

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
(1) Air Filters					
Air Filter (682)	"AAF" 5700 Disposable Panel Type Air Filters Model: 5700 Disposable Panel Type, 1" and 2" thick	AAF International, Louisville, USA	13/1/2014	January 2019	a) The filter units shall be UL listed and bear the appropriate UL Marking.
Air Filter (684)	3M Air Filter/Throw away type: a)Filtrete commercial High-Performance HVAC filter. a)Filtrete commercial Mid- Performance HVAC filter. Replacement media type: a) 3M High Air Flow Filtration Media.	3M Company, USA	27/1/2014	January 2019	The units shall be UL listed and bear the appropriate UL Marking.
Air Filter (685)	FLECO / a) Separator HEPA Filter - maximum 12 in. depth b) Pleated Filter - maximum 5 in. depth c) Mini-Pleated Panel - maximum 2.75 in. depth / UL File No. : AJZV.R22353 and Test Standard : UL 900 - Determination of the combustibility and the amount of smoke generated for air filter units and Test Result : UL Classified and compliance with UL 900.	Kinghope Limited	27/1/2014	January 2019	This units shall be UL listed and bear the appropriate UL Marking.
Air Filter (686)	"VariCel 2VS" . Throw-away dry type, maximum depth 12 in. High Capacity Extended Surface Mini-Pleat Filters/	AAF International, Louisville, USA.	27/1/2014	January 2019	a) The filter shall be UL listed and bear the appropriate identification markings.
Air Filter (688)	"Camfil Farr" Air Filter/ (a) Sofilair, (b) Micretain, (c) Absolute, (d) Megalam & (e) S-Flo	Camfil Farr Group, Malaysia and PRC	10/2/2014	February 2019	a) The filter shall bear the appropriate identification markings.
Air Filter (689)	"Clarcor" Air Filter Media / Replaceable filter media: (a) "Standard Grade Pads" - "SG", (b) "Industrial Grade Pads" - "IG", (c) "Supreme Grade Pads": - "SPG", (d) "Hammock Air Filters" - "AFS" - 46"	Clarcor Air Filtration Products Inc., U.S.A.	19/2/2014	February 2019	a) The filter media shall remain UL listed and bear the appropriate UL markings.
Air Filter (692)	AAF "Frontline" Air Filter Media Throw-away dry-type or adhesive coated pads or rolls, max. 2.0" thick a) FrontLine Gold b) FrontLine Blue, Type S and Type FG c) FrontLine Green, Type S and FG Throw-away dry-type roll filter, max. 2 " thick d) FrontLine Red.	AAF International, Louisville, USA	1/4/2014	March 2019	a)The toxicity of products of combustion resulting from exposure to flame has not been investigated. b) The filter media shall remain UL listed and bear the appropriate identification markings.
Air Filter (695)	AAF "VariCel RF/C", "VariCel RF/C Plus" & "DriPak" Air filters	"VariCel RF/C" & "VariCel RF/C Plus" - AAF International, Louisville, USA "DriPak" - AAF International, Selangor Darul Ehsan, Malaysia.	10/4/2014	March 2019	a)The toxicity of products of combustion resulting from exposure to flame has not been investigated. b) The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (696)	"Glasfloss Bulk Media" Air Filters Media/Throw-away adhesive coated air filter media - Glasfloss Bulk Media	Glassfloss Industries Inc., USA	10/4/2014	March 2019	a)The toxicity of products of combustion resulting from exposure to flame has not been investigated. b) The filter media shall remain UL listed and bear the appropriate identification markings.
Air Filter (698)	"AAF" Air Filter Units / Model "BioCel", "AstroCel I HCX" & "AmAir 200E" /Throw-away, dry type air filter units: a) "BioCel I", max. depth 12 in.b) "AstroCel I HCX", max. depth 11 1/2 in. c) "AmAir 200E", 1,2 & 4 in. thickness/AJZVR2570/UL 900-Determination of combustibility and the amount of smoke generated for air filter units.	AAF International, Louisville, USA	16/4/2014	March 2019	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (699)	"Goldmine" Air Filter Unit /Dry-type, throw-away air filter units: a) "Pleated Panel Series", max. depth 4 in. b) "Multi-Pocket Series", max. depth 24 in. c) :Separator Gold Series", max. depth 12 in. d) "HD Synthetic Media Series", max. depth 2 in./ AJZV.R26138/UL 900-Determination of combustibility and the amount of smoke generated for air filter units.	Goldmine Company Ltd., Hong Kong	16/4/2014	March 2019	The filter shall remain UL listed and bear the appropriate identification markings

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Air Filter (704)	"MayAir" Designed Pocket Filter/Synthetic fibre	Mayair Technology (China) Co., Ltd., PRC	7/5/2014	May 2019	The filter shall remain UL listed and bear the appropriate identification markings.
Air Filter (708)	"FOAMTEC FOAM MEDIA" Air Filter Units/Washable, dry-type air filter units designated as - types EZ, EZDR, EZOR, PDQZ, ZS, Q, QS, V,Z or ZT, may be followed by additional suffixes, maximum 2 in. thickness/AJZVR27865	Foamtec International Co. Ltd., Thailand	21/5/2014	May 2019	The filter shall remain UL listed and bear the appropriate identification markings.
Air Filter (744)	"Goldmine" IAQ Series Air Filter /Dry-type, throw-away air filter,"IAQ Series" maximum depth of 4 inches /AJZV.R26138	Goldmine Co. Ltd., Hong Kong	8/7/2014	July 2019	a)The toxicity of products of combustion resulting from exposure to flame has not been investigated. b) The filter shall remain UL listed and bear the appropriate identification markings.
Air Filter (724)	"Welaire® " / WSP Series / Bag Filter	Zhongshan Saiver Welaire Air-conditioning Equipment Co., Ltd., PRC	2/9/2014	September 2019	The filters shall bear the appropriate identification Markings.
Air Filter (726)	"Fleco" dry-type, throw-away air filter units: a) Designated "Separator Filter" maximum 12 in. depth b) Designated "Pocket Filter" maximum 36 in. depth Material: Glass/Synthetic fiber	Kunshan Fleco Filtration Co. Ltd., PRC	12/9/2014	September 2019	The filter shall remain UL listed and bear the appropriate identification markings.
Air Filter Pads (729)	Clarcor "Streamline - P, D1 and AM" Series Air Filter Pads / Throw away, dry type: a) Streamline - P, b) Streamline - DL, c) Streamline - AM / Thickness : Max. 2 inches	Clarcor Air Filtration Products, USA	7/10/2014	September 2019	The units shall be UL listed and bear the appropriate UL Marking
Air Filter (736)	"MayAir" Air Filter Units / Dry-type, throw- away air filter units : a) " Mini- Pleat Panel Filter" , max.depth 110mm. b) "Separator Filter", max.depth 305mm. c) "Primary Panel Filter", max.depth 96mm. UL File Number : AJZV.R26990. Test Standard : UL900-Determination of the combustibility and the amount of smoke generated for air filter units	Mayair Technology (China) Co., Ltd., PRC	18/11/2014	November 2019	The filter shall remain UL listed and bear the appropriate identification markings
Air Filter (739)	"Flanders-Precisionaire" Air Filter Units.Model : Throw away, dry type : a) Pre Pleat 40 b) Pre Pleat 62R c) Alpha Cell d) Precision Cell e) Alpha Panel. Throw away , bag type f) Precision Pak. Thickness/Depth : As listed in UL Certifications Directory AJZV.R5129 UL File Number : AJZV.R5129	Flanders-Precisionaire Inc., USA	4/12/2014	December 2019	The filter shall remain UL listed and bear the appropriate identification markings.
Air Filter (748)	"TROX" Pocket Filter Inserts F725, F726, F728, F729	TROX GmbH Industriegebiet West, Germany	7/1/2015	December 2019	a) The filters shall be installed and securely mounted on metallic filter mounting frames as detailed and recommended by the manufacturer. b) The filters should bear the trade mark "TROX" and the appropriate identification markings.
Air Filter (768)	"YUN YU HANG" Air Filter Units / Model : i) Dry-type, throw-away air filter unit, designated "Economical-Pleated Panel Filter", maximum depth of 4 in. ii) Dry-type, throw-away air filter unit, designated "Extended Surface Bag Filter", maximum depth of 24 in. iii) Dry-type, throw-away air filter unit, designated "YH Medium /High Efficiency Filter", maximum depth of 12 in. /UL File Number : AJZV.R38220	YUN YU HANG Co. Ltd.,Tai Wan	20/4/2015	April 2020	a) The filter shall remain UL listed and bear the appropriate identification markings.
Air Filter (778)	"Camfil Farr" Air Filter / Model : a) "C-Pleat" - 1 " , 2" & 4" b) "CFP-KW" c) "Opakfil" d) "Airopac" e) " Ecopleat" f) Pleating package air filter in "Silent Hood"	Camfil Farr Filtration (Kunshan) Co., Ltd., PRC	14/7/2015	February 2020	
Air Filter (788)	"Hencolin" / Dry-type, throw-away air filter units : a) "Extended Surface Filter", maximum depth of 4 in. b) "Synthetic Bag Filter", maximum depth of 36 in. c) "HEPA Separator Filter" and "ASHRAE Separator Filter", maximum depth of 12 in. d) "HEPA Mini-Pleat Filter", maximum depth of 3 in(76mm). / UL File Number : AJZV.R26150	Hencolin International Corporation, Taiwan	13/8/2015	August 2020	The filters shall remain UL listed and bear the appropriate identification markings.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Air Filter (799)	"AAF" / Replaceable media, dry type air filter units designated: a) SAAF Medium Duty Cassette b) SAAF Heavy Duty Cassette c) SAAF Commercial Grade Cassette ; Replaceable medium, dry type designated a) SAAF Carb b) SAAF Oxidant c) SAAF Carb MA d) SAAF Carb MB e) SAAF Carb MC f) SAAF Carb MA-HT / UL File Number : AJZV.R2570	AAF International, Louisville, USA	17/9/2015	September 2020	a) The toxicity of products of combustion resulting from exposure to flame has not been investigated. b) The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (813)	"Taiwan Nitta" / Throw-away dry-type air filter units designated as a) 33XX-XX, 34XX-XX, 35XX-XX, 36XX-XX, 38XX-XX, 39XX-XX, with a maximum depth of 4¾ in. b) 15XX-XX, with a maximum depth of 11¾ in. ("XX-XX" denotes efficiency and frame dimensions) c) TNxxU, TNxxH, with a maximum depth of 6 in. ("xx" denotes pleat depth in millimeters) d) TNNA, with a maximum depth of 4 in. (followed by letters and numbers representing filter depth in mm, efficiency, frame type, filter width in mm, gasket type and faceguard type) / UL File Number : AJZV.R20907	Taiwan Nitta Filter Co., Ltd., Taiwan	26/10/2015	September 2020	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (821)	"Welaire®" / Model : WAR Series / Description : Synthetic fiber filter medium in a roll.	Zhongshan Saiver Welaire Air-Conditioning Equipment Co., Ltd., PRC	1/12/2015	November 2020	The filters shall bear the appropriate identification markings.
Air Filter (845)	Aeroglass "Dustcollector" Glassfibre Filter Media used in Ventilating Systems / Model : Glassfibre-filtermedia DUCTcollector (50mm in depth) / Thickness/Density : 50mm / 4.25 kg/m ³	Aeroglass Filtri s.r.l., Italy	19/4/2016	April 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that is not our requirement.
Air Filter (859)	Pur.Air "PAB" & "PAC" Air Filter Units / Model : Throw-away extended area air filter unit designated a) Pur.Air "PAB" with maximum depth of 30 in. and maximum 10 pockets.; Throw-away air filter unit designated b) Pur.Air "PAC" with maximum depth of 11.25 in..	PUR.AIR Company Limited	21/6/2016	June 2021	a) The toxicity of products of combustion resulting from exposure to flame has not been investigated as that is not our requirement. b) The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (863)	"AAF" AmAir 1100 & AmAir 1300 Air Filter Units / Model : Throw-away, dry type: a) AmAir 1100 (max. depth 4 3/8 in.) b) AmAir 1300 (max. depth 4 in.)	AAF International, Louisville, USA	13/7/2016	July 2021	a) No assessment was made on the density and the toxicity of smoke generated by the product under fire as that are not our requirement. b) The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (864)	"AAF" AmAir / VariCel / AstroCel Series, Roll-O-Matic, Roll-O-Mat & DriPak 2000 Air Filter Units / Model : Throw-away, dry type: a) AmAir 100E, AmAir 200E, AmAir 300E and AmAir 500E b) VariCel Series & Varicel II c) AstroCel I, AstroCel II, AstroCel TM Electrically operated roll-away type: d) Roll-O-Matic Throw-away, dry type, automatic roll filter media e) Roll-O-Mat Throw-away, extended area, dry type f) DriPak 2000	AAF International, Louisville, USA	14/7/2016	July 2021	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (865)	"AAF" VariCel V-70, -80, -95 & VariCel V MERV-15 Air Filter Units / Model : Throw-away dry type, maximum depth 12 in. a) VariCel V-70, -80, -95 b) VariCel V MERV-15	AAF International, Louisville, USA	14/7/2016	July 2021	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (889)	"Aire-Plus" Air Filter Units	Aire-Plus Technology (SIP) Co., Ltd., PRC	22/11/2016	October 2021	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (890)	Camfil Farr "C-Flo" Air Filter Unit / "C-Flo"	Camfil Filtration (Shanghai) Co. Ltd., PRC	22/11/2016	October 2021	

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Air Filter (893)	"AAF" VariCel 2+' Air Filter Units / Model : Throw-away dry type -VariCel 2+ a)VariCel V-70. -80, -95 b) VariCel V MERV-15	AAF International, Louisville, USA	9/12/2016	November 2021	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (896)	"AAF" AmAir C", "AmAir/CP" and AmAir/C Plus; Series Air Filter Units Model :a Throw-away, dry type air filter units: -AMAir/C-1, AMAir/C-2 and AMAir/C-3 ; -AMAir/CP-1, AMAir/CP-2 and AMAir/CP-3 b.Throw-away, dry type air filter: - AmAir C/Plus UL File Number: AJZVR2570	AAF International, USA	12/12/2016	November 2021	a) The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (901)	"ACF" mini-V and "ACF-V" Activated Carbon Fiber Filters used in Ventilating System: a. ACF-mini V 25mm/ 109kg/m ³ , b. ACF-V 300mm/ 90.9kg/m ³	Energy Technology Laboratories Osaka Gas Co. Ltd., Japan	29/12/2016	November 2021	
Air Filter (906)	Purafil "Purafilter" Air Filter	Purafil Inc., USA	4/1/2017	December 2021	The filter is to be marked with the manufacturer's name, country of origin, model name and the standard to which it has been tested.
Air Filter (911)	FCR "MAT-GLAS" Glass Fibre Roll Air Filter Media	F.C.R. SpA, Italy	27/1/2017	December 2021	Packing of the filter media shall bear the appropriate identification markings.
Air Filter (918)	"Taiwan Nitta" Air filter units Model: Dry-type, throw-away air filter units designated as "Separator Filter" maximum depth of 12 in. UL File Number: AJZV.R20907	Taiwan Nitta Filter Co., Ltd., Taiwan	2/3/2017	February 2022	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (927)	Dust Fighter 95 & Dust Fighter 90 Air Filter Units / Model : Washable dry type air filter units Dust Fighter 90 and 95, thickness 1" and 2" / UL File No. : AJZV.R18657	He Shan Shi Dabao Air Purification Co., Ltd., PRC / Dust Free LP, USA	5/4/2017	March 2022	a) The units shall remain UL listed and bear the appropriate identification markings. b) This assessment supersedes our previous one of the same series dated 14.12.2015
Air Filter (937)	"Aire-Plus" RadiCel II Air Filter Units / Dry-type, Air Filter Unit designated: RadiCel II" , maximum depth of 83mm	Aire-Plus Technology (SIP) Co., Ltd., PRC	22/5/2017	April 2022	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (954)	"Synthetic filtermedia GC RETE 210" Filter Media / Filter Model: Synthetic Filtermedia GC RETE 210.	ORV Manufacturing SpA, Italy	6/7/2017	February 2022	The filter shall bear the appropriate identification markings.
Air Filter (981)	"Purafil" Chemical Air Filters / Filter Models: Dry type replaceable filter media: a) Purafil Chemisorbant b) Purafil Select CP Blend c) Purafil Select d) Purafil Select Chemisorbant e) CP Blend f) Purafil SP g) SP Blend h) Triple Blend, i) Odormix SP j) Puracarb k) Odorcarb Ultra l) Chlorosorb Ultra m) Puracarb AM / Filter Modules: Items (a) to (m) above are to be <u>factory-filled</u> into the following "Purafil" modules: a) PK-12 b) PK-18 c) CK-12/24 d) PM-18 / Dimensions : As defined by the module dimensions or listed in UL Certifications Directory / UL File Number : AJZVR6280	Purafil Inc., USA	27/11/2017	October 2022	(i) The filter media and filter modules shall both remain UL listed and bear the appropriate UL Marking. (ii) This letter supersedes our letter of the same series dated 7.6.2012 on same products.
Air Filter (982)	"Permatron" Air Filters / Filter Model : Dry Type, washable air filter units: a) Dust Eater+ b) Dust Eater Easy Flow+ c) Lifestyle Plus MF d) Lifestyle Plus LR / Thickness : As listed in UL Certifications Directory / UL File Number : AJZVR4135	Permatron Corp., USA	27/11/2017	October 2022	i) The units shall be UL listed and bear the appropriate UL Markings. ii) This letter supersedes our letter of the same series dated 21.6.2012 for the same products.

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Air Filter (987)	AAF Air Filters - VariSorb XL / Model : Throw-away, dry type air filter units "Varisorb XL" with maximum depth, 11-1/2 in. / Material : Filter media comprised of carbon particles bonded into a matrix of mini carbon granulated embedded between non-woven synthetic layers assembled in a V-bank configuration in high impact polystyrene cell sides / UL File Number : AJZVR2570	AAF International, Louisville, USA	30/11/2017	October 2022	a) The filter shall remain UL listed and bear the appropriate identification markings.
Air Filter (996)	Camfil Air Filter Units / Model : Throw away, dry-type filter unit: / a) Type 30/30, maximum depth of 4" b) Aeropleat III, maximum depth of 4" c) AP-Eleven, maximum depth of 4" d) AP-Thirteen, maximum depth of 4" / e) Riga-Flo, maximum depth of 12" / UL File Number : AJZVR3632	Camfil Filtration (Kunshan) Co. Ltd., PRC / Camfil Malaysia Sdn Bhd, Malaysia	15/12/2017	November 2022	(i) The filter media and filter modules shall both remain UL listed and bear the appropriate UL Marking. (ii) This letter supersedes our letter of the same series dated 6.6.2012 on filter products.
Air Filter (1039)	"Aire-Plus" RadiCel II Air Filter Units / Model : Dry-type, Air Filter Unit designated: RadiCel II", maximum depth of 83mm	Aire-Plus Technology (Sip) Co., Ltd., PRC	31/7/2018	April 2022	a) The filter shall remain UL listed and bear the appropriate identification markings. b) This letter supersedes our letter of the same series dated 22.5.2017 on the same product.
Air Filter (1108)	Purafil "Purafilter" Air Filter / Model : Purafilter / Description : Air Filter with either paperboard of frame material YM CBF-1 or metal frame; and factory-filled with YM SPB-500 filter medium / Dimension : 24" x 24" with thicknesses of 2", 4" or 12"	Purafil Inc., USA	29/5/2019	August 2026	a) The filter is to be marked with the manufacturer's name, country of origin, model name and the standard to which it has been tested. b) This assessment letter supersedes our previous one of the same series dated 4.1.2017. c) This assessment is subject to review by August 2026 or with the updating of the edition of the test standard.
Air Filter (1125)	"Camfil" Air Filters / Filter Model : (a) AeroPleat Eco, AeroPleat III (b) Opakfil (ES/ST/2V) (c) Superpac GM (d) Airopac Close Pleat (e) Ecopleat 3GPF (f) Absolute (VGHF/VE/C/D) (g) Micertain/Absolute Close Pleat (h) Megalam (i) Silent Hood Absolute (j) S-Flo (k) Camplis	Camfil Group, PRC or Malaysia	19/7/2019	October 2029	
Air Filter (1141)	"Welaire®" WSP Series Bag Filter / Model : WSP Series / Description : Bag Filter	Zhongshan Saiver Welaire Air-conditioning Equipment Co., Ltd., PRC	8/10/2019	September 2024	The filters shall bear the appropriate identification Markings.
Air Filter (1150)	"Unisorb Corporation" Mark 2 Deodorization Filter Media / Brand Name / Model : Unisorb Corp / Mark 2 / Construction : Purple sphere said to be activated alumina impregnated with potassium permanganate.	Unisorb Corporation, USA	8/11/2019	December 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire.
Air Filter (1157)	Purafil "Purafilter" Air Filters / Model : Purafilter / Description : Air filter with either paperboard of frame material YM CBF-1 or metal frame; and factory-filled with YM SPB-500 filter medium / Dimension : 24" x 24" with thicknesses of 2", 4" or 12"	Purafil Inc.	20/11/2019	September 2029	a) The filter is to be marked with the manufacturer's name, country of origin, model name and the standard to which it has been tested.

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Air Filter (1162)	"FLECO" Air Filter Units / Filter Model : a) "Separator HEPA Filter", maximum 292mm depth b) "Pleated Filter", maximum 4 in. depth c) "Mini-Pleated Panel, maximum 70mm depth / UL File Number : AJZV.R22353	Kunshan Fleco Filtration Co. Ltd., P.R.C.	13/12/2019	Subject to review with the updating edition of the test standard	i) The filter shall remain UL listed. (ii) b) This assessment letter supersedes our previous one of the same series dated 27.1.2014. (iii) This assessment is subject to review with the updating of edition of the test standard.
Air Filter (1169)	Acoustic High Efficiency Air Filter / Filter Model : Acoustic High Efficiency Air Filter	C - Cloud Filter Co., Ltd.	24/2/2020	July 2029	
Air Filter (1170)	Acoustic High Efficiency Air Filter with Antimicrobial Air Purifying Coating / Filter Model : Acoustic High Efficiency Air Filter with Antimicrobial Air Purifying Coating	C - Cloud Filter Co., Ltd.	24/2/2020	November 2029	
Air Filter (1171)	Acoustic - aided Pre - Filter / Filter Model : Acoustic - aided Pre - Filter	Laizhou Meihe Environmental Technology Co., Ltd.	24/2/2020	November 2029	
Air Filter (1183)	Air Filter with PACO Filter Material / Filter Model : Air filter with PACO filter material	Wisdom Networks Co, Ltd.	21/5/2020	December 2029	
Air Filter (1185)	"JAF" Air Filter Units / Filter Model : a) "MiraDeep Borsa", maximum 914mm depth b) "LunaKleen", maximum 117mm depth c) "TetraKleen", maximum 117mm depth d) "LunaCel", maximum 292mm depth e) "MiraCel", maximum 292mm depth f) "DeaKleen", maximum 95mm depth g) "DeaCarb", maximum 3/16in. depth h) Replaceable medium, "TerraCarb Acid" i) Replaceable medium, "TerraOxi" j) "12CS Cassette Module", maximum 295mm depth k) "18CS Cassette Module", maximum 441mm depth l) "TerraComb" maximum 150mm depth m) "Grease", maximum 95mm depth / UL File Number : AJZV.R27898	Japan Air Filter Malaysia And Bhd	22/5/2020	Subject to review with the updating of edition of the test standard	i) The filter shall remain UL listed.
Air Filter (1214)	"Hencolin" Air Filters / Filter Model : Dry-type, throw-away air filter units a) "Extended Surface Filter", maximum depth on 4 in. b) "Synthetic Bag Filter", maximum depth of 36 in. c) "HEPA separator Filter" and "ASHRAE Separator Filter", maximum depth of 12 in. d) "HEPA" Mini-Pleat Filter", maximum depth of 3 in (76mm) / UL File Number : AJZV.R26150	Hencolin International Corporation, Taiwan	11/8/2020	August 2025	a) The filters shall remain UL listed and bear the appropriate identification markings. b) This letter supersedes our previous letters of the same series dated 13.8.2015.
(2) Air Handling Equipment					

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Variable Air Volume Box (728)	"RSVAV" / Series TU, Series FP, Series UF / 1) Series TU - The basic unit casing is of galvanized steel sheet construction internally lined with fibreglass / elastomeric insulation. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream., 2) Series FP - The basic unit casing is of galvanized steel sheet construction internally lined with fibreglass / elastomeric insulation. The unit incorporates a fan-motor assembly comprising a galvanized steel fan wheel and housing and a totally enclosed single phase motor. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream, 3) Series UF - The basic unit casing is of steel construction internally lined with elastomeric insulation. All control devices and components are enclosed in a galvanized steel enclosure shielded from the air stream. Air grille fitted to the unit is of extruded aluminium. For fan-powered units, it incorporates a fan-motor assembly comprising a galvanized steel fan wheel and housing and a totally enclosed angle phase motor.	Royal Service Air Conditioning (Guangdong) Corp., PRC	26/9/2014	September 2019	
Variable Air Volume Box (795)	"Johnson Controls TSS" / Johnson Controls TSS Series VAV Terminal / Construction Details : The basic unit casing is of galvanized steel sheet construction internally lined with fiberglass insulation. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream. Major non-metallic parts : a) The rubber foam gasket for volume control damper complies with UL 94 V-0 flame class and UL listed. b) The plastic tubing for velocity pressure control complies with UL 94 HB flame class and UL listed. c) The fiberglass insulation, Model FG6413 by Xinjie Insulation Building Materials Co., Ltd., complying with BS 476 Part 6: 1989 + A1: 2009 (Overall Performance $l \leq 12$, Sub-index $i_1 \leq 6$) and BS 476: Part 7: 1997 (Class I). d) The plastic joints complies with UL 94 V-0 flame class. e) The high density polyethylene bearing complies with UL 94 V-0 flame class.	York Guangzhou Air Conditioning and Refrigeration Equipment Co., Ltd., PRC	10/9/2015	August 2020	
Variable Air Volume Box (818)	BARCOL-AIR NC Series, NV Series and NK/NL Series Variable Air Volume Terminals / Construction Details : <u>NC Series:</u> The base unit casing is of galvanized steel sheet construction incorporates an air distribution plenum internally lined with 25mm(thk.) fiberglass insulation with black glass tissue facing for model NCOA, NCOC, NCOG and NCOJ. The base unit casing combined with the electric heater section incorporates an air distribution plenum internally lined with 25mm(thk.) fiberglass and galvanized steel inner skin for model NCON and NCOQ. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream. <u>NV Series:</u> The base unit casing is of galvanized steel sheet construction incorporates an air distribution plenum internally lined with closed cell elastomeric foam insulation for model NVOA, NVOC, NVOG and NVOJ. The base unit casing combined with electric heater section incorporates an air distribution plenum internally lined with 25mm(thk.) fiberglass and galvanized steel inner skin for model NVON and NVOQ. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream. <u>NK/KL Series:</u> The base unit casing is of galvanized steel sheet construction incorporates an air distribution plenum for model NKOA and NLOA. The base unit casing is of galvanized steel sheet construction combined with electric heater section incorporates an air distribution plenum with 25mm(thk.) fiberglass external insulation and galvanized steel covers for model NKON and NLON. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream.	Barcol-Air Environmental Systems (Foshan) Limited, PRC	2/12/2015	November 2020	
Variable Air Flow Regulator (897)	"RS-CAVC" Variable Air Flow Regulators Model: RS-CAVC-IR,Q,R and DR Series	Royal Service Air Conditioning (Guangdong) Corp., PRC	16/12/2016	November 2021	

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Variable Air Volume Box (910)	"SUN" VAV, FDC & FDV Series Variable Air Volume Boxes to be used in Ventilating Systems Model VAV-5000 Series,, VAV-50E1 Series,, FDC-5000Series,, FDC-50E1 Series,, FDV-5000 Series & FDV-50E1 Series a) All Internal wiring is of high temperature heat resistance silicone rubber insulated cable with outer braiding. b) The electric heater is of back heat type, finned and sheathed with overheat cutout.	SUNRISE Air Conditioning Equipment LTD., PRC	26/1/2017	November 2021	
Variable Volume Box (959)	TROX "TVB" Series Variable Volume Box / Model : Series TVB / Construction Details: All metallic construction with galvanized steel sheet casing which is lined internally with 25 mm thick glass wool insulation of density 32 kg/m ³ , Airflow sensor tubes are made from aluminium tubing. All control devices and components are housed in a galvanized steel enclosure and shielded from the air stream. Insulation material is "Polyglass Polywool Ductliner" from Malaysia and is in compliance with BS 476 Part 6: 1989 (Overall Performance I ≤ 12, Sub-index i1 ≤ 6) and BS 476 Part 7: 1997 (Class 1). All non-metallic components within air stream are in compliance with V-0 or V-2 flammability class when tested to UL 94.	TROX Malaysia Sdn. Bhd., Malaysia	27/7/2017	June 2022	a) No assessment was made on the control arrangement of electric heater as no such information was provided. The control and sequence interlocking provisions shall be carried out strictly in accordance with the relevant requirements stipulated in Section 1 of Part XI of the FSD Circular Letter No 4 / 96. b) Electric heaters shall remain UL listed. c) Test reports of all non-metallic components within air stream including bush, lip seal, rubber, thermal insulations and angle (elbow) shall remain valid.
Sound Attenuator (1049)	"Vibro-Acoustic"® RLC" Rectangular Sound Attenuator / Model : "Vibro-Acoustics"® RLC" Rectangular Sound Attenuator / Construction : The Casing and splitter nose are constructed from 0.8 mm to 1.2 mm thick galvanized steel sheet. The splitter body is fabricated from 0.55 mm to 0.8 mm thick galvanized perforated steel sheet with "LAH" Fiberglass of 50mm thick density 32kg/m ³ or "LAH Glasswool" of 50mm thick density 48kg/m ³ packed as the infill material.	Dongguan Luen Wah Metal Product Co., Ltd., PRC	17/9/2018	September 2020	a) No assessment was made on the density and toxicity of smoke generated by the infill material under fire conditions as that are not our requirements. b) This assessment letter supersedes our previous one of the same series dated 1.8.2013
Variable Air Volume Box Terminal Unit (1082)	Honeywell "CPO-VAV" Series Variable Air Volume Box Terminal Unit / Model : CPO-VAV Series (excluding fan power type) / Construction Details : The unit casing is of galvanized steel sheet construction with 25mm thick, 32kg/m ³ density fiberglass internal insulation with perforated metal sheet (cooling only) and metal sheet (cooling and heating) protection, or 25mm thick, 45kg/m ³ density closed cell nitrile rubber internal insulation. All control devices and components are housed in a galvanized steel enclosure external to the air stream. / <u>Major non-metallic parts:</u> a) Rubber gasket shall be Ethylene Propylene Thermoplastic Rubber "Santoprene (TM) TPV" 251-70W232 complies with UL 94 V-0 flame class and UL listed. b) Pneumatic tubing shall be "1219 FR Flame Retardant Polyethylene tubing" complies with UL 94 V-2 flame class and UL listed. / <u>Internal Insulation:</u> a) Insulation material shall be "Owen Corning" Fiberglass Insulation (25mm x 32kg/m ³) Fibreglass Duct Liner board with Black Glass Tissue facing; or b) Insulation material shall be "Class "O" Armaflex" Closed cell nitrile rubber based flexible elastomeric foam thermal insulation material (25mm x 45kg/m ³)	Flying Horse, PRC	27/12/2018	April 2021	a) No assessment was made on the control arrangement of electric heater. The control and sequence interlocking provisions shall be carried out strictly in accordance with the relevant requirements stipulated in Section 1 of Part XI of the FSD Circular Letter No 4/96. b) Test reports of all non-metallic components within air stream shall remain valid.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Variable Air Volume Box Terminal Unit (1095)	"Flying Horse" Variable Air Volume (VAV) Terminal Units (Boxes) / Model : VAV - 1000 Series (cooling only) and VAV - 10RH Series (cooling & heating) / Construction Details : All metallic construction with galvanized steel sheet casing which is lined internally with 25 mm thick fiberglass insulation protected by perforated galvanized sheet steel . All control devices and heater control panel are mounted externally to the air stream. / <u>Internal Insulation</u> : Insulation materials fibreglass duct liner, ("AFICO" Faced Duct Wrap PAL ^R DSF 818 Class 0 Double Sided Aluminum Foil Facing, density 32 Kg/m ³ , with adhesive from PAL [®] IA811 WB Class 0 / IA 911 WB) . / <u>Major non-metallic parts</u> : a) Pneumatic tubing shall be "1219 FR Flame Retardant Polyethylene tubing" complies with V-2 flame class and UL listed. b) Rubber gasket shall be Ethylene Propylene Thermoplastic Rubber "Santoprene [™] Thermoplastic Vulcanizate" 251-70W232 complies with V-2 flame class and UL listed.	Dongguan Flying Horse Metal Products Industrial Limited, PRC	4/4/2019	May 2020	a) No assessment was made on the control arrangement of electric heater. The control and sequence interlocking provisions shall be carried out strictly in accordance with the relevant requirements stipulated in Section 1 of Part XI of the FSD Circular Letter No 4/96. b) This assessment is subject to review by May 2020 or when the updating of the edition of the test standard.
Sonic Armour Barrier Mats (1117)	"Gudi" Sonic Armour Barrier Mats (Model: BM3-5R) / Brand Name : Gudi / Model : BM3-5R / Thickness : 3 mm / Material : Mass Loaded durable flexible polymeric and self-reinforcement materials / Application : For the external insulation of ventilation pipework and ductwork	Guangdong Liyin Acoustics Technology Co. Ltd	6/6/2019	January 2027	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by January 2027 or with the updating of the edition of the test standard..
Acoustic Noise Barrier Mats (1129)	"WILHAMS " Acoustic Noise Barrier Mat / Brand Name : Revac [®] Momentum S50 FF / Thickness : 2.5 mm / Material : Class 0 foil faced dense flexible sound barrier mat / Application : For external acoustic insulation of ventilation pipework and ductwork	Wilhams Insulation Ltd	26/7/2019	January 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by January 2028 or with the updating of the edition of the test standard.
Variable Air Volume Box Terminal Unit (1131)	"RSVAV" Variable Air Volume Box / Model : Series TU, Series FP and Series UF / Construction Details : <u>TU Series</u> The basic unit casing is of galvanized steel sheet construction internally lined with fiberglass / elastomeric insulation. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream. <u>FP Series</u> The basic unit casing is of galvanized steel sheet construction internally lined with fiberglass / elastomeric insulation. The unit incorporates a fan-motor assembly comprising a galvanized steel fan wheel and housing and a totally enclosed single phase motor. All control devices and components are enclosed in a galvanized steel enclosure external to the air stream. <u>UF Series</u> The basic unit casing is of steel construction internally lined with elastomeric insulation. All control devices and components are enclosed in a galvanized steel enclosure shield from the air stream. Air grille fitted to the units is of extruded aluminium. For fan-powered units , it incorporates a fan-motor assembly comprising a galvanized steel fan wheel and housing and a totally enclosed single phase motor. Major non-metallic parts: a) The annular shape gasket for volume control damper complies with UL 94 V-0 flame class and UL listed. b) The tubing for velocity pressure control complies with UL 94 V-2 flame class and UL listed. c) The fiberglass insulation is "Owen Corning" Fiberglas [®] complying with BS 476 Part 6: 1989 (Overall Performance I ≤ 12, Sub-index i ₁ ≤ 6) and BS 476 Part 7: 1997 (Class I). d) The elastomeric insulation is "ARMAFLEX" elastomeric foam material complying with BS 476 Part 6: 1989 (Overall Performance I ≤ 12, Sub-index i ₁ ≤ 6) and BS 476 Part 7: 1997 (Class I).	Royal Service Air Conditioning (Guangdong) Corp., PRC	2/8/2019	January 2026	a) No assessment was made on the control arrangement of electric heater. The control and sequence interlocking provisions shall be carried out strictly in accordance with the relevant requirements stipulated in Section 1 of Part XI of the FSD Circular Letter No. 4/96.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Variable Air Volume Box Terminal Unit (1132)	"Flying Horse" Variable Air Volume (VAV) Terminal Units (Boxes) / Model : VAV - 1000 Series (cooling only) and VAV - 10RH Series (cooling & heating) / Construction Details : All metallic construction with galvanized steel sheet casing which is lined internally with 25 mm thick fiberglass insulation protected by perforated galvanized sheet steel. All control devices and heater control panel are mounted externally to the air stream. <u>Internal Insulation</u> : Insulation material is fiberglass duct liner, ("Owens Corning" fiberglass duct liner board with Black Glass Tissue (BGT) facing, density 32 Kg/m ³ , with adhesive from PAL® IA811 WB Class 0 / IA911 WB). <u>Major non-metallic parts</u> : a) Pneumatic tubing shall be "1219 FR Flame Retardant Polyethylene tubing" complies with V-2 flame class and UL listed. b) Rubber gasket shall be Ethylene Propylene Thermoplastic Rubber "Santoprene™ Thermoplastic Vulcanizate" 251-70W232 complies with V-2 flame class and UL listed.	Dongguan Flying Horse Metal Products Industrial Limited, PRC	2/8/2019	July 2023	a) No assessment was made on the control arrangement of electric heater. The control and sequence interlocking provisions shall be carried out strictly in accordance with the relevant requirements stipulated in Section 1 of Part XI of the FSD Circular Letter No. 4/96. b) This assessment is subject to review by July 2023 or when the updating of the edition of the test standard.
Acoustic Noise Barrier Mats (1142)	"WILHAMS" Acoustic Noise Barrier Mat / Brand Name : Revac® Momentum S50 FF SGQ / Density : 5.63 kg/m ² / Thickness : 27 mm / Material : Class 0 foil faced polymeric decoupled acoustic barrier mat (Acoustic Lagging) / Application : For the insulation supports of ventilation pipework and ductwork	Wilhams Insulation Ltd, United Kingdom	27/9/2019	January 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by January 2028 or with the updating of the edition of the test standard.
Variable Air Volume Box Terminal Unit (1165)	"Johnson Controls" TSS Series Variable Air Volume (VAV) Terminal / Model : Johnson Controls TSS Series VAV Terminal / Construction Details : All metallic construction with galvanized steel sheet casing which is lined internally with fiberglass insulation protected by perforated galvanized sheet steel. All control devices and heater control panel are mounted externally to the air stream. / <u>Major non-metallic parts</u> : a) The rubber foam gasket for volume control damper complies with UL 94 V-0 flame class and UL listed. b) The plastic tubing for velocity pressure control complies with UL 94 HB flame class and UL listed. c) The fiberglass insulation by Owens Corning (China) Investment Co Ltd., complying with BS 476 Part 6:1989 + A1: 2009 (Overall Performance I ≤ 12, Sub-index i ₁ <6) and BS 476: Part 7: 1997 (Class I). d) The Plastic joints comply with UL 94-V-0 flame class. e) The high density polyethylene bearing complies with UL 94 V-0 flame class.	York Guangzhou Air Conditioning and Refrigeration Co., Ltd., PRC	5/2/2020	April 2025	This assessment is subject to review by April 2025.
(3) Smoke Control Components (Ventilator / Fire Rated Duct/ Smoke Control Unit)					
Fire Rated Duct (811)	"FirePro/FP-900" Calcium Silicate Steel Ductwork System / System : A Rectangular steel duct system of proprietary design and construction. The duct system is to be clad with "FirePro/FP-900" calcium silicate board of thickness from 12mm to 24 mm with or without rock wool insulation of a nominal density from 60kg/m ³ to 100 kg/m ³ between "FirePro/FP-900" board and steel duct, as described in the WF Assessment Report No.336212 (Issue 2).	Guangdong Soben Green Materials Co., Ltd, PRC	22/12/2015	October 2020	All design, fabrication and installation of fire rated duct should be certified with a label stuck on every duct section by Guangdong Soben Green Material Co., Ltd.
Actuator (853)	"SE Controls" SEPO 70 Window Actuator and SECA 50 Catch for Static Smoke Vent / Model : (a) SEPO 70 window actuator, (b) SECA 50 window catch / Type : Pneumatic cylinder actuator with integral spring.	SE Controls, U.K.	25/5/2016	May 2021	a) No assessment was made on the smoke vents designed for operation by the actuators and catch covered in this letter. b) A valid certificate of quality management system certification to suitable international / national standard shall cover the manufacturing dates of the products.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Rated Duct (862)	Caswell "Firesafe" Ductwork System / A rectangular or circular steel duct system of proprietary design and construction. For thermal insulation and hard body impact test, the duct system is wrapped with Roxul "Firesafe" Rockwool with a 130 microns aluminium foil facing and a nominal density of 160kg/m ³ .	New Glory Engineering Limited, PRC	13/7/2016	February 2021	a) All design, fabrication and installation of fire rated duct should be certified with a label stuck on every duct section by Centalink International Ltd., who should possess a valid license for Hong Kong issued by Firesafe Fire Rated Ductwork Ltd. b) This assessment is valid for 4-sided fire rated duct applications only.
Fire Rated Duct (874)	Sheet Steel Ductwork Protected by 15mm thick Promatect H Board with Insulation for Ventilating and Smoke Extraction Systems Manufacturer: Promat International (Asia Pacific) Ltd., PRC System: A rectangular galvanized steel sheet ducting system to DW/144, protected by :Promatect-H" boards of 15mm thick and rock wool insulation of thickness 50 mm and density 100 kg/m ³ as described in the WF Assessment Report No. 346620	Promat International (Asia Pacific) Ltd., PRC	13/9/2016	November 2019	a) All design, fabrication and installation of fire rated ductwork system shall be stuck with a label with clear identification of the ductwork system (e.g. Galvanized sheet steel ductwork protected by 15mm thick "Promatect H" fire resistance board with rock wool insulation) at 5 m interval which is supplied by "Promat International (Asia Pacific) Ltd." and certified by the Registered Professional Engineer who is responsible for designing and/or installing the smoke control systems or Registered Fire Service Installation Contractor (RFSIC). b) This assessment is not applicable to kitchen exhaust systems.
Fire Rated Duct (971)	"Flamebar B.W. 11" Fire Resisting Ductwork System / System : A steel duct system of proprietary design and construction, with a spray of "Flamebar B.W.11" fire proofing for fire protection and if necessary wrapped with non-combustible stone mineral wool for thermal insulation and reinforced aluminium foil facing to protect the ductwork from mechanical damage. / Material : a) Ductwork is constructed of galvanized steel or stainless sheet to DW 144 or from manufacturer's prefabricated steel sections and panels of wall thickness 0.6mm to 1.2mm depending on duct size b) A layer of "Flamebar B.W. 11" thickness 0.7 to 1.0mm fire proofing spray or brush/roller applied under licence by manufacturer. c) "ROXUL" or "FPL 110" non-combustible stone mineral wool used for insulation in slab or wrap form with density of 45/60/105/110 kg/m ³ and varying thickness of 25mm to 200mm according to the design fire ratings as detailed in Tables 1 and 2 of BRE Assessment Report No.: CC 88343 Review 5 issue 3 of 7.12.2016 d) " INSUL-PHEN CW703" glass cloth reinforced aluminium foil laminate facing for mechanical protection in accordance with the Impact Test Report No. 170890ST170184 and No. 170890ST170184(1) / Application : Fire resisting ductwork for ventilating (excluding kitchen exhaust system) and/or smoke extraction systems for 4-sided applications / Maximum Duct Sizes : 21 m wide x 3 m high (intrnal dimensions) subject to the construction requirements stipulated in assessment and test reports listed below / Construction, Hanger and Wall Penetration Details : Details od contruction, hanger, insulation and penetration seals for variation in duct size, fire rating and orientation etc. shall be in accordance with BRE Assessment Report No. CC 88343 Review 5 Issue 2 and BRE Assessment Report No. CC 89277A Review 5 Issue 3 and shall comply with Firespray International Ltd. construction standards drawings included in thest two assessment reports	Firespray International Ltd., U.K.	12/10/2017	June 2020	a) All design, fabrication and installation of the fire resisting ductwork system shall be certified with a label stuck at every duct section by The Jardine Engineering Corporation Ltd. (JEC) who shall be holding a valid license issued by Firespray International Ltd., UK. or applicators authorized by JEC. b) Any construction details differ from those described in the above mentioned Assessment and Test Reports shall be endorsed by Firespray International Ltd., UK and submitted for assessment. c) This assessment letter supersedes our previous one of the same series dated 13.11.2013.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Smoke Curtain (967)	Coopers "SmokeStop" Automatic Smoke Curtain System for Smoke Extraction System / Model : "SmokeStop" Smoke Barrier / Type : Electrically operated with "EFP2/A2" fabric material / Operation Features : The above automatic smoke curtain system shall be of "fail safe" design that smoke curtains shall drop to the designed level when there is a failure in power supply or control	Copper Fire Ltd., U.K.	21/9/2017	April 2021	(a) The captioned product shall remain listed by IFC Certification and its listing status will be verified during compliance inspection (b) The captioned product shall bear the appropriate identification markings c) Automatic smoke curtain systems shall be designed and constructed according to the manufacturer's instruction and listing conditions. (d) A valid certificate of quality management system certification to suitable international/national standard shall be provided to cover the manufacturing dates of the products during compliance inspections.
Fire Rated Duct (1018)	"FirePro / FP-900" Smoke Extraction Ducts / Model : FirePro / FP-900 / System : A steel ductwork system of proprietary design and construction comprising FirePro / FP-900 board supported by galvanized iron (GI) angle sections at the longitudinal system corners and collars formed from GI channels around a GI sheet duct, with Rockwool insulation fitted to some constructions between the board and the steel duct / Product Listing Document : Warrington Certification Ltd.'s Certificate No.: CF 5413 of 24.3.2016 / Compliance Standard : BS 476: Part 24: 1987 / Material : (a) The steel duct is constructed with minimum thickness of 0.8 mm (the minimum thickness under this approval) to 1.2 mm galvanized sheet steel to DW 144 with longitudinal seams formed using the Pittsburgh Lock or Grooved Corner Seam systems; (b) Sheets of "FirePro / FP-900" calcium silicate board with thickness 14 mm/18 mm/24 mm fastened around the steel duct; and (c) "Rockwool" non-combustible stone wool with density of 100 kg/m ³ is fitted in between the "FirePro / FP-900" board and the metal sheet steel duct. / Application : Fire resistant ductwork for smoke extraction system for 4-sided applications / Maximum Duct Sizes : 7500 mm x 2500 mm high (internal dimensions) / Construction Hanger and Wall Penetration Details : Details of construction, hanger, insulation and penetration seals shall be in accordance with WF Assessment Report No. 336212, Issue 2	Soben International (Asia Pacific) Ltd.	16/4/2018	July 2023	(a) The captioned product shall remain listed by Warrington Certification Ltd and its listing status will be verified during compliance inspections; (b) The captioned product shall bear the appropriate identification markings; (c) A valid certificate of quality management system certification to suitable international / national standard shall be provided to cover the manufacturing dates of the products during compliance inspections

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Rated Duct (1028)	Sheet Steel Ductwork Protected by 25mm thick Promatect H Board with Insulation for Ventilating and Smoke Extraction Systems / System : A rectangular galvanized steel sheet ducting system to DW/144, protected by "Promatect-H" boards of 25 mm thick and rock wool insulation of thickness 100 mm and density 100 kg/m ³ as described in the WF Assessment Report No. 178825 (Issue 2) and BRANZ Fire Assessment Report No. FAR 4106 / Application : Fire rated ductwork for ventilating/smoke extraction systems excluding kitchen exhaust systems / Maximum Duct Sizes : a) Maximum 10,000 mm (W) x 2,500 mm (H) (internal dimensions) with maximum section length of 1,220 mm. b) For maximum width up to 6,000 mm, construction details should be referred to the Exova Warringtonfire WF Assessment Report No. 178825 (Issue 2) of 25.10.2013 c) For maximum width greater than 6,000 mm to up to 10,000 mm, construction details should be referred to BRANZ Fire Assessment Report No. FAR 4106 of 20.1.2015 / Material : a) Ductwork is constructed of galvanized steel sheet with longitudinal seams formed using the Pittsburgh Lock or Grooved Corner Seam systems as described in the WF Assessment Report No. 178825 (Issue 2) and BRANZ Fire Assessment Report No. FAR 4106. b) Ductwork must be constructed with rolled steel angle flanged cross-joints or equivalent roll formed sheet steel profile cross-joints as described in WF Assessment Report No. 178825 (Issue 2) and BRANZ Fire Assessment Report No. FAR 4106. c) Ductwork must be constructed in accordance with the requirements of DW/144 "Specification for sheet metal ductwork: low, medium and high pressure/velocity air systems". d) Gauges (longest side) are as follows: (i) Up to 800 mm - 0.7 mm (ii) Up to 2,500 mm - 1.0 mm (iii) Up to 6,000 mm - 1.2mm (iv) Up to 10,000 mm - not less than 1.2 mm with construction as detailed in Exova Warringtonfire WF Assessment Report No. 178825 (Issue 2). e) Thermal insulation: Rock wool with a nominal density of 100 kg/m ³ and thickness of 2 x 50 mm. / Construction, Hanger and Wall Penetration Details : Details of construction, hanger, insulation and penetration seals for variations in duct size, orientation, etc. shall be in accordance with the details of the test and assessment reports listed below. / Fire Test Report : a) BRANZ No. FR 3829 (Issue 2) of 18.3.2008 b) BRANZ No. FR 3682 (Issue 2) of 17.3.2008 c) CSIRO No. FSH 1124 of 15.6.2005.	Promat International (Asia Pacific) Ltd., PRC	12/6/2018	December 2022	a) All design, fabrication and installation of fire rated ductwork system shall be stuck with a label with clear identification of the ductwork system (e.g. Galvanized sheet steel ductwork protected by 25 mm thick "Promatect H" fire resistant board with rock wool insulation) at 5m interval which is supplied by "Promat International (Asia Pacific) Ltd." and certified by the Registered Professional Engineer who is responsible for designing and/or installing the smoke control systems or Registered Fire Services Installations Contractor (RSFIC). b) This assessment is not applicable to kitchen exhaust systems. c) The assessment reports prepared by Exova Warringtonfire, BRANZ indicated that the assessment were based on BRANZ No. FR 3829 (Issued 2) and No. FR 3682 (Issue 2) with tests report issued on 18.3.2008 and 17.3.2008. According to FSD Circular letter No. 1/2007, valid test reports of an accredited laboratory not over 10 years instead of assessment reports should be provided to support next application of assessment in December 2022. d) This assessment letter supersedes our previous one of the same series dated 13.9.2016
Fire Rated Duct (1029)	"Flamebar B.W.11" Fire Resisting Ductwork System with 0.8mm thick Chil-Jac Aluminum Hammered Cladding / System : A steel duct system of proprietary design and construction, with a spray of "Flamebar B.W. 11" fire proofing for fire protection and if necessary wrapped with non-combustible stone mineral wool for thermal insulation. / Material : a) Ductwork is constructed of galvanized steel or stainless steel to DW 144 or from manufacturer's prefabricated steel sections and panels of wall thickness 0.6 mm to 1.2 mm depending on duct size. b) A layer of "Flamebar B.W. 11" thickness 0.7 to 1.0 mm fire proofing spray or brush/roller applied under licence by the manufacturer. c) "ROXUL" or "FPL 110" non-combustible stone mineral wool used for insulation in slab or wrap form with density of 45/60/105/110 kg/m ³ and varying thickness of 25mm to 200mm according to the design fire ratings as detailed in Tables 1 and 2 of BRE Assessment Report No.: CC 88343 Review 5 Issue 2 of 30.11.2016 and Tables 1 and 2 of BRE Assessment Report No. CC 89277A Review 5 Issue 3 of 7.12.2016. d) 0.8mm thick Chil-Jac Aluminum Hammered Cladding for mechanical protection in accordance with the Impact Test Report No.171159ST170239. / Application : Fire resisting ductwork for ventilating (<u>excluding kitchen exhaust system</u>) and/or smoke extraction systems for 4-sided applications. / Maximum Duct Sizes : 21 m wide x 3 m high (internal dimensions) subject to the construction requirements stipulated in the assessment and test reports listed below / Construction Hanger and Wall Penetration Details : Details of construction, hanger, insulation and penetration seals for variations in duct size, fire rating and orientation etc. shall be in accordance with BRE Assessment Report No. CC 88343 Review 5 Issue 2 and BRE Assessment Report No. CC 89277A Review 5 Issue 3 and shall comply with Firespray International Ltd. construction standards drawings included in these two assessment reports.	Firespray International Ltd., U.K.	14/6/2018	June 2020	a) All design, fabrication and installation of the fire resisting ductwork system shall be certified with label stuck at every duct section by The Jardine Engineering Corporation Ltd. (JEC) who shall be holding a valid licence issued by Firespray International Ltd., UK or applicators authorized by JEC. b) Any construction details differ from those described in the above mentioned Assessment and Test Reports shall be endorsed by Firespray International Ltd., UK and submitted for assessment. c) This assessment letter supersedes our previous one of the same series dated 22.5.2013. d) The Test report no. TE 82414 of October 1992 by LPC, test report no. TE 82724 of January 1993 by LPC, test report no. TE 84033 of 27.10.1993 by LPC, test report no. 7191007628-MEC11/17-GZJ dated 1.6.2011 by TUV SUD PSB Pte Ltd are all over 10 years. According to FSD Circular letter No. 1/2007, test report of an accredited laboratory should not be over 10 years. It is to remind that appropriate valid test reports fulfilling the above requirement instead of assessment reports should be submitted to support the next assessment in 2020.

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Powered Terminal Box (1034)	TROX "TFP" Series Fan-Powered Terminal Box / Model : Series TFP / Construction Details : All metallic construction with galvanized steel sheet casing which is lined internally with 25 mm thick glass mineral wool insulation of density 32 kg/m ³ . Airflow sensor tubes are made from aluminum tubing. All control devices and components are housed in a galvanized steel enclosure and shielded from the air stream. Insulation material is "ECOWOOL, Ecowool Classic" from Malaysia and is in compliance with BS 476 Part 6:1989 (Overall Performance $I \leq 12$, Sub-index $i \leq 6$) [Test Report no.: 2016FE025] dated 26.5.2016 by SIRIM QAS International Sdn. Bhd.] and BS 476 Part 7: 1997 (Class 1) [Test Report no.: 2016FE0145 dated 4.4.2016 by SIRIM QAS International Sdn. Bhd.] All non-metallic components within air stream are in compliance with V-0 or V-2 flammability class when tested to UL 94.	TROX Malaysia Sdn. Bhd., Malaysia	9/7/2018	April 2026	a) No assessment was made on the control arrangement of electric heater as no such information was provided. The control and sequence interlocking provisions shall be carried out strictly in accordance with the relevant requirements stipulated in Section 1 of Part XI of the FSD Circular Letter No. 4/96. b) Electric heaters shall remain UL listed. c) Test reports of all non-metallic components within air stream including bush, lip seal rubber, thermal insulations and angle (elbow) shall remain valid. d) Internal insulation within one meter from the heater shall be covered with galvanized sheet metal.
Smoke Barrier (1042)	"Kent" ASC01DH Active Smoke Barrier / Model : "Kent" ASC01DH Active Smoke Barrier / Type : Electrically operated with "VG455" fabric / Operational Feature : The above automatic smoke curtain system shall be of "fail safe" design that smoke curtains will drop to the designed level where there is a failure in power supply or control. / Product Listing Document : Warrington Certification no. "1121-CPR-FA5006" issued on 7.12.2017	Kent Smoke and Fire Curtains	13/8/2018	September 2019	(a) The captioned product shall remain listed by Exova (UK) Limited trading as Warrington Certification and its listing status will be verified during compliance inspections. (b) The captioned product shall bear the appropriate identification markings.
Fire Rated Duct (1053)	Double-Skin Steel and DURASTEEL Ducts for Ventilating and Smoke Extraction System / System : A rectangular galvanized steel sheet ducting system to DW/144 protected by DURASTEEL board of 6 mm thick and rock wool insulation with a nominal density of 140kg/m ³ and the thickness of 2 x 40 mm for Duct A and 2 x 50 mm for Duct B in application requiring insulation / Application : Fire rated ductwork for ventilating/smoke extraction systems excluding kitchen exhaust systems Maximum Duct Sizes : Maximum 6,000 mm (W) x 2,500 mm (H) (internal dimensions) (Please refer to the Exova Warringtonfire WF Assessment Report No.: 380353 (Issue 3) of 13.2.2018 / Material : a) Ductwork is constructed of galvanized steel sheet with longitudinal seams formed using the Pittsburgh Lock or Grooved Corner Seam systems as describe in the Exova Warringtonfire WF Assessment Report No. 380353 (Issue 3) of 13.2.2018. b) Ductwork must be constructed with rolled steel angle flanged cross-joints or equivalent roll formed sheet steel profile cross-joints as described in the Exova Warringtonfire WF Assessment Report No. 380353 (Issue 3) of 13.2.2018. c) Ductwork must be constructed in accordance with the requirements of DW/144 "Specification for sheet metal ductwork: low, medium and high pressure/velocity air systems". d) Thermal insulation: Rock wool with a nominal density of 140 kg/m ³ and thickness of 2 x 40 mm for Duct A and 2 x 50 mm for Duct B / Construction Hanger and Wall Penetration Details : Details of construction, hanger, insulation and penetration seals for variations in duct size, orientation, etc. shall be in accordance with the details of the test and assessment reports listed below.	Intumex Asia Pacific	14/9/2018	August 2025	a) All design, fabrication and installation of fire rated ductwork system shall be stuck with a label with clear identification of the ductwork system (e.g. Galvanized sheet steel ductwork protected by 6 mm thick DURASTEEL board with rock wool insulation) at 5 m interval which is supplied by "Intumex Asia Pacific" and certified by the Registered Professional Engineer. b) This assessment is not applicable to kitchen exhaust systems.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Rated Duct (1059)	"WinDuct" Fire Resistant Coated Ductwork System / Brand : "WinDuct" Fire Resistant Coated Ductwork System / System : a) Ductwork is constructed of galvanized steel sheet in 1,200 mm long section to DW/144 of thickness 1.0 to 1.2 mm depending on duct size. b) A layer of spray or brush/roller applied "Winduct" intumescent water based fire prevention coating, minimum 0.6 mm thick. / Application : Fire rated duct for ventilating or smoke extraction systems including 2, 3 and 4-sided applications. / Maximum Duct Size : 10,000 mm (W) x 3,000 mm (H) / Construction, Hanger and Wall Penetration Details : The hanger, suspension points and penetration seals for variation in duct size and orientation etc. shall be in accordance with the details stipulated in IFC Assessment Report PAR/10244/01/Rev C in April 201792, CSIRO assessment report Ref.: 2282/CO4260 of 8.3.2013 and FCO-2825 of 21.1.2011.	Passive Fire Protection Sdn., Bhd., Malaysia	24/9/2018	June 2020	a) Insulation of the fire rated duct system shall be carried out by Dekkons Ltd. (who shall be holding a valid authorization issued by Passive Fire Protection Sdn., Bhd., Malaysia) or his authorized representatives. b) A letter shall be issued by Dekkons Ltd. to certify the quality of every completed "WinDuct" fire resistant coated ductwork system. c) Valid test reports and assessment reports as listed above shall be made available upon request. d) The assessment report prepared by International Fire Consultants Limited indicated that the assessment was based on FSH 0993 of 8.3.2013 by CSIRO with test reports issued on 5.7.2003. According to FSD Circular letter No. 1/2007, valid test reports of an accredited laboratory not over 10 years instead of assessment reports should be provided to support next application for assessment in June 2020
Smoke Curtain (1071)	"GELEC G1K1" Automatic Smoke Curtain / Brand Name : GELEC / Model : G1K1	BLE Smoke and Fire Curtains Ltd., UK	14/11/2018	October 2023	This assessment is subject to review by October 2023 supported by valid test reports by an accredited laboratory according to FSD Circular letter No. 1/2007.
Smoke Curtain (1112)	"BLE" SD60 Automatic Smoke Curtain System / Model : BLE SD 60 Active Smoke Barriers / Type : Electrically operated with "X32K" fabric / Operation Feature : The above automatic smoke curtain system shall be of "fail safe" design that smoke curtains will drop to the designed level when there is a failure in power supply or control. / Product Listing Document : By Exova Warrington: Certifire's Certificate No. CF 5030 issued on 20.12.2012 and revised on 8.12.2017	BLE Smoke and Fire Curtains Ltd., U.K.	30/5/2019	September 2020	a) The captioned product shall remain listed by Exova (UK) Limited trading as "Warrington Certification" and its listing status will be verified during compliance inspections. b) The captioned product shall bear the appropriate identification markings. c) Automatic smoke curtain systems shall be designed and constructed according to the manufacturer's instructions and listing conditions. d) A valid certificate of quality management system certification to suitable international/ national standard shall be provided to cover the manufacturing dates of the products during compliance inspections. e) This assessment is subject to reviewed by September 2020 or with the updating of the edition of the test standard. f) The next application for assessment shall be supported by valid test report(s) instead of assessment reports according to FSD Circular Letter No. 1/2007.

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Rated Duct (1133)	Sheet Steel Ductwork Protected by 15mm thick Promatect H Board with Insulation for Ventilating and Smoke Extraction Systems / System : A rectangular galvanized steel sheet ducting system to DW/144, protected by "Promatect-H" boards of 15 mm thick and rock wool insulation of thickness 50 mm and density 100 kg/m ³ as described in the WF Assessment Report No. 346620 (Issue 2) / Application : Fire rated ductwork for ventilating/smoke extraction systems excluding kitchen exhaust systems / Maximum Duct Sizes : a) Maximum 7,500 mm (W) x 2,500 mm (H) (internal dimensions) with maximum section length of 1,220 mm. b) For maximum width up to 7,500 mm, construction details should be referred to the Warringtonfire WF Assessment Report No. 346620 (Issue 2) of 17.6.2019 / Material : a) Ductwork is constructed of galvanized steel sheet with longitudinal seams formed using the Pittsburgh Lock or Grooved Corner Seam systems as described in the WF Assessment Report No. 346620 (Issue 2) b) Ductwork must be constructed with rolled steel angle flanged cross-joints or equivalent roll formed sheet steel profile cross-joints as described in WF Assessment Report No. 346620 (Issue 2) c) Ductwork must be constructed in accordance with the requirements of DW/144 "Specification for sheet metal ductwork: low, medium and high pressure/velocity air systems". d) Gauges (longest side) are as follows: (i) Up to 800 mm - 0.7 mm (ii) Up to 2,500 mm - 1.0 mm (iii) Up to 6,000 mm - 1.2mm (iv) Up to 7,000 mm - 1.2 mm with construction as detailed in Exova Warringtonfire WF Assessment Report No. 346620 (Issue 2). e) Thermal insulation: Rock wool with a nominal density of 100 kg/m ³ and thickness of 2 x 50 mm. / Construction, Hanger and Wall Penetration Details : Details of construction, hanger, insulation and penetration seals for variations in duct size, orientation, etc. shall be in accordance with the details of the test and assessment reports listed below. / Fire Test Report : a) BRANZ No. FR 11601-001 of 22.5.2019 b) FSRG No. FSRG 2018/061(A) of 26.2.2019	Promat International (Asia Pacific) Ltd., PRC	15/8/2019	October 2024	a) All design, fabrication and installation of fire rated ductwork system shall be stuck with a label with clear identification of the ductwork system (e.g. Galvanized sheet steel ductwork protected by 25 mm thick "Promatect H" fire resistant board with rock wool insulation) at 5m interval which is supplied by "Promat International (Asia Pacific) Ltd." and certified by the Registered Professional Engineer who is responsible for designing and/or installing the smoke control systems or Registered Fire Services Installations Contractor (RFSIC). b) This assessment is not applicable to kitchen exhaust systems. c) The assessment letter supersedes our previous one of the same series dated 13.9.2016.
Fire Rated Duct (1199)	"Flamebar B.W. 11" Fire Resisting Ductwork System / System : A steel duct system of proprietary design and construction, with a spray of "Flamebar B.W. 11" fire proofing for fire protection and if necessary wrapped with non-combustible stone mineral wool for thermal insulation and reinforced aluminium foil facing to protect the ductwork from mechanical damage. / Material : a) Ductwork is constructed of galvanized steel or stainless steel sheet to DW 144 or from manufacturer's prefabricated steel sections and panels of wall thickness 0.6 mm to 1.2 mm depending on duct size. b) A layer of "Flamebar B.W. 11" thickness 0.7 to 1.0 mm fire proofing spray or brush/roller applied under licence by the manufacturer. c) "ROXUL" or "FPL 110" non-combustible stone mineral wool used for insulation in slab or wrap form with density of 45/60/105/110 kg/m ³ and varying thickness of 25mm to 200mm according to the design fire ratings as detailed in Table 1 and 2 of BRE Assessment Report No.: CC88343 Review 5 Issue 2 of 30.11.2016 and Tables 1 and 2 of BRE Assessment Report No. CC 89277A Review 5 Issue 3 of 7.12.2016. d) "INSUL-PHEN CW703" glass cloth reinforced aluminium foil laminate facing for mechanical protection in accordance with 44509the Impact Test Report No. 170890ST170184 and No. 170890ST170184(1). / Application : Fire resisting ductwork for ventilating and/or smoke extraction systems for 4-sided applications. / Maximum Duct Sizes : 21 m wide x 3 m high (internal dimensions) subject to the construction requirements stipulated in the assessment and test reports listed below / Construction Hanger and Wall Penetration Details : Details of construction, hanger, insulation and penetration seals for variations in duct size, fire rating and orientation etc. shall be in accordance with BRE Assessment Report No. CC 88343 Review 5 Issue 2 and BRE Assessment Report No. CC 89277A Review 5 Issue 3 and shall comply with Firespray International Ltd. construction standards drawings included in these two assessment reports.	Firespray International Ltd., U.K.	10/7/2020	March 2023	a) All design fabrication and installation of the fire resisting ductwork system shall be certified with a label stuck at every duct section by The Jardine Engineering Corporation Ltd. (JFC) who shall be holding a valid licence issued by Firespray International Ltd., UK or applicators authorized by JEC. b) Any construction details differ from those described in the above mentioned Assessment and Test Reports shall be endorsed by Firespray International Ltd., UK and submitted for assessment. c) This assessment letter supersedes our previous one of the same series dated 12.10.2017. d) This assessment is subject to review by March 2023 and all certificates, assessment and test reports mentioned above shall remain valid throughout this period.
(4) Fire Resistant Cables					

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cable(694)	DUCAB Flame BICC 6 Fire Resistant Cables / Conductor Size : 16 to 400 mm ² inclusive, 3 & 4 core as detailed in the appendix to LPCB Certificate/ (Stranded copper conductor)	Dubai Cable Company (Private) Ltd., U.A.E.	2/4/2014	March 2019	a) Valid LPCB certificate shall be maintained; b) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cable(709)	AEI Firetec Standard Multicore LSZH Fire Resistant Cables / Firetec Standard Multicore LSZH Cables / Conductor Size : 1.5 mm ² , 2.5 mm ² and 4 mm ² ; 2, 3 and 4 core	AEI Cables Limited, Durham, UK	22/5/2014	May 2019	a) The cables shall bear the "LPCB" mark.b) Valid LPCB certificate shall be maintained.
Fire Resistant Cable (714)	"KEystone" Fire Resistant Armoured Cable	Dongguan Keystone Electric Wire & Cable Company Limited, Guangdong, PRC	18/7/2014	July 2019	a) The cables shall bear appropriate markings of the certification body for identification purpose; b) Valid LPCB certificate shall be maintained.
Fire Resistant Cables (737)	AEI "Firetec" Single Core LSZH Fire Resistant Cables. Model : Firetec Single Core LSZH . Construction : Stranded plain annealed copper conductor / mica/glass fire barrier tape/ LSZH insulation. Conductor Size : As detailed below under " Test Standard and Result"	AEI Cables Limited,UK	20/11/2014	November 2019	a) The cables shall bear appropriate markings of the certification body for identification purpose; b) Valid certificate shall be maintained ; c) The cables shall be installed in steel conduits
Fire Resistant Cable (741)	"Prysmian" FP600S Fire Resistant Cables. Model : FP600S. Construction : Plain annealed stranded copper conductor, mica/glass tape, cross- linked insulation,LSOH bedding galvanised steel wire and LSOH sheath. Conductor Size : 2.5 mm ² with 7 cores, 4.0-400mm ² with 2,3 and 4 cores.	PrysmianCables & Systems Ltd, UK	16/12/2014	November 2019	a)valid certificate and test reports shall be maintained; b)The cables shall bear appropriate markings of the certification body for identification purpose
Fire Resistant Cable (742)	"Prysmian" FP200 Gold Fire Resistant Cables. Model : FP200 Gold. Construction : Plain annealed circular copper, high performance insulation, aluminium tape bonded with cpc, LSOH sheath. Conductor Size : 1.0 -4.0 mm ² with 2, 3 and 4 cores, 4.0-400mm ² with 2,3 and 4 cores	Prysmian Cables & Systems Ltd.UK	16/12/2014	November 2019	a)valid certificate and test reports shall be maintained; b)The cables shall bear appropriate markings of the certification body for identification purpose
Fire Resistant Cables (743)	"Prysmian" FP100 Fire Resistant Cables. Model : FP100. Construction : Single core cable with stranded copper conductor, mica glass tape, low smoke zero halogen insulation. Conductor Size : 1.5 -2.5 mm ²	Prysmian Cables & Systems Ltd.UK	16/12/2014	November 2019	a)valid certificate and test reports shall be maintained; b)The cables shall bear appropriate markings of the certification body for identification purpose
Fire Resistant Cables (757)	"KME" Mineral Insulated Cables & Terminations. Model : a) MICO-KME Mineral insulated cables 500 V Light Duty Grade & 750V Heavy Duty Grade b) Terminations for mineral insulated cables (as details under Annex to Approval Certificates No.CA01.00229 and CA01.00230 dated 23.2.2011) / Cable is composed of copper conductors, magnesium oxide (MgO) as electrical insulation, copper sheath and LSF additional outer covering.	KME Italy S.p.A.	13/2/2015	January 2020	a)Valid certificates and test reports shall be maintained; b)The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (761)	Nexans NX100 ALSECURE PLUS Fire Resistant Cables / Model: NX100 ALSECURE PLUS / Single-core cable with stranded copper conductor / mica tape / polyolefin outer sheath / Conductor Size : 1.5 to 95 mm ²	Nexans Türkiye Endüstri ve Ticaret A.Ş., Turkey	19/3/2015	March 2020	a) Valid LPCB certificate shall be maintained b) The cables shall be installed in steel conduits c) The cables shall bear appropriate markings of the certification body for identification purpose.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (762)	Nexans NX400 ALSECURE PLUS Fire Resistant Cables / Model: NX400 ALSECURE PLUS / Armoured multi-core cable with stranded copper conductor / mica tape /XLPE insulation/ polyolefin inner and and outer sheath / Conductor Size : 1.5 to 400 mm ² inclusive, 2, 3 and 4 core as detailed in the appendix to Loss Prevention Certification Board Certificate No. 946a (Issue No. 05) of 12.2.2015.	Nexans Türkiye Endüstri ve Ticaret A.Ş., Turkey	19/3/2015	March 2020	a) Valid LPCB certificates shall be maintained b) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (763)	"Draka UK" FT SIFER 950i single-core fire resistant cables / Single-core cable with stranded plain annealed copper conductor, mica glass tape with OHLS insulation. Conductor Size : 1.5 to 120 mm ² .	Draka UK Ltd. UK	9/4/2015	March 2020	a) Valid certificate and test report shall be maintained b) The cables shall be installed in steel conduits c) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (764)	"Draka UK" FT SIFER 950s single-core fire resistant cables / Single-core cable with stranded plain annealed copper wire, mica /glass tape with OHLS insulation and OHLS sheath. Conductor Size : 1.5 to 120 mm ² .	Draka UK Ltd. UK	9/4/2015	March 2020	a) Valid certificates shall be maintained b) The cables shall be installed in steel conduits c) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (777)	ATOM KABLO "ATOM FIRE BARRIER- M" Multi- core Fire Resistant Cables for Fire Alarm Systems / Model : " ATOM FIRE BARRIER-M" Multi-core Cables / Multi-core cable with stranded plain annealed copper conductors, silicone rubber insulation, tinned copper conductor aluminium tape, and LSZH outer sheath / Conductor Size : 1.0 to 4.0 mm ² with 2, 3, and 4 core.	Atom Kablo Sanayi VE Ticaret A.S. Turkey	23/3/2015	March 2020	a) Valid certificates and test reports shall be maintained; b) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (769)	Oman Cables Industry (SAOG) "OCIFLAM-FS1" Fire Resistant Cables / Model : "OCIFLAM-FS1" single core fire resistant cables. / Construction : Stranded annealed plain copper conductor / glass mica tape / LSF insulation. Conductor Size : 1 to 95 mm ² inclusive	Oman Cables Industry (SAOG), Sultanate of Oman	29/4/2015	April 2020	a) Valid LPCB certificate shall be maintained b) The cables shall bear appropriate markings of the certification body for identification purpose c) The cables shall be installed in steel conduits.
Fire Resistant Cables (771)	"Draka UK" FT30 SAFFIRE Fire Resistant Cables / FT30 SAFFIRE multi- core fire resistant cables / Multi-core cable with solid / stranded plain annealed copper conductor, aluminium / polyester laminated tape, solid/stranded tinned annealed copper with OHLS sheath / Conductor Size : 1.5 to 2.5 mm ² inclusive with 2, 3 & 4 cores	Draka UK Ltd.	1/6/2015	May 2020	a) Valid certificates shall be maintained b) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (772)	"DUCAB Flam BICC 1" Fire Resistant Cables / Model : Ducab Flam BICC 1 / Single core cable with stranded copper conductors / mica glass tape & extruded XL-LSZH compound insulations / Conductor Size : Ducab Flam BICC 1 cables 1.5 to 95 mm ² inclusive, single core.	Dubai Cable Company (Private) Limited, Dubai, U.A.E.	10/6/2015	June 2020	a) Valid certificates shall be maintained; b) The cables shall be installed in steel conduits. c) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (773)	"DUCAB Flam BICC 3" Fire Resistant Cables / Model : Ducab Flam BICC 3 / Single core cable with stranded copper conductors / mica glass tape / XLPE/XL-LSF insulation / LSOH outer sheath / Conductor Size : 1.5 to 70 mm ² .	Dubai Cable Company (Private) Limited, Dubai, U.A.E.	10/6/2015	June 2020	a) Valid certificates shall be maintained; b) The cables shall be installed in steel conduits. c) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (791)	"Prysmian" FP Plus Flex Fire Resistant Cables / FP Plus Flex / Construction : Multi-core cable with annealed copper solid (1.0 - 1.5 mm ²) or stranded (2.5 - 4.0 mm ²) conductor, cross-linked damage resistant insulation, mica glass tape, laminated copper tape screen, tinned annealed copper circuit protective conductor, LSOH sheath. / Conductor Size : 1.0 - 4.0 mm ² with 2, 3, and 4 cores.	Prysmian Cables & Systems Limited, United Kingdom	28/8/2015	July 2020	a) Valid LPCB certificates shall be maintained; b) The cables shall bear appropriate markings of the certification body for identification purpose.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (792)	"Prysmian" FP Plus Fire Resistant Cables / FP Plus / Construction : Multi-core cable with annealed copper solid conductor, cross-linked damage resistant insulation, mica glass tape, laminated copper tape screen, tinned annealed copper circuit protective conductor, LSOH sheath. / Conductor Size : 1.5 mm ² with 2, 3, & 4 cores and 2.5 mm ² with 2 cores.	Prysmian Cables & Systems Limited, UK	17/10/2016	September 2021	a) Valid LPCB certificates shall be maintained; b) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cable(801)	"Irish Driver-Harris" / Model : Kilflam 1000 / Construction : Single-core cables with annealed copper conductor, mica glass tape and LSZH insulation. / Conductor Size : 1.5 to 10 mm ² .	IDH Cables Limited, Ireland	24/9/2015	August 2020	a) Valid LPCB certificate shall be maintained b) The cables shall be installed in steel conduits c) The cables shall bear the appropriate markings of the certification body for identification purpose.
Fire Resistant Cable(817)	Royal Horse "H07Z1-R" Single Core Fire Resistant Cables / Model : H07Z1-R / Construction : Single core cable with bare stranded/solid copper conductor, mineral ceramic (mica/glass) tape, LSZH insulation / Conductor Size : 1.5 to 70 mm ² inclusive.	S.G.H. Electric Wire & Cable (Dong Guan) Co., Ltd., PRC	16/11/2015	November 2020	a) Valid certificates shall be maintained. b) The cables shall bear appropriate markings of the certification body and trademark for identification purpose.
Fire Resistant Cables (825)	"DUCAB Flam BICC 1" Fire Resistant Cables / Model : Ducab Flam BICC 1 / Single core cable with stranded copper conductors / mica glass tape & extruded XL-LSZH compound insulations / Conductor Size : 1.5 to 2.5 mm ²	Dubai Cable Company (Private) Limited, Dubai, United Arab Emirates	11/12/2015	December 2020	a) Valid certificates shall be maintained; b) The cables shall bear appropriate markings of the certification body for identification purpose. c) The cables shall be installed in steel conduits.
Fire Resistant Cable (827)	"Firecel SR112 (Twisted)" / Conductor Size : 1 x 2 x 1.5mm ²	Cavice S.p.A., Italy	22/12/2015	December 2020	a) Valid reports and certificates shall be maintained; b) The cables shall bear appropriate markings for identification purpose.
Fire Resistant Cables (829)	Cavice SpA "Firecel SR 125H-R" 1 x 2 x 1.5 mm ² Fire Resistant Cable / Model : "Firecel SR 125H-R/OS/LSZH" / Construction : Stranded copper conductor / silicone rubber insulation / twisted in pairs / aluminium polyester tape with tinned copper drain wire / insulated cores twisted in pairs / LSZH outer sheath / Conductor Size : 1 x 2 x 1.5 mm ²	Cavice S.p.A., Italy	14/1/2016	January 2021	a) Valid reports and certificates shall be maintained; b) The cables shall bear appropriate markings for identification purpose.
Fire Resistant Cables (833)	Cavice SpA 2 x 2 x 0.75 mm ² - 0.6/1kV-LSZH-SWA Fire Resistant Cable / Model : "Firecel Fire Resistant R-SR/IS/OS/LSZH/SWA/LSZH 0.6/1kV" 2 x 2 x 0.75 mm ² / Construction : Stranded plain annealed copper wire / silicone rubber / twisted to form pairs / individual screen: aluminium backed polyester tape with tinned copper drain wire / overall screen: aluminium backed polyester tape with tinned copper drain wire / LSZH inner sheath / steel wire armour / outer sheath LSZH / Conductor Size : 2 x 2 x 0.75 mm ²	Cavice S.p.A., Italy	29/1/2016	January 2021	a) Valid reports and certificates shall be maintained; b) The cables shall bear appropriate markings for identification purpose.
Fire Resistant Cables (838)	Cavice SpA "Firecel SR 106H-R-SR/OS/LSZH/SWA/LSZH FR" / Model : Firecel SR 106H-R-SR/OS/LSZH/SWA/LSZH FR / Construction : Stranded plain annealed copper conductor / silicone rubber / aluminium backed polyester tape with tinned copper drain wire / LSZH inner sheath / steel wire armour / outer sheath LSZH / Conductor Size : 5 x 1.5mm ²	Cavice S.p.A., Italy	19/2/2016	February 2021	a) Valid reports and certificates shall be maintained; b) The cables shall bear appropriate markings for identification purpose.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (839)	"Samson" Fire Resistant Cables / Model : C322 0001 344 (SP704HT/LS), C322 0002 344 (SP705HT/LS) / Construction : Two core cable with plain annealed copper wires, mica glass tape, XLPE insulation, TACW drain wire, A1. polyester tape overall screened, fire resistance barrier, LSHF sheath / Conductor Size : $2 \times 1.0 \text{ mm}^2$ & $2 \times 1.5 \text{ mm}^2$.	Sun Shine Electric Wire and Cable (Shenzhen) Co., Ltd., PRC	29/2/2016	February 2021	a) Valid certificate and test reports shall be maintained; b) The cables shall bear appropriate markings for identification purpose.
Fire Resistant Cables (866)	"Samson" Fire Resistant Shielded Twisted Pair Control Cables / Model : C1320064344 (SC-8723/FR), C1330145344 (SC-8761/FR), C1330146344 (SC-8760/FR) / Construction : Stranded tinned annealed copper wire(TACW) / twisted pairs / mica glass tape / LSHF insulation / aluminium polyester tape pair screen / TACW drain wire / LSHF sheath / Conductor Size : C1320064344 (SC-8723/FR): 0.324 mm^2 , C1330145344 (SC-8761/FR): 0.324 mm^2 , C1330146344 (SC-8760/FR): 0.823 mm^2 .	Sun Shine Electric Wire and Cable (Shenzhen) Co., Ltd., PRC	19/7/2016	July 2021	a) Valid reports and certificates shall be maintained; b) The cables shall bear appropriate markings for identification purpose.
Fire Resistant Cables (869)	IDH "Kilflam 1000" Fire Resistant Cables / Model : "Kilflam 1000" single core fire resistant cables / Construction : Single core / plain annealed copper / mica tape / low smoke zero halogen insulation / Conductor Size : 1.5 to 10 mm^2 inclusive	IDH Cables Limited, Ireland	23/8/2016	August 2021	a) Valid test reports and certificates shall be maintained; b) The cables shall be installed in steel conduits c) The cables shall bear appropriate markings for identification purpose.
Fire Resistant Cables (880)	"Prysmian" FP100 Fire Resistant Cables. Model : FP100. Construction : Single core cable with stranded copper conductor, mica glass tape, low smoke zero halogen insulation. Conductor Size : 1.5 - to 95 mm^2 inclusive	Prysmian Cables & Systems Limited, UK	17/10/2016	October 2021	a) Valid LPCB certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cables (881)	"Prysmian" FP300 Fire Resistant Cables. Model : FP300. Construction : Plain annealed copper conductor, mineral ceramic tape, XLPE insulation, LSOH sheath. Conductor Size : 1.0 to 95 mm^2 inclusive with 1-core, 1.0 to 16 mm^2 inclusive with 2-core, 3-core, 1.0 to 10 mm^2 with 4 core.	Prysmian Cables & Systems Limited, UK	17/10/2016	October 2021	a) Valid LPCB certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cable (888)	"FIRECARE FR-LS" Fire Resistant Cable Model: FIRECARE FR-LS-1P-015-CWZ / Construction : 1 pair of stranded copper conductors, fire proof tape, LSZH insulation, tinned copper, alumina-polyester tape, LSZH sheath / Conductor Size $2 \times 1.5 \text{ mm}^2$	Jiangsu Zhongtian Technology Co., Ltd., PRC	21/11/2016	November 2021	a) Valid certificate(s) and test report(s) shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cable (892)	"Samson" Twist Pair Fire Resistant Cable Model C611 0031 311 (SP19021HT/LS) Construction : Stranded tinned annealed copper wire / twisted pair / mica tape / LSHF insulation / LSHF sheath Conductor Size : $2 \times 0.65 \text{ mm}^2$	Sun Shine Electric Wire and Cable (Shenzhen) Co., Ltd., PRC	2/12/2016	November 2021	a) Valid reports and certificates shall be maintained; b) The cables shall bear appropriate markings for identification purpose.

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Fire Resistant Cable (905)	Cabletech "C6366FR-ZH" and "C6369FR-ZH" Fire Resistance Cables Model: C6366FR-ZH and C6369FR-ZH Construction: Stranded copper conductors / twisted pair / mica tape / LSOH insulation / LSOH sheath, Conductor Size: 2*0.75mm ² and 2*1mm ²	Fishan Sonata Telecommunication Co., Ltd., PRC	3/1/2017	December-2021	a) Valid reports and certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cable (916)	"KEYSTONE" FR7211 Series Single Core Fire Resistant Cables Construction : Stranded plain copper conductors / mica tape / LSNH insulation Conductor Size: : 1.5mm ² to 35mm ² inclusive	Dongguan Keystone Electric Wire & Cable Company Limited, PRC	10/2/2017	January 2022	a) The cables shall remain LPCB listed and valid certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose; c) The cables shall be installed in steel conduits.
Fire Resistant Cables (917)	Samson " PC151/FR" & "PC152/FR" Fire Resistant Cables Model : PC151/FR & PC152/FR Construction : PC151/FR -stranded plain annealed copper wire / single core / mica glass tape / XLPE insulation, PC152/FR -stranded plain annealed copper wire / twisted pair / mica glass tape / XLPE insulation. Conductor Size: : 1.5mm ²	Sun Shine Electric Wire and Cable (Shenzhen) Co., Ltd., PRC	27/2/2017	February 2022	a) Valid reports and certificates shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings for identification purpose.
Fire Resistant Cables (920)	"Draka UK" FTP Fire Resistant Cables / FTP armoured multi- core fire resistant cables / Armoured multi-core cable with stranded copper conductors, mica/ glass tape, polyester tape, OHLS bedding, galvanised steel wires, OHLS sheathed / Conductor Size : 1.5 to 400.0 mm ² inclusive with 2, 3 & 4 core	Draka UK Ltd.	16/3/2017	February 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose; c) Our previous letter of the same series dated 01.06.2015 for the same fire resistant cables is hereby superseded.
Fire Resistant Cables (921)	"Caledonian" Fire Resistant Cables (FIREFLIX RE-2X(ST) HSWAH-1P01/5) / Tinned annealed stranded copper, mica tape, polyethylene insulation, twisted pair, aluminium tape screen, LSOH bedding, galvanised steel wire armour, LSOH sheath / Conductor Sizes : 2 * 1.5mm ²	Caledonian (Shandong) Cables Limited, PRC	24/3/2017	February 2022	a) Valid test report and certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (922)	"Caledonian" Fire Resistant Cables (CCL-TP302906LH-068761-FR-SWA) / Stranded copper conductors, mica tape, polyethylene insulation, aluminium screen, LSOH bedding, galvanised steel wire armour, LSOH jacket / Conductor Sizes : 2 * 0.35mm ²	Caledonian (Shandong) Cables Limited, PRC	24/3/2017	February 2022	a) Valid test report and certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (923)	"Prysmian" FP400 Fire Resistant Cables. Model : FP400. Construction : Plain annealed copper conductor, mineral ceramic tape, cross link insulation, LSOH bedding, steel wire armour, LSOH sheath. Conductor Size : 1.5 to 400 mm ² inclusive with 2, 3 and 4 core.	Prysmian Cables & Systems Limited, UK	24/3/2017	February 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose; c) Our previous letter of the same series dated 17.10.2016 for the same fire resistant cables is hereby superseded.

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Fire Resistant Cables (924)	"Caledonian" Fire Resistant Cables (FIREFLIX-1201/0) / Plain copper, mica tape, XLPE insulation, LSOH sheath / Conductor Sizes : 1.0mm ² with 12 core	Caledonian (Shandong) Cables Limited, PRC	5/4/2017	March 2022	a) Valid test report and certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (925)	"Caledonian" Fire Resistant Cables (FIREFLIX-0801/0) / Plain copper, mica tape, XLPE insulation, LSOH sheath / Conductor Sizes : 1.0mm ² with 8 core	Caledonian (Shandong) Cables Limited, PRC	5/4/2017	March 2022	a) Valid test report and certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (926)	AEI " Firetec" Enhanced Multicore LSZH Cable. / Construction : Plain annealed copper conductors / fire barrier tape/ LSZH insulation. Cores laid up with a non-insulated CPC, overall screen, LSZH Sheath / Conductor Size : 1.5 to 4.0 mm ² , inclusive with 2, 3 and 4 core	AEI Cables Limited,UK	5/4/2017	March 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (930)	"GENFIRE" FR 950 /07Z-R-M Fire Resistant Cables -/ Stranded copper conductor, mica tape, halogen-free crosslinked insulation /Conductor Size : 1.5 to 16 mm ² inclusive	Grupo General Cable Sistemas S.L.U., Spain	5/4/2017	March 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cables (931)	IDH Kilflam Fire Resistant Cables / Model : "Kilflam Standard 2000 & Kilflam Enhanced 3000 " / Construction : Kilflam Standard 2000 - Multi-core copper wire conductor, silicon rubber insulation, tinned copper earth wire, aluminium / polyester tape screen, low smoke halogen free sheathing, Kilflam Enhanced 3000 - Multi-core copper wire conductor, mica glass tape, silicon rubber insulation, tinned copper earth wire, aluminium/polyester tape screen, low smoke halogen free sheathing / Conductor Size : Kilflam Standard 2000 1.5 to 2.5 mm ² inclusive with 2, 3 and 4 core 4 mm ² with 2 core, Kilflam Enhanced 3000 1.5 to 2.5mm ² inclusive with 2, 3 and 4 core 4 mm ² with 2 core	IDH Cables Limited, Ireland	11/5/2017	April 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cables (932)	"Caledonian" Fire Resistant Cables (FIREFLIX6387-F3SLH02005ALH) / Plain copper conductor, mica tape, PE insulation, aluminium screen with a tinned drain wire, copper wire braid, twisted pair, LSOH jacket / Conductor Sizes : 2 * 2 * 0.5mm ²	Caledonian (Shandong) Cables Limited, PRC	9/5/2017	April 2022	a) Valid test report and certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (933)	"Caledonian" Fire Resistant Cables (FIREFLIX6387-1201/5-SWA) / Plain copper conductor, mica tape, PE insulation, aluminium screen with a tinned drain wire, copper wire braid, twisted pair, LSOH sheath / Conductor Sizes : 12 * 1.5mm ²	Caledonian (Shandong) Cables Limited, PRC	9/5/2017	April 2022	a) Valid test report and certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (934)	"Caledonian" Fire Resistant Cables (FIREFLIX6387-4001/5) / Plain copper conductor, mica tape, XLPE insulation, LSOH jacket / Conductor Sizes :1.5mm ² with 40 core	Caledonian (Shandong) Cables Limited, PRC	9/5/2017	April 2022	a) Valid test report and certificate shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.

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Fire Resistant Cables (941)	MAS "Fireres" 694nXFR Fire Resistant Cables/ Manufacturer: / Model: 694nXFR fire resistant XLPE armoured power cables (where n runs from 2 to 48) / Construction: Multi-core cable with stranded plain annealed copper conductors, mica/glass tape, XLPE insulated, n-core laid up, extruded LSOH bedding, galvanized steel wire armoured and LSOH outer sheathed / Conductor Size: As detailed below under The wrist Standards & Result "/ Rated & Tested Voltage: 600/1000 V, 1000 V Test standard & Result: a) BS 6387: 2013, Category C, W, Z (cables with overall diameter not exceeding 20 mm) - for 694nXFR, 1.5 & 2.5mm ² where n=2, 3 & 4 cores, b) BS 8491: 2008 (flame application for 120 minutes and cables with overall diameter exceeding 20 mm) - for 6942XFR, 4 to 400 mm ² , 2cores, - for 6943XFR 4 to 400 mm ² , 3 cores, - for 6944XFR, 4 to 400 mm ² , 4 cores for 694nXFR, 1.5 & 2.5mm ² where n=5, 7, 8, 10, 12, 19, 27, 37 & 48 cores /	Baosheng Science and Technology Innovation Co., Ltd., PRC	29/5/2017	April 2022	a) Valid certificates and test reports shall be maintained; b) The cables will bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cable (945)	AEI "Firetec Power" Multi-core and Armoured Fire Resistant Cable / Conductor Size : Cables manufactured at AEI cables Limited, UK: 1.5 to 16 mm ² inclusive with 2 to 5 cores, 25 to 35 mm ² inclusive with 2 to 4 cores, 1.5 to 4.0 mm ² inclusive with 7 to 37 cores, Cables manufactured at Dubai Cable Company (Private) Limited, UAE: 50 to 400 mm ² inclusive with 2 to 4 cores.	AEI Cables Limited, UK	29/5/2017	April 2022	a) The cables shall remain LPCB listed and valid Certificates shall be maintained; b)) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cables (946)	Nexans ALSECURE PLUS NX300 Multi-Core Fire Resistant Cables / Conductor Size 1.5 to 6 mm ² with 2, 3 & 4 cores .	Nexans Türkiye Endüstri ve Ticaret A.Ş., Turkey	1/6/2017	April 2022	a) The cables shall remain LPCB listed and valid Certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cables (948)	Doncaster Fire Resistant Cables / Model: Firesure Cables, Firesure Plus Cables, Firesure 500 Cables/ Construction: Firesure Cables Plain annealed copper conductors / silicon rubber insulated / double layer of aluminium /polyester laminated tapes / circuit protective conductor / LSNH sheath, Firesure Plus Cables Plain annealed copper conductors / silicon rubber insulated / glass fibre tape/ tinned circuit protective conductor/ double layer of copper / polyester tape / LSNH sheath.	Doncaster Cables, U.K.	21/6/2017	May 2022	a) The cables shall remain LPCB listed and valid Certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cable (951)	Oman Cables Industry (SAOG) "OCIFLAM-FSA" Fire Resistant Cables / OCIFLAM-FSA 2, 3 and 4-core armoured fire resistant cables / Construction: Stranded annealed plain copper conductor / glass mica tape covered with XLPE insulation / LSF bedding / galvanized steel wire armour / LSF outer sheath/ Conductor Size : 1.5 to 400 mm ² inclusive, 2, 3 & 4-core as detailed in the appendix to Loss Prevention Certification Board (LPCB) Certificate No. 995a (Issue:04) of 27.10.2016	Oman Cables Industry (SAOG), Sultanate of Oman	23/6/2017	May 2022	a) The cables shall remain LPCB listed and valid Certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.
Fire Resistant Cable (952)	Nexans NX 400 ALSECURE PLUS Fire Resistant Cables / Model: NX 400 ALSECURE PLUS / Construction: Armoured multi-core cable with stranded copper conductors / mica tape / XLPE insulation / LSHZ bedding / LSNH sheath/ Conductor Size : 1.5 to 400 mm ² inclusive, 2, 3 & 4-core as detailed in the appendix to Loss Prevention Certification Board (LPCB) Certificate No. 946a (Issue: 07) of 8.2.2017.	Nexans Türkiye Endüstri ve Ticaret A.Ş., Turkey	23/6/2017	May 2022	a) The cables shall remain LPCB listed and valid Certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose.

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Fire Resistant Cable (956)	"KEystone" Enhanced Fire Resistant Armoured Cables Construction : Stranded copper conductor / XLPE insulation, galvanized steel wire amour, LSNH oversheath. Conductor Size: 4 & 6 mm ² inclusive with 3 & 4 cores, 10 to 400 mm ² inclusive with 2, 3 & 4 cores .	Dongguan Keystone Electric Wire & Cable Company Limited, PRC	7/7/2017	May 2022	a) The cables shall remain LPCB listed and valid Certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose. c) This letter supersedes your previous letter dated 23.6.2017 for the same cables,
Fire Resistant Cables (962)	MAS "FR2C" Fire Resistant Cables / Model : FR2C / Construction: Two-core twisted cables with plain annealed stranded copper conductors, mica/glass tape with LSOH insulated / Conductor Size : 2 x 1.5 mm ² .	Baosheng Science and Technology Innovation Co Ltd., PRC	2/8/2017	July 2022	a) Valid certificates and test reports shall be maintained b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (964)	"GENFIRE" FRA 950 / FRA-1 950 Fire Resistant Cables / Model: "GENFIRE" FRA 950 / FRA-1 950 / Construction : Copper conductor, mica tape, XLPE insulation, halogen-free thermoplastic bedding, galvanized steel wires, halogen-free thermoplastic polyolefin sheath / Conductor Size : <u>GENFIRE" FRA 950</u> 1.5 to 185 mm ² with 2, 3 & 4 core / <u>GENFIRE" FRA-1 950</u> 240mm ² with 2, 3 & 4 core 300 and 400mm ² with 2, 3 & 4 core	Grupo General Cable Sistemas, S.L.U., Spain	12/9/2017	August 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification purpose; c) Our previous letter of the same series dated 20.1.2012 for the same fire resistant cables (Former model: SEGURFOC FRA 950 and 950-1) is hereby superseded.
Fire Resistant Cables (965)	Oman Cables Industry (SAOG) "OCIFLAM1 Premium" and "OCIFLAM2 Premium" Fire Resistant Armoured Cables / Model: "OCIFLAM1 Premium" and "OCIFLAM2 Premium" / Construction : " <u>OCIFLAM1 Premium</u> " Stranded annealed plain copper conductor/mica-glass tape covered with XLPE insulation / polyester tape /OHLS bedding / galvanized steel wire amour / OHLS sheath / " <u>OCIFLAM2 Premium</u> " Stranded annealed plain copper conductor/mica-glass tape covered with XLPE insulation / polypropylene tape / OHLS bedding / flame retardant / galvanized steel wire amour / OHLS sheath / Conductor Size: <u>OCIFLAM1 Premium</u> 1.5 to 6mm ² with 2, 3, & 4 core / <u>OCIFLAM2 Premium</u> 10 to 400mm ² with 2, 3, & 4 core	Oman Cables Industry (SAOG), Sultanate of Oman	12/9/2017	August 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer and certification body for identification body purpose.
Fire Resistant Cables (966)	"ATOM Fire Barrier S " Single Core Fire Resistant Cables / Model : Atom Fire Barrier S / Construction : Single core cable with stranded copper conductor / mica glass tape / XL-LSZH insulation / Conductor Size : 1.5mm ² to 70mm ² inclusive	ATOM KABLO SANYI VE TICARET A.S. Turkey	18/9/2017	August 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer and certification body for identification body purpose; d) Our previous letter of the same series dated 27.7.2012 is hereby superseded.
Fire Resistant Cable (968)	MAS "FR1C" Fire Resistant Cables (1.5 to 70mm2) / Model : FR1C / Construction : Single core, plain annealed stranded copper conductor, mica/glass tape with LSOH insulated / Conductor size : 1.5 to 70mm ² Rated Voltage : 600/1000V	Baosheng Science and Technology Innovation Co., Ltd. PRC	20/9/2017	August 2022	a) Valid certificates and test reports shall be maintained, b) The cables shall be installed in steel conduits, c) The cable s shall bear appropriate markings of the manufacturer for identification purpose, d) Our previous letter of the same series dated 14.11.2014 is hereby superseded.

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Fire Resistant Cable (973)	Cavicel SpA "Firecel SR 106H-R-SR/OS/LSZH/SWA/LSZH FR" 2, 4, 5 & 7 x 1mm ² Fire Resistant Cables / Model : Firecel SR 106H-R-SR/OS/LSZH/SWA/LSZH FR / Construction : Plain annealed copper wire / high performance fire resistant silicone rubber / overall screen: aluminium/polyester tape with copper drain wire / inner sheath: LSZH thermoplastic materials / galvanized steel wire / outer sheath LSZH thermoplastic materials / Conductor Size : 2 x 1mm ² , 4 x 1mm ² , 5 x 1mm ² , and 7 x 1mm ²	Cavicel S.p.A	17/10/2017	September 2022	a) valid test report and certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cable (975)	"KEystone" Fire Resistant Armoured Cables / Model : "KEystone" Fire Resistant Armoured Cables / Construction : 2, 3, or 4 -core cable; copper conductor, XLPE insulation, galvanized steel wire armour, LSNH oversheath / Conductor Size : 1.5 to 400 mm ² inclusive with 2-, 3- & 4-core	Dongguan Keystone Electric Wire & Cable Company Limited, PRC	19/10/2017	July 2019	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose; c) Our previous letters of the same series dated 3.5.2012 & 18.7.2014 & 13.10.2017 are hereby superseded.
Fire Resistant Cable (978)	AEI "Firetec" Single Core Fire Resistance Cables / Model : "Firetec" Single Core LSZH / Construction : Stranded plain copper conductors, fire barrier tape, LSZH insulation / Conductor Size : 1.5 to 95 mm ² inclusive	Dubai Cable Company (Private) Limited, UAE	17/11/2017	October 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer for identification purpose; d) Our previous letter of the same series dated 20.11.2014 are hereby superseded.
Fire Resistant Cable (979)	AP Solution Oy " MSSFR0225-M" Fire Resistant Cables used in Fire Service Installations / Model : MSSFR0225-M / Construction : Stranded copper conductors, LSZH insulation, polyester tape, aluminium foil with tinned copper drain wire, LSZH outer jacket / Conductor Size : 2 x 2.5 mm ²	Petkab Sgv Kablo Turizm Insaat Ltd. Sti., Turkey	17/11/2017	February 2022	a) Valid certificate(s) and test report(s) shall be maintained, b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cable (1001)	HN-Amtb "FP2C" Fire Resistant Cables / Model : FP2C / Construction : Two single core cables, twisted with plain annealed copper conductors, mica/glass tape with LSOH insulation / Conductor Size : 2 x 1.5 mm ²	Tianjin Jinneng Cable Co., Ltd., PRC	23/10/2017	September 2022	a) Valid certificates and test report shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cable (1003)	HN-Amtb "6387C2", "6387C3", "6387C4" & "6387Cn" Fire Resistant Cables / Model : 6387C2, 6387C3, 6387C4, 6387Cn / Construction : 2, 3, 4 and n-core, stranded plain annealed copper conductors, mica/glass tape, XLPE insulation, galvanized steel wire armour and LSOH outer sheath / Conductor Size : 1.5 - 400 mm ² with 2, 3 and 4-core / 1.5 - 2.5 mm ² with 7, 10, 12, 19, 27 and 37-core	Tianjin Jinneng Cable Co., Ltd.	10/1/2018	July 2027	a) Valid certificates and test reports shall be maintained; b) The cables shall bear appropriate markings of the manufacturer as shown in Appendix "I" and "II" for identification purpose
Fire Resistant Cables (1004)	IDH Kilflam Fire Resistant Cables / Model : Kilflam 1000 / Construction : Single core / plain annealed copper / mica tape / low smoke zero halogen insulation / Conductor Size : 1.5 to 10 mm ² inclusive	IDH Cables Limited, Ireland	5/1/2018	December 2022	a) The cables shall remain LPCB listed and valid certificates shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear marking "IDH CABLE KILFLAM 1000 CONDUIT WIRE LPCB 1302a/01 APPROVED TO BS 6387 C.W.Z. XXSQMM" of the manufacturer for identification purpose; d) Our previous letters of the same series dated 24.9.2015 and 23.8.2016 is hereby superseded.

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (1005)	MAS "FR1CXL " Fire Resistant Cables / Model : FR1CXL / Construction : Single core, stranded plain annealed copper conductor, mica/glass tape with XLPE insulated and LSOH sheathed / Conductor Size : 25 to 70 mm ² inclusive	Baosheng Science and Technology Innovation Co., Ltd., PRC	9/1/2018	May 2024	a) Valid certificate(s) and test report(s) shall be maintained, b) The cables shall be installed in steel conduits, c) The cables shall bear appropriate markings "FR1CXL-25mm" of the manufacturer for identification purpose.
Fire Resistant Cables (1021)	AP Solution Oy " MSSFR0215-M" Fire Resistant Cables used in Fire Service Installations / Model : MSSFR0215-M / Construction : Stranded copper conductors, LSZH insulation, polyester tape, aluminium foil with tinned copper drain wire, LSZH outer jacket / Conductor Size : 2 x 1.5 mm ²	Petkab Sgv Kablo Turizm Insaat Ltd. Sti., Turkey	26/4/2018	September 2026	a) Valid certificate(s) and test report(s) shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (1026)	MAS "Fireres" 694nXFR Armoured Fire Resistant Cables / Model : 694nXFR n-core armoured fire resistant cables (where n runs from 2 to 4) / Construction : Multi-core with stranded plain annealed copper conductors, mica/glass tape, XLPE insulated, n cores laid up, LSOH bedding, galvanized steel wire armoured and LSOH outer sheathed (where n runs from 2 to 4) / Conductor Size : 1.5 mm ² and 2.5mm ² with 2, 3 & 4 cores	Baosheng Science and Technology Innovation Co., Ltd., PRC	30/5/2018	August 2025	a) Valid certificate(s) and test report(s) shall be maintained, b) The cables shall bear appropriate markings of the manufacturer for identification purpose.
Fire Resistant Cables (1041)	HN-Ambt "FP1C" Fire Resistant Cables / Model : FP1C / Construction : Single core, stranded plain annealed copper conductor, mica/glass tape with LSOH insulation / Conductor Size : 1.5 to 120 mm ² / Rated and Tested Voltages : 450/750V, 750V	Tianjin Jinneng Cable Co., Ltd., PRC	13/8/2018	September 2022	a) Valid certificates and test reports shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer for identification purpose; d) Our previous letter of the same series dated 17.10.2017 is hereby superseded (Item 974)
Fire Resistant Cables (1052)	Doncaster Cables "Firesure1" Fire Resistant Cables / Model : Firesure 1 / Construction : Single-core cables with annealed copper conductors, mica tape, LSNH insulation / Conductor Size : 1.5 to 70 mm ² inclusive / Rated & Tested Voltages : 450/750 V, 450/750 V	Doncaster Cables, UK	17/9/2018	January 2020	a) Valid certificate(s) and test report(s) shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer for identification purpose
Fire Resistant Cables (1056)	"Samson" Fire Resistant Cables / Model : C322 0001 344 (SP704HT/LS) C322 0002 344 (SP705HT/LS) / Construction : Two-core stranded plain annealed copper wires, mica glass tape, XLPE insulation, TACW drain wire, aluminium polyester tape overall screened, fire resistant barrier, LSHF sheath / Conductor Size : 2 x 1.0 mm ² and 2 x 1.5 mm ² / Rated and Tested Voltages : 300/500V, 500V	Sun Shine Electric Wire And Cable (Shenzhen) Co., Ltd, PRC	19/9/2018	June 2024	a) Valid certificate(s) and test report(s) shall be maintained; b) The cables shall bear appropriate marking of manufacturer for identification purpose; c) Our previous letter of the same series dated 29.2.2016 is hereby superseded
Fire Resistant Cables (1057)	MAS "FR1CXL" Fire Resistant Cables / Model : FR1CXL / Construction : Single core, stranded plain annealed copper conductor, mica/glass tape with XLPE insulated and LSOH sheathed / Conductor Size : 95 to 1000 mm ² inclusive / Rated and Tested Voltages : 600/1000V, 600V	Baosheng Science & Technology Innovation Co., Ltd., PRC	19/9/2018	June 2028	a) Valid certificate(s) and test report(s) shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose;

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (1058)	Cavicec S.p.A "Firecel SR 106H-R-SR/OS/LSZH/SWA/LSZH FR" 19 x 1 mm ² , 27 x 1 mm ² , 37 x 1 mm ² Fire Resistant Cables / Model : Firecel SR 106H-R-SR/OS/LSZH/SWA/LSZH FR / Construction : Plain annealed copper wire, high performance fire resistant silicone rubber, overall screen: aluminium/polyester tape with copper drain wire, inner sheath: LSZH thermoplastic materials, galvanized steel wire, outer sheath: LSZH thermoplastic materials / Conductor Size : 19 x 1 mm ² , 27 x 1 mm ² , 37 x 1 mm ² / Rated and Tested Voltages : 600/1000V, 1000V	Cavicec S.p.A, Italy	19/9/2018	June 2028	a) Valid certificate(s) and test report(s) shall be maintained; b) The cables shall bear appropriate markings of the manufacturer for identification purpose
Fire Resistant Cables (1062)	"Samson" Fire Resistant Cables / Model : C411 0121 244 (PC251/FR) / Construction : Single-core stranded plain annealed copper wire, mica glass tape, XLPE Insulation / Conductor Size : 2.5 mm ² / Rated and Tested Voltages : 600/1000V, 1000V	Sun Shine Electric Wire And Cable (Shenzhen) Co., Ltd, PRC	30/10/2018	June 2028	a) Valid certificate(s) and test report(s) shall be maintained; b) The cables shall be installed in steel conduits; c) The cables shall bear appropriate markings of the manufacturer for identification purpose
Fire Resistant Cables (1093)	"Royal Horse" CU/MICA/XLPE/LSHF/SWA/LSHF (FR30) Fire Resistant Cables / Brand Name : Royal Horse / Model : CU/MICA/XLPE/LSHF/SWA/LSHF (FR30) series	S.G.H. Electric Wire & Cable (Dongguan) Co., Ltd., PRC	26/2/2019	May 2028	a) Valid certificates shall be maintained; b) The cables shall bear appropriate markings of the certification body and trademark for identification purpose. c) Cable application shall be according to the requirement in F.S. Circular Letter No. 2/2017; and d) This assessment is subject to review by May 2028 or with the updating of the edition of the test standard.
Fire Resistant Cables (1124)	"Belden" Fire Resistant Cable / Brand Name : Belden / Model : ZA36CFU01 & YJ70323	"Belden" Hirschmann Industries (Suzhou) Limited	17/7/2019	December 2025	a) Valid certificates shall be maintained; b) The cables shall bear appropriate markings of the certification body and trademark for identification purpose. c) Cable application shall be according to the requirement in FSD Circular Letter No. 2/2017; and d) This assessment is subject to review by December 2025 or with the updating of the edition of the test standard.
Fire Resistant Cables (1140)	MAS "FR1C" Single-core Fire Resistant Cables / Supplier : MAS Cables Ltd. / Model : FR1C single-core fire resistant cables / Construction : Mica/Glass Tape, Low Smoke Zero(LSOH) Insulated Non sheathed single core cable / Conductor Size : FR1C Single Core 95 mm ²	Baosheng Science and Technology Innovation Co. Ltd., PRC	30/9/2019	January 2024	a) Valid certificates and test reports shall be maintained; b) The cables shall bear appropriate markings of the certification body for identification purpose.
Fire Resistant Cables (1156)	"Samson" Fire Resistant Armoured Control Cable / Model : C1320071344 (SC-8723/FR/UG) / Construction : Stranded TACW, 2 Pairs, Mica glass tape, LSHF Insulation, Al. Polyester Tape Pair Screen / Overall Diameter: : 12.2 mm / Rated & Tested Voltage : 300V	Sun Shine Electric Wire and Cable (Shenzhen) Co., Ltd., PRC	20/11/2019	March 2024	a) Valid certificates and test reports shall be maintained; b) The cables shall bear appropriate markings for identification purpose; c) This assessment letter supersedes our previous one of the same product dated 25.10.2019; 22and

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (1166)	"Samson" Fire Resistant Single-Core Cable / Brand Name : Samson / Model : C411 01122 XX (PC151/FR) C161 00172 XX (PC152/FR) C411 0121 244 (PC251/FR)	Sun Shine Electric Wire and Cable (Shenzhen) Co., Ltd.	17/2/2020	December 2026	a) The cables shall be enclosed in steel conduit as stipulated in the Test Reports. b) The cables shall bear appropriate markings of the certification body and trademark for identification purpose. c) Cable application shall be according to the requirement in FSD Circular Letter No. 2/2017; and d) This assessment is subject to review by December 2026 or with the updating of the edition of the test standards.
Fire Resistant Cables (1167)	"Royal Horse" Single Core Fire Resistant Cables H07Z1-R / Brand Name : Royal Horse / Model : Single Core Fire Resistant Cables H07Z1-R series (1.5 mm ² to 240 mm ²)	S.G.H. Electric Wire & Cable (Dongguan) Co., Ltd., PRC	17/2/2020	March 2025	a) Valid certificates shall be maintained; b) The cables shall bear appropriate markings of the certification body and trademark for identification purpose; c) Cables application shall be according to the requirement in FSD Circular Letter No. 2/2017; and d) This assessment is subject to review by March 2025 or with the updating of the edition of the test standard.
Fire Resistant Cables (1172)	"JLY" BS 8592:2016 Electric Cables / Supplier : Hilly Cables Ltd. / Model : BS 8952:2016 Single-core fire cables / Construction : Thermosetting insulated, non armoured, fire resistant, single-core non-sheathed cable, low emission of smoke and corrosive gases / Conductor Size : Single-core 1.5mm ² and 50mm ²	JLY Group Co., Ltd.	1/4/2020	March 2025	a) Valid certificates and test reports shall be maintained; b) The cables shall bear appropriate markings (i.e. JLY GROUP CO., LTD or TRICIRCLE and HILLY) of the certification body for identification purpose;
Fire Resistant Cables (1174)	"Royal Horse" CU/MICA/XLPE/LSHF/SWA/LSHF (FR120) Fire Resistant Cables / Brand Name : Royal Horse / Model : CU/MICA/XLPE/LSHF/SWA/LSHF (FR120) 4.0 mm ² to 300 mm ² with 2, 3 & 4 cores	S.G.H. Electric Wire & Cable (Dongguan) Co., Ltd., PRC	2/4/2020	September 2028	a) Valid certificates shall be maintained; b) The cables shall bear appropriate markings of the certification body and trademark for identification purpose; c) Cable application shall be according to the requirement in FSD Circular Letter No. 2/2017; and d) This assessment is subject to review by September 2028 or with the updating of the edition of the test standard.
Fire Resistant Cables (1184)	"Samson" Fire Resistant Armoured Screened Cable / Brand Name : "Samson" BS 7629-1 Fire Resistant Armoured Screened Cable 300/500V / Model C3220003344 (SP705HT/LS/UG) / Type of cable 1.5mm ² 2-core LSHF steel wire armoured	Sun Shine Electric Wire and Cable (Shenzhen) Co., Ltd., PRC	22/5/2020	Feb 2030	a) Valid certificate shall be maintained; b) The cable shall bear appropriate marking of the certification body and trademark for identification purpose. c) Cable application shall be in accordance with the requirement in FSD Circular Letter No. 2/2017; and d) This assessment is subject to review by Feb 2030 or with the updating of the edition of the test standard.

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (1209)	"MAS" FR1C Single-core Fire Resistant Cables / Supplier : MAS Cables Ltd. / Model : FRIC Single-Core Fire Resistance Cables / Construction : Mica/ Glass Tape, Low Smoke Zero (LSOH) Insulated Non-sheathed single-core cable / Conductor Size : FRIC Single-core 400mm ²	Baosheng Science & Technology Innovation Co. Ltd., PRC	30/7/2020	June 2025	a) Valid certificates and test reports shall be maintained; b) The cables shall bear appropriate markings of the certification body for identification purpose; and c) This assessment is subject to review by June 2025. d) No assessment was made on the FRIC Single-core 95mm ² as no objection letter of 30.9.2019, under the same reference, has been issued by this Department. e) No assessment was made on FRIC Single-core with conductor size from 120mm ² to 300mm ² as NO valid test reports was found.
(5) Flexible Connectors					
Flexible Connector (710)	"PAL [®] " XDF 22/280°C Duct Fabric" / Black polymeric coated textile-glass material / 680 g/m ² ; 0.5 mm thick	Phenotherm Asia Limited, PRC	13/6/2014	June 2019	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Flexible Duct Connector (840)	"PAL [®] " DF16 Class '0' Duct Fabric / Model : "PAL [®] DF 16 Class '0' / Material : A black polymeric coated textile-glass material with nominal thickness of 0.4 mm and weight of 550 g/m ² .	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	5/4/2016	April 2021	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition as that are not our requirements. b) The brand and model name should be marked on the product.
Flexible Connector (879)	"COLAN" AF406/SIL Flexible Connector for use in Ventilation/Smoke Extraction System "COLAN AF406/SIL" A glass-fibre fabric woven from satin weave E-glass with silicon rubber on both sides, having a nominal thickness of 0.46 mm and a normal weight of 543 g/m ² in grey colour.	COLAN Products Pty Ltd., Australia	13/10/2016	February 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The product shall have label tag(s) bearing the word "AF 406 SIL" sewn on it as a means of identification.
Flexible Connector (899)	Colan "AF805 SIL" Glass Fibre Fabric as Flexible Connector in Ventilation/Smoke Extraction System "COLAN AF805 SIL" glass-fibre fabric A fibreglass fabric woven (high bulk borosilicate type) with silicon rubber coating on both sides in red colour, having an overall bulk density and a thickness of approximately 1309 kg/m ² , and 1.6mm respectively	COLAN Products Pty Ltd., Australia	29/12/2016	June 2021	a) No assessment was made on the density and toxicity of smoke generated by material under fire conditions as that are not our requirement. b) The product shall have label tag(s) bearing the word "AF805 SIL" sewn on it as a means of identification.
Flexible Connector (900)	"COLAN" AF406/FRN Flexible Connector AF406/FRN (Flame Retardant Neoprene) textile fabric / A black glass fibre fabric with a nominal thickness of 0.54 mm and a nominal weight of 80.68kg/m ² approximately, woven from satin weave Type E glass fibre and coated on both sides with flame retarded neoprene.	Colan Products Pty Ltd., Australia	29/12/2016	February 2021	a) No assessment was made on the density and toxicity of smoke generated by material under fire conditions as that are not our requirement. b) The material shall bear the marking "AF406 FRN" as a means of identification.
Flexible Duct Connector (1043)	"Ductflex 280" Flexible Duct Connectors for Ventilation System / Brand : "Ductflex 280" / Material : Reinforced fibre sandwiched between silicon rubber sheets Thickness : 0.4 mm	Guangzhou Jitai Development Co. Ltd., PRC	13/8/2018	July 2023	a) No assessment was made on the density and toxicity of smoke generated by material under fire. b) The packing of the product should bear the Brand Name of the product c) This letter supersedes our previous letter one the same series dated 3.10.2013

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Flexible Duct Connector (1044)	"Wolter" Flexible Connectors for Ventilation Fans / Brand : Wolter / Model : CHEMCO EV-1 & CHEMCO EV-2 / Material : For CHEMCO EV-1 Glass fiber with Polymeric PVC coating For CHEMCO EV-2 Glass fiber with Silicone Rubber coating / Density & Thickness : For CHEMCO EV-1 600±10% g/m ² & 0.45±0.05 mm thick For CHEMCO EV-2 1925±10% g/m ² & 1.35±0.05 mm thick	Dongguan Wolter Chemco Ventilation Ltd	17/8/2018	May 2028	a) No assessment was made on toxicity of smoke generated by the material under fire. b) The packing of the product should bear the Brand Name of the product
Flexible Duct Connector (1060)	PAL [®] XDF 22/280°C Duct Fabric / Brand Name : "PAL [®] XDF 22/280°C Duct Fabric" / Material : Black polymeric coated textile-glass material / Nominal Density and Thickness 680 g/m ² ; 0.5 mm thick / Application : For use as flexible connectors in ventilating and smoke extraction systems Remark: The material shall not be used as smoke extraction ductwork passes through fire compartments.	Phenotherm Asia Ltd., PRC	3/10/2018	March 2024	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) This assessment letter supersedes our previous one of the same series dated 13.6.2014.
Flexible Duct Connector (1089)	"Ductflex 300" Flexible Duct Connectors for Ventilation System / Brand : "Ductflex 300" / Material : Reinforced woven fibreglass with stainless steel wire, coated on both sides with fire resistance silicon rubber sheets / Thickness : 1.00 mm - 1.50 mm	Guangzhou Jitai Development Co. Ltd., PRC	4/2/2019	April 2023	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the product should bear the Brand Name of the product c) This letter supersedes our previous letter one the same series dated 5.8.2013 d) This assessment is subject to review by April 2023 with valid test reports according to FSD Circular Letter No. 1/2007 or with the updating of the edition of the test standards.
Flexible Duct Connector (1120)	"Welaire [®] " Flexible Connector / Brand Name : Welaire [®] / Model : WFC-TM / Thickness : 0.5 mm / Material : Fiberglass cloth material for flexible connector	Zhongshan Saiver Welaire Air Conditioning Equipment Co., Ltd	8/7/2019	August 2026	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by August 2026 or with the updating of the edition of the test standard.
Flexible Duct Connector (1196)	"COLAN" AF406/FRN Flexible Connector / Model : "AF406/RFN" (Fire Retardant Neoprene) textile fabric / Material : A black glass fibre fabric with nominal thickness of 0.54mm and overall density of 0.8kg/m ² approximately, Type E glass fibre and coated on both sides with fire retarded neoprene. Application : For use as flexible connectors in ventilating systems	Colan Products Pty Ltd, Australia	3/7/2020	June 2025	a) No assessment was made on the density and toxicity smoke generated by the material under fire conditions as there are not our requirements. b) The material shall bear the marking "AF406/FRN" as means of identification.
(6) Fire/ Fire & Smoke Dampers					

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Damper (780)	"TROX" Series FSD, FSP and FSE Fire Shutter Dampers / Model : a) FSD series b) FSP series c) FSE series / Maximum Size : 1000mm (W) x 1000mm(WxH) nominal / Construction : a) FSD series - Fire damper assemblies of galvanised mild steel construction using a curtain type arrangement. b) FSP series - Fire damper assemblies similar to FSD series, but with blades constructed from stainless steel Grade 430. c) FSE series - Fire damper assemblies similar to FSD series with the catch plates and the case being constructed from stainless steel Grade 304L. / Multiple Dampers : FSD series for vertical mounting only as detailed in the Assessment Report No.FAR 3494 of 10.11.2010.	TROX Malaysia Sdn.Bhd.	20/7/2015	March 2020	a) The dampers are to be fitted with fusible link release of a type approved by this department with a rating not exceeding 69°C.
Fire Damper (844)	"TANDA" TFD Series Curtain Type Fire Damper / Model : a) TFD-100 b) TFD-200 / Construction : a) TFD-100 series - curtain type completed with integral sleeve; the frame is made of four pieces of steel sheet joined at the corners by riveted overlaps. This is fitted centrally inside a duct and fastened together by rivets. The curtain comprises interlinked slats with the top one riveted to the frame. The damper can be of full galvanized steel, full stainless steel, galvanized steel frame with stainless steel curtain or stainless steel frame with galvanized steel curtain construction. The stainless steel can be of Grade 304 or 316. b) TFD-200 series - curtain type with frame formed from C-section steel. The curtain comprises interlinked slats with the top one riveted to the frame. The damper can be of full galvanized steel, full stainless steel, galvanized steel frame with stainless steel curtain or stainless steel frame with galvanized steel curtain construction. The stainless steel can be of Grade 304 or 316. c) Details of construction shall be as described in the test/assessment reports.	TANDA International Company Ltd. Hong Kong	15/4/2016	September 2020	a) A label to indicate the manufacturer, model, standards and fire resistant rating achieved should be fixed to the damper. b) The fusible link shall remain listed in the UL Certification Directory and approved by this Department. c) The Micro switch is solely for monitoring purpose and the installation of micro switch and the associated wiring work shall not impede in any way the complete closure/opening of the damper.
Fire & Smoke Damper (855)	Ruskin Model TFD30 Fire and Smoke Damper / Construction: Damper frame constructed of 2mm galvanized steel or stainless steel. Double skin aerofoil blade with minimum 2mm blade skin thickness.	Ruskin Co., USA or Thailand	10/6/2016	June 2021	a) The damper and actuator shall remain listed in the UL Certifications Directory. b) The damper shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model. c) The limit switch is solely for monitoring purpose and the installation of limit switch and the associated wiring work shall not impede in any way the complete closure/opening of the damper.
Fire Damper (856)	"Ruskin" IBD Curtain Type Fire Damper / Construction : A curtain damper formed by interlocking galvanized mild steel/stainless steel (Grade 304 or 316) blades mounted in a galvanized mild steel /stainless steel (Grade 304 or 316) frame held in open position by fusible link; closure of damper is effected by stainless steel springs.	Delta Pyramax Company Limited, Hong Kong or 澳太平洋五金製品 (中山) 有限公司, 中國	23/6/2016	July 2020	The fusible link used with the damper shall be a type approved by the Director of Fire Services and with a rating not exceeding 69°C.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire and Smoke Damper (908)	"Prefco" 5500 E6-LPC Curtain Type Fire Damper	Prefco-Johnson Tech Air Control Inc., Taiwan	24/1/2017	December 2021	a) A label to indicate the manufacturer, model, standards and fire resistant rating achieved should be fixed to the damper. b) The fusible link shall remain listed in the UL Certification Directory and approved by this Department.
Fire Damper (942)	"LASER" 9020 Series Curtain Type Fire Dampers/ Model: a) 9020 GV - G.I. frame and blade (without spring loaded housing) b) 9020 G - G.I. frame and blade c) 9020 S - G.I. frame and stainless steel blade d) 9020 SS - Stainless steel frame and blade / Construction: The damper comprises interlinked galvanized steel / stainless steel damper slats housed in galvanized steel / stainless frames with / without spring loaded housing. The stainless steel can be of Grade 304 or 316. The thickness of the steel, the clearance between the slats ends and the frame and other details shall be as described in the BRANS reports listed below. Size: 100mm(W) x 100mm (H) - 900mm(W) x 900mm (H) for each module, maximum size up to: a) Horizontal - 3732 (W) x 1844mm(H) (4 x 2 modules) b) Vertical - 3732 (W) x 2788mm (H) (4 x 3 modules) Mounting details a) Vertical and Horizontal Mounting for 9020G 9020s, 9020SS, b) Vertical Mounting only for 9020GV, c) Breakaway joint to the requirement of UL555 should be provided for ductwork connected to fire damper sleeves, d) Other details shall be as detailed in BRANZ assessment report no PAR3985 Issue 3 of 13.12.2016.	Laser Resources (Asia) Co. Ltd., Hong Kong	29/5/2017	October 2021	a) The damper shall bear the "Laser" trade mark and production label with company name and model number is attached on the damper. b) The damper is to be fitted with fusible links approved by this department and designed to operate up to a temperature not exceeding 69 °C
Fire Damper (943)	BSB "FD" Series Stainless Steel Curtain Type Fire Damper / BSB "FD" Series / Construction : a) Stainless steel casing with stainless steel blades · the casing shall be 1.2mm thick and the blades shall be 0.7mm thick and 74mm wide as described in the test report · The stainless steel can either be of Grade 316 or Grade 430. b) The damper shall be held open by an approved fusible link attached to the gate latch or straight bar link fixed to the damper case. c) Other details such as the BSB mounting frame · closing spring and side seal shall be as described in the test report. / Application : Vertical and horizontal mounting / Maximum Sizes : 1,200mm (W) x 1,000mm (H)	BSB Engineering Services Limited, U.K.	29/5/2017	October 2021	The fusible link shall be of FSD approved type with a rating not exceeding 69°C
Fire Damper (957)	"LASER" 9021 Series Curtain Type Fire Dampers / Model: a) 9021 G - G.I. frame and blade, b) 9021 S - G.I. frame and stainless steel blade. / Construction: The damper comprises interlinked galvanized steel / stainless steel damper slats housed in galvanized steel / stainless frames with spring loaded housing. The stainless steel can be of Grade 304 or 316. The thickness of the steel, the clearance between the slats ends and the frame and other details shall be as described in the BRANZ reports listed below./ Size: 100mm (W) x 100mm (H) - 900mm (W) x 900mm (H) for each module. Maximum size up to. a) Horizontal - 3732 (W) x 1844mm (H) (4 x2 modules) b) Vertical - 3732 (W) x 2788mm (H) (4 x 3 modules) / Mounting Details: a) Vertical and Horizontal Mounting for 9021G, 9021S b) Breakaway joints to the requirement of UL555 should be provided for ductwork connected to fire dampers sleeves c) Other details shall be as detailed in BRANZ assessment report no FAR 3985 issue 3 of 13.12.2016.	Laser Resources (Asia) Co. Ltd., Hong Kong	20/7/2017	October 2021	a) The damper shall bear the "Laser" trade mark and production label with company name and model number attached on the damper. b) The damper is to be fitted with fusible links approved by this department and designed to operate up to a temperature not exceeding 69°C

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (970)	"TROX" SFD, SFP and SFE Series Fire & Smoke Dampers / Model : SFD, SFP, SFE Series; / Construction : a) SFD Series: Assemblies on of galvanized mild steel construction, with 1.5mm thick sleeve, 1.5mm thick blades for vertical mounting and 2 mm thick for horizontal mounting, springs and catch plates as described in the test reports, The frame is made up of top hat sections weld together. A linkage system enables all blades to move and lock together when in the closed position.; b) SFP Series: Same as SFD series, but with the blades, spindles and blade to spindle fixings in Grade 304, 316, 316L or 430 stainless steel. c) SFE Series, same as SFD series, but with the sleeve & frame, blades, blade spindles and blade to spindle fixing and linkage to Grade 304, 316, 316L or 430 stainless steel. / Mounting : Vertical and horizontal in accordance with the manufacturer's recommendations and particular requirements as described in the test and assessment reports as listed below : Duct connections: For ventilating system, breakaway joints to the requirements of UL 555 should be provided for ductwork connected to fire damper sleeves. If there are ductwork connections on both sides of the damper, breakaway joints should be provided on both sides except for the ductwork that are constructed of fire resisting materials or installed inside a fire rated shaft / pipe duct / Size : Maximum 1000 mm x 1000 mm (W x H) / Actuator : 1. "Belimo" FSNF 230-S US (for max. damper size of 1000mm x 650mm ² . "Belimo" FSAF 230-S US (for max. damper size of 1000mm x 1000mm)	TROX Malaysia Sdn. Bhd., Malaysia	4/10/2017	March 2020	a) The damper and thermal enclosures shall be permanently marked or stamped with label(S) which shall remain visible after fixed into position for the identification of brand name and model. b) This letter supersedes our previous one of the same reference dated 27.6.2012 on :Troxx" SFD, SFP and SFE Series fire and smoke dampers.
Fire & Smoke Damper (972)	"TROX" JFM Fire and Smoke Dampers for smoke Control System / Model : JFM-G, JFM-L & JFM-E2 multi-blade fire and smoke dampers with vertical and horizontal mounting models / Application & Limitation : <u>For smoke extraction system only and excluding those smoke extraction systems that required to be in compliance with UL555S</u> / Construction : Multi-blade stainless steel or mild steel un-insulated blades fitted in a mild steel or stainless steel channel section frame suitable for horizontal or vertical attitude with airflow in either direction. Details of construction are shown in the Fire Test/Assessment Reports listed below : Size : Single Module : Maximum size up to 2,200mm (W) x 2,500mm (H) Multiple Modules : Maximum size up to 4,550 mm(W) x 2,500 mm(H) (2 x 1modules) with construction details in accordance with the manufacturer's drawing of the Assessment Report no.: 129103(Issue 9)of 31.1.2013 / Mounting : Vertical and horizontal mounting / Installation Method : In accordance with the manufacturer's recommendations and manufacturer's drawings	Trox (Malaysia) Sdn. Bhd., Malaysia	17/10/2017	March 2020	1) No assessment was made on the above dampers and actuators for compliance with UL555S. 2) The dampers , actuator and thermal enclosures shall be permanently marked or stamped with labels which shall remain visible after fixed into positions for the identification of brand name and model. 3) This letter supersedes our previous one of the same reference dated 19.5.2011.
Fire Damper (976)	"LASER" 9021 Series Curtain Type Fire Dampers / Model: a) 9021 G - G.I. frame and blade. / b) 9021 S - G.I. frame and stainless steel blade. / Construction: The damper comprises interlinked galvanized steel / stainless steel damper slats housed in galvanized steel / stainless frames with spring loaded housing. The stainless steel can be of Grade 304 or 316. The thickness of the steel, the clearance between the slats ends and the frame and other details shall be as described in the BRANZ reports listed below / Size: 100mm (W) x 100mm (H) - 900mm (W) x 900mm (H) for each module. / Maximum size up to: a) Horizontal - 3732 (W) x 1844mm (H) (4 x2 modules) b) Vertical - 3732 (W) x 2788mm (H) (4 x 3 modules) / Mounting Details: a) Vertical and Horizontal Mounting for 9021G, 9021S b) Breakaway joints to the requirement of UL555 should be provided for ductwork connected to fire dampers sleeves c) Other details shall be as detailed in BRANZ assessment report no FAR 3985 issue 3 of 13.12.2016.	Laser Resources (Asia) Co. Ltd., Hong Kong	23/10/2017	October 2021	a) The damper shall bear the "Laser" trade mark and production label with company name and model number attached on the damper. b) The damper is to be fitted with fusible links approved by this department and designed to operate up to a temperature not exceeding 69°C c) This letter supersedes our previous one of the same series dated 20.7.2017 on the same products.

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Damper (977)	"LASER" 9020 Series Curtain Type Fire Dampers / Model: a) 9020 GV - G.I. frame and blade (without spring loaded housing) b) 9020 G - G.I. frame and blade c) 9020 S - G.I. frame and stainless steel blade d) 9020 SS - Stainless steel frame and blade / Construction: The damper comprises interlinked galvanized steel / stainless steel damper slats housed in galvanized steel / stainless frames with / without spring loaded housing. The stainless steel can be of Grade 304 or 316. The thickness of the steel, the clearance between the slats ends and the frame and other details shall be as described in the BRANS reports listed below / Size: 100mm(W) x 100mm (H) - 900mm(W) x 900mm (H) for each module, Maximum size up to: a) Horizontal - 3732 (W) x 1844mm(H) (4 x 2 modules) /b) Vertical - 3732 (W) x 2788mm (H) (4 x 3 modules) / Mounting Details / a) Vertical and Horizontal Mounting for 9020G 9020s, 9020SS / b) Vertical Mounting only for 9020GV / c) Breakaway joint to the requirement of UL555 should be provided for ductwork connected to fire damper sleeves / d) Other details shall be as detailed in BRANZ assessment report no FAR3985 Issue 3 of 13.12.2016.	Laser Resources (Asia) Co. Ltd., Hong Kong	23/10/2017	October 2021	a) The damper shall bear the "Laser" trade mark and production label with company name and model number is attached on the damper. b) The damper is to be fitted with fusible links approved by this department and designed to operate up to a temperature not exceeding 69 °C, c) This letter superseded our previous one of the same series dated 29.5.2017 on the same products.
Fire & Smoke Damper (1007)	"Prefco" Multi-blade Fire/ Smoke Damper Series 5000 / Product Model : "Prefco" Fire/ Smoke Damper Series 5000, Model No. 5050-1, 5050-2, 5053-1 and 5053-2 / Construction : Non-insulated multi-blade damper of galvanized steel construction complete with linkages / Damper actuator is to be housed in a galvanized steel enclosure insulated internally with rockwool of density 100 kg/m ³ details are as illustrated in the drawing attached to Report No. : R07G22 of 7.1.2008 by Research Engineering Development Facade Consultants Ltd. / Maximum Size: For single module- 915 mm x 1143 mm (W x H) / For multiple modules: Two modules in height and two or more modules in width. The vertical steel plate in each mullion between the modules may be 10, 12 or 14 gauge galvanised steel as detailed in the BRE Global Assessment Report No. CC 87874 Review 4 Issue 2 of 1.8.2013.	Prefco-Johnsontech Air Control Inc., Taiwan	19/1/2018	12 August 2021	a) The dampers shall remain listed in the UL Certifications Directory. b) The dampers shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model. c) This letter supersedes our previous one of the same series dated 23.8.2016. d) Separate actuator shall be fitted for each single damper module that makes up a multiple module. e) Valid assessment report on the integrity of multiple module damper assemblies to BS 476: Part 20 shall always be made available.
Fire & Smoke Damper (1008)	"LASER" 9010 Series Combined Fire and Smoke Damper for use in Ventilation System / Smoke Control System / Model: a) 9010 G - G.I. frame and blade (vertical & horizontal mounting) / b) 9010 S - G.I. frame and stainless steel blade (vertical & horizontal mounting) / Construction : The damper comprises profiled galvanized steel / stainless steel (Grade 304 or 316) damper blades housed in galvanized mild steel frames with blade linkage and operated by electric actuator. The thickness of the steel, the clearance between the slats ends and the frame and other details shall be as described in the BRANZ reports listed below. / Size : 200 mm(W) x 200mm (H) - 900mm (W) x 900mm (H) for each module / Maximum size up to: a) Horizontal - 2788 (W) x 1844mm(H) (3 x 2 modules) / b) Vertical - 3732 (W) x 1844mm (H) (4 x 2 modules) / Mounting Details : a) Vertical and Horizontal Mounting / b) Breakaway joints to the requirement of UL555 should be provided for ductwork connected to fire damper sleeves c) Other details shall be as detailed in BRANZ assessment report no. FAR 3985 Issue 3 of 13.12.2016	LASER Resources (Asia) Co., Ltd., Hong Kong	31/1/2018	October 2021	a) The dampers shall remain listed in the UL Certifications Directory. b) The damper shall bear the "Laser" trade mark and production label with company name and model number attached firmly on the damper. c) The damper is to be fitted with fusible links approved by this department and designed to operate up to a temperature not exceeding 69°C. d) This letter supersedes our previous one of the same series dated 11.12.2012 on the same products.

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (1016)	"TROX" JFM Fire & Smoke Dampers For ventilating or Smoke Control System / Model : "JFM-G", "JFM-E" and "JFM-E2" multi-blade fire and smoke dampers with vertical and horizontal mounting models / Application & Limitation : a) <u>Damper size above 1100mm(W) x 1250mm(H) - For smoke extraction systems only and excluding those smoke extraction systems that required to be in compliance with UL555S.</u> b) <u>Damper size 1100mm(W) x 1250mm(H) and below - For ventilating or smoke extraction systems with compliance with UL555S.</u> / Construction : Multi-blade stainless steel or mild steel un-insulated blades fitted in a mild steel or stainless steel channel section frame suitable for horizontal or vertical attitude with airflow in either direction. Details of construction are shown in the Fire Test/Assessment Reports listed below. / Size : Single Module: Maximum size up to 2,200mm (W) x 2,500mm (H) / Mounting : Vertical and horizontal mounting / Installation Method : In accordance with the manufacturer's recommendations and manufacturer's drawings	Trox (Malaysia) Sdn. Bhd., Malaysia	23/3/2018	September 2022	1. The dampers, actuators and thermal enclosures shall be permanently marked or stamped with labels which shall remain visible after fixed into positions for the identification of brand name and model. 2. This letter supersedes our previous one of the same reference dated 19.5.2011.
Fire & Smoke Damper (1025)	Ruskin "TFD80" Combination Fire and Smoke Dampers / Model : TFD80 Heavy Duty Tunnel Fire and Smoke Damper / Construction : Channel frame constructed of stainless steel grade 304 of 200mm x 50mm x 2.8mm thick with stainless steel bearing fitted into frame. Damper blades are double-skin construction of stainless steel grade 304 of 1.6mm thick with interlocking blade to blade design. Axle is stainless steel grade 304 in full length. / Mounting : Vertical and horizontal / Sizes : Max. 3,400 mm x 2,000 mm (WxH)	Ruskin Co., USA or Thailand	25/5/2018	August 2020	a) The dampers shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model.
Fire & Smoke Damper (1030)	"Ruskin" IBD Curtain Type Fire Damper / Construction : A curtain damper formed by interlocking galvanized mild steel / stainless steel (Grade 304 or 316) blades mounted in a galvanized mild steel / stainless steel (Grade 304 or 316) frame held in open position by fusible link; closure of damper is effected by stainless steel springs / Mounting : Vertical and Horizontal / Maximum sizes : (a) Vertical single: 1200mm x 1100mm (W x H) 900mm x 1800mm (W x H) (b) Horizontal single: 900mm x 1100mm (W x H) / Maximum Multiple Assembly Size : (a) Vertical multiple: Sizes as detailed in BRANZ Assessment Report No. FAR 2072 Issue 2 of 1.4.2003 (b) Horizontal multiple: Sizes as detailed in BRANZ Assessment Report No. FR 97/1057 of 18.4.1997 / Installation Method : In accordance with the manufacturer's recommendations detailed in the test and assessment reports. Breakaway Joints : Breakaway joints should be provided in the ductwork connected to the damper in accordance with the requirements of UL 555 and in accordance with (a) Detail C in 'BRANZ' test report no. FAR1713, drawing no.: IBD/BJ/001, or (b) Detail B in 'FUGRO' test report no. 156211ST170862, drawing no. DITS1 (for maximum damper size 4,600mm (W) x 2,900mm (H))	Delta Pyramax Company Limited, Hong Kong	5/7/2018	July 2020	(a) The fusible link used with the damper shall be a type approved by the Director of Fire Services and with a rating not exceeding 69°C (b) This letter supersedes our previous one of the same reference dated 15.9.2015

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (1038)	"Lloyd" FSD-111 Series Combination Fire and Smoke Dampers / Model : FSD-111-1 and FSD-111-2 / Construction : Channel frame constructed of 1.5 mm galvanized steel with an interlocking stacked hat section and 1.5 mm thick galvanized V-formed blades. Linkage device is zinc-plated steel concealed within the channel frame. The product can also be of an entirely stainless steel (Grade 304 or 316) or a combination of galvanized steel and stainless steel construction as described in the Assessment Report mentioned below. / Mounting : Vertical and horizontal as listed in UL File EMME.R14128/EMME.R26194, installed accordance with the manufacturer's recommendations and as per the relevant description in the Assessment Report. Breakaway joints to the requirements of UL should be provided for ductwork connected to the damper sleeves. / Sizes : a) FSD-111-1 Single section: 200 mm x 200 mm - 900 mm x 900 mm (W x H); Multiple sections (for vertical mounting only): Max. 3,000 mm x 1,800 mm (W x H) Multiple-sections (for horizontal mounting only): Max. 2,400 mm x 1,800 mm (W x H) b) FSD-111-2 Single section: 200 mm x 200 mm - 900 mm x 900 mm (W x H); Multiple sections (for vertical mounting only): Max. 3,000 mm x 1,800 mm (W x H) Multiple sections (for horizontal mounting only): Max. 2,400 mm x 1,800 mm (W x H)	Lloyd Industries Inc., USA / Lloyd Asia Company Ltd, Hong Kong	25/7/2018	July 2027	a) The dampers shall remain listed in the UL Certifications Directory. b) The fusible link shall remain listed in the UL Certification Directory. c) The dampers shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model. d) The micro switch is solely for monitoring purpose and the installation of micro switch and the associated wiring work shall not impede in any way the complete closure/opening of the damper. c) This letter supersedes our previous letter of the same series dated 10.9.2015 on the same products.
Fire & Smoke Damper (1061)	"Ruskin" IBD Curtain Type Fire Damper (2 Hours Fire Rating) / Model : IBD Curtain Type Fire Damper / Construction : A curtain damper formed by interlocking galvanized mild steel / stainless steel (Grade 304 or 316) blades mounted in a galvanized mild steel / stainless steel (Grade 304 or 316) frame held in a open position by fusible link; closure of damper is effected by stainless steel springs / Mounting : Vertical and Horizontal / Maximum Sizes : (a) Vertical single : 900mm x 1300mm (W x H) (b) Horizontal single : 900mm x 1100mm (W x H) / Maximum Multiple Assembly Size : Horizontal multiple: 1300mm x 1300mm (W x H) / Installation Method : In accordance with the manufacturer's recommendations detailed in the assessment report R16B22-1A_Issue1, drawing no.: FRB-V01A and FRB-H01. / Breakaway Joints : Breakaway joints should be provided in the ductwork connected to the damper in accordance with the requirements of UL 555	Delta Pyramax Company Limited, Hong Kong	29/10/2018	August 2020	(a) The fusible link used with the damper shall be a type approved by the Director of Fire Services and with a rating not exceeding 69°C
Fire & Smoke Damper (1073)	"TROX" SFD, SFP and SFE Series Fire & Smoke Dampers / Model : SFD, SFP, SFE Series / Construction : a) <u>SFD Series</u> : Assemblies is of galvanized mild steel construction, with 1.5 mm thick sleeve, 1.5 mm thick blades for vertical mounting and 2 mm thick for horizontal mounting, springs and catch plates as described in the test reports. The frame is made up of top hat sections welded together. A linkage system enables all blades to move and lock together when in the closed position. b) <u>SFP Series</u> : Same as SFD series, but with the blades, spindles and blade to spindle fixings in Grade 304, 316, 316L or 430 stainless steel. c) <u>SFE Series</u> : Same as SFD series, but with the sleeve & frame, blades, blade spindles and blade to spindle fixing and linkage of Grade 304, 316, 316L or 430 stainless steel. / Mounting : Vertical and horizontal, in accordance with the manufacturer's recommendations and particular requirements as described in the test and assessment reports as listed below. / Duct Connections: For ventilating systems, breakaway joints to the requirements of UL 555 should be provided for ductwork connected to fire damper sleeves. If there are ductwork connections on both sides of the damper, breakaway joints should be provided on both sides except for the ductwork that are constructed of fire resisting materials or installed inside a fire rated shaft / pipe duct. / Size : Maximum 1000 mm x 1000 mm (W x H) / Actuator : 1. "Belimo" FSNF 230-S US (for max. damper size of 1000mm x 650mm ²). "Belimo" FSAF 230-S US (for max. damper size of 1000mm x 1000mm) 3. "Belimo" FSLF 230-S US (for max. damper size of 1000mm x 300mm) Remark: For smoke control systems involving or exposed to high temperature operation, actuator shall be enclosed by TROX TE01 thermal enclosure.	TROX Malaysia Sdn. Bhd., Malaysia	20/11/2018	March 2020	a) The dampers and thermal enclosures shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model. b) This letter supersedes our previous one of the the same reference dated 4.10.2017 on "TroX" SFD, SFP and SFE Series fire and smoke dampers. d) The test report no.: FR2893 of 15.12.2000, FR2894 of 7.11.2000, FR2758 of 2.7.2001 and FAR1845 of 2.10.2001 by BRANZ are all over 10 years. It is to remind that appropriate valid test reports fulfilling the above requirement instead of assessment reports should be submitted to support the next assessment.

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Fire & Smoke Damper (1083)	"Prefco" Multi-blade Fire/Smoke Damper Series 5000 / Product Model : "Prefco" Fire/Smoke Damper Series 5000, Model No. 5050-1, 5050-2, 5053-1 and 5053-2 / Construction : Non-insulated multi-blade damper of galvanized steel construction complete with linkages / Damper actuator is to be housed in a galvanized steel enclosure insulated internally with rockwool of density 100 kg/m ³ , details are as illustrated in the drawing attached to Report No.: R15C08-1 of 7.5.2015 by Research Engineering Development Façade Consultant Ltd. / Maximum Size : For single module - 915 mm x 1143 mm (W x H) For multiple modules: Two modules in height and two or more modules in width. The vertical steel plate in each mullion between the modules may be 10, 12 or 14 gauge galvanized steel as detailed in BRE Global Assessment Report No. CC 87874 Review 5 Issue 1 of 12.1.2018. / Actuator : Belimo - FSNF 230US Honeywell - MS4620F1005 / Installation Method : In accordance with the manufacturer's recommendations	Prefco - Johnsontech Air Control Inc., Taiwan	27/12/2018	November 2023	a) The dampers shall remain listed in the UL Certifications Directory. b) The dampers shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model. c) This letter supersedes our previous one of the same series dated 19.1.2018. d) Separate actuator shall be fitted for each single damper module that makes up a multiple module. e) Valid assessment report on the integrity of multiple module damper assemblies to BS 476: Part 20 shall always be made available.
Fire & Smoke Damper (1110)	"Actionair" Hot Shield PTC Series 2501, 2601 and 2701 Combination Fire & Smoke Damper for Smoke Extraction System / Model : "Actionair" Hot Shield PTC Series 2501, 2601 and 2701 Combination Smoke Management and Fire Dampers and Associated Control Modes / Construction : Double skin galvanized steel casing with 75 mm double skin aerodynamic interlocking stainless steel blades fitted with silicon seals. The casing is complete with fully welded spigot connections suitable for rectangular, circular or flat oval ducts. / Actuator : 1. 230V Control Mode 6 actuator shall be housed inside a Pyrocork Phoenix 300 series thermal protection enclosure. 2. 24V DC mode 5 (non-ETR) PTC Universal Spring Return Actuator shall be housed inside a Pyrocork Phoenix 300 series thermal protection enclosure. / Mounting : Vertical and horizontal mounting / Maximum Module Sizes : Rectangle : 1,000 mm x 1,000 mm Circular : 1,000 mm diameter Oval : 1,000 mm x 500 mm / Maximum Multiple Assembly Sizes : As detailed in BRE Assessment Report No. P107620 - 1004 Issue 1 of 31.01.2019 for Hot Shield PTC damper assemblies installed vertical only in a concrete or masonry walls. / Installation Method : In accordance with the manufacturer's recommendations and manufacturer's drawings	Ruskin Air Management Ltd., U.K.	28/5/2019	December 2023	a) No assessment was made on the suitability of the dampers in ventilating system in Protected Areas. b) No assessment was made on cycling test of the dampers for compliance with the UL555S. c) This letter supersedes our previous one of the same series dated 22.05.2017 on the same products. d) This assessment letter is subject to review by December 2023 or with the updating of the edition of the test standard. The next application for assessment shall be supported by valid test report(s) instead of assessment reports according to FSD Circular Letter No. 1/2007.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks															
Fire & Smoke Damper (1111)	<p>Ruskin' FSD60 Fire & Smoke Damper / Type / Model : FSD60 Combined Fire and Smoke Damper / Construction : Details as described and illustrated in "Ruskin FSD60 Catalogue" / Mounting : Vertical and horizontal, in accordance with the manufacturer's recommendation and particular requirement as described in the test reports listed below. Single Section Size : a. Vertical Mounting: 203mm x 152 mm - 813 mm x 1,219 mm (WxH) b. Horizontal Mounting: 203mm x 152 mm - 762 mm x 1,219 mm (WxH) / Multiple Section Size : a. Vertical Mounting : Maximum 2,337 mm x 2,337 mm (WxH) b. Horizontal Mounting Maximum 2,286 mm x 2,337 mm (WxH) / Actuator : For ventilation system, solo used for maintaining integrity of fire compartment: "Belimo" FSAF230A(-S), FSAF230(-S), FSLF230(-S), FSNF230(-S),FSTF230(-S), FSAF24-SR "Honeywell" MS4620F(1005/1203), MS4609F(1010/1210), MS4604F(1010/1210) For smoke extraction system:</p> <table><tr><td><u>Actuator Brand</u></td><td><u>Model</u></td><td><u>Max. Driving Area (sq. ft)</u></td></tr><tr><td rowspan="3">Belimo</td><td>Belimo</td><td>14.2</td></tr><tr><td>FSLF230</td><td>4</td></tr><tr><td>FSNF230(-S)</td><td>8</td></tr><tr><td rowspan="2">Honeywell</td><td>MS4620F(1005/1203)</td><td>14.2</td></tr><tr><td>MS4609F1010</td><td>8</td></tr></table> <p>Remark: For smoke extraction system, actuator shall be enclosed by thermal protection box of 8" wide by 14.25" high by 6.5 " deep, constructed by G.M.S. sheet with 8lb/ft³ Fibrefrax insulation infill materials.</p>	<u>Actuator Brand</u>	<u>Model</u>	<u>Max. Driving Area (sq. ft)</u>	Belimo	Belimo	14.2	FSLF230	4	FSNF230(-S)	8	Honeywell	MS4620F(1005/1203)	14.2	MS4609F1010	8	Ruskin Co. Thailand	28.05.2019	February 2027	a) The dampers shall remain listed in the UL Certification Directory b)The damper shall bear the trade mark and production label with company name and model number attached firmly on the damper. c) When the damper is used solely for maintaining the integrity of fire compartment, it shall be fitted with "Ruskin" EFL 155 Resettable Electric Fuse Link, which shall be approved by this department and designed to operate up to a temperature not exceeding 69°C d) This letter is subject to review by February 2027 or with the updating of the edition of the test standard.
<u>Actuator Brand</u>	<u>Model</u>	<u>Max. Driving Area (sq. ft)</u>																		
Belimo	Belimo	14.2																		
	FSLF230	4																		
	FSNF230(-S)	8																		
Honeywell	MS4620F(1005/1203)	14.2																		
	MS4609F1010	8																		
Fire & Smoke Damper (1113)	<p>"Prefco" Multi-blade Fire/Smoke Damper Series 5000 / Product Model : "Prefco" Fire/Smoke Damper Series 5000, Model No. 5050-1, 5050-2, 5053-1 and 5053-2 / Construction : Non-insulated multi-blade damper of galvanized steel construction complete with linkages / Damper actuator is to be housed in a galvanized steel enclosure insulated internally with rockwool of density 100 kg/m³, details are as illustrated in the drawing attached to Report No.: R15C08-1 of 7.5.2015 by Research Engineering Development Facade Consultants Ltd. / Maximum Size : For single module - 915 mm x 1143 mm (W x H) For multiple modules: Two modules in height and two or more modules in width. The vertical steel plate in each mullion between the modules may be 10, 12 or 14 gauge galvanised steel as detailed in the BRE Global Assessment Report No. CC 87874 Review 5 Issue 1 of 12.1.2018. / Actuator : Belimo - FSNF 230US Honeywell - MS4620F1005 / Installation Method : In accordance with the manufacturer's recommendations</p>	Prefco - Johnsontech Air Control Inc., Taiwan	29/5/2019	November 2023	a) The dampers shall remain listed in the UL Certifications Directory. b) The dampers shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model. c) This letter supersedes our previous one of the same series dated 27.12.2018. d) Separate actuator shall be fitted for each single damper module that makes up a multiple module. e) Valid assessment report on the integrity of multiple module damper assemblies to BS 476: Part 20 shall always be made available.															

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks																		
Fire & Smoke Damper (1118)	<p>Ruskin' FSD60 Fire & Smoke Damper / Type / Model : FSD60 Combined Fire and Smoke Damper / Construction : Details as described and illustrated in "Ruskin FSD60 Catalogue" / Mounting : Vertical and horizontal, in accordance with the manufacturer's recommendation and particular requirement as described in the test reports listed below. / Single Section Size : a. Vertical Mounting: 203mm x 152 mm - 813 mm x 1,219 mm (WxH) b. Horizontal Mounting: 203mm x 152 mm - 762 mm x 1,219 mm (WxH) / Multiple Section Size : a. Vertical Mounting : Maximum 2,337 mm x 2,337 mm (WxH) b. Horizontal Mounting: Maximum 2,286 mm x 2,337 mm (WxH) / Actuator : For ventilation system, solo used for maintaining integrity of fire compartment: "Belimo" FSAF230A(-S), FSLF230(-S), FSNF230(-S), FSTF230(-S), FSAF24-SR / "Honeywell" MS4620F(1005/1203), MS4609F(1010/1210), MS4604F(1010/1210)</p> <p>For smoke extraction system:</p> <table><tr><td><u>Actuator Brand</u></td><td><u>Model</u></td><td><u>Max. Driving Area (sq. ft)</u></td></tr><tr><td>Belimo</td><td>FSAF230A(-S)</td><td>14.2</td></tr><tr><td></td><td>FSLF230</td><td>4</td></tr><tr><td></td><td>FSNF230(-S)</td><td>8</td></tr><tr><td>Honeywell</td><td>MS4620F(1005/1203)</td><td>14.2</td></tr><tr><td></td><td>MS4609F1010</td><td>8</td></tr></table> <p>Remark: For smoke extraction system, actuator shall be enclosed by thermal protection box of 8" wide by 14.25" high by 6.5 " deep, constructed by G.M.S. sheet with 8lb/ft³ Fibrefrax insulation infill materials.</p>	<u>Actuator Brand</u>	<u>Model</u>	<u>Max. Driving Area (sq. ft)</u>	Belimo	FSAF230A(-S)	14.2		FSLF230	4		FSNF230(-S)	8	Honeywell	MS4620F(1005/1203)	14.2		MS4609F1010	8	Ruskin Co. Thailand	18/6/2019	February 2027	a) The dampers shall remain listed in the UL Certification Directory. b) The Damper shall either bear the trade mark and production label with company name and model number attached firmly on the damper or provided with a certificate of origin issued by the manufacturing plant showing the model number and plant order number c) When the damper is used solely for maintaining the integrity of the compartment, it shall be fitted with "Ruskin" EFL 155 Resettable Electric Fuse Link, which shall be approved by this department and designed to operate up to a temperature not exceeding 69 °C d) This letter supersedes our previous one of the same series dated 28.5.2019. e) This letter is subject to review by February 2027 or with the updating of the edition of the test standard.
<u>Actuator Brand</u>	<u>Model</u>	<u>Max. Driving Area (sq. ft)</u>																					
Belimo	FSAF230A(-S)	14.2																					
	FSLF230	4																					
	FSNF230(-S)	8																					
Honeywell	MS4620F(1005/1203)	14.2																					
	MS4609F1010	8																					
Fire & Smoke Damper (1143)	<p>"TROX" SFD, SFP and SFE Series Fire & Smoke Dampers / Model : SFD, SFP and SFE Series / Construction : a) SFD Series Assemblies is of galvanised mild steel construction, with 1.5 mm thick sleeve, 1.5 mm thick blades for vertical mounting and 2 mm thick for horizontal mounting, springs and catch plates as described in the test reports. The frame is made up of top hat sections welded together. A linkage system enables all blades to move and lock together when in the closed position. b) SFP Series Same as SFD series, but with the blades, spindles and blade to spindles fixings in Grade 304, 316, 316L or 430 stainless steel. c) SFE Series Same as SFD series, but with the sleeve & frame, blades, blade spindles and blade to spindle fixing and linkage of Grade 304, 316, 316L or 430 stainless steel. / Mounting : Vertical and horizontal, in accordance with the manufacturer's recommendations and particular requirements as described in the test and assessment reports listed below. / Duct Connections : For ventilating systems, breakaway joints to the requirements of UL 555 should be provided for ductwork connected to fire damper sleeves. If there are ductwork connections on both sides of the damper, breakaway joints should be provided on both sides except for the ductwork that are constructed of fire resisting materials or installed inside a fire rated shaft / pipe duct. / Sizes : Maximum 1000 mm x 1000 mm (W x H) / Actuator : 1. "Belimo" FSNF 230-S US (for max. damper size of 1000mm x 650mm) 2. "Belimo" FSAF-230A-S (for max. damper size of 1000mm x 1000mm) 3. "Belimo" FSLF 230-S US (for max. damper size of 1000mm x 300mm) Remark: For smoke control systems involving or exposed to high temperature operation, actuator shall be enclosed by TROX TE01 thermal enclosure.</p>	TROX Malaysia Sdn. Bhd., Malaysia	16/10/2019	September 2026	a) The dampers and thermal enclosures shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of brand name and model. b) This letter supersedes our previous one of the same reference dated 20.11.2017 on "TroX" SFD, SFP and SFE Series fire and smoke dampers.																		

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (1147)	"TROX" Series FSD, FSP and FSE Fire Shutter Dampers / Type/Model : a) FSD series b) FSP series c) FSE series / Construction : a) FSD series - Fire damper assemblies of galvanised mild steel construction using a curtain type arrangement b) FSP series - Fire damper assemblies similar to FSD series, but with blades constructed from stainless steel Grade 430 c) FSE series - Fire damper assemblies similar to FSD series with the catch plates and the case being constructed from stainless steel Grade 304L / Maximum Size : Single Module: Maximum size up to 1,000 mm (W) x 1,000 mm (H) Multiple Modules: Maximum size up to 8,000 mm (W) x 3,000 mm (H) for FSD series on vertical mounting only as detailed in the Assessment Report No. FAR3494 of 10.11.2010. / Installation Method : Single damper, vertically or horizontally mounted in accordance with the manufacturer's recommendations. Breakaway joints should be provided in accordance with the requirements of UL555 in the ductwork connected to the damper. For there are ductwork connections on both sides of the damper, breakaway joints should be provided on both sides except for the ductwork that are constructed of fire rated materials or installed inside a fire rated shaft/ pipe duct.	TROX (Malaysia) Sdn. Bhd., Malaysia	8/11/2019	May 2024	a) The dampers are to be fitted with fusible link release of a type approved by this department with a rating not exceeding 69°C. b) This letter supersedes our previous one of the same series dated 20.7.2015 on the same products.
Fire & Smoke Damper (1149)	"TROX" JFM Fire & Smoke Dampers for Ventilating and Smoke Control System / Model : "JFM-G", "JFM-E" and "JFM-E2" multi-blade fire and smoke dampers with vertical and horizontal mounting models / Construction : Multi-blade stainless steel or mild steel un-insulated blades fitted in a mild steel or stainless steel channel section frame suitable for horizontal or vertical attitude with airflow in either direction. Details of construction are shown in the Fire Test/Assessment Reports listed below. / Size : Single Module: Maximum size up to 2,200mm (W) x 2,500mm (H) / Multiple Modules: Maximum size up to 4,550 mm (W) x 2,500 mm (H) (2 x 1 modules) with construction details in accordance with the manufacturer's drawings of the Assessment Report no.: 129103(Issue 12) of 31.1.2013. / Mounting : Vertical and horizontal mounting / Installation Method : In accordance with the manufacturer's recommendations and manufacturer's drawings / Actuator : In accordance with Assessment Report No. 159143 (Issue 8) of 30.4.2019 and Assessment Report No. 129103 (Issue 12) of 31.1.2013, the selection of actuators for the dampers of different sizes shall base on a damper torque factor of 26Nm/m ² . a) "Rotor" RC200 series pneumatic actuators / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) Application: 250°C for 2 hours or 400°C for 1 hour b) "Hytrok" XL1126 S80 pneumatic actuator / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) / Application: 250°C for 2 hours c) "Dresser" RCS Sure 100 and 150 series electric actuator complete with "BETA" thermal jacket / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) / Application: 250°C for 2 hours d) "Rotork" RCE series electric actuators complete with "BETA" thermal jacket / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) / Application: 250°C for 2 hours e) "Rotork" RCEL019 electric actuator complete with "BETA" thermal jacket / Maximum Damper Size: 2,200mm(W) x 2,500mm(H) / Application: 250°C for 2 hours f) "Schischek" InMax 60-SF electric actuator complete with 50mm ceramic fibre of "Durablanket®S" thermal enclosure / Maximum Damper Size: 1,500mm(W) x 1,500mm(H) / Application: 250°C for 2 hours	Trox (Malaysia) Sdn. Bhd., Malaysia	8/11/2019	Feb 2025	1. The dampers, actuators and thermal enclosures shall be permanently marked or stamped with labels which shall remain visible after fixed into positions for the identification of brand name and model. 2. This letter supersedes our previous one of the same reference dated 17.10.2017. 3. This assessment letter is subject to review by Feb 2025. 4. Some test reports for Fire Test and Temperature Degradation Test by Warrington Fire Research Centre are over 10 years. According to FSD Circular letter No. 1/2007, test reports of an accredited laboratory should not be over 10 years. It is to remind that appropriate valid test reports fulfilling the above requirement instead of assessment reports should be submitted to support the next assessment.

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (1168)	<p>"TROX" JFM Fire & Smoke Dampers for Ventilating and Smoke Control System / Model : "JFM-G", "JFM-E" and "JFM-E2" multi-blade fire and smoke dampers with vertical and horizontal mounting models / Construction : Multi-blade stainless steel or mild steel un-insulated blades fitted in a mild steel or stainless steel channel section frame suitable for horizontal or vertical attitude with airflow in either direction. Details of construction are shown in the Fire Test/Assessment Reports listed below. / Size : Single Module: Maximum size up to 2,200mm (W) x 2,500mm (H) / Multiple Modules: Maximum size up to 4,550 mm (W) x 2,500 mm (H) (2 x 1 modules) with construction details in accordance with the manufacturer's drawings of the Assessment Report no.: 129103(Issue 12) of 31.1.2013. / Mounting : Vertical an horizontal mounting / Installation Method : In accordance with the manufacturer's recommendations and manufacturer's drawings / Actuator : In accordance with Assessment Report No. 159143 (Issue 9) of 14.5.2019 and Assessment Report No. 129103 (Issue 15) of 14.5.2019, the selection of actuators for the dampers of different sizes shall base on a damper torque factor of 26Nm/m². a) "Rotor" RC200 series pneumatic actuators / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) Application: 250°C for 2 hours or 400°C for 1 hour b) "Hytork" XL1126 S80 pneumatic actuator / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) / Application: 250°C for 2 hours c) "Dresser" RCS Sure 100 and 150 series electric actuator complete with "BETA" thermal jacket / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) / Application: 250°C for 2 hours d) "Rotork" RCE series electric actuators complete with "BETA" thermal jacket / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) / Application: 250°C for 2 hours e) "Rotork" RCEL series electric actuator complete with "BETA" thermal jacket / Maximum Damper Size: 4,550mm(W) x 2,500mm(H) / Application: 250°C for 2 hours f) "Schischek" InMax 60-SF electric actuator complete with 50mm ceramic fibre of "Durablanket®S" thermal enclosure / Maximum Damper Size: 1,500mm(W) x 1,500mm(H) / Application: 250°C for 2 hours</p>	Trox (Malaysia) Sdn. Bhd., Malaysia	20/2/2020	February 2025	<p>1. The dampers, actuators and thermal enclosures shall be permanently marked or stamped with labels which shall remain visible after fixed into positions for the identification of brand name and model. 2. This letter supersedes our previous one of the same reference dated 8.11.2019. 3. This assessment letter is subject to review by Feb 2025. 4. Some test reports for Fire Test and Temperature Degradation Test by Warrington Fire Research Centre are over 10 years. According to FSD Circular letter No. 1/2007, test reports of an accredited laboratory should not over 10 years. It is remind that appropriate valid test reports fulfilling the above requirement instead of assessment reports should be submitted to support the next assessment.</p>

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (1192)	<p>"TANDA" TFD Series Curtain Type Fire Damper / Model : a) TFD-100 b) TFD-100F c) TFD-200 / Construction : a) TFD-100 series - curtain type completed with integral sleeve; the frame is made of four pieces of steel sheet joined at the corners by riveted overlaps. This is fitted centrally inside a duct and fastened together by rivets. The curtain comprises interlinked slats with the top one riveted to the frame. The damper can be of full galvanized steel, full stainless steel, galvanized steel frame with stainless steel curtain or stainless steel frame with galvanized steel curtain construction. The stainless steel can be of Grade 304 or 316. b) TFD-100F series - curtain type completed with integral sleeve; the frame is made of four pieces of folded galvanized steel which were fixed together with interlocking tabs. This is fitted centrally inside a duct and fastened together by rivets. The curtain comprises interlinked slats with the top one riveted to the frame. The damper can be of full galvanized steel, full stainless steel, galvanized steel frame with stainless steel curtain or stainless steel frame with galvanized steel curtain construction. The stainless steel can be of Grade 304 or 316. c) TFD-200 series - curtain type with frame formed from C-section steel. The curtain comprises interlinked slats with the top one riveted to the frame. The damper can be of full galvanized steel, full stainless steel, galvanized steel frame with stainless steel curtain or stainless steel frame with galvanized steel curtain construction. The stainless steel can be of Grade 304 or 316. d) Details of construction shall be as described in the test/assessment reports. / Maximum Sizes : a) TFD-100 series: i) Single section: 1100 mm (W) x 1200 mm (H) maximum ii) Multi-Section (3 x 2 array): 2660 mm (W) x 2000 mm (H) maximum b) TFD-100F series: i) Single section: 1200 mm (W) x 1200 mm (H) / 1,000 mm (W) x 2,000 mm ii) Multi-Section (3 x 2 array): 2600 mm (W) x 2000 mm (H) maximum / Micro Switch : c) TFD-200 series: i) Single section: 650 mm (W) x 2000 mm (H) or 1100 mm (W) x 1200 mm (H) ii) Multi-Section (3 x 2 array): 2660 mm (W) x 2000 mm (H) maximum / Fusible Link : Relay & Control Corp., model RCM403 micro switch Model JS155°F by Globe Technologies Corp., UL listed by certificate number : 20130624-R1431 and rated at a temperature not exceeding 69°C / Installation Method : TFD-100/TFD-100F/TFD-200 series : vertical or horizontal mounted. Breakaway joints should be provided in accordance with the requirements of UL555 in the ductwork connected to the damper. For there are ductwork connections on both sides of the damper, breakaway joints should be provided on the both sides excepted for the ductwork that are constructed of fire rated materials or installed inside a fire rated shaft/ pipe duct.</p>	TANDA International Company Ltd, Hong Kong	4/6/2020	March 2025	<p>a) A label to indicate the manufacturer, model, standards and fire resistant rating achieved should be fixed to the damper. b) The fusible link shall remain listed in the UL Certification Directory and approved by this Department. c) The micro switch is solely for monitoring purpose and the installation of micro switch and the associated wiring work shall not impede in any way the complete closure/opening of the damper. d) This letter supersedes our previous one of the same series dated 15.4.2016 on the same products. e) Test reports No. R11E08 Issue 1 of 2.6.2011 by RED and FR 3400 Issue 1 of 19.3.2005 by BRANZ are over 10 years. According to FSD Circular letter No. 1/2007, test reports of an accredited laboratory should not be over 10 years. It is to remind that appropriate valid test reports fulfilling the above requirement instead of assessment reports should be submitted to support the next assessment.</p>
Fire & Smoke Damper (1193)	<p>"Ruskin" IBD Curtain Type Fire Damper / Model : IBD Curtain Type Fire Damper / Construction : A curtain damper formed by interlocking galvanized mild steel/ stainless steel (Grade 304 or 316) blades mounted in a galvanized mild steel/ stainless steel (Grade 304 or 316) frame held in open position by fusible link; closure of damper is by stainless steel springs / Mounting : Vertical and Horizontal / Maximum Sizes : Vertical single: 1200mm x 1100mm (W x H) 900mm x 1800mm (W x H) / Maximum Multiple Assembly Size : Horizontal multiple: 2800mm x 1200mm (W x H); 2725mm x 1200mm (W x H) / Installation Method : In accordance with the manufacturer's recommendations detail in the test reports</p>	Delta Pyramax Co. Ltd, Hong Kong	10/6/2020	May 2022	<p>a) The fusible link used with the damper shall be a type approved by the Director of Fire Services and with a rating not exceeding 69°C. / This letter supersedes my previous letter dated 22.5.2020 (Item No. 1182)</p>

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (1195)	Ruskin "TFD80" Combination Fire and Smoke Damper / Country of Original : Thailand / Model : TFD80 Tunnel Ventilation Fire and Smoke Damper / Construction : Channel frame constructed of Type 304 /Type 316 stainless steel /Galvanized steel of 3.0mm thick with stainless steel bearing fitted into frame. Damper blades are double-skin construction of Type 304/Type 316 stainless steel /Galvanized steel of 2.0mm thick minimum with interlocking blade to blade design. Axle is Type 304/Type 316 stainless steel /Galvanized steel in full height. / Mounting : Vertical and horizontal / Size : Max. 3,400mm x 2,000mm (WxH) / Actuator : a) "Valvcon" Q30177 LVW2000HKN230AC electric actuator encased in 1.0mm thick Type 304 stainless steel box with thermal insulation of density 128kg/m ³ b) RCS Sure 100-10(CW or CCW rotation) electric actuator encased in 1.0 mm thick Type 304 stainless steel box with thermal insulation of density 128kg/m ³ / Installation Method : In accordance with the manufacturer's instructions	Ruskin (Thailand) Co., Ltd.	22/6/2020	Sep 2022	a) The dampers shall be permanently marked or stamped with label(s) which remain visible after fixed into position for identification of brand name and model. b) This assessment is subject to review by Sep 2022 or with the updating of the edition of the test standard.
Fire & Smoke Damper (1203)	"Ruskin" IBD Curtain Type Fire Damper (2 Hours Fire Rating) / Model : IBD Curtain Type Fire Damper / Construction : A curtain damper formed by interlocking galvanized mild steel/ stainless steel (Grade 304 or 316) blades mounted in a galvanized mild steel/ stainless steel (Grade 304 or 316) frame held in open position by fusible link; closure of damper is by stainless steel springs / Mounting : Vertical / Maximum Sizes : Vertical / Maximum Sizes : Vertical single: 1200mm x 1100mm (W x H) / Maximum Multiple Assembly Size : Vertical multiple: 2926mm x 2856mm (W x H) / Installation Method : In accordance with the manufacturer's recommendations detail in the test reports / Breakaway Joints : Breakaway joints should be provided in the ductwork connected to the damper in accordance with the requirements of UL 555	Delta Pyramax Co. Ltd, Hong Kong	20/7/2020	June 2022	a) The fusible link used with the damper shall be a type approved by the Director of Fire Services and with a rating not exceeding 69°C. b) This assessment is subject to review by June 2022. c) No assessment is made on the test reports as below which are <u>not</u> relevant to 2 hours fire rating in this application: - By Research Engineering Development Façade Consultant Ltd (i) Test Report No. R19G25-2A of 2.10.2019 By Fugro Technical Services Ltd (ii) Test Report IT19-130 of 6.12.2019 (iii) Test Report of IT19-200 of 6.12.2019
(7) Flexible Ducts					
Flexible Duct (693)	Wyser-Air / FDI - 16 / An inner core fabricated from a scrim-reinforced polyester and aluminium laminate, completely encapsulating a non-corrosive wire helix, bonded with a double seam of hot melt adhesive. b) A core of fibre glass insulation with a thickness of 25mm and a density of 16 kg/m ³ , c) An outer vapour barrier jacket comprising a polyester and aluminium laminate.	Wysermann Co. Ltd., HK	1/4/2014	March 2019	a) No assessment was made on the density and toxicity of smoke generated by the product under fire.
Flexible Duct (712)	"COLMAN" Aluminium Flexible Air Ducts/Laminating aluminium foil with fibre-glass insulation reinforced with steel wire helix/100 mm dia., 150 mm dia., 200 mm dia., 250 mm dia., and 300 mm dia.	Colman Airflow Co. Ltd., PRC	8/7/2014	July 2019	a) No assessment was made on the density and toxicity of smoke generated by the materials under fire..
Flexible Duct (721)	"Aluduct" Aluminium Flexible Duct / A flexible duct comprising a core layer of aluminium laminate with an encapsulated high tensile spring steel wire helix, an insulation layer of fibreglass blanket (25 mm thick and density of 16 kg/m ³) and an outer vapour barrier layer made of aluminium foil.	Jitai Development Ltd. PRC	13/8/2014	August 2019	No assessment was made on the density and toxicity of smoke generated by the materials under fire.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Flexible Duct (727)	"Supaflex 13 AP" Flexible Air Duct / the duct comprises of an insulation layer of glasswool (light yellow colour, 25 mm thick, 24kg/m ³) sandwiched between an inner core of aluminium/polyester laminate encapsulating spring steel wire helix and an outer aluminium/polyester vapour barrier.	Delta Duct Systems Ltd., PRC	12/9/2014	September 2019	a) No assessment was made on the density and toxicity of smoke generated by the product under fire. b) The word "SUPAFLEX" is to be marked on the outer surface of the product at approx. 1,000 mm interval for product identification.
Flexible Duct (822)	"PAL [®] " Winflex 33i Flexible Air Duct / Model : "PAL [®] " Winflex 33i Insulated Aluminium Flexible Air Duct / A factory made insulated round flexible air duct of different diameters with inner foil facing encapsulating a high tensile spring steel wire helix to form the wall of the air duct which is insulated with 25 mm thick, density 24 kg/m ³ yellow colour fibreglass with 1 layer of metalized polyester and 1 outer layer of aluminium foil laminated with fire retardant adhesive with tri-direction glass-fibre scrim reinforcement.	Dongguan Juwun Rubber & Plastic Products Co. Ltd., PRC	2/12/2015	November 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The brand name and model number should be marked on the product.
Flexible Duct (847)	"Wei Li" Aluminium Flexible Air Duct / Model : "Wei Li" Insulated Aluminium Flexible Air Duct / Product Description : A factory made insulated flexible air duct of 200mm diameter comprising of an inner layer of aluminium foil facing encapsulating galvanized steel wire helix to form the wall of the air duct which is insulated with 25mm thick, density 32 kg/m ³ fiberglass with Top Overlapped and Bottom Overlapped aluminium foil. / Duct Size : 200mm diameter only	Dong Guan Shi Wei Li Ruan Guan Jai Gong Chang, PRC	17/5/2016	May 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Flexible Duct (852)	"PAL [®] " Winflex 33 Aluminium Flexible Air Duct / Model : "PAL [®] " Winflex 33 Aluminium Flexible Air Duct / Product Description : A factory made round flexible duct comprising of 2 layers of aluminium foil polymer adhesive and encapsulating a high tensile spring steel wire helix to form the wall of the duct. The duct can be of different diameters from 100mm to 300mm with an overall wall thickness of 0.045 mm and weight of 86 - 89 g/m ² approximately.	Dongguan Juwun Rubber & Plastic Products Co. Ltd., PRC	25/5/2016	May 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Flexible Duct (961)	DEC"ISODUCT"Flexible Duct / Model : "Econoflex A-1 I25AL" / Material: a) An outer sleeve comprising the aluminium foil face with overall thickness of approximately 0.07mm forms the outer surface of the ducting. b) A core of fiber glass insulating has a thickness of 25 mm and a density of 24 kg/m ³ An inner sleeve similar in construction to the outer sleeve but encapsulating a high tensile steel wire helix.	Air Trade Centre Limited, PRC	1/8/2017	February 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire. b) The brand name should be clearly marked on the flexible duct.
Flexible Duct (1101)	"COLMAN" Aluminium Flexible Air Ducts / Model : "Colman" Aluminium Flexible Air Duct / Material : Laminating aluminium foil with fibre-glass insulation reinforced with steel wire helix. / Size : 100mm dia., 150mm dia., 200mm dia., 250mm dia., and 300mm dia.	Colman Airflow Co. Ltd., PRC	3/5/2019	November 2022	a) No assessment was made on the density and toxicity of smoke generated by the materials under fire. b) This letter supersedes our previous one of the same reference dated 8.7.2014 on "COLMAN" Aluminium flexible air ducts. c) This assessment is subject to review by November 2022 or with the updating of the edition of the test standard.
Flexible Duct (1102)	"Aluduct" Class "0" Aluminium Flexible Duct Brand Name : "Aluduct" / Construction : A flexible duct comprising a core layer of aluminium laminate with an encapsulated high tensile spring steel wire helix, an insulation layer of fiberglass blanket (25 mm thick and density of 16 kg/m ³) and an outer vapour barrier layer made of aluminium foil. / Application : For flexible air duct in ventilating system	JITAI Development Ltd., PRC	9/5/2019	May 2024	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) This assessment letter supersedes our previous one of the same series dated 13.8.2014. c) This assessment is subject to the review by May 2024 or with the updating of the edition of the testing standard.

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Flexible Duct (1115)	"Supaflex" 13 AP Flexible Air Duct / Brand Name : "Supaflex 13 AP" Flexible Air Duct / Material : The duct comprises of an insulation layer of glasswool (light yellow colour, 25 mm thick, 24 kg/m ³) sandwiched between an inner core of aluminium/polyester laminate encapsulating spring steel wire helix and an outer aluminum/polyester vapour barrier.	Delta Duct Systems Ltd	31/5/2019	January 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The word "SUPAFLEX" is to be marked on the outer surface of the product at approx. 1000 mm interval for product identification. c) This letter supersedes our previous letter of the same series dated 12.9.2014 d) This assessment is subject to review by January 2021 or with the updating of the edition of the test standard. e) The next application for assessment shall be supported by valid test report(s) for puncture test according to FSD Circular Letter No. 1/2007.
Flexible Duct (1116)	"Aluduct" Class "0" Aluminium Flexible Duct / Brand Name : "Aluduct" / Construction : A flexible duct comprising a core layer of aluminium laminate with an encapsulated high tensile spring steel wire helix, an insulation layer of fiberglass blanket (25 mm thick and density of 16 kg/m ³) and an outer vapour barrier layer made of aluminium foil. / Application : For flexible air duct in ventilating system	JITAI Development Ltd., PRC	9/5/2019	May 2024	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) This assessment letter supersedes our previous one of the same series dated 13.8.2014. c) This assessment is subject to review by May 2024 or with the updating of the edition of the testing standard.
Flexible Duct (1180)	"TANDA" TA-01 Flexible Duct / Brand Name : "TANFDA" TA-01 Flexible Duct / Material : The duct can be of different diameters of 100mm, 200mm, 300mm comprises of an insulation layer of fiberglass (25 mm thick, 24 kg/m ³) sandwiched between an inner core of aluminium foil encapsulating spring steel wire helix and an outer aluminum foil.	TANDA International Company Ltd.	21/5/2020	November 2023	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The product shall have label tag bearing the work "TANDA model TA-01" and diameter of flexible duct sewn on it as a means of identification. c) This assessment is subject to review by November 2023 or with the updating of the edition of the testing standard.
Flexible Duct (1181)	"PAL [®] " Winflex 33i Flexible Air Duct / Model : "PAL [®] " Winflex 33i Insulated Aluminium Flexible Air Duct / Product Description : A factory made insulated round flexible air duct of different diameters with inner foil facing encapsulating a high tensile spring steel wire helix to form the wall of the air duct which is insulated with 25 mm thick, density 24 kg/m ³ yellow colour fiberglass with 1 layer of metalized polyester and 1 outer layer of aluminium foil laminated with fire retardant adhesive with tri-direction glass-fibre scrim reinforcement.	Dongguan Juwun Rubber & Plastic Products Co. Ltd., PRC	21/5/2020	June 2025	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The brand name and model number should be marked on the product. c) This assessment supersedes our previous one of the same series dated 2.12.2015.
(8) Energy Recovery Units					

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Energy Recovery Ventilator (1160)	"STC-EHRV" Energy Humidity Recovery Ventilator / Model : (i) "SD" Series (ii) "SH" Series (iii) "RP" Series / Construction : "SD" Series: An internally insulated rectangular galvanized steel enclosure containing a belt driven galvanized steel rotary wheel with galvanized steel blower fans housing six removable sectors of core material for heat/humidity exchange. The core material is packed 38 mm thick polyester (PE) fiber of 25 - 150 micrometer diameter with a surface density of 3.9 kg/m ² . Two sets of aluminum pre-filters are fitted on the air inlets of the unit. "SH" Series & "RP" Series An internally insulated rectangular galvanized steel enclosure containing a belt driven galvanized steel rotary wheel housing six removable sectors of core material for heat/humidity exchange. The core material is packed 38 mm thick polyester (PE) fiber of 25 -150 micrometer diameter with a surface density of 3.9 kg/m ² . Two sets of aluminum pre-filters are fitted on the air inlets of the unit. / Unit Size : (i) 70 m ³ /h to 1,500 m ³ /h (ii) 600 m ³ /h to 2,000 m ³ /h (iii) 2,000 m ³ /h to 40,000m ³ /h	Hong Kong Stirling Ventilator Co., Ltd., PRC	5/12/2019	September 2027	a) No assessment was made on the density and toxicity of smoke generated by the core material under fire condition. b) All electric cables installed inside the ventilator are to be contained in metallic conduit. c) Valid test report shall be made available on request to demonstrate that the internal insulation used in the ventilator can comply with the requirement of having an overall fire propagation index $I \leq 12$, sub-index $i_1 \leq 6$ when tested in accordance with BS 476 Part 6 or equivalent standards. d) This assessment supersedes our previous one of the same series dated 21.9.2015
(9) Smoke Fans					
Smoke Fan (775)	Wolter "JFUO", "JFRO", "JFUC" and "JFRC" Series Axial Jet Fans for Smoke Control Systems / Product Name : JFUO/ JFRO/JFUC/JFRC Series./ Type and Size : Axial jet fans with diameter from 250mm to 400mm. / Construction : Fan housing : Galvanized sheet steel. / Impeller hub & blades : aluminium die -cast alloy. / Motor support : Galvanized sheet steel. / Terminal box : aluminium die -cast alloy. /Wire guard : Powder coated steel / Outlet nozzle / louver : Galvanized sheet steel. / Motor : Proprietary product under " Wolter " brand name forming an integral part of the jet fan.	Wolter GmbH Maschinen-und Apparatebau KG, Germany	30/6/2015	June 2020	a) The captioned axial jet fans shall remain listed by " Materialprufanstalt fur das Bauwesen Braunschweig" and bear the appropriate identification markings. b) As smoke control systems using jet fans are not classified as standard designs complying with the prescriptive requirements of this Department, their application should be substantiated by fire engineering analysis and submitted by the authorized project designer for approval on a project-by project basis.
Smoke Fan (776)	"Wolter" A/H/T-RZ 400 Centrifugal Fan for Smoke Extraction Systems / Product Name : A/H/T-RZ 400 / Type and Size : Centrifugal fan of 400mm diameter / Construction : Zinc coated mild steel plate cabinet panels with mild steel RHS framing, 8- blade mid steel impeller. / Motor : Manufacturer : "CHEMCO" Wolter GmbH / Type : Externally mounted squirrel cage induction motor, enclosed air- cooled, /Frame number : foot mounting horizontal / Model number : B3 / Insulation : ME2- 100L2-4 / Power : Class F 3.0kW.	Wolter GmbH Maschinen-und Apparatebau KG, Germany	30/6/2015	June 2020	a) The fan shall bear appropriate labels for identification and its temperature / time hot smoke performance.
Ventilator (883)	Witt & Sohn "IGW" Series Axial Powered Smoke and Heat Exhaust Ventilators for Smoke Extraction System / "IGW" Series Axial Ventilators.	Witt & Sohn AG, Germany	17/10/2016	June 2021	The captioned fans and the associated motors shall remain listed by "Materialprufanstalt fur das Bauwesen Braunschweig (MPA)" and bear the appropriate identification markings.
Smoke Fan (915)	Wolter "AXV", "AXV-BD", "AXV-DD", "HRE", & HRZ" Series Fans for Smoke Extraction Systems Type and Size:1) AXA:Axial fan-315 to 2,600mm, 2) AXV-BD:Axial fan with external belt driven motor-400 to 1,575mm, 3) AXV-DD: Bifurcated axial fan-400 to 1,575mm, 4) HRE:Single inlet & single width centrifugal fanwith external directdriven motor-315 to 1,000mm, 5) HRZ: Double inlet & double width centrifugal fan with external belt driven otor-315 to 1,000mm.	Dongguan Wolter Chemco Ventilation Ltd., PRC	2/2/2017	January 2022	a) For fans with external motors or belt driven motors, those external motors and components shall not be exposed to hot smoke.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Smoke Fan (935)	"Systemair" WVI 630D4-XL" Smoke Extraction / Air Release Fan / Axial fan Diameter 650mm Construction: a) Fan material : Steel, stainless steel / b) Blades : X6 CrNiTi 18-10 / Motor: / a) Manufacturer : AC Motoren / b) Model : FCA 132S-4/HE, Housing : aluminium / d0 Grease type : SKF LGMT - 3 / Motor insulation : Class F / Frame size : 132 S.	Systemair D.O.O., Slovenia	16/5/2017	April 2022	(a) The Systemair "WVI 630D4-XL" smoke extraction / air release fan together with its motor cooling fan and associated ductwork shall be installed inside a separate fire-rated and insulated fire service installation (FSI) room in which and external louver shall be provided at the external wall of the FSI room for fresh air intake of the motor cooling system.
Smoke Fan (1013)	"Systemair" AXC(B) Series Axial Smoke Extraction Fan / Model : AXC(B) series as listed in the product certificate no.: KM 622130 of 6.2.2018 / Type : Axial fan	Systemair Sdn. Bhd., Malaysia	2/3/2018	February 2028	(a) The captioned product shall remain listed by BSI Certification and its listing status will be verified during compliance inspections. (b) The captioned product shall bear the appropriate identification markings. (c) The following fan categories are excluded from the above application: 1. AJR axial fan range (Leroy Somer motors); and 2. AJR axial fan range (WEG motors). (d) A valid certificate of quality management system certification to suitable international/national standard shall be provided to cover the manufacturing dates of the products during compliance inspections.
Smoke Fan (1014)	Nuaire Smoke Fans for Smoke Extraction System / Model : Smoke Axus Circular - Long Cased Axials 4Z, 5Z, 6W, 9W / Smoke Axus Circular - 3H Impellers / Smoke Axus Circular - Long Cased Axial Fixed Pitch Steel / Smoke Axus Circular - P* range / Smoke Axus Circular - Variable Pitch Steel / Smoke Axus Circular -Fixed Pitch Steel / Smoke Axus Circular - Axus P* Range (as listed in the BSI Kitemark™ Certificate No.: KM 614968 Page 2, 4, 5, 6) / Type : Axial Fan	Nuaire : A Trading Division Polypipe Limited, U.K.	21/3/2018	March 2027	(a) The captioned product shall remain listed by BSI Certification and its listing status will be verified during compliance inspections. (b) The captioned product shall bear the appropriate identification markings. (c) The following fan categories are excluded from the above application: 1. Smoke Contra Rotating Axial (AXC) 2. Smoke Run and Standby Axial (AXT) (d) A valid certificate of quality management system certification to suitable international/national standard shall be provided to cover the manufacturing dates of the products during compliance inspections.
Axial Fan (1037)	"FläktWoods" JM Aerofoil H.T. Series Axial Fan / Model : JM Aerofoil H.T. series as listed in the product certificate no.: 0086-CPR-474878 of 15.12.2017 / Type : Axial fan / Product Listing Document : BSI Assurance UK Ltd.'s Certificate No.: 0086-CPR-474878 of 15.12.2017	FläktWoods Limited, U.K.	19/1/2018	January 2028	(a) The captioned product shall remain listed by IFC Certification and its listing status will be verified during compliance inspections. (b) The captioned product shall bear the appropriate identification markings. (c) The following fan categories are excluded from the above application: 1. The fans that are tested with temperature and duration lower than 250°C and 1 hour; and 2 . Car park range as stated in pages 18 to 24 of the BSI certificate. (d) A valid certificate of the quality management system certification to suitable international/national standard shall be provided to cover the manufacturing dates of the products during compliance inspections.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Smoke Fan (1075)	Nuaire Smoke Fans for Smoke Extraction System / Model : Smoke Axus Circular - Long Cased Axials 4Z, 5Z, 6W, 9W / Smoke Axus Circular - 3H Impellers / Smoke Axus Circular - Long Cased Axial Fixed Pitch Steel / Smoke Axus Circular - P* range / Smoke Axus Circular - Variable Pitch Steel / Smoke Axus Circular - Fixed Pitch Steel / Smoke Axus Circular - Axus P* Range (as listed in the BSI Kitemark™ Certificate No.: KM 614968 Page 2, 4, 5, 6) / Type : Axial Fan / Product Listing Document : BSI Certificate of Constancy of Performance - Certificate No.: 0086-CPR-672476 of 25.10.2017 BSI Kitemark™ Certificate - Certificate No.: KM 614968 of 25.10.2017	Nuaire : A Trading Division Polypipe Limited, U.K.	19/11/2018	March 2027	(a) The captioned product shall remain listed by BSI Certification and its listing status will be verified during compliance inspections. (b) The captioned product shall bear the appropriate identification markings. (c) A valid certificate of quality management system certification to suitable international/national standard shall be provided to cover the manufacturing dates of the products during compliance inspections. d) This letter supersedes our previous letter dated 21.3.2018.
Smoke Fan (1079)	Nuaire Smoke Fans for Smoke Extraction System / Model : Smoke Axus Circular - Long Cased Axials 4Z, 5Z, 6W, 9W / Smoke Axus Circular - 3H Impellers / Smoke Axus Circular - Long Cased Axial Fixed Pitch Steel / Smoke Axus Circular - P* range / Smoke Axus Circular - Variable Pitch Steel / Smoke Axus Circular - Fixed Pitch Steel / Smoke Axus Circular - Axus P* Range (as listed in the BSI Kitemark™ Certificate No.: KM 614968 Page 2, 4, 5, 6) / Type : Axial fan / Product Listing Document : BSI Certificate of Constancy of performance - Certificate No.: 0086-CPR-672476 of 25.10.2017 BSI Kitemark™ Certificate - Certificate No.: KM 614968 of 25.10.2017	Nuaire : A Trading Division Polypipe Limited, U.K.	14/12/2018	March 2027	(a) The captioned product shall remain listed by BSI Certification and its listing status will be verified during compliance inspections. (b) The captioned product shall bear the appropriate identification markings. (c) A valid certificate of quality management system certification to suitable international/national standard shall be provided to cover the manufacturing dates of the products during compliance inspections. d) This letter supersedes our previous letter dated 19.11.2018 and 21.3.2018
Smoke Fan (1146)	"ZITRON" "ZVN" & "ZVR" Series Axial Fans and "JZ" & "JZR" Series Jet Fans for Smoke Extraction System / Product Name : "ZVN" and "ZVR" Series Axial Fans; "JZ" and "JZR" Series Jet Fans / Type and Size : Axial fans with fan diameter from 900mm to 2,500mm; Jet fans with fan diameter from 500mm to 1,530mm with "Leroy Somer" motor / Jet fans with fan diameter 1,120mm with "WEG" motor / Construction Fan (Axial Fan) : (a) Fan casing : Carbon steel S-275JR (b) Impeller Hub Disc : Steel (c) Impeller blades : Aluminum alloy (d) Motor Brand : WEG (e) Motor casing : Cast Steel (f) Terminal box : Galvanized steel / Aluminum Alloy (g) Motor frame size : 250 - 355 (h) Motor output power range : 55 - 575 kW (i) Maximum Rotation Speed : 1500 rpm (j) Stage : Single (k) No. of Poles : 4 or more (l) Maximum Voltage : 660V (m) Motor insulation : Class H, 250°C / 120 minutes (n) Utilization : Thermal Class F / Construction Fan (Jet Fan) (a) Fan casing : Carbon steel S-275JR (b) Impeller Hub Disc : Steel (c) Impeller blades : Aluminum Alloy (d) Motor Brand : Leroy Somer / WEG (e) Motor casing : Carbon steel S-275JR (f) Terminal box : Galvanized steel / Aluminum alloy (g) Motor frame size : 200 - 280 / 225 (h) Motor output power range : 30 - 75 kW / 45kW (i) Maximum Rotation Speed : 2954rpm / 1500 rpm (j) No. of Poles : 2 or more / 4 or more (k) Maximum Voltage : 415V / 660V (l) Motor insulation : Class H, 250°C / 120 minutes (m) Motor insulation : Class H, 250°C / 120 minutes (m) Utilization : Thermal Class F / Blow Direction : Uni-directional or Reversible / Installation Method : In accordance with the manufacture's recommendations and manufacturer's drawings	Talleres Zitron, S.A, Spain	7/11/2019	September 2020	(a) The captioned fans and the associated motors shall remain listed by AENOR and its listing status will be verified during compliance inspections. (b) The captioned product shall bear the appropriate identification markings. (c) A valid certificate of quality management system certification to suitable international/national standard shall be provided to cover the manufacturing dates of the products during compliance inspections

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks																								
Smoke Fan (1163)	<p>Wolter-"AXV", "AXV-BD","AXV-DD", "HRE" & "HRZ" Series Fans for Smoke Extraction Systems / Product Name : "AXV", "AXV-BD", "AXV-DD", "HRE" & "HRZ" Series / Type and Size :</p> <table><thead><tr><th>Item</th><th>Model Series</th><th>Fan Type</th><th>Fan Range</th></tr></thead><tbody><tr><td>1</td><td>AXV</td><td>Axial fan</td><td>315 to 2,800 mm</td></tr><tr><td>2</td><td>AXV-BD</td><td>Axial fan with external belt driven motor</td><td>400 to 1,575 mm</td></tr><tr><td>3</td><td>AXV-DD</td><td>Bifurcated axial fan</td><td>400 to 1,575 mm</td></tr><tr><td>4</td><td>HRE</td><td>Single inlet & single width centrifugal fan with external direct driven motor</td><td>315 to 1,600 mm</td></tr><tr><td>5</td><td>HRZ</td><td>Double inlet & double width centrifugal fan with external belt driven motor</td><td>315 to 1,000 mm</td></tr></tbody></table> <p>Construction ("AXV") : (a) Fan housing : Mild steel with epoxy paint/galvanized steel (b) Impeller hubs & blades : Die-cast aluminum alloy (c) Motor support : Galvanized steel (d) Terminal box : Die-cast aluminum alloy / Motor ("AXV") : (a) Manufacturer: Wolter Chemco (b) Bearing grease: Mobil Polyrex EM (c) Bearing clearance: C3 (d) Motor insulation: Class H (e) Utilization: Thermal Class F (f) Frame Size: 71 - 355 / Construction ("AXV-DD" or "AXV-BD") : (a) Fan housing : Mild steel with epoxy paint/galvanized steel (b) Impeller hubs & blades : Mild steel with epoxy paint/galvanized steel (c) Motor support : Mild steel with epoxy paint/galvanized steel (d) Terminal box : Mild steel with epoxy paint/galvanized steel / Motor ("AXV-DD" or AXV-BD) : (a) Manufacturer: Wolter Chemco (b) Bearing grease: Mobil Polyrex EM (c) Bearing clearance: C3 (d) Motor insulation: Class H (e) Utilization: Thermal Class F (f) Frame Size: 80 - 355 / Construction ("HRE" or HRZ") : (a) Fan housing : Mild steel with epoxy paint/galvanized steel (b) Impeller hubs & blades : Mild steel with epoxy paint/galvanized steel (c) Motor support : Mild steel with epoxy paint/galvanized steel (d) Terminal Box : Mild steel with epoxy paint/galvanized steel / Motor ("HRE" or HRZ") : (a) Manufacturer: Wolter Chemco (b) Bearing grease: Mobil Polyrex EM (c) Bearing clearance: C3 (d) Motor insulation: Class H (e) Utilization: Thermal Class F (f) frame</p>	Item	Model Series	Fan Type	Fan Range	1	AXV	Axial fan	315 to 2,800 mm	2	AXV-BD	Axial fan with external belt driven motor	400 to 1,575 mm	3	AXV-DD	Bifurcated axial fan	400 to 1,575 mm	4	HRE	Single inlet & single width centrifugal fan with external direct driven motor	315 to 1,600 mm	5	HRZ	Double inlet & double width centrifugal fan with external belt driven motor	315 to 1,000 mm	Dongguan Wolter Chemco Ventilation Ltd., PRC	30/12/2019	August 2024	(a) For fans with external motors or belt driven motors, those external motors and components shall not be exposed to hot smoke. (b) This letter supersedes our previous letter of the same series dated 2.2.2017. (c) This assessment is subject to review by August 2024. (d) The dates of original issue of certificates of compliance issued by Singapore Laboratory Services are all over 10 years. According to FSD Circular letter No. 1/2007, test reports of an accredited laboratory should not be over 10 years. It is to remind that appropriate valid test reports fulfilling the above requirement instead of certificate of compliance should be submitted to support the next assessment.
Item	Model Series	Fan Type	Fan Range																										
1	AXV	Axial fan	315 to 2,800 mm																										
2	AXV-BD	Axial fan with external belt driven motor	400 to 1,575 mm																										
3	AXV-DD	Bifurcated axial fan	400 to 1,575 mm																										
4	HRE	Single inlet & single width centrifugal fan with external direct driven motor	315 to 1,600 mm																										
5	HRZ	Double inlet & double width centrifugal fan with external belt driven motor	315 to 1,000 mm																										
(10) Thermal / Acoustic Insulations																													
Thermal Insulation (691)	"UniFiber [®] " Fiberglass with PAL [®] DSF 818 Aluminium Foil Facing / "UniFiber [®] " fiberglass with "PAL [®] DSF 818" aluminium foil facing / Fiberglass faced on one side with "PAL [®] DSF 818" double sided aluminium foil facing / Thickness / Density : 32 kg/m ³ / 25 mm	UniFiber Manufacturing Ltd., PRC	10/3/2014	March 2019	no assessment was made on the density and toxicity of smoke generated by the material under fire.																								
Thermal Insulation (697)	"Owens Corning" Fiberglas Duct Liner Board/"Owens Corning" Fiberglas Duct Liner/Fiberglas duct liner board with Black Glass Tissue (BGT) facing	Owens Corning (Guangzhou) Fiberglas Co. Ltd., PRC	16/4/2014	March 2019	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.																								
Thermal Insulation (702)	"Owens Corning" Fiberglas [®] Duct Liner/a) Density 32-64 kg/m ³ b) Thickness lining of ventilation ductwork.	Owens Corning, PRC	29/4/2014	March 2019	No assessment was made on the density and toxicity of smoke generated by the materials under fire.																								

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (705)	"CAPAPHEN-K" Phenolic Foam Insulation Material/"Phenolic foam with a normal density of 40 kg/m ³ and laminated on one face with a 0.3 mm thick aluminium foil/For external insulation of ventilation ductwork and pipe work.	United Regent International Ltd., PRC	9/5/2014	January 2019	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (716)	"Evertherm" Phenolic Foam Insulation Material with Aluminium Foil Facing / "Evertherm" Phenolic Foam with aluminium foil facing / Grey colour closed cell rigid phenolic foam insulation material with aluminium foil facing and having a density of a) 40 kg/m ³ b) 80 kg/m ³ c) 120 kg/m ³	Evertherm Insulation Hong Kong Ltd., HK (with phenolic foam from PRC)	29/7/2014	July 2019	
Thermal Insulation (722)	"Durkblex BG" Nitrile Rubber Insulation Materials/"Durkblex BG"/Closed cell elastomeric thermal insulation material with one side compound aluminium foil facing/25 mm & 50 mm between 50 - 60 kg/m ³ .	Durkee (Wuhan) Insulation Material Co., Ltd.	14/8/2014	April 2019	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions. b) The product should bear the marking "Durkblex BG" as a means of identification.
Thermal Insulation (730)	"Sunbao" phenolic foam insulation Closed-cell thermal insulation material with aluminium foil facing on one side 25mm/40kg/m ²	Huizhou Embelish Source Chemical Co., Ltd, PRC	8/10/2014	October 2019	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Thermal Insulation (731)	Thai Sekisui "Thermobreak" Thermal Insulation a closed cell crosslink polyethylene foam insulation material, in tube or sheet form with factory applied reinforced aluminium foil facing on one side and acrylic adhesive backing. 12 and 25mm/25kg/m ³	Thai Sekisui Foam Co., Ltd., Thailand	8/10/2014	October 2019	
Thermal Insulation (749)	"Evertherm " Phenolic Foam Insulation Materials with Silver Embossed Aluminium Foil Facing. Model : "Evertherm " Phenolic Foam with "Evertherm 980S" silver embossed aluminium foil facing / Grey colour closed cell rigid phenolic foam insulation materials with silver embossed aluminium foil facing and having a density of 40 kg/m ³ / For external insulation of ventilation ductwork and pipework.	Evertherm Insulation Hong Kong Ltd. HK (with phenolic foam from PRC)	8/1/2015	January 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (750)	"Armafix" Insulation Pipe Hanger covered with outer shell metal jacket. Material : Armafix insulation embedded PUR loading segments and covered with the outer shell metal jacket / For insulation support in ventilating system.	Armacell (Guangzhou) Ltd. PRC	15/1/2015	January 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The product should bear appropriate marking as a means of identification.
Acoustic Insulation (751)	"Best Bond" FHPEVA Insulation Ring / Split composite insulation ring comprising high pressure foamed, high density polyethylene vinyl acetate (PEVA) / 556 kg/m ³ / As external insulation ring for pipe work in ventilating system.	Meriton East (HK) Ltd., PRC	19/1/2015	January 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Acoustic Insulation (752)	"LAH" Rockwool Acoustic Lining / Rock wool board/ panel insulation material of 50mm thick and having a density of a) 60 kg/m ³ b) 80 kg/m ³ c) 100 kg/m ³ / As <u>internal</u> acoustic lining of ductwork.	Luen Wah Machine Welding & Iron Works Co., Ltd., PRC	27/1/2015	January 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand Name of the product.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Acoustic Insulation (753)	"LAH" Glass Wool Internal Acoustic Lining / Fiberglass board / blanket of 50mm thick and having a density of a) 32 kg/m ³ b) 48 kg/m ³ / As internal acoustic lining of ductwork.	Luen Wah Machine Welding & Iron Works Co., Ltd., PRC	27/1/2015	January 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand Name of the product.
Thermal Insulation (756)	"PHENOTHERM" Phenolic Foam Insulation Supports with "PAL® DSF-White 818" Aluminium Foil Facing / High density rigid phenolic foam insulation material of 80-120 kg/m ³ density with double sided reinforced aluminium foil facing./ For insulation support in ventilating systems.	Phenotherm Asia Limited PRC	9/2/2015	February 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The packing of the material should bear the Brand Name of the product.
Thermal Insulation (758)	"K-Flex" Insulated Pipe Support for Ventilating System / Composite insulation support comprising of rigid PIR, with a density of 120 kg/m ³ , surrounded by K-Flex flexible elastomeric insulation foam, laminated with 0.1 mm thick double sided aluminium foil facing as a vapor barrier / Insulation support for pipe work in ventilating system	L' Isolante K-Flex (Suzhou) Company Ltd., PRC	18/2/2015	February 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Thermoplastic Elastomer Insulation (759)	"Chilloflex" Thermoplastic Elastomer Insulation Material. Model : Chilloflex / #25150 / Thickness and density : 25mm, between 40-60 kg/m ³ / For use as external and internal insulation material in ventilation ductwork and pipework.	Guangdong De Xu Insulation Materials Co., Ltd., PRC	19/3/2015	March 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions. b) The product shall bear the marking "Chilloflex" as a means of identification.
Thermal Insulation (783)	"UniFiber®" fiberglass with single sided "PAL® SSF 515" aluminium foil facing / Density / Thickness 64 kg/m ³ / 25 mm / For external insulation of ventilating ductwork and pipe work in ventilating systems	UniFiber Manufacturing Ltd., PRC	21/7/2015	September 2019	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Acoustic Insulation (784)	"Pyrotek" Wavebar Quadzero Noise Barrier / Material : A 4 mm thick black flexible aluminium foil faced polymer backed by a white nonwoven polyester fabric / Density : 8.14 kg/m ² / For external acoustic insulation of ductwork.	Pyrotek Pty. Ltd., Australia	21/7/2015	July 2019	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Thermal Insulation (800)	"K-Flex" Pipe Support / Material : Insulated pipe support comprising of rigid polyurethane with a density of 180-220 kg/m ³ , surrounded by 25mm thick K-Flex flexible elastomeric insulation foam laminated with 0.1mm thick double-sided aluminium foil facing.	L'Isolante K-Flex (Suzhou) Company Limited, PRC	24/9/2015	September 2020	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Thermal Insulation (804)	"Phenotherm™" / Phenotherm™ phenolic foam / Material : A composite insulation panel comprising a phenolic foam core having a density of 60 kg/m ³ bonded on both sides with white glass tissue and embossed aluminium foil of a thickness ≥ 0.06 mm. / Overall Thickness : 21mm.	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	21/9/2015	September 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (805)	"GOODEVER PF" / "GOODEVER PF" Phenolic Foam Insulation with aluminium Foil Facing / Material : Phenolic foam insulation with a density of 40 kg/m ³ bonded on one side with 0.25 mm "S-series" thick doubled sided aluminium facing material using PS 8109S adhesive / Thickness: 15 mm - 150 mm	Shenzhen Goodever Xinxing Building Material Co., Ltd., PRC	21/9/2015	September 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (819)	"CAPAPHEN-K" Phenolic Foam Insulation Material / Material : Phenolic foam with a nominal density of 120 kg/m ³ and laminated on one face with a 0.35mm thick double-sided aluminium foil. / Application : For external insulation of ventilation ductwork and pipe work.	United Regent International Ltd., PRC	1/12/2015	November 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire.

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Thermal Insulation (823)	"P-flex [®] " Class '1' Flexible Elastomeric Closed Cell Insulation / Material : An off-white colour flexible elastomeric closed cell insulation material having a nominal density of 45-65 kg/m ³ / Thickness : 13mm	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	8/12/2015	December 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Thermal Insulation (830)	"Durkflex [®] " FG" Closed Cell Nitrile Rubber Insulation / Brand Name : "Durkflex [®] " FG" / Material : Black coloured closed-cell elastomeric thermal insulation material comprising of Nitrile Butadiene rubber / Thickness and Density : 19mm and 52 kg/m ³ approximately.	Durkee (Wuhan) Insulation Material Co., Ltd., P.R.C.	19/1/2016	January 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions. b) The product shall bear the marking "Durkflex [®] " FG" as a means of identification.
Thermal Insulation (832)	"AFICO" Fiberglass Insulation with "FRK" Aluminium Foil Facing / "AFICO" Fiberglass Insulation with "FRK" Aluminium Foil Facing / Material : Comprising an aluminium foil laminate faced glass fiber insulation product, consist of heavy density fiberglass insulation with FRK aluminium foil facing / Thickness / Density : 50 mm / 64 kg/m ³	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	28/1/2016	January 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The product itself has no marking, however, details such as brand name, density and thickness are to be marked on its packing.
Thermal Insulation (834)	"PHENOTHERM [™] " phenolic foam with "PAL [®] " DSF 818" Double Sided Aluminium Foil Facing / Material : Closed cell phenolic foam insulation material having a thickness of 25 mm and a density of 40 kg/m ³ with "PAL [®] " DSF 818" double-sided aluminium foil vapour barrier of approx. 0.42 mm thick.	Phenotherm Asia Limited, PRC	17/2/2016	February 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Thermal Insulation (835)	"Bellsafe" / Material : Elastomeric rubber thermal insulation sheet and tube material / Thickness and Density : 13-50 mm thick and density approx. 53-58 kg/m ³ .	Huizhou Bellsafe up Insulation Co., Ltd., PRC	17/2/2016	February 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions. b) The product shall bear the marking of the brand name as a means of identification.
Thermal Insulation (836)	"T-Max" Foil Thermal Insulation Material / Material : Polyester insulation layer faced on one side with aluminium foil / Thickness / Density : 13 mm thick / approx. 74 kg/m ³ .	Hueintek Inc., S. Korea	19/2/2016	June 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire as that are not our requirement.
Acoustic Insulation (837)	"T-Max" Aluminium Foil Damping Sheet / Material : Aluminium foil adhered on one face of rubber / Thickness / Density : 2-3 mm thick / approx. 5 kg/m ² .	Hueintek Inc., S. Korea	19/2/2016	February 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire as that are not our requirement.
Thermal Insulation (841)	"K-Flex ST" Elastomeric Insulation Materials for Ductwork or Pipework used in Ventilating System / Brand Name : "K-Flex ST" / Material : 6mm, 10mm, 13mm, 19mm, 25mm, 32mm, 40mm, and 50mm thick black colour closed cell, nitrile rubber based elastomeric insulation foam products having a density of 65±10 Kg/m ³ .	L'isolante K-Flex (Suzhou) Company Limited (PRC)	6/4/2016	April 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Thermal Insulation (843)	"TANDA R140" Rockwool Insulation for use in Ventilating System / Brand Name : "TANDA R140" Rockwool / Material : A yellowish rockwool board using heat cured resin as fibre binding agent. / Thickness : 50mm Approx. / Density : 140 kg/m ³ Approx.	Dongguan Penghua Thermal Material Co., Ltd. Dongguan, Guangdong, PRC	2/3/2016	February 2021	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirement.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (848)	"Lucky-PIP" Pre-insulated Pipe System (Aluminium Jacket) / "Lucky-PIP" (CFC, HCFC, HCF Free) Pre-insulated Pipe (Aluminium Jacket) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.6 mm thick aluminium sheet and an insulation of 35 mm thick polyurethane foam (48 kg/m ³) machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	17/5/2016	April 2019	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirement.
Thermal Insulation (850)	Owens Corning Black DSF Faced Insulation Materials Used in Ventilating System / Brand/Model : "Owens Corning Fiberglass Insulation" Black DSF (Lamtee-763 BLACK) Faced Board/Pipe/Blanket type. / Material : Fiberglass board/pipe/blanket type insulation material laminated with black colour double sided aluminium foil (Lamtee-763 BLACK) / Thickness : 25-50 mm / Density : 24 kg/m ³ - 64 kg/m ³ .	Owens Corning (Guangzhou) Fiberglas Co., Ltd., PRC	17/5/2016	May 2021	No assessment was made on the density and toxicity of smoke generated by the materials under fire conditions as that are not our requirements.
Thermal Insulation (851)	"Armaflex Duct" Nitrile Based Elastomeric Insulation / Brand Name : "Armaflex Duct" / Thickness : 25 mm / Material : Closed cell elastomeric foam with aluminium foil laminated on one side, having a density of 40 to 65 kg/m ³ .	Armocell (Guangzhou) Limited, P.R.C.	24/5/2016	May 2021	No assessment was made on the density and toxicity of smoke generated by the materials under fire conditions as that are not our requirement.
Thermal Insulation (854)	"BBS" Rockwool Insulation / Material : A yellowish brown mineral wool sheet of 50mm thickness, having a nominal density between 40 kg/m ³ and 150 kg/m ³ .	Best Building Suppliers Company Ltd., PRC	26/5/2016	March 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Thermal Insulation (858)	"AFICO" Type 480 Fiberglass Duct Liner Insulation with Black Glass Tissue (BGT) Facing / Material : Uniformly textured inorganic glass fibers bonded together by a thermosetting resin and faced on one side with a black glass tissue. / Thickness / Density : 50 mm / 48 kg/m ³	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	21/6/2016	June 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Thermal Insulation (867)	"AFICO" Type 320 Fiberglass Insulation with FRK Aluminium Foil Facing / "AFICO" Type 320 Faced Duct Wrap / Material : Uniformly textured inorganic glass fibers bonded together by a thermosetting resin and faced on one side with an aluminium foil / Thickness / Density : 25 mm / 32 kg/m ³	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	26/7/2016	June 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Thermal Insulation (868)	"UniFiber®" Rockwool Insulation / Material : Rockwool without facing / Thickness / Density : 50 mm / 140 Kg/m ³	UniFiber Manufacturing Ltd., PRC	11/8/2016	July 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement. b) The product itself has no markings. However, details such as brand name, density and thickness are to be marked on its packing.
Thermal Insulation (876)	"AFICO" Fibreglass Duct Wrap (with PAL® DSF 818 Class 0, Double Sided Aluminium Foil Facing) for External Insulation of Ductwork in Ventilation System / "AFICO" Faced Duct Wrap with PAL® DSF 818 Class 0, Double Sided Aluminium Foil Facing / "AFICO" glasswool laminated on one side with PAL® DSF 818 Class 0, 8-layer double sided reinforced aluminium foil facing / Thickness / Density : 25 mm / 48 kg/m ³	Arabian Fiberglass Insulation Company Ltd., Saudi Arabia	29/9/2016	September 2021	No assessment was made on the density and toxicity of smoke generated by the product under fire.
Thermal Insulation (884)	"GOODEVER PF" Phenolic Foam Insulation with aluminium Foil Facing / Model : "GOODEVER PF" CFC and HCFC Free Phenolic Foam Insulation / Material : Phenolic foam insulation with a density of 40 kg/m ³ bonded on one side with 0.23 mm white antiglare coating doubled sided aluminium foil facing material using Ps 8109s adhesive / Thickness: 25 mm	Shenzhen Goodever Xinxing Building Material Co., Ltd., PRC	17/10/2016	October 2021	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirement.

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Thermal Insulation (891)	"Insulflex" Closed Cell Nitrile Rubber Insulation Foam / "Insulflex" / Black coloured closed cell nitrile rubber insulation material / Thickness and Density : 25 mm, 100 kg/m ³	Insulflex Corporation Sdn Bhd, Malaysia	22/11/2016	October 2021	No assessment was made on the density and toxicity of smoke generated by the product under fire as that are not our requirements.
Thermal Insulation (902)	"P-flex®" Class '0' Flexible Elastomeric Insulation Thickness/Density of 50mm / 50-65 kg/m ³	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	29/12/2016	November 2021	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirement. No assessment was made on whether the material used is CFCs and HCFCs free.
Thermal Insulation (903)	"BBS" Rockwool Insulation / Material : A yellowish brown mineral wool sheet of 40mm thickness, having a nominal density 140 kg/m ³ .	Best Building Suppliers Company Ltd., PRC	29/12/2016	November 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Thermal Insulation (904)	"Lucky-PIP" Pre-insulated Pipe System (Aluminium Jacket) without Penetration of Fire Barrier / "Lucky-PIP" (CFC, HCFC, HCF Free) Pre-insulated Pipe (Aluminium Jacket) Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.6 mm thick with interlocking seam and an insulation of 35 mm thick polyurethane foam (48 kg/m ³) machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	29/12/2016	April 2019	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirement. No assessment was made on whether the material used is CFC HCFC and HCF free.
Thermal Insulation (912)	"Wincell® W0" Closed Cell Thermal Insulation Material Brand / Model: Wincell® W0 Thickness/ Density: 20mm / 60Kg/m ³ ±5Kg/m ³ Application: For use as insulation of ventilation ductwork and pipework.	Jiangsu Zhaoseng Building Material Co. Ltd., PRC.	1/2/2017	December 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirements.
Aluminium Foil Tape (919)	"Best Bond" BB388 Self Adhesive Aluminium Foil Tape / Bright aluminium foil with a nominal thickness of 30 micron coated with flame retardant acrylic adhesive / For sealing of joints in aluminium foil facing of insulated pipe work and ductwork in ventilating system.	Meriton East (HK) Ltd., PRC	3/3/2017	February 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire as that are not our requirements.
Thermal Insulation (928)	"AFICO" Fiberglass Insulation / Fiberglass wool insulation with doubled sided aluminium foil vapour barrier / Thickness / Density : 50 mm / 48 kg/m ³ .	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	5/4/2017	March 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The product itself has no markings, however details such as brand name, density and thickness are to be marked on its packing.

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Aluminium Foil Facing (929)	UniFiber® Fiberglass Insulation with PAL® DSF 818 Class "0" Double Sided Aluminium Foil Facing / Fiberglass wool Insulation with doubled sided aluminium foil vapour barrier / Thickness / Density : 50mm / 64 kg/m ³	UniFiber Manufacturing Ltd., PRC	5/4/2017	March 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement. b) The product itself has no markings, however, details such as brand name, density and thickness are to be marked on its packing.
Acoustic Attenuator (940)	"AES" Rectangular Acoustic Attenuator Construction: The casing of the attenuator is constructed from 6mm to 10mm thick galvanized steel plate with a folded joint along one edge of the unit sealed with silicone mastic sealant. The splitter is fabricated from 0.8mm thick galvanized perforated steel sheet with "Owens Corning" fibreglass insulation of density of approximate 40kg/m ³ packed under 10% compression as infill material/ Cross Section Area: Maximum 4,000 mm x 4,000 mm.	Acoustic Engineering Services (UK) Ltd., PRC	23/5/2017	May 2021	
Thermal / Acoustic Insulations (944)	"TANADA R100 Rockwool" / Material : Yellow rockwool board having a density of 100 kg/m ³ and thickness of 50mm.	Dongguan Penghua Thermal Material Co. Ltd., PRC	18/9/2015	September 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire as that are not our requirements.
Thermal Insulation (947)	Phenotherm™ Phenolic Foam Insulation with PAL® SSF 515 Aluminium Foil Facing / Brand Name: Phenotherm™ CFCs & HCFCs Free Phenolic Foam Insulation with PAL® SSF 515 Aluminium Foil Facing / Material: CFCs & HCFCs Free Phenolic Foam Insulation material having a thickness of 25 mm and a density of 40 Kg/m ³ with PAL® SSF 515 5-layers Single Sided Reinforced Aluminium Material Facing.	Dongguan Juwun Rubber & Plastic Products Co. Ltd., PRC	2/6/2017	May 2022	No assessment was made on the density and toxicity of smoke generated by the material under fire as that are not our requirements.
Thermal Insulation (955)	"Lucky-PIP" CFC Free Pre-insulated Pipe System (Aluminium Jacket) without Penetration of Fire Barrier. / Construction: Piping system comprising a basic metal carrier pipe with an aluminium outer jacket of minimum 0.6 mm thick with interlocking seam and an insulation of 35 mm thick polyurethane foam (48 kg/m ³) in milky yellow colour machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	7/7/2017	June 2022	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirement. .
Thermal Insulation (958)	Class 0 "Armaflex" Closed cell Nitrile-based Elastomeric Insulation Materials/ Armacell Armaflex / Thickness/Density: 6mm, 9mm, 13mm, 19mm, 25mm, 30mm, 32mm 40mm and 50mm having density of 65 kg/m ³ Approx.	Armacell (Guangzhou) Limited, P.R.C.	21/7/2017	June 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements.

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Thermal Insulation (983)	"Lucky-PIP" Pre-insulated Pipe System (Grade 304 Stainless Steel Jacket) / Brand : Lucky-PIP / Model : CFC/HCFC/HCF Free Pre-insulated Pipe (Grade 304 Stainless Steel Jacket) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick grade 304 stainless steel and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration: The carrier pipe with a metal outer of 0.5mm thick grade 304 stainless steel and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G. I. , C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 20mm thick "Superwool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	27/11/2017	March 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC/HCFC/HCF free.. c) This letter supersedes our letter of the same series dated 6.12.2011 on the same product.
Thermal Insulation (985)	"Lucky-PIP" Pre-insulated Pipe System (Galvanized Steel Jacket) / Brand : Lucky-PIP / Model : CFC Free Pre-insulated Pipe (Galvanized Steel Jacket) / Construction: Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick galvanised steel, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick galvanised steel and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick "Super Wool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	27/11/2017	March 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC free. c) This letter supersedes our letter of the same series dated 6.12.2011 on the same product.
Thermal Insulation (986)	"K-Flex Class 1" Elastomeric Insulation Material for Ventilating System / Brand Name : K-Flex Class 1 / Material : A closed cell, nitrile rubber based elastomeric insulation foam product with a color reference black / Thickness and Density : Thickness ≤50mm and 65±10kg/m ³ / Application: For external insulation of ductwork or pipework	L'Isolante K-Flex (Suzhou) Co., Ltd., PRC	30/11/2017	May 2021	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) This assessment letter supersedes our previous one of the same series dated 22.10.2012.

Approved and Acceptance Material List

VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

Note: For details of the acceptance criteria / conditions, please refer to the acceptance letters issued to the manufacturers / suppliers

TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (988)	"Lucky-PIP" Pre-insulated Pipe System (Galvanized Steel Jacket) / Brand : Lucky-PIP / Model : CFC/HCFC/HCF Free Pre-insulated Pipe (Galvanized Steel Jacket) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick galvanised steel, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick galvanised steel and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick "Super Wool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	30/11/2017	April 2019	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC/HCFC/HCF free c) This letter supersedes our letter of the same series dated 5.11.2013 on the same product.
Thermal Insulation (991)	"Lucky-PIP" Pre-insulated Pipe System (Aluminium Jacket) / Brand : Lucky-PIP / Model : CFC Free Pre-insulated Pipe (Aluminium Jacket) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.6mm thick aluminium, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48 kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.6mm thick aluminium and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a C-channel with sizes of 38mm by 72mm by 6mm thick and fixed by a steel clamp located 310mm away from the concrete wall fixed by a steel clamp with 2 nos. of M9x50mm long screws. The C-channel was fixed to a 48mm by 100mm by 6mm thick channel by 2 nos. of M16x 870mm long bolts on each side. The surround section of approximately 300 mm deep which penetration through the wall frame, sandwiched by 6mm thick mild steel sleeve, is wrapped by 15 mm thick "Superwool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	14/12/2017	March 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC free c) This letter supersedes our letter of the same series dated 30.9.2016 on the same product.
Thermal Insulation (993)	"Lucky-PIP" Pre-insulated Pipe System (Galvanized Steel Jacket) / Brand : Lucky-PIP / Model : CFC Free Pre-insulated Pipe (Galvanized Steel Jacket) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick galvanised steel, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick galvanised steel and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick "Super Wool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	22/12/2017	March 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC free c) This letter supersedes our letters of the same series dated 6.12.2011 and 27.11.2017 on the same product.

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (995)	"Byucksan Rockwool" Thermal Insulation / Brand Name : "Byucksan Rockwool" Thermal Insulation / Material : A yellowish brown mineral wool sheet having a thickness of 50 mm and a nominal density of 100 kg/m ³ / Application : For internal and external insulation of ventilation ductwork	Byucksan Young Dong Factory, South Korea	18/12/2017	November 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement. b) This assessment letter supersedes our previous one of the same series dated 15.10.2012 .
Thermal Insulation (997)	"AFICO" Fibreglass Duct Wrap with PAL [®] DSF 818 Class 0, Double Sided Aluminium Foil Facing for External Insulation of Ductwork in Ventilating System / Brand/Model : "AFICO" Faced Duct Wrap with PAL [®] DSF 818 Class 0 Double Sided Aluminium Foil Facing / Material : "AFICO" glasswool laminated on one side with PAL [®] DSF 818 Class 0, 8-layer double side reinforced aluminium foil facing / Thickness /Density : 25 mm / 32 kg/m ³	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	15/12/2017	October 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirement. b) This assessment letter supersedes our previous letter of the same series dated 6.2.2013.
Thermal Insulation (998)	"Lucky-PIP" Pre-insulated Pipe System (Stainless Steel Jacket Grade 316) / Brand : Lucky-PIP / Model : CFC, HCFC, HCF Free Pre-insulated Pipe (Stainless Steel Jacket Grade 316) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick stainless steel, and an insulation of 10-400 mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick stainless steel grade 316 and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick "Super Wool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	14/12/2017	April 2019	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC, HCFC, HFC free. c) This letter supersedes our letter of the same series dated 1.3.2011 on the same product.

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LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (999)	"Lucky-PIP" Pre-insulated Pipe System (Stainless Steel Jacket Grade 316) / Brand : Lucky-PIP / Model : CFC Free Pre-insulated Pipe (Stainless Steel Jacket Grade 316) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick stainless steel, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick stainless steel grade 316 and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick "Super Wool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	14/12/2017	March 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC free. c) This letter supersedes our letter of the same series dated 9.1.2012 on the same product.
Thermal Insulation (1000)	"Lucky-PIP" Pre-insulated Pipe (Stainless Steel Jacket Grade 304) / Brand : Lucky-PIP / Model : CFC Free Pre-insulated Pipe (Stainless Steel Jacket Grade 304) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick stainless steel (grade 304), and an insulation of 35mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick stainless steel grade 304 and an insulation of 35mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a C-channel with sizes of 80mm by 40mm by 4mm thick and held in position by steel clamps which were fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 500mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 40 mm thick "Super Wool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	14/12/2017	November 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC free. c) This letter supersedes our letter of the same series dated 10.1.2012 on the same product.
Thermal Insulation (1009)	"Lucky-PIP" Pre-insulated Pipe System (Galvanized Steel Jacket) / Brand: Lucky-PIP / Model: CFC/HCFC/HCF Free Pre-insulated Pipe (Galvanised Steel Jacket) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick galvanised steel, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick galvanised steel and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick "Super Wool 607" ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting	Link The Best Company Ltd., Hong Kong	31/1/2018	April 2019	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC/HCFC/HCF free. c) This letter supersedes our letters of the same series dated 5.11.2013 and 30.11.2017 on the same product.

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VENTILATION DIVISION OF FIRE SERVICES DEPARTMENT

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1011)	"Isophen" CFC Free Phenolic Foam Insulation / Material : CFC free phenolic foam insulation material with factory applied reinforced aluminum foil facing / Density and Thickness : 80 kg/m ³ & 120 kg/m ³ , 25mm	Isotherm Ltd., Hong Kong	5/2/2018	October 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire. b) This letter supersedes our previous one of the same series dated 4 February 2013.
Thermal Insulation (1017)	"Isophen" CFC & HCFC Free Phenolic Foam Insulation / Material : CFC & HCFC free phenolic foam insulation material with aluminium foil facing / Density and Thickness: 40 kg/m ³ , 25 mm / Application : For external and internal insulation of pipework and ductwork	Isotherm Ltd., Hong Kong	9/4/2018	August 2022	a) This assessment letter supersedes our previous one of the same series dated 27.11.2012.
Acoustic insulation (1019)	"Sargents" SILDUCT Silencer / Model : SILDUCT duct mounted attenuators / Construction : 0.55 mm thick perforated galvanized sheets front and back skins with fibreglass wool infill material wrapped by a 23 micron "Melinex" film; 0.8 mm thick galvanized steel sheet perimeter casing	Luen Wah Machine Welding & Iron Works Co., Ltd., PRC	17/4/2018	December 2027	a) The fibreglass wool infill material of the attenuator shall be of a type conforming to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96. b) This assessment letter supersedes our previous one of the same series dated 23.10.2015.
Thermal Insulation (1020)	"LAH /WTC 008" Fiber Glass Cloth Acoustic/Insulation Material / Brand / Model : "LAH/WTC008" / Material : Fiber glass cloth in 0.08mm thick and density approximately 92g/m ² / Application : For use as internal insulation of ventilating ductwork	Shen Zhen Sailong Fiber Glass Co., Ltd., PRC	19/4/2018	August 2026	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements.
Thermal Insulation (1022)	"PHENOTHERM TM " Phenolic Foam Insulation Supports c/w "PAL [®] DSF 818" 8-Layers Double Sided Aluminium Foil Facing / Model : "PHENOTHERM TM " phenolic foam supports with "PAL [®] DSF 818" double sided reinforced aluminium foil facing / Material : CFC and HCFC free phenolic foam insulation material with 8-layers double sided reinforced aluminium foil vapour barrier / Density 120 kg/m ³ / Thickness : 25 mm / Application : Insulation supports for ventilation ductwork and pipework	Phenotherm Asia Ltd., PRC	24/5/2018	March 2028	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) The packing of the insulation materials should bear the Brand Name of the products. c) This assessment letter supersedes our previous one of the same series 3.4.2013.
Thermal Insulation (1023)	"PHENOTHERM TM " Phenolic Foam Insulation Supports c/w "PAL [®] DSF-Black 818" 9-Layers Double Sided Aluminium Foil Facing / Model : "Phenotherm TM " phenolic foam supports with "PAL [®] DSF-Black 818" double sided aluminium foil facing / Material : CFC and HCFC free phenolic foam insulation material with 9-layers double sided reinforced aluminium foil vapour barrier in black colour coating / Density 120 kg/m ³ / Thickness : 25 mm	Phenotherm Asia Limited., PRC	24/5/2018	March 2028	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) The packing of the insulation materials should bear the Brand Name of the products.
Acoustic Insulation (1024)	"Wincell" Internal Thermal / Acoustic Insulation / Brand / Model : Wincell / Wincell W0 / Material : NBR (nitrile-butadiene rubber) Closed Cell Thermal Insulation Material / Thickness/ Density : 20 mm / 60kg/m ³ ±5kg/m ³	Jiangsu Zhaosheng Building Material Co., Ltd., PRC	24/5/2018	January 2023	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirements.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1031)	"Owens Corning" EcoTech® Blanket Fibreglas Insulation" with 763 Black DSF Facing / Brand/Model : "EcoTouch Blanket Fibreglas Insulation" with 763 Black DSF facing material / Material : "EcoTouch" blanket type fiberglass insulation material laminated with DSF 763 facing on one side comprising of 763 Black DSF facing with Polymeric coating/Fiberglass / Density: 24 - 48 kg/m ³ / Thickness : 25 - 50 mm / Application : For external insulation of ventilation ductwork	Owens Corning (Guangzhou) Fibreglas Co., Ltd., PRC	9/7/2018	May 2027	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements.
Thermal Insulation (1032)	"Owens Corning Fibreglas Insulation" Laminated with FSK (Board/Pipe Type) / Brand/Model : "Owens Corning Fibreglas Insulation" FSK Faced Board/Pipe Type material / Material : Fiberglass board/pipe type insulation material laminated on one side with FSK vapor barrier / Density: 32 - 64 kg/m ³ / Thickness : 25 - 50 mm / Application : For external insulation of ventilation ductwork or pipework	Owens Corning (Guangzhou) Fibreglas Co., Ltd., PRC	9/7/2018	May 2021	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) This assessment letter supersedes our previous one of the same series dated 22.10.2012
Thermal Insulation (1033)	"Owens Corning" Fibreglass Insulation" Laminated with FSK (Blanket Type) / Brand/Model : "Owens Corning Fibreglas Insulation" FSK Faced Blanket Type material / Material : Fiberglass blanket type insulation material laminated on one side with FSK Vapor Barrier / Density: 24 - 48 kg/m ³ / Thickness : 25 - 50 mm / Application : For external insulation of ventilation ductwork	Owens Corning (Guangzhou) Fibreglas Co., Ltd., PRC	9/7/2018	June 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) This assessment letter supersedes our previous one of the same series dated 22.10.2012
Thermal Insulation (1035)	"Teembase" Pre-insulated Pipe System / Product : "Teembase" Pre-insulated Pipe / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.6 mm thick Stainless Steel (Grade 304), Galvanized Steel or Aluminium Sheet and an insulation of 15 - 75 mm thick polyurethane foam (48 kg/m ³) machine -injected between the carrire pipe and outer jacket.	Teembase Development Ltd.	20/7/2018	September 2020	a) No assessment was made on the density and toxicity of smoke generated by the assembly under fire. b) A valid assessment report on the wall penetration seal shall be maintained. c) This assessment letter supersedes our previous one of the same series dated 20.11.2013
Thermal Insulation (1036)	"Insul Cold™" Elastomeric Insulations Materials for Ventilation System / Brand : Insul Cold™ / Density : 40 kg/m ³ - 50 kg/m ³ / Thickness : 25 mm	Owens Corning (China) Investment Co. Ltd	20/7/2018	September 2027	a) No assessment was made on toxicity of smoke generated by the material under fire. b) The packing of the product should bear the Brand Name of the product
Thermal Insulation (1040)	"KFX" Series Insulated Pipe Support System / Brand Name : KFX / Material : Rigid polyurethane perimeter surrounded by 20mm thick x 200kg/m ³ K-Flex flexible elastomeric insulation foam. The exposed surfaces are laminated with 0.2mm thick double-sided aluminum foil and fully enclosed by a 0.8mm thick galvanized iron sheet painted black / Size : a) Length of support assembly: 60mm to 190mm b) Inner diameter of ventilation pipe-work: 15mm to 610mm	Kaimans Insulation & A/C Parts Limited, Hong Kong	9/8/2018	July 2027	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement. b) The exposed surfaces of the insulation materials shall be fully enclosed by a 0.8mm thick galvanized iron sheet. c) This assessment letter supersedes our previous one of the same series dated 21.1.2013

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1045)	"ROCKWOOL®" ThermalRock / Rock Tech Thermal Insulation for Mechanical Ventilating Systems / Brand Name / Model : (a) Rockwool® ThermalRock S (Slab): S60, S80, S100 and S140 (b) Rockwool® RockTech Slab Series: S350, S450 S650, / Material : Stonewool Board material made of basalt, a volcanic stone / Thickness : 50mm / Density : 60kg/m ³ , 80kg/m ³ , 100kg/m ³ and 140kg/m ³ / Application : For acoustic or thermal insulation in ventilation ductwork in ventilating systems	Rockwool Fireseal Insulation (Guangzhou) Co., Ltd., PRC	31/8/2018	December 2027	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on the composition / information on the ingredients of the material.
Thermal Insulation (1046)	"AFICO" Glasswool (Mineral Wool) with WGF (Black Woven Glass Fabric) Facing for Air Duct Internal Lining / Product Name : Duct Liner, Mechanical Boards / Material : Mineral wool with water based adhesive and woven glass fabric (WGF) / Thickness / Density : 50 mm / 48 kg/m ³	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	5/9/2018	April 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (1047)	"PHENOTHERM" Phenolic Foam Insulation with "PAL® DSF-Black 818" Aluminium Foil Facing for Pipework and Ductwork Insulation / Material : A composite insulation material comprising "Phenotherm" closed cell phenolic foam faced with "PAL® DSF-Black 818" (9-layers) double sided reinforced aluminium foil facing / Density and thickness : " 40 kg/m ³ ; 25 mm thick / Application : Insulation of ventilation duct work and pipe work	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	4/9/2018	August 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand Name of the products. c) This assessment letter supersedes our previous one of the same series dated 12.12.2014.
Thermal Insulation (1051)	"Durkflex® FG" Nitrile Rubber Insulation Material / Brand Name : "Durkflex® FG" / Material : Black coloured closed cell elastomeric thermal insulation material comprising of nitrile butadiene rubber / Thickness and Density : 25 mm between 50 - 65kg/m ³ 32 mm between 50 - 65kg/m ³ 40 mm between 45 - 60kg/m ³ 50 mm between 45 - 60kg/m ³	Durkee (Wuhan) Insulation Material Co., Ltd., P.R.C.	4/9/2018	April 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) The product shall bear the marking "Durkflex® FG" as a means of identification. c) This assessment letter supersedes our previous one of the same series dated 30.4.2013
Thermal Insulation (1054)	"Phenotherm™" Phenolic Foam Pre-insulated Panel For Construction of Air Ducts / Model : Phenotherm™ phenolic foam / Material : A composite insulation panel comprising a phenolic foam core having a density 60kg/m ³ bonded on both sides with embossed aluminum foil of a thickness ≥ 0.05mm using PAL® IA811 adhesive / Overall Thickness 21 mm	Dongguan Juwun Rubber & Plastic Products CO., Ltd.	17/9/2018	September 2020	a) No assessment was made on the density and toxicity of smoke generated by the product under fire. b) The use of Pre-Insulated Panels shall be referred to the application in the appendix of FSD Circular Letter No. 1/2014. c) The use of Pre-Insulated Panels shall not be permitted for construction of air ducts in Mechanical Ventilating System in Scheduled Premises.
Thermal Insulation (1055)	"Fiberflex" Composite Elastomeric Thermal Insulation / Model : "Fiberflex" Composite Elastomeric Thermal Insulation with fire resistant surface / Material : Elastomeric Composite Thermal Insulation materials with fire-resistant surface (approx. 0.3mm thick) on one face and having a thickness and density of a) 13mm / 58kg/m ³ b) 19mm / 90kg/m ³ c) 25mm / 71kg/m ³ / Application : For external insulation of ventilation ductwork and pipework	Durkee (Wuhan) Insulation Material Co., Ltd., PRC	4/9/2018	September 2027	a) No assessment was made on the density and toxicity of smoke generated by the materials under fire conditions as that are not our requirement.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1064)	"Lucky-PIP" Pre-insulated Pipe System (Stainless Steel Jacket Grade 316) / Brand : Lucky-PIP / Model : CFC, HCFC, HCF Free Pre-insulated Pipe (Stainless Steel Jacket Grade 316) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick stainless steel, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick stainless steel grade 316 and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting.	Link The Best Company Ltd., Hong Kong	5/11/2018	May 2026	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC, HCFC, HCF free. c) This letter supersedes our letter of the same series dated 14.12.2017 on the same product.
Thermal Insulation (1065)	"Lucky-PIP" Pre-insulated Pipe System (Galvanized Steel Jacket) / Brand : Lucky-PIP / Model : CFC/HCFC/HCF Free Pre-insulated Pipe (Galvanized Steel Jacket) / Construction : Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5mm thick galvanised steel, and an insulation of 10-400mm thick polyurethane foam (milky yellow, 48kg/m ³) machine-injected between the carrier pipe and outer jacket. / Wall Penetration : The carrier pipe with a metal outer of 0.5mm thick galvanised steel and an insulation of 65mm thick polyurethane foam with density of 48kg/m ³ filled between the carrier pipe and outer jacket. The whole assembly is supported by a G.I. C-channel with sizes of 100mm by 50mm by 5mm thick and held in position by steel clamps which was fixed to the C-channel by 2 nos. of M12 bolt and nuts located at nominal 300mm away from the concrete wall on both exposed and unexposed sides. The C-channel was hung to a supporting steel beam stand by M12 threaded rods. The surround section of approximately 300 mm deep which penetration through the wall frame is wrapped by 15 mm thick ceramic fibre with density of 128 kg/m ³ and covered by cement sand grouting.	Link The Best Company Ltd., Hong Kong	5/11/2018	May 2026	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) No assessment was made on whether the product materials used are CFC/HCFC/HCF free. c) This letter supersedes our letter of the same series dated 31.1.2018 on the same product.
Thermal Insulation (1068)	"Kooltherm" HCFC Free Phenolic Foam Insulation with Aluminium Reinforced Foil Laminate / Brand Name : Kooltherm / Density : 37, 60, 80, 120 kg/m ³ / Thickness : 25 mm / Material : HCFC free, closed cell rigid Phenolic foam insulation faced with aluminium reinforced foil laminate / Application : For the external insulation of ventilation pipework and ductwork	Kingspan Tarec Industrial Insulation NV, Belgium	14/11/2018	January 2028	a) No assessment was made on the toxicity of smoke generated by the material under fire.
Thermal Insulation (1070)	"ECO-PIP" Pre-insulated pipes (PIP) material for Pipe assembly of steel service pipe, PU terminal and casting / Brand : "ECO-PIP" / Thickness : 50 mm (PU terminal) / Casting : Galvanized sheet	Tai Shan Xian'Guang Building Material Co. Ltd	14/11/2018	December 2026	a) No assessment was made on density and toxicity of smoke generated by the material under fire. b) The packing of the product should bear the Brand Name of the product. c) This letter supersedes our previous one of the same series dated 6.11.2018 (item 1067)
Thermal Insulation (1081)	"WING ONN PF" Phenolic Foam Insulation with Aluminium Foil Facing / Material : Phenolic foam insulation with a density of 40kg/m ³ bonded on one side with 0.2 mm "S-series" reinforced double sided aluminium foil facing material using Ps8109s adhesive / Thickness : 25 mm / Application : For external insulation of pipework and ductwork	Huizhou Yong Liang Xinxing Building material Co., Ltd., Shenzhen, PRC	27/12/2018	September 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition as that is not our requirement.

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LIST OF ACCEPTED MATERIALS FOR USE IN VENTILATING / FIRE SERVICE RELATED SYSTEMS

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1084)	"GOODEVER PF" Phenolic Foam Insulation with Aluminium Foil Facing / Material : Phenolic foam insulation with a density of 40kg/m ³ bonded on one side with 0.2 mm "S-series" reinforced double sided aluminium foil facing material using Ps8109s adhesive / Thickness : 25 mm / Application : For external insulation of pipework and ductwork	Huizhou Yong Liang Xinxing Building material Co., Ltd., PRC	27/12/2018	April 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition as that is not our requirement.
Thermal Insulation (1085)	"WING ONN PF" Phenolic Foam Insulation with Aluminium Foil Facing / Material : Phenolic foam insulation with a density of 40kg/m ³ bonded on one side with 0.2 mm "S-series" reinforced double sided aluminium foil facing material using Ps8109s adhesive / Thickness : 25 mm / Application : For external insulation of pipework and ductwork	Huizhou Yong Liang Xinxing Building material Co., Ltd., Shenzhen, PRC	27/12/2018	September 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition as that is not our requirement.
Thermal Insulation (1086)	"UniFiber [®] " Fiberglass Insulation Material with "PAL [®] SSF 515" Aluminium Foil Facing / Product Name & Material : "UniFiber [®] " fiberglass with 5-layer single sided "PAL [®] SSF 515" reinforced aluminium foil facing / Density / Thickness : 64 kg/m ³ / 50 mm / Application: For <u>external insulation</u> of ventilating ductwork and pipework in ventilating systems	UniFiber Manufacturing Ltd., PRC	27/12/2018	October 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition as that is not our requirement.
Thermal Insulation (1088)	"PHENOTHERM [™] " Phenolic Foam Insulation Supports c/w "PAL [®] DSF-Black 818" 9-Layer Double Sided Aluminium Foil Facing / Model : "PHENOTHERM [™] " phenolic foam supports with "PAL [®] DSF-Black 818" double sided reinforced aluminium foil facing / Material : CFC and HCFC free phenolic foam insulation material with 9-layer double sided reinforced aluminium foil vapour barrier / Density 80 kg/m ³ / Thickness : 25 mm / Application : Insulation supports for ventilation ductwork and pipework	Phenotherm Asia Ltd., PRC	24/1/2019	October 2028	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) The packing of the insulation materials should bear the Brand Name of the products. c) This letter supersede our previous one of the same series dated 16 January 2019. d) This assessment is subject to review by October 2028 or with the updating of the edition of the test standard. (Item 1087)
Thermal Insulation (1090)	"Owens Corning Fibreglass Insulation" Laminated with DSF (Blanket Type) / Brand/Model : "Owens Corning Fibreglass Insulation" DSF Faced Blanket Type material / Material : Fiberglass blanket type insulation material laminated on one side with DSF (Lamtec-763) double sided aluminum foil / Density ; 24 - 48 kg/m ³ / Thickness : 25 - 50 mm / Application : For external insulation of ventilation ductwork	Owens Corning (China) Investment Co., Ltd., PRC	20/2/2019	August 2021	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions. b) This assessment letter supersedes our previous one of the same series dated 22.10.2012 c) This assessment is subject to review by August 2021 or with the updating of the edition of the test standard.
Thermal Insulation (1091)	"Owens Corning Fibreglass Insulation" Laminated with DSF (Board/Pipe Type) / Brand/Model : "Owens Corning Fibreglass Insulation" DSF Faced Board/Pipe Type material / Material : Fiberglass board/pipe type insulation material laminated on one side with DSF (Lamtec-763) double sided aluminium foil / Density ; 32 - 64 kg/m ³ / Thickness : 25 - 50 mm / Application : For external insulation of ventilation ductwork	Owens Corning (China) Investment Co., Ltd., PRC	20/2/2019	August 2021	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions. b) This assessment letter supersedes our previous one of the same series dated 22.10.2012 c) This assessment is subject to review by August 2021 or with the updating of the edition of the test standard.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1098)	"Owens Corning" Fiberglass Insulation Duct Liner Board with Black Glass Tissue (BGT) Facing / Brand/Model " "Owens Corning" Fiberglas Duct Liner / Material : Fiberglas duct liner board with Black Glass Tissue (BGT) facing / Thickness / Density : 25 mm / 32 kg/m ³ 50 mm / 64 kg/m ³ / Application : For internal lining of ventilating ductwork	Owens Corning (Guangzhou) Fiberglas Co., Ltd., PRC	17/4/2019	July 2023	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This assessment letter supersedes our previous one of the same series dated 16.4.2014.) This assessment is subject to review by July 2023 or with the updating of the edition of the test standard.
Thermal Insulation (1099)	Phenotherm TM Phenolic Foam Insulation Supports c/w PAL [®] DSF818 8-Layers Double Sided Aluminium Foil Facing, Insulation Support for Ventilation Ductwork and Pipework / Brand Name : Phenotherm TM Phenolic Foam Insulation Supports c/w PAL [®] DSF818 8-Layers Double Sided Aluminium Foil Facing / Density : 80 kg/m ³ / Thickness : 25 mm / Material : CFCs & HCFCs free phenolic foam insulation with 8-Layers Double Sided Reinforced Aluminium Foil Facing / Application : For the insulation supports of ventilation pipework and ductwork	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	2/5/2019	November 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by November 2028 or with the updating of the edition of the test standard.
Thermal Insulation (1103)	"Durkflex [®] FG" Nitrile Rubber Insulation Material / Brand Name : "Durkflex [®] FG" / Material : Closed cell nitrile based elastomeric thermal insulation material comprising of nitrile butadiene rubber / PVC and with a colour reference "Black" / Thickness and Density : 9 mm and 62 kg/m ³	Durkee (Wuhan) Insulation Material Co., Ltd, P.R.C.	9/5/2019	January 2029	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) The product shall bear the marking "Durkflex [®] FG" as a means of identification. c) This assessment letter supersedes our previous one of the same series dated 5.7.2011. d) This assessment is subject to review by January 2029 or with the updating of the edition of test standard.
Thermal Insulation (1104)	"UniFiber" Rockwool Insulation with Density 100 kg/m ³ Thickness 50mm / Product Name : "UniFiber" Rockwool Insulation / Material : Rockwool without facing / Thickness / Density : 50 mm / 100 kg/m ³ / Application : For internal lining of ventilating ductwork	UniFiber Manufacturing Ltd., PRC	16/5/2019	February 2029	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) The product itself has no markings. However, details such as brand name, density and thickness are to be marked on its packing. c) This assessment letter supersedes our previous one of the same series dated 11.8.2016. d) This assessment is subject to review by February 2029 or with the updating of the edition of the test standard.
Thermal Insulation (1114)	P-flex [®] Class '0' Flexible Elastomeric Insulation c/w PAL [®] DSF818 Class '0' Aluminium Foil Facing for Ductwork and Pipework Insulation / Brand Name : P-flex [®] Class '0' Flexible Elastomeric Insulation c/w PAL [®] DSF818 Class '0' Aluminium Foil Facing / Density : 50 - 65 kg/m ³ / Thickness : 25 mm / Material : P-flex [®] Class '0' Flexible Elastomeric Insulation with PAL [®] DSF818 8-layers double sided reinforced Aluminium Foil Facing / Application : For the insulation of ventilation pipework and ductwork	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	30/5/2019	July 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by July 2028 or with the updating of the edition of the test standard.
Thermal Insulation (1119)	"Insulflex" Closed Cell Nitrile Rubber Insulation Foam / Brand Name : Insulflex / Density : 65 - 80 kg/m ³ / Thickness : 32 mm / Material : Closed Cell Nitrile Rubber Insulation Foam / Application : For the insulation of ventilation pipework and ductwork	Insulflex Corporation SDN BHD, Malaysia	9/7/2019	May 2028	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by May 2028 or with the updating of the edition of the test standard.

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Thermal Insulation (1126)	"Armafix" Insulated Pipe Hanger / Brand Name : "Armafix" / Material : Armaflex insulation embedded PUR loading segments and covered with the outer shell metal jacket / Application : Insulation support in ventilating system	Armocell (Guangzhou) Limited, PRC	19/7/2019	April 2029	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) The product should bear appropriate marking as a means of identification
Thermal Insulation (1127)	"INSUL-PHEN" CW701 Self-Adhesive Glass Cloth Aluminium Foil / Brand Name : INSUL-PHEN "CW-701" / Thickness : 0.24 mm / Material : 240 micro thick glass cloth aluminium foil on one side and the other side coated with acrylic adhesive / Application : Sealing of joints in ventilation duct work or pipe work	INSUL-PHEN Insulation Ltd., PRC / Jiangyin Meiyuan Industries Corporation	26/7/2019	February 2024	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by Feb. 2024 or with the updating of the edition of the test standard.
Thermal Insulation (1128)	"SEKISUI" Thermobreak Sheet Closed Cell Polyefin Foam with Reinforced Aluminium Foil And backed with Pressure Sensitive Adhesive Tape / Brand/Model : "Thermobreak" / Material : A closed cell polyethylene foam insulation material, in sheet form with applied reinforced aluminium foil and backed with pressure sensitive adhesive tape / Thickness / Density : 12mm or 25 mm / 24 - 50 kg/m ³ / Application : For external insulation of ventilating ductwork	Thai Sekisui Foam Co., Ltd., Thailand	26/7/2019	November 2024	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This assessment is subject to review by November 2024 or with the updating of the edition of the test standard.
Thermal Insulation (1130)	"K-Flex" Insulated Pipe Support / Brand Name : "K-Flex" Pipe Support / Material : Insulated pipe support comprising of rigid polyurethane with a density of 160 - 250 kg/m ³ , surrounded by 25mm thick K-Flex flexible elastomeric insulation foam laminated with 0.1 mm thick double-sided aluminium foil facing and K-Flex protective IN cladding, bonded with K - Flex 428 glue. / Application : Insulation support for pipe work in ventilating system	L' Isolante K-Flex (Suzhou) Company Limited, PRC	29/7/2019	February 2029	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This letter supersedes our previous one of the same series dated 16.7.2019
Thermal Insulation (1134)	"EVERTHERM" Phenolic Foam Insulation Materials (120Kg/m ³) for Pipework and Distribution Ductworks / Brand/Model : "Evertherm " Phenolic Foam with aluminium foil facing / Material : A closed cell phenolic foam insulation material with aluminium foil facing / Thickness / Density : 25 mm / 120 kg/m ³ / Application : For external insulation of ventilating ductwork and pipework	Evertherm Insulation Hong Kong Ltd., HK	19/8/2019	February 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This assessment is subject to review by February 2022 or with the updating of the edition of the test standard.
Thermal Insulation (1135)	"EVERTHERM" Phenolic Foam Insulation Materials (40Kg/m ³) for Pipework and Distribution Ductworks / Brand/Model : "Evertherm " phenolic foam with aluminium foil facing / Material : A closed cell phenolic foam insulation material with aluminium foil facing / Thickness / Density : 25 mm / 40 kg/m ³ / Application : For external insulation of ventilating ductwork and pipework	Evertherm Insulation Hong Kong Ltd., HK	19/8/2019	May 2029	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This assessment is subject to review by May 2029 or with the updating of the edition of the test standard.
Thermal Insulation (1137)	"Owens Corning" Thermafiber® FireSpan® Insulation Materials used in Ventilating System / Brand/Model : "Owens Corning" Thermafiber® FireSpan® Insulation Materials / Material : Rockwool with aluminium foil facing / Thickness / Density : 50 - 100 mm / 60 - 140 kg/m ³ / Application : For external insulation and internal lining of ventilating ductwork	Owens Corning (Guangde) Rock Wool Manufacturing Co., Ltd.	11/9/2019	July 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition.

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Thermal Insulation (1139)	Sheet Steel Ductwork Protected by 15mm thick Promatect H Board with Insulation for Ventilating and Smoke Extraction Systems / System : A rectangular galvanized steel sheet ducting system to DW/144, protected by "Promatect-H" boards of 15 mm thick and rock wool insulation of thickness 50 mm and density 100 kg/m ³ as described in the WF Assessment Report No. 346620 (Issue 2) / Application : Fire rated ductwork for ventilating/smoke extraction systems excluding kitchen exhaust systems. / Maximum Duct Sizes : a) Maximum 7,500 mm (W) x 2,500 mm (H) (internal dimensions) with maximum section length of 1,220 mm b) For maximum width up to 7,500 mm, construction details should be referred to Warringtonfire WF Assessment Report No. 346620 (Issue 2) of 17.6.2019 / Material : a) Ductwork is constructed of galvanized steel sheet with longitudinal seams formed using the Pittsburgh Lock or Grooved Corner Seam systems as described in the WF Assessment Report No. 346620 (Issue 2). b) Ductwork must be constructed with rolled steel angle flanged cross-joints or equivalent roll formed sheet steel profile cross-joints as described in WF Assessment Report No. 346620 (Issue 2). c) Ductwork must be constructed in accordance with the requirements of DW/144 "Specification for sheet metal ductwork: low, medium and high pressure/velocity air systems". d) Gauges (longest side) are as follows: (i) Up to 800 mm - 0.7 mm (ii) Up to 2,500 mm - 1.0 mm (iii) Up to 6,000 mm - 1.2 mm (iv) Up to 7,000 mm - 1.2 mm with construction as detailed in Exova Warringtonfire WF Assessment Report No. 346620 (Issue 2). e) Thermal insulation: Rock wool with a nominal density of 100 kg/m ³ and thickness of 1 x 50 mm or 2 x 25 mm.	Promat International (Asia Pacific) Ltd., PRC	16/9/2019	October 2024	a) All design, fabrication and installation of fire rated ductwork system shall be stuck with a label with clear identification of the ductwork system (e.g. Galvanized sheet steel ductwork protected 15 mm thick "Promatect H" fire resistant board with rock wool insulation) at 5m interval which is supplied by "Promat International (Asia Pacific) Ltd." and certified by the Registered Professional Engineer who is responsible for designing and/or installing the smoke control systems or Registered Fire Service Installations Contractor (RFSIC). b) This assessment is not applicable to kitchen exhaust systems. c) This assessment letter supersedes our previous one of the same series dated 13.9.2016. d) This assessment is subject to review by October 2024. e) This letter superseded our previous letter under ref. FP (LC) 316/23 dated 15.8.2019.
Thermal Insulation (1145)	"ECO-PIP" Pre-insulated pipes (PIP) material for Pipe assembly of steel service pipe, PU terminal and casting / Brand : "ECO-PIP" / Thickness : 50 mm (PU terminal) / Casting : Galvanized sheet	Tai Shan Xian'Guang Building Material Co. Ltd	24/10/2019	December 2026	a) No assessment was made on density and toxicity of smoke generated by the material under fire. b) The packing of the product should bear the Brand Name of the product. c) This letter supersedes our previous one of the same series dated 14.11.2018 d) This assessment is subject to review by December 2026 or with the updating of the edition of the test standard.
Thermal Insulation (1151)	"Arma-Check Silver" Flexible Elastomeric Insulation / Brand Name: Arma-Chek Silver" / Material : A multi-layer laminate of aluminium, UV protective PET layer and a polymer backing / Application : Cover for flexible elastomeric insulation for pipework and metallic ducts in ventilating systems.	Armacell (GuangZhou) Limited	8/11/2019	April 2029	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Acoustic Insulation (1152)	"SNAP Acoustics" SNAP/SIL/MPF Duct Silencer with Fibreglass Infill protected by Melinex Polyester Film / Model : SNAP/SIL/MPF Duct Silencer with Fibreglass Infill protected by Melinex Film / Construction : 0.75 mm thick perforated galvanized steel sheets with "Owens Corning" (EcoTouch® blanket Fibreglass Insulation) of density 16 - 48 kg/m ³ as the infill material wrapped with 12 micron "Melinex" polyester facing; 0.75 mm thick non-perforated galvanized steel sheet perimeter casing.	NAP Acoustics (Far East) Limited	28/10/2019	October 2028	a) The infill material of the attenuator shall conform to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96.
Acoustic Insulation (1153)	"SNAP Acoustics" SNAP/LIN/MPF Acoustic Lining with Fibreglass Infill protected by Melinex Polyester Film / Model : SNAP/LIN/MPF Acoustic Lining with Fibreglass Infill protected by Melinex Film / Construction : 0.75 mm thick perforated galvanized steel sheets with "Owens Corning" (EcoTouch® blanket Fibreglass Insulation) of density 16-48 kg/m ³ as the infill material wrapped with 12 micron "Melinex" polyester facing; 0.75 mm thick non-perforated galvanized steel sheet perimeter casing.	NAP Acoustics (Far East) Limited	28/10/2019	October 2028	a) The infill material of the attenuator shall conform to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96.

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Acoustic Insulation (1154)	"SNAP Acoustics" SNAP/LIN/FT Acoustic Lining with Fibreglass Infill protected by Fibreglass Tissue / Model : SNAP/LIN/FT Acoustic Lining with Fibreglass Infill protected by Fibreglass Tissue / Construction : 0.75 mm thick perforated galvanized steel sheets with "Owens Corning" (EcoTouch® blanket Fibreglass Insulation) of density 16 - 48 kg/m ³ as the infill material wrapped with 0.15mm fiberglass tissue; 0.75 mm thick non-perforated galvanized steel sheet perimeter casing.	NAP Acoustics (Far East) Limited	28/10/2019	October 2028	a) The infill material of the attenuator shall conform to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96.
Acoustic Insulation (1155)	"SNAP Acoustic" SNAP/SIL/FT Duct Silencer with Fibreglass Infill protected by Fibreglass Tissue / Model : SNAP/ SIL/FT Duct Silencer with Fibreglass Infill protected by fiberglass tissue / Construction : 0.75 mm thick perforated galvanized steel sheets with " Owens Corning" (EcoTouch® blanket Fibreglass Insulation) of density 16 - 48 kg/m ³ as the infill material wrapped with 0.15mm fiberglass tissue; 0.75 mm thick non-perforated galvanized steel sheet perimeter casing.	NAP Acoustics (Far East) Limited	28/10/2019	October 2028	a) The infill material of the attenuator shall conform to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96.
Aluminium Foil Tap (1158)	"INSUL-PHEN" CW FRBT Self-Adhesive Black Lacquered Aluminium Foil Tape / Brand Name : INSUL-PHEN "CW FRBT" / Thickness : 30 µm / Material : 30 micro thick black lacquered aluminium foil coated on one side with flame-retardant acrylic adhesive / Application : Sealing of joints in ventilation duct work or pipe work	INSUL-PHEN Insulation Ltd., PRC / Jiangyin Meiyuan Industries Corporation	20/11/2019	April 2024	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by Apr. 2024 or with the updating of the edition of the test standard.
Acoustic Insulation (1159)	"Durkflex® FG" Elastomeric Thermal Insulation / Brand Name : "Durkflex® FG" / Material : Closed cell elastomeric thermal insulation material comprising of nitrile butadiene rubber / PVC and with a nominal density 55±15 kg/m ³ / Thickness and Density : 9 mm & 13 mm	Durkee (Wuhan) Insulation Material Co., Ltd, P.R.C.	21/11/2019	January 2029	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) The product shall bear the marking "Durkflex® FG" as a means of identification.
Thermal Insulation (1161)	"Best Bond" FHPEVA Class One Pipe Support / Model : "Best Bond" FHPEVA / Construction : Split composite insulation ring comprising high pressure foamed, high density polyethylene vinyl acetate (PEVA) / Density : 556 kg/m ³ / Application : As external insulation ring for pipe work in ventilating system	Meriton East (HK) Ltd., PRC	20/12/2019	September 2024	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) This assessment letter supersedes our previous one of the same series dated 19.1.2015.
Thermal Insulation (1164)	"EVERTHERM" Phenolic Foam Insulation Materials (80Kg/m ³) for Pipework and Distribution Ductworks / Brand/Model : "Evertherm" phenolic foam with aluminium foil facing / Material : A closed cell phenolic foam insulation material with aluminium foil facing / Thickness / Density : 25 mm / 80 kg/m ³ / Application : For external insulation of ventilating ductwork and pipework	Evertherm Insulation Hong Kong Ltd., HK	30/12/2019	Feb 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This assessment is subject to review by Feb 2022 or with the updating of the edition of the test standard.
Thermal Insulation (1173)	"Phenotherm®" Phenolic Foam Insulation Support c/w Density 120kg/m ³ 25mm thickness and DSF-White 818 Aluminum Foil Facing / Model : Phenotherm® / Material : A composite rigid phenolic foam insulation material of 120kg/m ³ density with double sided reinforced aluminum foil facing / Insulation Thickness : 25 mm / Application : For insulation support in ventilation system	Phenotherm Asia Ltd	1/4/2020	March 2025	a) Valid test reports shall be maintained; b) No assessment was made on the density and toxicity of smoke generated by the material under fire.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1177)	"Phenotherm [®] " Phenolic Foam Insulation in Density 60kg/m ³ 20mm thickness c/w Embossed Aluminum Foil Facing for Ventilation Ductwork / Model : Phenotherm [®] phenolic foam / Material : A composite insulation panel comprising a phenolic foam core having a density of 60kg/m ³ bonded on both sides with white glass tissue and embossed aluminum foil / Overall Thickness : 20 mm / Application : For external insulation of ductwork in ventilation system	Donnguan Juwan Rubber & Plastic Products Co., Ltd, PRC	21/5/2020	March 2025	a) Valid test reports shall be maintained; b) No assessment was made on the density and toxicity of smoke generated by the material under fire.
Acoustic Insulation (1186)	"LAH" Rockwool Internal Acoustic Lining / Brand Name : LAH / Density : 60/80/100 kg/m ³ / Thickness : 50 mm / Material : Rockwool board/panel / Application : As internal acoustic lining of ductwork	Guangdong Jiefu Energy Saving Technology Co., Ltd., PRC	22/5/2020	June 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by June 2022 or with the updating of the edition of the test standard.
Acoustic Insulation (1187)	"LAH" Glasswool Internal Acoustic Lining / Brand Name : LAH / Density : 32/48 kg/m ³ / Thickness : 50 mm / Material : Glasswool board/panel / Application : As internal acoustic lining of ductwork	Guangdong QingYuan Han Jang Glass Cotton Technology Co. Ltd., PRC	22/5/2020	October 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of the insulation materials should bear the Brand name of the products. c) This assessment is subject to review by Oct 2020 or with the updating of the edition of the test standard.
Acoustic insulation (1188)	"SNAP Acoustic" SNAP/SIL/FT (Galvanized Steel/Stainless Steel) Duct Silencer with Fibreglass infill protected by Fibreglass Tissue / Model : a) SNAP/SIL/FT Duct Silencer (Galvanized Steel) b) SNAP/SIL/FT Duct Silencer (stainless Steel) / Construction : a) 0.5 mm thick perforated galvanized steel sheets front and back skins with fibreglass with 40 kg/m ³ infill material wrapped by 0.15 mm thick black tissue; 0.8 mm thick galvanized steel perimeter casing b) 0.5 mm thick perforated stainless steel sheets grade 304 front and back skins with fibreglass with 40 kg/m ³ infill material wrapped by 0.15 mm thick black tissue; 1.0 mm thick stainless steel sheet grade 304 perimeter casing	NAP Acoustics (Far East) Ltd.	26/5/2020	July 2026	a) The fibreglass infill material of the silencer shall be of a type conforming to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96. b) The silencer including internal component should not cause restriction of the air stream during the operating smoke extraction system. c) This assessment is subject to review by Jul 2026 or with the updating of the edition of the test standard.
Acoustic insulation (1191)	"P-flex [®] " Class "1" Flexible Elastomeric Insulation (Off-white Colour) / Model : P-flex [®] / Material : An off-colour flexible elastomeric closed cell insulation material having a nominal density of 45-65 kg/m ³ / Insulation Thickness : 13 mm / Application : For external insulation of pipework	Dogguan Juwan Rubber & Plastic Products Co., Ltd	4/6/2020	June 2025	a) Valid test reports shall be maintained; b) No assessment was made on the density and toxicity of smoke generated by the material under fire.
Acoustic insulation (1194)	"SNAPAcoustics" SNAP/SIL/FT (Galvanized Steel/Stainless Steel) Duct Silencer with Fibreglass infill protected by Fibreglass Tissue / Model : a) SNAP/SIL/FT Duct Silencer (Galvanized Steel) b) SNAP/SIL/FT / Duct Silencer (Stainless Steel) / Construction : a) 0.5 mm thick perforated galvanized steel sheets front and back skins with fibreglass with 40 kg/m ³ infill material wrapped by 0.15 mm thick black tissue; 0.8 mm thick galvanized steel sheet perimeter casing b) 0.5 mm thick perforated stainless steel sheets grade 304 front and back skins with fibreglass with 40 kg/m ³ infill material wrapped by 0.15 mm thick black tissue; 1.0 mm thick stainless steel sheet grade 304 perimeter casing	NAP Acoustics (Far East) Ltd.	8/6/2020	July 2026	a) The fibreglass infill material of the silencer shall be of a type conforming to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96. b) The silencer including internal component should not cause restriction of the air stream during the operating smoke extraction system. c) This assessment is subject to review by Jul 2026 or with the updating of the edition of the test standard. d) This letter superseded our previous letter issued on 26.5.2020

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (1197)	"AFICO" Fiberglass Insulation with "FRK" Aluminium Foil Facing / Product Name : "AFICO" Fiberglass Insulation with "FRK" Aluminium Foil Facing / Material : Comprising an aluminium foil laminate faced glass fiber insulation product, consist of heavy density fiberglass insulation with FRK aluminium foil facing / Insulation Thickness : 50 mm/ 64 kg/m ³	Arabian Fiberglass Insulation Co., Ltd.	10/7/2020	June 2025	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The product itself has no marking, however, details such as brand name, density and thickness are to be marked in its packing. c) Valid test reports shall be maintained
Thermal Insulation (1198)	"PAL [®] " AT38B Class '0' Black Aluminium Foil for Ventilating Systems / Model : "PAL [®] " AT38B / Material : 38 micron thick aluminium foil with a black coating and coated on one side with synthetic rubber resin adhesive / Application : Sealing of joints for insulation used in ventilating system	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	10/7/2020	April 2025	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This assessment letter supersedes our previous one of the same series dated 21.9.2015. c) This assessment is subject to review by April 2025 or with the updating of edition of the test standard.
Thermal Insulation (1200)	"Aeroflex-FO" Class 0 Thermal Insulation / Brand/Model : "Aeroflex-FO" / Material : Class 0, flexible closed cell, elastomeric, EPDM based insulation product having a density of 53 kg/m ³ / Thickness : 50 mm	Aeroflex Co., Ltd	13/7/2020	June 2022	a) No assessment was made on the density and toxicity of smoke generated by the product under fire condition. b) This assessment is subject to review by June 2022 or with the updating of the edition of test standard.
Thermal Insulation (1204)	"Phenotherm" Phenolic Foam Insulation Density 40kg/m ³ 25mm thickness c/w PAL [®] DSF 818 Class '0' 8-layers Double-sided Aluminium Foil Facing / Model : Phenotherm [®] phenolic foam with "PAL [®] DSF 818" double sided aluminium foil facing / Material : Closed cell phenolic foam insulation material having a thickness of 25mm and a density of 40kg/m ³ "PAL [®] DSF 818" Class '0' 8-layers double sided aluminium foil vapour barrier of approx. 0.3mm thick	Phenotherm Asia Ltd	21/7/2020	July 2025	a) Valid test reports shall be maintained; b) No assessment was made on the density and toxicity of smoke generated by the material under fire. c) This assessment is subject to review by July 2025. d) This letter <u>supersedes</u> our previous letter under ref. FP(LC) 31714 dated 13 July 2020 for amendment made for reference no. of test reports. (Item 1201)
Thermal Insulation (1205)	Phenotherm [®] Phenolic Foam Insulation Support c/w Density 80kg/m ³ 25mm thickness "PAL [®] DSF-White 818" Class '0' Double Sided Reinforced Aluminium Foil Facing / Model : "Phenotherm" / Model : "Phenotherm" / Material : High density rigid phenolic foam insulation material of 80 kg/m ³ density with "PAL [®] DSF-White 818" Class "0" 9-layers double sided reinforced aluminium foil facing / Insulation Thickness : 25 mm / Application : For external insulation support in ventilation ductwork and pipework	Phenotherm Asia Ltd, PRC	21/7/2020	June 2025	a) Valid test reports shall be maintained; b) No assessment was made on the density and toxicity of smoke generated by the material under fire. c) The packing of the material should bear the Brand Name of the product.
(11) Miscellaneous					
Self-adhesive Foil Tape (707)	INSUL-PHEN "CW 701" Self-Adhesive Glass Cloth Aluminium Foil Tape / 240 micron thick glass cloth aluminium foil on one side and the other side coated with acrylic adhesive / Sealing of joints in ventilation duct work or pipe work.	INSUL-PHEN Insulation Ltd., PRC	16/5/2014	March 2019	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Aluminium Foil Tape (713)	"CW FRBT" Self-Adhesive Black Lacquered Aluminium Foil Tape/30 micron thick black lacquered aluminium foil coated on one side with flame-retardant acrylic adhesive / Sealing of joints in ventilation duct work or pipe work.	INSUL-PHEN Insulation Limited, PRC	15/7/2014	July 2019	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Sealant Tape (720)	"PAL R" TC 98 Class "O" Butyl Sealant Type / "PAL R" TC 98 / A polymeric butyl rubber based compound with a grey to black colour.	Phenotherm Asia Ltd./ Dongguan Juwun Rubber & Plastic Products Co. Ltd., PRC	13/8/2014	June 2019	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Insulation Adhesive (767)	PAL®IA 811 WB Class "0" Water Based Insulation Adhesive / PAL®IA 811 WB/ Material : A quick setting adhesive with white in colour / For the adhering of flexible elastomeric insulation foam to ductwork and pipework.	Phenotherm Asia Ltd. PRC	15/4/2015	April 2020	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Insulation Adhesive (782)	"PAL®IA 911 WB Insulation Adhesive / Material : A water based insulation adhesive with a grey colour / For the fixing of insulation to ductwork and pipework.	Phenotherm Asia Ltd. PRC	16/7/2015	May 2020	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Self-adhesive Foil Tape (803)	"PAL®" / "PAL®" AT38B / Material : 38 micron thick aluminium foil with a black coating and coated on one side with synthetic rubber resin adhesive.	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	21/9/2015	March 2020	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Aluminium Foil Tape (806)	"BondTape" F/R Grade / Material : 0.03 - 0.05mm thick aluminium foil tape combined with flame-retardant adhesive and protected by silicone release liner / Bulk Density : Approx. 0.23kg/m ² .	Jiangyin BondTape Technology Corporation, PRC	21/9/2015	December 2019	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Aluminium Foil Tape (809)	INSUL-PHEN "CW FRWT" Aluminium Foil Tape / 30 micron thick aluminium foil coated with white lacquer on one side with fire-retardant hot melt adhesive / Sealing of joints for Insulation used in ventilating system.	INSUL-PHEN Insulation Ltd., PRC	9/10/2015	October 2020	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Aluminium Foil Tape (810)	INSUL-PHEN "CW FRT" Aluminium Foil Tape / 30 micron thick aluminium foil coated on one side with fire-retardant hot melt adhesive / Sealing of joints for Insulation used in ventilating system.	INSUL-PHEN Insulation Ltd., PRC	9/10/2015	October 2020	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Duct Sealant (887)	"PAL R" "IS918WB" Class '0' Water Based Industrial Sealant / Brand : PAL®"IS918WB" / Description : A water based industrial sealant with a grey colour / Application / As a sealant for joints in sheet metal ductwork, rigid phenolic foam and PU foam	Phenotherm Asia Ltd., PRC	16/11/2016	October 2021	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Insulation Adhesive (913)	PAL®IA 811LV Class "0" Insulation Adhesive Brand Name: PAL®IA 811LV Material: A quick setting adhesive with a light yellow color Application: For the fixing of elastomeric foam insulation to ductwork and pipework.	Phenotherm Asia Ltd. PRC	1/2/2017	March 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirements.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Aluminium Foil Tape (953)	"RLW BLQ / T-BF3001FR" Black Lacquer Aluminium Foil Tape / Material: aluminium foil tape comprising of 0.03mm thick aluminium foil coated with black lacquer of 0.001-0.002mm thick / flame-retardant acrylic adhesive of 0.035mm thick / removable paper release liner of 0.085mm thick. Overall thickness and area bulk density are approximately 0.15 mm and 188g/m ² respectively / Application: For use as moisture or vapour barrier on external insulation for ventilation ductwork.	Jiangyin Meiyuan Industries Corporation, PRC	6/7/2017	June 2022	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirements.
Glass Tape as Gasket (960)	"COLAN TTW 30" Glass Tape / Material: a) 'E' type texturised yarns. b) 3mm thick & 50 mm wide. c) Density of 2794 kg/m ³ approx. / Application: For use as gasket in ventilating/smoke extraction systems.	Colan Products Pty. Ltd., Australia	1/8/2017	February 2021	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements. b) Provide with identification label on each packing.
Duct Sealant (984)	"Foster Duct-Fas 32-19" Water Based Metallic Duct Sealant / Brand Name : "Foster Duct-Fas-32-39" A fire resistive, water based, non-fibrated sealant / Application : For sealing galvanized, aluminium and mild steel ductwork in ventilating systems / Installation method : Method, coverage range and drying time shall fully comply with the manufacturer's recommendations.	Foster Products Corporation, USA	27/11/2017	October 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) This letter supersedes our previous one of the same series dated 22 January 2013.
Duct Sealant (989)	"Foster 32-19" Water Based Duct Sealant / Brand Name : Foster 32-19 water based duct sealant / Material : Sealant made of water, Titanium Dioxide, Kaoline Clay, Calcium Carbonate, Crystalline Silica and Cristobalite / Density : 1.4 kg/litre / Application : For sealing of ductwork in ventilating systems	H.B. Fuller Construction Products, Inc., U.S.A.	13/12/2017	November 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire as that are not our requirements. b) No assessment was made on composition / information on the ingredients of the sealant. c) This assessment letter supersedes our previous one of the same series dated 28.5.2013.
Duct Sealant (990)	"SHC 105-19" Water Based Duct Sealant / Brand Name : "SHC 105-19" WB duct sealant / Material : Sealant made of water, Dihydrogen Oxide, Calcium Carbonate, Titanium Dioxide. 1,2-Dihydroxyethane, Silic anhydride, Trihydroxyaluminium / Density : 1300 kg/m ³ approximately / Application : For sealing of ductwork in ventilating systems	Sam Hwa Chemicals Co., Ltd., Korea	13/12/2017	November 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire as that are not our requirements. b) No assessment was made on composition / information on the ingredients of the sealant.
Duct Sealant (992)	"Foster Duct-Fas 32-19" Water Based Metallic Duct Sealant / Brand Name : "Foster Duct-Fas 32-19" / A fire resistive, water based, non-fibrated sealant / Application : For sealing galvanized, aluminium and mild steel ductwork in ventilating systems / Installation method : Method, coverage range and drying time shall fully comply with the manufacturer's recommendations	Foster Products Corporation, USA	27/11/2017	October 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) This letter supersede our previous one of the same series dated 22 January 2013 and 27 November 2017.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Aluminium Foil Tape (994)	"Scapa 3594" PVC Foam Tape and "Scapa 337a" Aluminium Foil Tape / Brand & Model : "Scapa 3594" PVC Foam Tape b) "Scapa 337a" Aluminium Foil Tape / Material : a) "Scapa 3594" PVC foam tape - 3mm thick PVC single sides foam tape coated with acrylic adhesive. Overall thickness of 15mm approx. and area density of 12.45kg/m ² approx. b) "Scapa 337a" Aluminium foil tape - 30 microns thick aluminium foil single sided tape coated with pressure resistive adhesive and removable paper liner. Overall thickness of 60 microns approx. / Application : For sealing of joints of insulation in ventilating systems	a) Scapa UK Ltd., UK ("Scapa 3594" PVC Foam Tape) b) Scapa Shanghai International Co., Ltd., PRC ("Scapa 337a" Aluminium Foil Tape)	15/12/2017	June 2021	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions as that are not our requirement.
Aluminium Foil Tape (1002)	"BOSTIK IDENDEN T303" Aluminium Foil Tape Used in Ventilating Systems / Brand Name : "Bostik" Idenden T303" / Material : Aluminium foil coated with rubber/resin adhesive and removable paper liner / Application : Sealing of joints in ventilation ductwork / Information Sheet No.: TDS00654	Bostik Limited, England	9/1/2018	September 2024	a) No assessment was made on the density and toxicity of smoke generated by the product under fire.
Aluminium Foil Tape (1010)	"Ideal Tape 488 ECO" Self Adhesive Aluminium Foil Tape / Brand Name : "Ideal Tape 488 ECO" / Material : 30 micro (1.2 mil) thick aluminium foil coated on one side with pressure sensitive adhesive and removable paper liner / Application : Sealing of joints in ventilation ductwork	Ideal Tape Co., USA	7/2/2018	October 2022	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) This letter supersedes our previous one of the same series dated 4 February 2013.
Aluminium Foil Tape (1015)	PAL [®] AT38 Class '0' 38 Micron thick Aluminium Foil Tape / Brand Name : PAL [®] AT38 / Material : AT-38 - High strength aluminium foil (38 micron thick) coated on one side with permanent synthetic rubber resin adhesive / Application : Sealing of joints in ventilating system	Phenotherm Asia Ltd., PRC	6/4/2018	December 2027	a) No assessment was made on the density and toxicity of smoke generated by the products under fire condition. b) This assessment letter supersedes our previous one of the same series dated 29.4.2014.
Insulation Adhesive (1048)	"I-Bond 1230" Water Based Adhesive / Brand Name : "I-bond 1230" / Material : Water Based adhesive / Application : For the bonding of thermal insulation materials to metal ductwork in ventilation systems	Foshan Fokis New Materials Co. Ltd	5/9/2018	January 2023	a) No assessment was made on the density and toxicity of smoke generated by the material under fire.
Aluminium Foil Tape (1050)	PAL [®] AT-38W Class '0' White Aluminium Foil Tape / Brand Name : PAL [®] AT-38W / Material : AT-38W - High strength aluminium foil (38 micron thick) with a white surface finish coating on the external side and coated on the other side with permanent synthetic rubber resin adhesive / Application : Sealing of joints in ventilating systems	Phenotherm Asia Ltd., PRC	14/9/2018	December 2027	a) No assessment was made on the density and toxicity of smoke generated by the products under fire condition. b) This assessment letter supersedes our previous one of the same series dated 29.4.2014.
Paint (1076)	"Armafinish 99" Paint / Model : "Armafinish 99" Paint / Material : Water-based coating using terpolymer resin system with white colour / Application : Protection of flexible thermal insulation materials against sunlight, UV radiation and chemical attack.	Armaceil (GuangZhou) Limited, PRC	22/11/2018	September 2027	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements.

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Adhesive (1077)	"Armaflex" 520 BLV Adhesive / Model : "Armaflex" 520 BLV Adhesive / Material : A synthetic rubber base of dark green colour with synthetic resins and fillers, hydrocarbon- and ketone-type solvents / Application : As adhesive for joining flexible elastomeric and flexible polyethylene insulation on ductwork and pipework.	Armocell (GuangZhou) Limited, PRC	22/11/2018	November 2027	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements.
Adhesive (1078)	"Armaflex" 520 Adhesive / Model : "Armaflex" 520 Adhesive / Material : Adhesive based on chloroprene rubber in a blend of flammable solvents with a light yellow colour. The adhesive is not flammable in dry state / Application : As adhesive for joining flexible elastomeric and flexible polyethylene insulation to ductwork and pipework.	Armocell (GuangZhou) Limited, PRC	22/11/2018	November 2027	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions as that are not our requirements.
Sealant Tape (1100)	PAL® TC-98 Class '0' Butyl Sealant Tape for Ventilating Ductwork Gasket-sealing / Brand Name : PAL® TC-98 / Model : Class "0" / Material : Polymeric butyl rubber based compound / Application : For Gasket-sealing and provides a high compression flexible sealant between mating flanges and laps	Phenotherm Asia Ltd. / Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	2/5/2019	January 2029	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) This assessment is subject to review by January 2029 or with the updating of the edition of the test standard.
Duct Sealant (1105)	"DUCTSEAL" Air Duct Sealant / Brand Name : "DUCTSEAL" A fire resistive and water based sealant / Application : For sealing galvanized, aluminium and mild steel ductwork in ventilating systems / Installation method : Method, coverage range and drying time shall fully comply with the manufacturer's recommendations.	Aeroseal, LLC	23/5/2019	January 2029	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) This assessment is subject to review by January 2029 or with the updating of the edition of the test standard.
Insulation Adhesive (1109)	PAL® IA 811WB Class "0" Water Based Insulation Adhesive / Product Name : PAL® IA 811 WB Class "0" Water Based Insulation Adhesive / Material : A quick setting adhesive with white in colour / Application : For the adhering of flexible elastomeric insulation foam to ductwork and pipework	Phenotherm Asia Ltd., PRC	29/5/2019	December 2024	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) This assessment letter supersedes our previous one of the same series dated 15.4.2015. c) This assessment is subject to review by December 2024 or with the updating of the edition of the test standard.
Insulation Adhesive (1148)	PAL® IA 911WB Class "0" Water Based Insulation Adhesive / Product Name : PAL® IA 911 WB Class "0" Water Based Insulation Adhesive / Material : A water based insulation adhesive with a grey colour / Application : For the fixing of insulation to ductwork and pipework	Phenotherm Asia Ltd., PRC	8/11/2019	July 2029	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) This assessment letter supersedes our previous one of the same series dated 16.7.2015.
Glass Cloth (1179)	"Flying Horse" FH-GC Glass Cloth / Brand Name : Flying Horse / Material : 100% Glass Fibre / Application : Sealing of thermal insulation in ventilating system	York Choi Industrial Limited	21/5/2020	February 2029	a) No assessment was made on the density and toxicity of smoke generated by the products under fire condition.

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Tesa 4613 Duct Tape (1206)	Tesa 4613 Duct Tape / Brand Name : "Tesa" model 4613 / Thickness : 0.18 mm / Application : For the sealing of Duct in ventilation system	Tesa Plant (Suzhou) Co., Ltd. PRC	23/7/2020	April 2027	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) This assessment is subject to review by Apr. 2027 or with the updating of the edition of the test standard.
Tesa 60642 Aluminum Foil Tape (1207)	Tesa 60642 Aluminum Foil Tape / Brand Name : "tesa" model 60642 / Thickness : 0.04 mm / Application : For the sealing of joints in ventilation system	tesa Plant (Suzhou) Co., Ltd. PRC	23/7/2020	July 2029	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) This assessment is subject to review by Jul 2029 or with the updating of the edition of the test standard.