

# 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
<b>(1) Air Filters</b>					
Air Filter (451)	AAF / Dry type air filter units for filling with SAAF Carb and SAAF Oxidant filter media: a) SAAF Medium Duty Cassette b) SAAF Heavy Duty Cassette c) SAAF Commercial Grade Cassette: Replaceable filter medium a) SAAF Carb b) SAAF Oxidant c) SAAF Carb MA d) SAAF Carb MB e) SAAF Carb MC f) SAAF Carb MA-HT	AAF International, Louisville, USA	28/7/2010	July 2015	The filter units and medium shall be UL listed and bear the appropriate UL mark.
Air Filter (453)	Nitta / Throw-away dry-type air filter units designated as a) 33XX-XX, 34XX-XX, 35XX-XX, 36XX-XX, 38XX-XX, 39XX-XX, maximum depth 4 3/4 in. B) 15XX-XX, maximum depth 11 3/4 in. ("XX-XX" denotes efficiency and frame dimensions)	Taiwan Nitta Filter Co., Ltd., Taiwan	28/7/2010	July 2015	The filters shall remain UL listed and bear the appropriate identifications markings
Air Filter (462)	Airguard / Throw-away, dry type filter units (from Malaysia) a) "Clean Pak" Series - CP5, CP6, CP8 and CP9; max. depth 36 in. b) "VSC" Series; max. depth 14 in. Replaceable media, adhesive coated air filter pads or rolls (from USA) c) "AGFG"	Clarcor Air Filtration Products Inc., USA and Malaysia	2/9/2010	September 2015	the units shall be UL listed and bear the appropriate UL Marking
Filter (468)	"AAF" AmerTex R-Series Filter / AmerTex R15, R29 and R50 Series	AAF International, Louisville, USA	28/9/2010	September 2015	
Air Filter (493)	Purafil "Purafilter" Air Filter / Purafilter / Air filter with either paperboard or metal frame and factory-filled with SPB-500/30 filter medium Dimension 24" x 24" with thicknesses of 2", 4" or 12"	Purafil Inc., USA	1/2/2011	February 2016	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 (498)	Filtration Group "Auto Roll Filter" Air Filter / Auto Roll Filter - adhesive coated, throw away type / Maximum 2 in. depth	Filtration Group Inc., USA	24/2/2011	February 2016	a) The filter shall remain UL listed. b) Suitable documentation, e.g. delivery order, detailing the following should be kept by users of this filter for inspection upon request: i) Manufacturer's name; ii) Place of manufacture; iii) Model number; and iv) The standard to which the filter has been type-tested.
Air Filter Units (512)	Purolator "Key Pleat" Air Filter Units / Throw away, dry type air filter unit "Key Pleat" / Thickness : As listed in UL Certifications Directory AJZV.R5891	Clarcor Air Filtration Products Inc., USA	12/4/2011	April 2016	The units shall be UL listed and bear the appropriate UL Marking.
Air Filter (535)	"Welaire" AC Series Air Filter / AC Series / TiO <sub>2</sub> filter wwith aluminium frame utilizing photocatalyst material a) UP-102 (A 2 mm thick nickel three dimensional structure alloy material) or b) UP-315 (A 13 mm thick aluminium honeycomb structure material)	Zhongshan Saiver Welaire Air-conditioning Equipment Co., Ltd., PRC	2/8/2011	August 2016	
Air Filter (537)	"AAF" Air Filter Units / Throw-away, dry type: a) AmAir 100, AmAir 200, AmAir 300 and AmAir 500 b) VariCel, 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	10/8/2011	August 2016	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (538)	Camfil Farr "C-Flo" Air Filter Unit / "C-Flo"	Camfil Farr Group, PRC	11/8/2011	August 2016	

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Air Filter (540)	"AAF" Air Filter Units / Throw-away, dry type: a) AmAir 1100 (max. depth 4 3/8 in.) b) AmAir 1300 (max. depth 4 in.)	AAF International, Louisville, USA	15/8/2011	August 2016	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter Units (549)	"AAF" Air Filter Units / Throw-away dry type, maximum depth 12 in. a)VariCel V-70. -80, -95in.) b) VariCel V MER15	AAF International, Louisville, USA	21/9/2011	September 2016	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (582)	"Camfil Farr" Air Filters / Throw away, dry-type: a) Aeropleat IV b) Aeropleat IV+ c) Aeropleat III d) Type 30/30 e) Riga-Flo	Camfil Farr Group, Malaysia and PRC	6/6/2012	June 2017	The filter units shall remain UL listed and bear the appropriate UL marking.
Air Filter (583)	"Purafil" Chemical Air Filters / Dry-type replaceable filter media: a) Chemisorbant media b) Select CP Blend media c) Select media d) Select Chemisorbant media e) SP media f) SP Blend media g) Triple Blend media h) Puracarb media i) Purakol II media j) Puracarb AM media	Purafil Inc., USA	7/6/2012	June 2017	The filter media and filter modules shall both remain UL listed and bear the appropriate UL marking.
Air Filter(585)	"Permatron" Air Filter - Washable unit, dry type: a) DustEater Easy Flow; b) Lifestyle Plus MF and Lifestyle Plus LR	Permatron Corp., USA	21/6/2012	June 2017	The Units shall be UL listed and bear the appropriate UL marking.
Air Filter(614)	"Phototroph" Photocatalytic Extruded Ceramic Filter / PECF200	Zeta Coating Hong Kong Ltd., PRC	12/11/2012	November 2017	
Air Filter(615)	"Camfil Farr" Air Filters / Filter Model: --Throw away, dry type a) Absolute --Replacable media, adhesive coated a) Hi-Cap -- Replacable media, dry type a) Hi-Flo / Thickness: As listed in UL Certification Directory	Camfil Farr Group, Malaysia and PRC	23/11/2012	November 2017	The units shall be UL listed and bear the appropriate UL Marking.
Air Filter(618)	"Permatron" Air Filter / "Dust Eater" electrostatic filter	Permatron Corp., USA	11/12/2012	December 2017	The filter unit shall be UL listed and bear the appropriate UL Marking.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Air Filter(620)	:NCCO" Nano Air Filter Unit / NF 1001 /Dry type panel filter unit (300 mm - 600mm(L) x 300 - 600 mm (W) x 20 - 36 mm (Th.)) comprising a galvanized steel frame filled with "nano" material (zeolite) as the filtering medium	RHT Limited, Hong Kong	18/12/2012	December 2017	The filter unit shall bear an appropriate product label
Air Filter(622)	"Camfil Farr" Fiberglass Air Filter Unit / "Camfil Farr" Fiberglass Filter	Camfil Farr Group, PRC or Malaysia	21/12/2012	December 2017	
Air Filter(627)	"AAF" Air Filter Units / Throw-away dry type, maximum depth 12 in. a)VariCel V-70. -80, -95) b) VariCel III	AAF International, Louisville, USA	3/1/2013	January 2018	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter(646)	"Purafil" Chemical Air Filter Media / CP Blend media	Purafil Inc., USA	3/4/2013	April 2018	The filter media shall remain UL listed and bear the appropriate UL Marking.
Air Filter (652)	AAF "MEGAcel" Series Throw-away Dry Type Air Filter Units / Dry Type, Throw-away Air Filter Unit: "MEGAcel I" , Maxium depth 12 in., "MEGAcel II" , Maxium depth 6 in.,"MEGAcel III" , Maxium depth 12 in.	AAF International, USA	24/5/2013	May 2018	The filters shall remain UL listed and bear the appropriate identification markings.
Air Filter (655)	"Duct Free" DFSB & DFC Series Air Filters / a) Bag Filters: DFSB-65, DFSB-85 and DFSB-95 b) Cartridge Filters: DFC-65, DFC-85 and DFC-95	Shen Zhen Dust Free Mfg. Limited, PRC	21/6/2013	June 2018	The filters shall be UL listed and bear the appropriate UL Marking.
Air Filter (662)	Unisorb Corp /Mark 2 / Purple sphere said to be activated alumina impregnated with potassium permanganate.	Unisorb Corporation, USA	29/8/2013	August 2018	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
Air Filter (673)	AAF "AmAir C" Air Filter / "AmAir C" throw-away dry type panel filter	AAF Shenzhen Co., Ltd., PRC	13/11/2013	November 2018	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 (678)	Freudenberg "Viledon" G35S & T60 Compact Pocket Ar Filters / Viledon G35S compact pocket filter, Viledon T60 compact pocket filter.	Freudenberg Filtration Technologies KG, Deutschland	21/11/2013	November 2018	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 "Viledon" for identification purpose.
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.	Kinghlope Limited	27/1/2014	January 2019	This units shall be UL listed and bear the appropriate UL Marking.

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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.

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Air Filter (696)	"Glasfloss Bulk Media" Air Filters Media/Throw-away adhesive coated air filter media - Glasfloss Bulk Media	Glasfloss 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
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.

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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 <sup>®</sup> " / 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



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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	

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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.
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 <sup>®</sup> " / 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.

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Air Filter (824)	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	Dust Free LP, USA	14/12/2015	December 2020	The filter units shall be UL listed and 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 <sup>3</sup>	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.
<b>(2) Air Handling Equipment</b>					
Variable Volume Box (490)	TROX "TVB" Variable Volume Box / Series TVB / All metallic construction with galvanized steel sheet casing which is lined internally with 25 mm thick glass wool insulation. All control devices and components are housed in a galvanized steel enclosure and shielded from the air stream. Insulation material is glass wool insulation board, ("Polyglass polywool Ductliner", Malaysia) of density 32 Kg/m <sup>3</sup> and is in compliance with BS 476 Part 6: 1989 (Overall Performance $I \leq 12$ , Sub-index $i_1 \leq 6$ ) and BS 476 Part 7: 1997(Class 1) All non-metallic components are in compliance V0 or V2 flammability class when tested to UL 94 and UL listed.	TROX Malaysia Sdn. Bhd., Malaysia	27/1/2011	January 2016	

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Variable Air Volume Box (545)	"SUN" Variable Air Volume Box / Series VAV-5000 and Series VAV-50E1	SUNRISE Air-conditioning Equipment Ltd., PRC	7/9/2011	September 2016	
Sound Attenuator (613)	"Vibro-Acoustics® RLC" Rectangular Sound Attenuator / Construction: The casing and splitter nose are constructed from 0.8mm to 1.2mm thick galvanized steel sheet. The splitter body is fabricated from 0.55mm to 0.8mm thick galvanized perforated steel sheet with "Thermawool KT/CT 32 Glasswool" or "Thermawool KT/CT 48 Glasswool" Fibre Glasswool of density 32 or 48kg/m <sup>3</sup> packed as the infill material.	Zhongshan Sanbe Metal Acoustics Limited, PRC	31/10/2012	November 2017	a) Other glasswool infill materials of the attenuator other than those tested as specified above and all seals/gaskets (if any) shall conform to the requirements for internal insulation stipulated in Part XI of the FSD Circular Letter No. 4/96. b) No assessment was made on the density and toxicity of smoke generated by the glasswool infill material under fire.
Rotor and Cassette (647)	"SustainE" Series Desiccant Rotor and Cassette	Foshan Liangsi Air-Conditioning Equipment Co. Ltd., PRC	8/4/2013	April 2018	a) All electric cables installed inside the product and exposed to the air stream are to be contained in flexible metal conduit. b) Valid test reports shall be made available to demonstrate that other non-metallic components / materials, if any, installed inside the air stream of product 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: 1989 + A1 : 2009.

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Sound Attenuator (660)	"Vibro-Acoustics® RLC " Rectangular Sound Attenuator c/w "Owens Corning" Fiberglass Infill Material	Zhongshan Sanhe Metal Acoustics Limited, PRC	1/8/2013	August 2018	a) Other infill materials of the attenuator other than those tested as specified and all seals/gaskets (if any) shall conform to the requirements for internal insulation stipulated in Part XI of FSD Circular Letter No. 4/96 b) No assessment was made on the density and toxicity of smoke generated by the Fibreglas infill materials under fire
Variable Air Volume Box (664)	"Flying Horse" Variable Air Volume (VAV) Terminal Units (Boxes) / VAV - 1000 Series (cooling only and VAV - 10RH Series (cooling & heating)	Dongguan Flying Horse Metal Products Industrial Limited, PRC	2/9/2013	September 2018	
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	

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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 (795)	<p>"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.</p> <p>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 <math>I \leq 12</math>, Sub-index <math>i_1 \leq 6</math>) 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.</p>	York Guangzhou Air Conditioning and Refrigeration Equipment Co., Ltd., PRC	10/9/2015	August 2020	

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Variable Air Volume Box (818)	<p>BARCOL-AIR NC Series, NV Series and NK/NL Series Variable Air Volume Terminals / Construction Details :</p> <p><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.</p> <p><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.</p> <p><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.</p>	Barcol-Air Environmental Systems (Foshan) Limited, PRC	2/12/2015	November 2020	
<b>(3) Smoke Control Components ( Ventilator / Fire Rated Duct/ Smoke Curtain )</b>					

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Static Smoke Ventilators (477)	Hexadome "Hexasteel" & "Hexacoif" Static Smoke Ventilators for Natural Venting of Staircase/a) Hexasteel b) Hexacoif (As indicated in the annex to EC Certificate of Conformity No.:0333-CPD-219003)	Hexadome, France	6/12/2010	December 2015	A valid "EC-Certificate of Conformity" shall be maintained.
Fire Rated Duct (491)	"WinDuct" Fire Resistant Coated Ductwork System / a) Ductwork is constructed of galvanized steel sheet in 1,200 mm long section to DW/144 of thickness 1.0 mm. b) A layer of spray or brush/roller applied "Winduct" intumescent water based fire prevention coating, minimum 0.6 mm thick.	Passive Fire Protection Sdn., Bhd., Malaysia	1/2/2011	September 2015	a) Installation 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.
Smoke Ventilators (499)	"Brakel" Smoke Ventilators for Static Smoke Extraction System / a) Eura and Eura-R; b) Duo Therma	Brakel Aluminium b.v., U.K.	24/2/2011	February 2016	A valid "EC-Certificate of Conformity" shall be maintained.
Actuator (541)	"SE Controls" Window Actuator for Static Smoke Vents / a) SELA N 24R b) SEPO 50 c) SELA N 24G d) SECO N24	SE Controls, UK	15/8/2011	August 2016	No assessment was made on the smoke vents designed for operation by the actuator models covered in this letter.
Actuator (641)	"Deftha Airax" Gas Spring and "Jofo Pneumatik" Pneumatic Cylinder & Lock as Failsafe Actuators for Static Smoke Vents / a) "Deftha Airax" Gas Spring type: F900N/stroke 400/T10/C22 "Jofo Pneumatik" Pneumatic Cylinder : PVZ 50 - 05 b) "Jofo Pneumatik" Pneumatic Lock PZ 25-182/2-15-190-φ8	a) "Deftha Airax" Gas Spring by Deftha Group, France b) "Jofo Pneumatik" Pneumatic Cylinder & Lock by Jofo Pneumatik GmbH, Germany	19/2/2013	February 2018	Limitations in application listed shall be fully complied with



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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Rated Duct (675)	"Flamebar B.W. II" Fire Duct and Fire Enclosure System / A steel duct system of proprietary design and construction, with a spray of "Flammebar B.W.11" fire proofing for fire protection and if necessary wrapped with stone mineral wool for thermal insulation and reinforced aluminium foil facing to protect the ductwork from mechanical damage..	Fire Spray International Ltd., U.K.	13/11/2013	April 2017	a) All design, fabrication and installation of the fire rated duct system shall be certified with a label stuck at every duct section by The Jardine Engineering Corporation Ltd. (JEC) or applicators authorized by JEC who shall be holding a valid licence issued by Firespray International Ltd., UK. 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.
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 <sup>3</sup> to 100 kg/m <sup>3</sup> 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.
Fire Rated Duct (814)	"Promatect-H" Sheet Metal Ductwork Protected by Promatect H Board 15mm thick with Insulation for Ventilating and Smoke Extraction Systems / System : A rectangular galvanized steel sheet ducting system, protected by "Promatect-H" boards of 15mm thick and rock wool insulation of thickness 50mm and density 100 kg/m <sup>3</sup> as described in the WF Assessment Report No. 346620.	Promat International (Asia Pacific) Ltd., PRC	28/10/2015	November 2019	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 (826)	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 aluminum foil facing and a nominal density of 160kg/m <sup>3</sup> .	New Glory Engineering Limited, PRC	22/12/2015	January 2019	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 licence for Hong Kong issued by Firesafe Fire Rated Ductwork Limited. b) This assessment is valid for 4-sided fire rated duct applications only.
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.
<b>(4) Fire Resistant Cables</b>					
Fire Resistant Cable(452)	KEYSTONE / FR 7211 / Single core cable comprising solid / stranded plain copper conductor, mica glass tape, Mylar tape and a LSNH insulation	Dongguan Keystone Electric Wire & Cable Company Limited, PRC	23/7/2010	July 2015	The cable shall carry markings.
Fire Resistant Cable (475)	"Samson" Fire Resistant Cables, SP19021 HT/LS and SP3202 HT/LS a) 2 core, 0.65 mm <sup>2</sup> conductor b) 2 core, 1.0 mm <sup>2</sup> conductor	Sun Shine Metal Electrical Mfg., Shenzhen, PRC	25/11/2010	November 2015	a) A valid certificate for quality assurance scheme shall be made available at all times. b)The cables shall carry markings detailed.
Fire Resistant Cable (517)	"Pyrotenax" Pyro MI Mineral Insulated Cables / Heavy Duty, Light Duty & Twisted Light Duty	Tyco Thermal Controls UK Ltd., U.K.	30/5/2011	May 2016	All cables shall bear the appropriate LPCB markings.
Fire Resistant Cables (521)	"DUCAB BICC" Ducab-FR Fire Resistant Cables / Ducab - FR	Dubai Cable Company(Private) Ltd., U.A.E.	8/6/2011	June 2016	

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (529)	"Prysmian" Fire Resistant Cables / a) FP100 b) FP150 c) FP200 Gold d) FP200 Flex e) FP300 f) FP300MI g) FP400 / Single Core: a) "FP100" from 1.0 to 95 mm <sup>2</sup> b) "FP300" from 1.0 to 35 mm <sup>2</sup> c) "FP300MI" from 1.0 to 35 mm <sup>2</sup> 2, 3 & 4 Core: d) "FP150" from 1.0 to 2.5 mm <sup>2</sup> e) "FP200 Gold" from 1.0 to 4.0 mm <sup>2</sup> f) "FP200 Flex" from 1.0 to 2.5 mm <sup>2</sup> g) "FP300" from 1.0 to 16 mm <sup>2</sup> h) "FP400" from 1.0 to 400 mm <sup>2</sup> Others: "FP200 Gold 1.0 mm <sup>2</sup> , 1.5 mm <sup>2</sup> , 7, 12 & 19 core and 2.5 mm <sup>2</sup> , 7 & 12 core	Prysmian Cables & Systems Ltd., UK	23/6/2011	June 2016	a) Large single core cables mentioned in the above certificates and which comply with BS 6387 Cat. C only will be considered on project basis. B) All cables shall bear the appropriate LPCB markings.
Fire Resistant Cable(566)	"SEGURFOC" Fire Resistant Cables / a) SEGURFOC FR 950 07Z-R-M cable b) SEGURFOC FRA 950 armoured cable c) SEGURFOC FRA 950-1 armoured cable / a) SEGURFOC FR 950 07Z-R-M cable Single core, nominal csa 1.5 to 16 mm <sup>2</sup> b) SEGURFOC FRA 950 armoured cable 2, 3, 4 core, nominal csa 1.5 to 185 mm <sup>2</sup> c) SEGURFOC FRA 950-1 armoured cable 2, 3, 4 core, nominal csa 240 to 400 mm <sup>2</sup>	Grupo General Cables Sistemas S.A., Spain	20/1/2012	January 2017	a) Large fire resistant single core cables mentioned in Certificate No. 722a (Issue No. 02) which comply with BS 6387 Cat. C or C, W only will be considered on project basis. B) The cables shall bear the appropriate "LPCB" mark.
Fire Resistant Cable(569)	"KME" Mineral Insulated Cables / Mineral Insulated Cable a) MICO - KME Light Duty b) MICO - KME Single Core Heavy Duty c) MICO - KME Multie Core Heavy Duty / Exact number of cores and sizes are as detailed in Loss Prevention Certification Board (LPCB) Certificate No. 427a (Issue No. 10)	KME Italy S.P.A., Italy	10/2/2012	February 2017	a) A valid certificate issued by LPCB shall always be available. b) The cables shall bear the appropriate "LPCB" mark.
Fire Resistant Cable(579)	"Firecel" SR112 single core and SR114H & SR114E multi-core copper cables	Cavicel SpA, Italy	16/5/2012	May 2017	a) The single core SR112 cables must be enclosed in steel conduit and/or metal trunking b) The cable shall bear the LPCB mark for identification purpose.
Fire Resistant Cable(592)	ATOM Fire Barrier S Single Core Fire Resistant Cables / ATOM Fire Barrier S / No. of Core and Size: Single core, 1.5mm <sup>2</sup> to 70mm <sup>2</sup> (Sizes as indicated in LPCB Certificate No. 905b, Issue No. 01 of 23.4.2012)	ATOM KABLO SANAYI ve Ticaret A.Ş., Turkey	27/7/2012	July 2017	a) The cables shall be enclosed in steel conduits. b) The cables shall bear the appropriate LPCB markings.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cable(603)	ACT® 2/3/4-Core Fire Resistant Power Cables / "ACT®" Two-Core LSZH Fire Resistant Armoured Power Cables, Type 6942B-FR, "ACT®" Three-Core LSZH Fire Resistant Armoured Power Cables, Type 6943B-FR, "ACT®" Four-Core LSZH Fire Resistant Armoured Power Cables, Type 6944B-FR	Tianjin Suli Cable Group Co. Ltd., PRC	27/9/2012	October 2015	The cable shall bear the "ACT®" trade name and KEMA-KEUR certification mark for identification purpose.
Fire Resistant Cable(626)	"Firestop" FS-90 Fire resistant Cables / Firestop FS-90 Multicore Cable / Conductor Sizes : 1.5 to 400 mm <sup>2</sup> inclusive, 4-core	Prysmian Power Cables and Systems Australia Pty Ltd., Australia	27/10/2012	May 2016	Valis ISO 9001 certificate should be maintained.
Fire Resistant Cable (617)	AEI "Firetec" Single Core Fire Resistant Cables / Firetec Single Core LSZH cables / Sizes : 1.0 to 35 mm <sup>2</sup> inclusive, single core (exact sizes as detailed in LPCB Certificate No. 221c, Issue No. 08)	AEI Cables Limited, Durham, UK	27/11/2012	November 2017	a) The cables shall be enclosed in steel conduits as stipulated in the Test Certificate. b) The cables shall bear the "LPCB" mark. c) A valid "Certificate of Product Conformity" by LPCB shall be made available.
Fire Resistant Cable (638)	AEI "Firetec" Multi-core and Armoured Fire Resistant Cables / a) Firetec armoured cables b) Firetec armoured LSZH cables / Sizes : a) 1.5 mm <sup>2</sup> to 16 mm <sup>2</sup> ; 2 to 48 core (exact sizes and cores as detailed in LPCB Certificate No. 221k, Issue No.3) b) 1.5 mm <sup>2</sup> to 400 mm <sup>2</sup> inclusive (exact sizes as detailed in LPCB Certificate No. 221j, Issue No. 2) ; 2, 3, and 4 core	AEI Cables Limited, Durham, UK	4/2/2013	February 2018	a) The cables shall bear the "LPCB" mark. b) A valid "Certificate of Product Conformity" by LPCB shall be made available.
Fire Resistant Cable(643)	DUCAB - FR Fire Resistant Cables / Ducab-FR / No. of Core and Size: 1.5 to 400 mm <sup>2</sup> inclusive, 2.3 & 4 core (Stranded copper conductors only)	Dubai Cable Company(Private) Ltd., U.A.E.	11/3/2013	March 2018	a) A valid ISO 9001 certificate shall be maintained. b) The cables shall bear the "LPCB" mark.
Fire Resistant Cable(657)	"KEYSTONE" fire resistant armoured auxiliary cables / Construction : stranded copper conductors with XLPE insulation, LSNH bedding, galvanized steel wire armour and LSNH overheat / No. of Cores and Sizes : No. of Core) 7 to 37 / / Size (mm <sup>2</sup> ) 1.5 , 2.5 & 4.0	Dongguan Keystone Electric Wire & Cable Company Limited, Guangdong, PRC	28/6/2013	June 2018	a) Valid BASEC certificate shall be maintained b) The cable shall bear the BASEC mark for identification purpose

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cable(658)	"KEYSTONE" FR7211 Series Single Core fire resistant cables / Construction : Single core cable comprising stranded copper conductor, mica tape, and LSNH insulation / Cable Sizes : 1.5mm <sup>2</sup> to 35mm <sup>2</sup>	Dongguan Keystone Electric Wire & Cable Company Limited, Guangdong, PRC	11/7/2013	July 2018	a) Valid LPCB certificate shall be maintained b) The cable shall bear the appropriate markings of the certification body for identification purpose c) The cables shall be installed in steel conduits
Fire Resistant Cable(665)	Cavicel SpA "Firecel SR 125H" Fire Resistant Cable / "FIRECEL SR 125H-U-300/500V" / Size: 2 x 2 x 0.5mm <sup>2</sup>	Cavicel SpA, Italy	16/9/2013	September 2018	The cables shall bear the trade name/mark and model number for identification purpose.
Fire Resistant Cable(680)	Oman Cables Industry (SAOG) "OCIFLAM-FSA" Fire Resistant Cables / "OCIFLAM-FSA" 2, 3 and 4-core armoured fire resistant cables / Stranded annealed plain copper conductor / mica glass tape covered with XLPE insulation / LSF bedding / galvanized steel wire armour / LSF outer sheath Conductor Size : 16 - 400 mm <sup>2</sup> , 2, 3 and 4-core cable, as detailed in the appendix to Loss Prevention Certification Board Certificate No. 995a of 14.12.2011	Oman Cables Industry (SAOG), Sultanate of Oman	11/12/2013	December 2018	a) Valid LPCB certificate shall be maintained; b) The cables shall bear appropriate markings of the certificate body for identification purpose;
Fire Resistant Cable(683)	Fireflex CU/MICA/LSOH / Single core cable comprising insulated stranded copper conductor / mica tape / a black over sheath / Conductor Sizes : 1.5mm <sup>2</sup> , single core	Caledonian Cables Limited, U.K. / Addison Technology Limited, U.K.	11/12/2013	July 2018	The sheath shall have the printed marking "Caledonian Fireflex CU/MICA/LSOH 1.5 mm sq2008" for identification.
Fire Resistant Cable(694)	DUCAB Flame BICC 6 Fire Resistant Cables / Conductor Size : 16 to 400 mm <sup>2</sup> 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 <sup>2</sup> , 2.5 mm <sup>2</sup> and 4 mm <sup>2</sup> ; 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 (733)	MAS "Fireres" 694nXFR Armoured Fire Resistant Cables. Model : 694nXFR Armoured Fire Resistant Cables (where n runs from 2 to 5 and 7 to 19) Construction : Multi-core armoured cable with stranded plain annealed copper conductors , mica/glass,XLPE insulated, n-core laid up, extruded LSOH bedding, galvanized steel wire armoured and LSOH outer sheathed. Conductor Size : As detailed below under the "Test Standard & Result"	Baosheng Science and Technology Innovation Company Limited, PRC	14/11/2014	April 2017	a) The cables shall bear appropriate markings of the certification body for identification purpose; b) Valid certificate and test reports shall be maintained.
Fire Resistant Cables (734)	MAS "Fireres" FR2C Two-core Twisted Fire Resistant Cables. Model : FR2C two-core twisted fire resistant cables / Conductor Size : 2 x 1.5 mm <sup>2</sup>	Baosheng Science and Technology Innovation Company Limited, PRC	14/11/2014	March 2017	a) The cables shall bear appropriate markings of the certification body for identification purpose; b) Valid certificate and test report shall be maintained ; c) The cable shall be installed in steel conduits
Fire Resistant Cables (735)	MAS "Fireres" FR1C Single-core Fire Resistant Cables. Model : FR1C single -core fire resistant cables. Construction : Single core, stranded plain annealed copper conductor, mica/glass tape with LSOH insulated. Conductor Size : As detailed below under " Test Standard and Result"	Baosheng Science and Technology Innovation Company Limited, PRC	14/11/2014	March 2017	a) The cables shall bear appropriate markings of the certification body for identification purpose; b) Valid certificate and test report shall be maintained ; c) The cables shall be installed in steel conduits
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

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup> with 7 cores, 4.0-400mm <sup>2</sup> 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 <sup>2</sup> with 2, 3 and 4 cores, 4.0-400mm <sup>2</sup> 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 <sup>2</sup>	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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup>	Nexans Turkiye Endustri ve Ticaret A.S., 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.
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 <sup>2</sup> 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 Turkiye Endustri ve Ticaret A.S., 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 <sup>2</sup> .	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 <sup>2</sup> .	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.



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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup> 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 (765)	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 armoured cable with stranded plain annealed copper conductors , mica/glass, XLPE insulated, n-core laid up, extruded LSOH bedding, galvanized steel wire armoured and LSOH outer sheathed. Conductor Size : As detailed below under the "Test Standard & Result."	Baosheng Science and Technology Innovation Company Limited, PRC	19/3/2015	March 2017	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 <sup>2</sup> 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (770)	"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 10.0 mm <sup>2</sup> inclusive with 2 core / 1.5 to 6.0 mm <sup>2</sup> inclusive with 3 & 4 core	Draka UK Ltd.	1/6/2015	May 2020	a) Valid certificate and test report shall be maintained b) The cables shall bear appropriate markings of the certification body for identification purpose.
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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> .	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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup> ) or stranded (2.5 - 4.0 mm <sup>2</sup> ) 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 <sup>2</sup> 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.
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 <sup>2</sup> with 2, 3, & 4 cores and 2.5 mm <sup>2</sup> with 2 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.
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 <sup>2</sup> .	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 <sup>2</sup> 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup>	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 <sup>2</sup>	Cavicel 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 (828)	MAS "Fireres" 694nXFR Armoured Fire Resistant Cables / Model : 694nXFR n-core armoured fire resistant cables (where n runs from 2 to 4 and 5 to 48) / Construction : Multi-core armoured cable with stranded plain annealed copper conductors , mica/glass, XLPE insulated, n-core laid up, extruded LSOH bedding, galvanized steel wire armoured and LSOH outer sheathed / Conductor Size : As detailed below under the "Test Standard & Result"	Baosheng Science and Technology Innovation Co. Ltd., PRC	31/12/2015	April 2017	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 (829)	Cavicel SpA "Firecel SR 125H-R" 1 x 2 x 1.5 mm <sup>2</sup> Fire Resistant Cable / Model : "Firecel SR 125H-R/OS/LSZH" / Construction : Stranded copper conductor / silicone rubber insulation / twisted in pairs / aluminum polyester tape with tinned copper drain wire / insulated cores twisted in pairs / LSZH outer sheath / Conductor Size : 1 x 2 x 1.5 mm <sup>2</sup>	Cavicel 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Resistant Cables (833)	Cavicel SpA 2 × 2 × 0.75 mm <sup>2</sup> - 0.6/1kV-LSZH-SWA Fire Resistant Cable / Model : "Firecel Fire Resistant R-SR/IS/OS/LSZH/SWA/LSZH 0.6/1kV" 2 × 2 × 0.75 mm <sup>2</sup> / 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 × 2 × 0.75 mm <sup>2</sup>	Cavicel 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)	Cavicel 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 × 1.5mm <sup>2</sup>	Cavicel 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.
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 × 1.0 mm <sup>2</sup> & 2 × 1.5 mm <sup>2</sup> .	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.
<b>(5) Flexible Connectors</b>					

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Flexible Connector (526)	"COLAN" AF406/FRN Textile Fabric / 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 800 g/m <sup>2</sup> woven from satin weave Type E glass fibre and coated on both sides with flame retarded neoprene.	Colan Products Pty Ltd., Australia	13/6/2011	June 2016	a) No assessment was made on the density and toxicity of smoke generated by material under fire. b) The material shall bear the marking "AF406 FRN" as a means of identification.
Flexible Connector (532)	"COLAN" AF406/Silicone Glass-Fibre Fabric as Flexible Connector in Ventilation/Smoke Extraction System / "COLAN AF406/Silicon" Glass-fibre fabric / A woven fibreglass fabric with silicon rubber coating on both sides, having a nominal thickness of 0.46 mm and a normal weight of 543 g/m <sup>2</sup> and with a standard reference colour grey.	COLAN Products Pty Ltd., Australia	7/7/2011	July 2016	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 (534)	"PAL®" DF16 Class '0' Duct Fabric / "PAL® DF 16 Class '0' / A black polymeric coated textile-glass material with an nominal thickness of 0.4 mm and weight of 550 g/m <sup>2</sup> .	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	21/7/2011	July 2016	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The brand and model name should be marked on the product.
Flexible Connector (551)	Colan "AF805 SIL" Glass Fibre Fabric as Flexible Connector in Ventilation/Smoke Extraction System / "COLAN AF805 SIL" glass-fibre fabric / A woven fibreglass fabric (high bulk borosilicate type) with silicon rubber coating on both sides, having an overall thickness of 2.2 mm and weight of 1570 g/m <sup>2</sup> , and with a standard reference colour red.	COLAN Products Pty Ltd., Australia	26/9/2011	September 2016	a) No assessment was made on the density and toxicity of smoke generated by material under fire. b) The product shall have label tag(s) bearing the word "AF805 SIL" sewn on it as a means of identification.
Flexible Connector (661)	"Ductflex 300" Flexible Duct Connectors for Ventilating Systems / Reinforced woven fiberglass with stainless steel wire, coated on both sides with fire resistance silicon rubber with an nominal thickness of 1.5 mm approx., area density of 2.5 Kg/m <sup>2</sup> and with a standard orange brown colour.	GuangZhou Jitai Development Co., Ltd., P.R.C.	5/8/2013	August 2018	a) No assessment was made on the smoke generation by the material under fire conditions. b) The products shall bear suitable model name makings.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Flexible Connector (667)	"Ductflex 280" Flexible Duct Connector for Ventilating Systems / Reinforced fibre sandwiched between silicon rubber sheets / Thickness : 0.4 mm	GuangZhou Jitai Development Co., Ltd., PRC	3/10/2013	October 2018	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.
Flexible Connector (710)	"PAL <sup>®</sup> XDF 22/280°C Duct Fabric" / Black polymeric coated textile-glass material / 680 g/m <sup>2</sup> ; 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 Connector (808)	"Welaire <sup>®</sup> " / "Welaire <sup>®</sup> " WFC-TM / Material : Fiberglass cloth flexible connector with nominal thickness of 0.5 mm approx., and density of 0.4 kg/m <sup>2</sup> .	Zhongshan Saiver Welaire Air Conditioning Equipment Co., Ltd., PRC	21/9/2015	April 2016	a) No assessment was made on the smoke generated by the material under fire conditions. b) The products should bear suitable brand/model name markings for identification.
Flexible Duct Connector (840)	"PAL <sup>®</sup> " DF16 Class '0' Duct Fabric / Model : "PAL <sup>®</sup> 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 <sup>2</sup> .	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.
<b>(6) Fire/ Fire &amp; Smoke Dampers</b>					
Fire Dampers (457)	TROX / a) FSD series, b) FSP series, c) FSE series / 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	Trox (Malaysia) Sdn. Bhd.	10/8/2010	July 2015	The dampers are to be fitted with fusible links release of a type approved by this department with a rating not exceeding 69°C

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (473)	"TROX" SFD - Fire & Smoke damper / 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.	TROX Malaysia Sdn. Bhd., Malaysia	5/11/2010	July 2015	The dampers shall be permanently marked or stamped with label(s) which shall remain visible after it is fixed into position for the identification of its brand name and model
Fire & Smoke Damper (500)	"Prefco" Muti-blade Fir/Smoke Damper Series 5000 / Non-insulated multi-blade damper of galvanized steel construction complete with linkages	Perfect Air Control Inc.	1/3/2011	March 2016	a) Separate actuator shall be fitted for each single damper module that makes up a multiple module. b) Valid assessment report on the integrity of multiple module damper assemblies to BS476:Part 20 shall always be made available.
Fire & Smoke Damper (515)	"Trox" JFM Fire & Smoke Damper / "JFM-G-F" and "JFM-E-F" multi-leaf fire damper with vertical and horizontal mounting models	Trox (Malaysia) Sdn. Bhd., Malaysia	19/5/2011	March 2016	
Fire Damper (547)	"Prefco" 5500 E4A Curtain Type Fire Damper / 5500 E4A	Perfect Air Control Inc., USA	20/9/2011	September 2016	a) The damper shall be fitted with a FSD approved fusible link of temperature rating not exceeding 69°C. b) A valid assessment report shall be available to substantiate the fire resistance performance of the fire damper assembly.
Fire Damper (548)	"Prefco" 5500 E6-LPC Curtain Type Fire Damper / 5500 E6-LPC	Perfect Air Control Inc., USA	20/9/2011	September 2016	a) The damper shall be fitted with a FSD approved fusible link of temperature rating not exceeding 69°C. b) A valid assessment report shall be available to substantiate the fire resistance performance of the fire damper assembly.



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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (576)	RUSKIN "FSD60" Combined Fire & Smoke Damper. Construction: Details as described and illustrated in Warres No. 43157 & SwRI Project No. 01.13537.01.312, 0.7 mm thick galvanized mild steel frame with 0.3 mm thick stainless steel convex shaped side seals and G.I. blade stops with the longer leg welded to the web of the frame. Mounting: Vertical and horizontal. Maximun Sizes: a) Sigle section: 750 mm x 900 mm (W x H) b) Multiple section: 3,048 mm x 2,438 mm (W x H) for electric and pneumatic actuator	Ruskin Co., USA or Thailand	26/3/2012	March 2017	The dampers shall maintain its status as an UL listed product.
Fire & Smoke Damper (588)	"TROX" SFD, SFP and SFE Fire & Smoke Damper / SFD, SFP and SFE Series	TROX Malaysia Sdn. Bhd., Malaysia	27/6/2012	July 2015	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 Damper (600)	"LASER" 9020 Series Curtain Type Fire Damper for Use in Ventilation System / "LASER" curtain type fire damper / 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 / 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.	Laser Resources (Asia) Co. Ltd., Hong Kong	24/8/2012	January 2017	a) Inspection reports covering routine inspection and "check tests" done in accordance with the schedule of the follow-up services by Vipac Engineers and Scientists (HK) Ltd., shall be made available on request. b) The damper shall bear the "Laser" trade mark and production label with company name and model number is attached on the damper. c) The dampers are to be fitted with fusible links approved by this department and designed to operate up to a temperature of 69°C

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire & Smoke Damper (619)	"LASER" 9010 Series Combined Fire and Smoke Damper for Use in Smoke Control / Ventilation System / "LASER" blade type combined fire and smoke dampers / a) 9010G - G.I. frame and blade (vertical & horizontal mounting) b) 9010S - G.I. frame and stainless steel blade (vertical & horizontal mounting) / 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 blade ends and the frame and other details shall be as described in BRANZ report nos. FR 3606 (Issue 2) AND far 2922 (ISSUE 2) Size: 200mm(W) x 200 mm (H) - 900 mm (W) x 900 mm (H) for each module Maximum size up to: a) Horizontal - 2788 (W) x 1844 mm (H) (3 x 2 modules) b) Vertical - 3732 mm (W) x 2788 mm (H) (4 x 3 modules)	Laser Resources (Asia) Co. Ltd., Hong Kong	11/12/2012	October 2016	a) Inspection reports covering routine inspection and "check tests" done in accordance with the schedule of the follow-up services by Vipac Engineers and Scientists (HK) Ltd. shall be made available on request. b) The damper shall bear the "Laser" trade mark and production label with company name and model number is attached on the damper. c) The dampers are to be fitted with fusible links approved by this department and designed to operate up to a temperature of 69°C
Fire Damper (629)	BSB "FD" Series Stainless Steel Curtain Type Fire Damper / BSB "FD" Series / Application : Vertical and horizontal mounting	BSB Engineering Services Limited, U.K.	16/1/2013	April 2016	The fusible link shall be of FSD approved type with a rating not exceeding 69°C

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Damper (676)	"LASER" 9021 Series Curtain Type Fire Damper for Use in Ventilation System / "LASER" 9021 series curtain type fire dampers a) 9021 G - G.I. frame and blade. b) 9021 S - G.I. frame and blade. 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 BRANZ reports listed below.	Laser Resources (Asia) Co. Ltd., Hong Kong	21/11/2013	December 2016	a) Inspection reports covering routine inspection and "check tests" done in accordance with the schedule of the follow-up services by Vipac Engineers and Scientists (HK) Ltd., shall be made available on request. b) The damper shall bear the "Laser" trade mark and production label with company name and model number is attached on the damper. c) The dampers are to be fitted with fusible links approved by this department and designed to operate up to a temperature of 69°C
Fire Damper (681)	"RUSKIN" BIBD Series Curtain Type Fire Damper/DIBD series; Model DIBD 2; DIBD 2SS, DIBD 23 and BIBD 23SS	Ruskin Company, USA	16/12/2013	December 2018	1) The dampers shall remain listed in the UL Online Certifications Directory. 2) The damper shall be permanently marked or stamped with label(s) which shall remain visible after it is fixed into position for the identification of its brand name and model. 3. The damper shall be fitted with fusion link designed to operate up to a temperature of 69°C and approved by this department.

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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 and Smoke Damper (717)	Actionair / Fire, Shield Series 101, 201, 301 and 401 / Un-insulated stainless steel folded blade fire damper having unbroken joints and comprising of stainless steel constant tension closure springs and stainless steel peripheral gasket. The assembly should be fitted into the structure with a galvanized steel "HEVAC/HVAC" installation frame.	Ruskin Air Management Ltd., UK	7/8/2014	August 2015	a) No assessment was made on the suitability of dampers in ventilating system in Protected Areas. b) No assessment was made on any leakage test or cycling test of the dampers for compliance with the UL555S or equivalent national or international standards.
Fire and Smoke Damper (747)	"Prefco" Multi-blade Fire/ Smoke damper Series 5000, Product Model : "Prefco" Multi-blade Fire/ Smoke damper Series 5000, Model No. 5050-1, 5050-2. 5053-1 and 5053-2 / 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 100kg/m <sup>3</sup> , details are as illustrated in the drawing attached to Report No. : R07G22 of 7.1.2008 by Research Engineering Development Facade Consultants Ltd./ Actuator : Belimo - FSNF 230US. Honeywell - ML4115C and ML4115D. / Installation Method : In accordance with the manufacturer's recommendations.	Johnson Tech Air Control Inc., Taiwan	5/1/2015	December 2017	1) The dampers shall remain listed in the UL Certifications Directory. 2) The damper shall be permanently marked or stamped with label(s) which shall remain visible after fixed into position for the identification of its brand name and model. 3) Separate actuator shall be fitted for each single damper module that makes up a multiple module. 4)Valid assessment report on the integrity of multiple module damper assemblies to BS476: Part 20 shall always be made available.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Fire Damper (754)	"ACTIONAIR" Fire/Shield Series Fire Dampers / Fire /Shield Series 101, 201, 301 and 401 / Un-insulated galvanised steel or stainless steel folded blade fire damper having unbroken movable joints, stainless steel constant tension closure springs for positive closure. The assembly should be fitted into the structure with a galvanized mild steel "HEVAC/HVAC" installation frame./Application : Vertical and horizontal mounting. / Installation Method : In accordance with the manufacturer's recommendations. Maximum Sizes : a) Series 101 : 1250mm x 1000mm (WxH) b) Series 201 : 1250mm x 1000mm (WxH) c) Series 301 : 1000mm (Diameter) d) Series 401 : 1250mm x 500mm (WxH)	Ruskin Air Management Ltd., UK	9/2/2015	March 2017	The fusible link shall be of FSD approved type with a rating not exceeding 69°C.
Fire and Smoke Damper (774)	"Dresser" RCS Sure 100 Electric Actuator for " Trox" JFM Fire & Smoke Dampers. For Actuator : Model: RCS Sure 100. For Thermal jacket : Brand Name : Beta / Maximum damper size : 2100mm (W) x 2100mm(H) / 250° C for 2 hours in smoke extraction systems only.	Actuator : Dresser, Inc., USA. Thermal jacket : Beta Thermal Insulation Materials Ltd. Co. (Please refer to drawing no. JFM14P479 for construction details)	12/6/2015	March 2016	Limitation & Restriction : The actuator is not to be used in ventilating system in Protected Areas as it has not been tested to the requirements stipulated in Part XI, Section 5 of FSD Circular Letter No. 4/96.

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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 and Smoke Damper (794)	"Lloyd" / FSD-111-1 and FSD-111-2 / Construction : Channel frame constructed of 1.6 mm galvanized steel with an interlocking stacked hat section and 1.6 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.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 : 300mm x 200mm - 900mm x 900mm (WxH); Multiple sections (for vertical mounting only) : Max. 1,800mm x 1,800mm (WxH). b) FSD-111-2 Single section : 200mm x 200mm - 900mm x 900mm (WxH); Multiple sections (for vertical mounting only): Max. 1,800mm x 1,800mm (WxH).	Lloyd Industries Inc., USA	10/9/2015	March 2018	a) The dampers shall remain listed in the UL Certifications Directory. b) The fusible link shall remain listed in the UL Certifications 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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.
<b>(7) Flexible Ducts</b>					
Flexible Duct (674)	"SK Kicflex" Aluminium Flexible Air Duct / "KIC-8000", 100mm, 200mm & 300mm, a) An inner core fabricated from aluminium foil laminated with PET and aluminium foil with steel wire inserts, b) A core of fibre glass insulation with a thickness of 25mm and density of 24kg/m <sup>3</sup> , c) An outer jacket comprising aluminium foil laminated with PET.	SK Kicflex Co. Ltd, PRC	13/11/2013	November 2018	a) No assessment was made on the density and toxicity of smoke generated by the product under.
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 <sup>3</sup> , 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..



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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>3</sup> ) 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.
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 <sup>3</sup> ) 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 <sup>®</sup> " Winflex 33i Flexible Air Duct / Model : "PAL <sup>®</sup> " 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 <sup>3</sup> 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 <sup>3</sup> 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Flexible Duct (852)	"PAL <sup>®</sup> " Winflex 33 Aluminium Flexible Air Duct / Model : "PAL <sup>®</sup> " 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 <sup>2</sup> 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.
<b>(8) Energy Recovery Units</b>					
Energy Recovery Ventilator (807)	"STC-EHRV" Energy Humidity Recovery Ventilator / "RP" Series / Construction : An internally insulated rectangular galvanized steel enclosure containing a belt driven stainless steel rotary wheel housing six removable sectors of core material for heat/humidity exchange. The core material is packed 40 mm thick polyester (PE) fiber of 25 - 150 micrometer diameter with a surface density of 3.9 kg/m <sup>2</sup> . Two sets of aluminium pre-filters are fitted on the air inlets of the unit. / Unit Size : 2,000m <sup>3</sup> /h to 40,000m <sup>3</sup> /h	Hong Kong Stirling Ventilator Co., Ltd., PRC	21/9/2015	April 2018	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 flexible metal 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.
<b>(9) Smoke Fans</b>					
Smoke Fan (458)	Wolter / a) JFUO and JFRO Series - Impeller diameter 300mm to 355mm, b) AXV Series - Impeller diameter 315mm to 1600mm, c) RVHT Series - Impeller diameter 355mm to 710mm	Walter GmbH Maschinen-und Apparatebau KG, Germany	24/8/2010	August 2015	a) Valid "EC - Certificate of Conformity" shall be maintained for the fan models, b) A valid certificate for quality management system shall be maintained.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Smoke Fan (530)	"Wolter" Axial Fan / AXV Series - Size 335 mm to 1,250 mm / The fans are driven by IP55 single or two-speed high temperature motor of insulation class "H" by either "Siemens", "CMG", "WEG", "TECO", "ABB" or "Wolter (OEM)". The motors can be of 2/4/6/8 poles and operate on either 220V, 380V or 415V, 50 Hz supply.	Wolter GmbH Maschinen-und Apparatebau KG, Germany	5/7/2011	July 2016	a) Valid "EC-Certificate of Conformity" shall be maintained for the fan models. b) A valid certificate for quality management system shall be maintained.
Smoke Fan (542)	"Fläkt Woods" JM Aerofoil H.T. Series Axial Fan for Smoke Extraction System / JM Aerofoil H.T. Series as listed in the supplementary information sheets to EC-Certificate of Conformity No. 0086-CPD-474878 of 27.10.2010, but only limited to those with temperature/time classification equal to or better than 250°C and 1 hour (i.e. F300 or better).	Fläkt Woods Limited, UK	18/8/2011	August 2016	The family of "JM Aerofoil HT" Series fans shall bear the appropriate markings for the identification of temperature/time classification.
Smoke Fan (557)	"Elta" Axial Fan / Smoke Vent Series as listed in the supplementary information sheet to EC-Certificate of Conformity No. 0086-CPD-493001 of 20.8.2008, but only limited to those with temperature/time classification equal to 400°C and 2 hour (i.e. F400)	Elta Fans Limited, U.K.	2/11/2011	November 2016	The family of "Smoke Vent" Series fans shall bear the appropriate "CE" markings for the identification of temperature / time classification.
Smoke Fan (572)	"Systemair" AR Axial Smoke Extraction Fan a) AR/AJR 315-2 F300 with "ATT" 1.1kW motor b) AR 1250-4/16 D4(F400) with "ATT" 15kW motor Type and Size: Axial fan of 315mm and 1,250mm diameter	Systemair Sdn. Bhd., Malaysia	8/3/2012	March 2017	

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 : Aluminum die -cast alloy. / Motor support : Galvanized sheet steel. / Terminal box : Aluminum 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Smoke Fan (846)	Wolter "AXV-AL", "RXV-AL" Series Axial Fans for Smoke Extraction Systems / Product Name : "AXV-AL" & "RXV-AL" Series / Type and Size : Axial fan with diameter from 250mm to 1,800mm / Construction : (a) Fan housing : Galvanized steel (b) Impeller hub & blades : Die-cast aluminum alloy (c) Motor support : Galvanized steel (d) Terminal box : Die-cast aluminum alloy / Motor : (a) Manufacturer : WEG (b) Bearing grease : Mobil Polyrex EM (c) Bearing clearance : C3 (d) Motor insulation : Class H (e) Utilization : Thermal Class F (f) Frame Size : 80-315.	Wolter GmbH Maschinen-und Apparatebau KG, Germany	22/4/2016	April 2017	The captioned axial fans shall remain listed by "Materialprufanstalt fur das Bauwesen Braunschweig (MPA)" and bear the appropriate identification markings.
Ventilator (857)	Witt & Sohn "IGW" Series Axial Powered Smoke and Heat Exhaust Ventilators for Smoke Extraction System / "IGW" Series Axial Ventilators	Witt & Sohn AG, Germany	16/6/2016	June 2021	The captioned fans and the associated motor shall remain listed by "Materialprufanstalt fur das Bauwesen Braunschweig (MPA)" and bear the appropriate identification markings.
<b>(10) Thermal / Acoustic Insulations</b>					
Thermal Insulation (225)	"GOODEVER PF" Phenolic Foam Insulation	Beijing Goodever Xinxing Building Material Co., Ltd, Shenzhen Branch, PRC	21/9/2007	March 2016	
Thermal Insulation (485)	ATC "PD5020-80/80" Sandwich Air Duct Panel / A composite insulation panel comprising a core of polyisocyanurate foam having a nominal density of 48-52 kg/m <sup>3</sup> with 80 micron thick aluminium foil bonded to each face	Air Trade Centre Limited, PRC	14/1/2011	July 2015	a) no assessment was made on the density and toxicity of smoke generated by the material under fire. b) the insulation panel should be marked with "PD5020-80/80"
Thermal Insulation (497)	"Insutech-PIP" Pre-insulated Pipe System / Piping system comprising a basic metal carrier pipe, a metal outer jacket of 0.6 mm thick galvanized steel and an insulation layer of 50 mm thick polyurethane foam (48 kg/m <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Bun Kee Building Materials (Guangzhou) Co., Ltd., PRC	18/2/2011	February 2016	a) No assessment was made on the density and toxicity of smoke generated by the assembly under fire. b) Valid assessment report on the integrity of wall penetration seal to BS 476: Part 20 shall always be made available.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (501)	"Lucky-PIP" Pre-insulated Pipe System (CFC, HCFC, HCF Free) / "Lucky-PIP" (CFC, HCFC, HCF Free) Pre-insulated Pipe (Grade 316 stainless steel jacket) / Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5 mm thick Grade 316 stainless steel sheet and an insulation of 35 mm thick polyurethane foam (48 kg/m <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	1/3/2011	March 2016	no assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (522)	"Insutech-PIP" Pre-insulated Pipe System / Piping system comprising a basic metal carrier pipe, a metal outer jacket of 0.6 mm thick galvanized steel, 0.8 mm aluminium sheet or 0.6 mm thick Grade 316 or Grade 304 stainless steel sheet and an insulation layer of 50 mm thick rigid polyurethane foam (48 kg/m <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Bun Kee Building Materials (Guangzhou) Co., Ltd., PRC	9/6/2011	June 2016	a) No assessment was made on the density and toxicity of smoke generated by the assembly under fire. b) Valid assessment report on the integrity of wall penetration seal to BS 476: Part 20 shall always be made available. c) This letter supersedes our previous letter of the same series dated 18.2.2011 on the same product.
Thermal Insulation (531)	"Durkflex® FG" Nitrile Rubber Insulation / Durkflex® FG / Closed cell nitrile based elastomeric insulation material, having a density of 60-80 kg/m <sup>3</sup> and with a colour reference "Black" Thickness : 9 mm and 13 mm	Durkee (Wuhan) Insulation Material Co., Ltd., PRC	5/7/2011	July 2016	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The material shall bear the marking "Durkflex® FG" as a means of identification.
Thermal Insulation (550)	"AFICO" Duct Liner for Ventilation Ducts / "AFICO" Duct Liner, Type 320 / Uniformly textured inorganic glass fibers bonded together by a thermosetting resin and faced with a black glass tissue thickness (mm)/Density (KG/m <sup>3</sup> ) :25 mm / 32 kg/m <sup>3</sup>	Arabian Fiberglass Insulation Company Ltd., Saudi Arabia	21/9/2011	September 2016	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The material shall be installed with the black glass tissue exposed to the air stream.
Thermal Insulation (558)	"Lucky-PIP" Pre-insulated Pipe System / CFC Free Pre-insulated Pipe	Link The Best Company Limited, Hong Kong	6/12/2011	August 2016	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (562)	"UniFiber®" Rockwool Insulation /Rockwool without facing / Thickness / Density : 50 mm / 140 Kg/m <sup>3</sup>	UniFiber Manufacturing Ltd., PRC	16/12/2011	December 2016	a) No assessment was made on the density and toxicity of smoke generated by 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.
Thermal Insulation (564)	"Lucky-PIP" Pre-insulation Pipe System (Grade 316 Stainless Steel Jacket) / "Lucky-PIP" CFC Free Pre-insulation Pipe (Grade 316 Stainless Steel Jacket) / Piping system comprising a basic carrier pipe, a metal other jacket of minimum 0.5 mm thick Grade 316 stainless steel, and an insulation of 35 mm thick polyurethane foam (48 kg/m <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	9/1/2012	November 2016	a) No assessment was made on the density and toxicity of smoke generated by assembly under fire. b) Document demonstrating that reports WF No. 173898 and WF No. 173897 remain valid shall be made available for inspection upon request.
Thermal Insulation (565)	"AFICO" Fibreglass Duct Wrap (with PAL® DSF 818 Class 0, Double Sided Aluminium Foil Facing) for Ventilation Ducts / "AFICO" Faced Duct Wrap / "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 <sup>3</sup>	Arabian Fiberglass Insulation Company Ltd., Saudi Arabia	9/1/2012	January 2017	No assessment was made on the density and toxicity of smoke generated by the product under fire.
Thermal Insulation (563)	"Lucky-PIP" Pre-insulation Pipe System (Grade 304 Stainless Steel Jacket) / "Lucky-PIP" CFC Free Pre-insulation Pipe (Grade 304 Stainless Steel Jacket) / Piping system comprising a basic carrier pipe, a metal other jacket of minimum 0.5 mm thick Grade 304 stainless steel, and an insulation of 35 mm thick polyurethane foam (48 kg/m <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	10/1/2012	November 2016	a) No assessment was made on the density and toxicity of smoke generated by assembly under fire. b) Document demonstrating that reports WF No. 173898 and WF No. 173897 remain valid shall be made available for inspection upon request.

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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 (567)	"Insulflex" Closed Cell Nitrile Rubber Insulation Foam / "Insulflex" / Black coloured closed cell nitrile rubber insulation material / Thickness and Density : 25 mm, 100 kg/m <sup>3</sup>	Insulflex Corporation Sdn Bhd, Malaysia	20/1/2012	January 2017	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Acoustic Insulations (568)	PAL® "IS918WB" Class '0' Sealant / PAL® "IS918WB" / A water based industrial sealant with a grey colour	Phenotherm Asia Ltd., PRC	1/2/2012	February 2017	No assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Thermal Insulation (575)	"Lucky-PIP" CFC Free Pre-insulated Pipe (Aluminium Jacket) / 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 <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	19/3/2012	June 2016	no assessment was made on the density and toxicity of smoke generated by the product under fire.
Thermal Insulation (577)	"K-Flex ST" Class 0 Elastomeric Insulation Material for Insulation of Ventilation Ductwork or Pipework / "K-Flex ST" / Black colour closed cell, nitrile rubber based elastomeric insulation foam product having a density of 45-65 Kg/m <sup>3</sup> .	L'isolante K-Flex, Srl, Italy (PRC made)	26/4/2012	May 2016	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The product shall bear the marking "CL 1 DM 26.6.84" for identification purpose.
Thermal Insulation (591)	"PAL® SSF 515" Class '0' Aluminium Foil Vapour Barrier Laminated on top of Insulation for Ductwork and Pipe work / A 5-layer flame retarded tri-directional reinforced aluminium foil	Phenotherm Asia Limited, PRC	16/7/2012	July 2017	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) For phenolic foam insulation, the finished external insulation layer (i.e. insulation + "PAL® SSF 515" as vapour barrier) should comply with BS 476 Part 7 (Class 1) c)The product shall bear the marking "CL 1 DM 26.6.84" for identification purpose.



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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (593)	"Certain Teed" Fiberglass Insulation Material / Certain Teed ToughGard T Textile Liner / A textile-type glass fibres bonded together with a thermosetting resin overlaid with a black matt tissue surface on the air stream side. Fiberglass material having a density and a thickness of 32 kg/m <sup>3</sup> and 25 mm respectively.	Certain Teed Corporation, USA	21/8/2012	August 2017	a) No assessment was made on the density and toxicity of smoke generated by the material under fire conditions. 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 (594)	"AFICO" Fiberglass Insulation / Fiberglass wool insulation with doubled sided aluminium foil vapour barrier / Thickness / Density : 50 mm / 48 kg/m <sup>3</sup>	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	22/8/2012	August 2017	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 (597)	"AmCoolong®" / Black coloured closed cell elastomeric foam insulation material / Thickness and Density : 19 mm, 64 kg/m <sup>3</sup>	Long Mass Insulation Material Factory, PRC	23/8/2012	July 2016	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 "AmCoolong®" marking..
Thermal Insulation (602)	'Class 1 Armaflex' / Closed cell, nitrile based flexible elastomeric insulation products, having a density of about 46 kg/m <sup>3</sup> and with a colour reference "Black" / Thickness: 6 mm and 32 mm	Armacell (Guangzhou) Limited, P.R.C.	7/9/2012	September 2017	no assessment was made on the density and toxicity of smoke generated by the materials under fire condition.
Thermal Insulation (605)	"Byucksan rockwool" Thermal Insulation / Material A yellowish brown mineral wool sheet having a thickness of 50mm and a nominal density of 100kg/m <sup>3</sup>	Byucksan Co. Ltd., S. Korea	15/10/2012	June 2017	no assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (606)	"Owens Corning Fiberglass Insulation" FSK (Lamtec-3035) Faced Board/Pipe Type material / Density 32-64kg/m <sup>3</sup> Thickness 25-50mm	Owens Corning (Guangzhou) Fibreglass Co., Ltd., PRC	22/10/2012	October 2017	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 (607)	"Owens Corning Fibreglass Insulation" FSK (Lamtec-3035) Faced Blanket Type material / Density 24-48kg/m <sup>3</sup> Thickness 25-50mm	Owens Corning (Guangzhou) Fibreglass Co., Ltd., PRC	22/10/2012	October 2017	no assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (608)	"Owens Corning Fibreglass Insulation" DSF (Lamtec-763) Faced Board/Pipe Type material / Density 32-64kg/m <sup>3</sup> Thickness 25-50mm	Owens Corning (Guangzhou) Fibreglass Co., Ltd., PRC	22/10/2012	October 2017	no assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (609)	"Owens Corning Fibreglass Insulation" DSF (Lamtec-763) Faced Blanket Type material / Density 24-48kg/m <sup>3</sup> Thickness 25-50mm	Owens Corning (Guangzhou) Fibreglass Co., Ltd., PRC	22/10/2012	October 2017	no assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (610)	"AmCoolong®" / Black coloured closed cell elastomeric foam insulation material / Thickness and Density : 25 mm, 50-80 kg/m <sup>3</sup>	Long Mass Insulation Material Factory, PRC	22/10/2012	October 2017	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 "AmCoolong®" marking..
Thermal Insulation (611)	K-Flex Class 1 / A closed cell, nitrile rubber based elastomeric insulation foam product with a colour reference black, Thickness ≤ 50mm, 45 to 80 kg/m <sup>3</sup> / Application: for external insulation of ductwork or pipe-work	L'isolante K-Flex (Suzhou) Co., Ltd., PRC	22/10/2012	October 2017	no assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Thermal Insulation (616)	"Isophen" CFC free phenolic foam Insulation / CFC free phenolic foam insulation material with aluminium foil facing / Density and Thickness : of 40 kg/m <sup>3</sup> , 25 mm	Isotherm Ltd., Hong Kong	27/11/2012	November 2017	
Thermal Insulation (623)	"Durkflex FG" Closed Cell Elastomeric Nitrile Rubber Insulation Material / "Durkflex FG" / Black coloured closed cell elastomeric nitrile rubber insulation material / Thickness and Density : 25 mm, between 50 - 65kg/m <sup>3</sup>	Durkee (Wuhan) Insulation Material Co., Ltd., PRC	21/12/2012	December 2017	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

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (624)	"Kooltherm" Phenolic Thermal Insulation Material / Kooltherm / HCFC free, closed cell rigid phenolic foam insulation faced on one side with aluminium reinforced foil laminate by spray adhesive Density and Thickness: 40, 60, 80 and 120 kg/m <sup>3</sup> , 25mm	Kingspan Tarec Industrial Insulation N.V., Belgium	24/12/2012	December 2017	No assessment was made on the density and toxicity of smoke generated by the material under fire
Thermal Insulation (631)	"KFX" Series Insulated Pipe Support System / KFX / 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	21/1/2013	January 2018	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The exposed surfaces of the insulation materials shall be fully enclosed by a 0.8mm thick galvanized steel jacket.
Thermal Insulation (632)	"Roxul" Stonewool / Thermal insulation material manufactured from basalt volcanic stone and non-combustible product / Density : 60 kg/m <sup>3</sup> , 80 kg/m <sup>3</sup> , 100 kg/m <sup>3</sup> and 140 kg/m <sup>3</sup> / Thickness : 40mm to 50mm	Rockwool Firesafe Insulation (GuangZhou) Co., Ltd., PRC	22/1/2013	January 2018	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.
Thermal Insulation (635)	"MGATHERM" Phenolic Foam Insulation Materials / "MGATHERM" Phenolic Foam with "MEGATHERM 758" aluminium foil facing / Density & Thickness : a) Density : 40 kg/m <sup>3</sup> b) Thickness : ranged from 25mm to 100mm / Application : For external insulation of ventilation ductwork and pipework	Megatherm Insulation Limited, HK (with phenolic foam from PRC)	29/1/2013	January 2018	No assessment was made on the density and toxicity of smoke generated by the materials under fire
Thermal Insulation (637)	"Isophen" CFC free phenolic foam Insulation / CFC free phenolic foam insulation material with aluminium foil facing / Density and Thickness : of 80kg/m <sup>3</sup> & 120kg/m <sup>3</sup> , 25 mm	Isotherm Ltd., Hong Kong	4/2/2013	February 2018	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 (639)	"AFICO" Fiberglass Insulation / Fiberglass wool insulation with doubled sided aluminium foil vapour barrier / Thickness / Density : 25 mm / 32 kg/m <sup>3</sup>	Arabian Fiberglass Insulation Co., Ltd., Saudi Arabia	6/2/2013	February 2018	a) No assessment was made on the density and toxicity of smoke generated by the materials 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 (642)	"P-flex <sup>®</sup> " Flexible Closed-Cell Elastomeric Insulation / P-flex <sup>®</sup> / A CFCs and HCFCs free flexible closed-cell elastomeric insulation material having a nominal density of 60 to 80 kg/m <sup>3</sup> Thickness: 50mm	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	5/3/2013	March 2018	no assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Thermal Insulation (644)	Roxul "Thermawool KT/CT 48" / Thermal insulation material manufactured from glasswool boned with thermosetting resin / Density: 48kg/m <sup>3</sup> Thickness: 25mm	Rockwool Firesafe Insulation (GuangZhou) Co., Ltd., PRC	13/3/2013	March 2018	a) No assessment was made on the density and toxicity of smoke generated by the material under fire. b) The packing of insulation materials should bear the Brand Name of the product.
Thermal Insulation (645)	"PHENOTHERM <sup>™</sup> " phenolic foam supports with "PAL <sup>®</sup> DSF 818" double sided reinforced aluminium foil facing / Density 80Kg/m <sup>3</sup> & 120 Kg/m <sup>3</sup> / Thickness: 25mm	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	3/4/2013	January 2018	a) No assessment was made on the density and toxicity of smoke generated by the material under fire condition. b) The packing of the insulation materials should bear the Brand Name of the products.
Thermal Insulation (648)	"Durkflex <sup>®</sup> FG" / Black coloured closed cell elastomeric nitrile insulation materials / Thickness and Density : 25mm, between 50 - 65 kg/m <sup>3</sup> , 32 mm, between 50 - 65 kg/m <sup>3</sup> , 40 mm, between 50 - 65 kg/m <sup>3</sup>	Durkee (Wuhan) Insulation Material Co., Ltd., PRC	30/4/2013	April 2018	a) No assessment was made on the density and toxicity of smoke generated by the materials under fire conditions. b) The product shall bear the marking "Durkflex <sup>®</sup> FG" as a means of identification.

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Thermal Insulation (656)	"Durkflex <sup>®</sup> FG" / Black coloured Closed Cell Elastomeric Nitrile Rubber Insulation Material / Thickness and Density : 50mm, between 45 - 60kg/m <sup>3</sup>	Durkee (Wuhan) Insulation Material Co., Ltd., P.R.C.	24/6/2013	June 2018	a) No assessment was made on the density and toxicity of smoke generated by the materials under fire conditions. b) The product shall bear the marking "Durkflex <sup>®</sup> FG" as a means of identification.
Thermal Insulation (666)	"PHENOTHERMTM" Phenolic Foam Insulation with "PAL <sup>®</sup> DSF-White 818" Aluminium Foil Facing / A composite insulation material comprising "Phenotherm" CFC and HCFC free closed cell phenolic foam faced with "PAL <sup>®</sup> DSF-White 818" (9-layers) double sided reinforced aluminium foil vapour barrier / Density and thickness : 40 kg/m <sup>3</sup> ; 25 mm thick	Phenotherm Asia Limited, PRC	3/10/2013	October 2018	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Acoustic Insulations (668)	"Wincell" Internal Acouster Insulations for the "Wolter" SDX Silent Cabinet Ventilation Fans / A dark grey elastomeric foam insulation board / blanket of 0.4 to 0.8 kg/m <sup>2</sup> of weight per unit area and 20 mm in thickness.	Jiangsu Zhaoseng Building Material Co. Ltd., PRC.	16/10/2013	October 2018	No assessment was made on the density and toxicity of smoke generated by the product under fire conditions.
Thermal Insulation (670)	"Fiber Coat" (Nylon 66) / Short Nylon 66 fibre having an normal length of 0.4 mm bonded to hot dip galvanized steel sheet by water based adhesive through and electrostatic flocking process	ShenZhen Catic & Tai Kee (E&M) Ltd. and WuXi XinDaZhong Steel Sheet Co., Ltd., PRC	23/10/2013	October 2018	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (671)	"Lucky-PIP" Pre-insulated Pipe system (CFC, HCFC and HCF free) / Piping system comprising a basic carrier pipe, a metal outer jacket of minimum 0.5 mm thick galvanized steel sheet and an insulation of 35 mm thick polyurethane foam (48 kg/m <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Link The Best Company Limited, Hong Kong	5/11/2013	October 2016	a) No assessment was made on the density and toxicity of smoke generated by the assembly under fire. b) No assessment was made on whether the product materials used are CFC, HCFC and HCF free.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (672)	"UniFiber <sup>®</sup> " Fiberglass with Black Glass Tissue (BGT) Facing / Fiberglass faced on one side with black glass tissue / Thickness / Density : 25 mm / 32 kg/m <sup>3</sup>	UniFiber Manufacturing Ltd., PRC	6/11/2013	November 2018	no assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (677)	"Teembase" Pre-insulated Pipe System / 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 <sup>3</sup> ) machine-injected between the carrier pipe and outer jacket.	Teembase Development Limited, PRC	20/11/2013	November 2018	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.
Thermal Insulation (679)	"Armacell Armaflex" / Class 0, closed cell, nitrile based flexible elastomeric insulation products (density between 40 kg/m <sup>3</sup> and 65 kg/m <sup>3</sup> ) / Thickness: 6mm, 9mm, 13mm, 19mm, 25mm, 30mm, 32mm and 50mm	Armacell (Guangzhou) Limited, P.R.C.	11/12/2013	June 2017	No assessment was made on the smoke density and toxicity generated by the materials under fire condition.
Thermal Insulation (687)	"Infung" Phenolic Foam Insulation with Aluminium Foil Facing / CFC/HCFC free phenolic foam material faced with double sided 0.2 mm thick aluminium facing foil Density : 40 kg/m <sup>3</sup> Thickness :15 mm - 50 mm	Jiangmenshi Xinhuiqu Huicheng Infung Insulation Material Factory (江門市新會區會城盈豐保溫材料廠), PRC	7/2/2014	October 2017	No assessment was made on the density and toxicity of smoke generated by the material under fire conditions.
Thermal Insulation (691)	"UniFiber <sup>®</sup> " Fiberglass with PAL <sup>®</sup> DSF 818 Aluminium Foil Facing / "UniFiber <sup>®</sup> " fiberglass with "PAL <sup>®</sup> DSF 818" aluminium foil facing / Fiberglass faced on one side with "PAL <sup>®</sup> DSF 818" double sided aluminium foil facing / Thickness / Density : 32 kg/m <sup>3</sup> / 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" Fibreglas Duct Liner Board/"Owens Corning" Fibreglas Duct Liner/Fibreglas duct liner board with Black Glass Tissue (BGT) facing	Owens Corning (Guangzhou) Fibreglas 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.

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Thermal Insulation (701)	"MGATHERM" Phenolic Foam Insulation Materials / "MGATHERM" Phenolic Foam with "MEGATHERM 758" aluminium foil facing / Density & Thickness : a) Density : 80 kg/m <sup>3</sup> & 120 kg/m <sup>3</sup> . b) Thickness : 20mm to 100mm / Application : For external insulation of ventilation ductwork and pipework	Megatherm Insulation Limited, HK (with phenolic foam from PRC)	29/4/2014	February 2018	No assessment was made on the density and toxicity of smoke generated by the materials under fire
Thermal Insulation (702)	"Owens Corning" Fiberglas® Duct Liner/a) Density 32-64 kg/m <sup>3</sup> . 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.
Thermal Insulation (705)	"CAPAPHEN-K" Phenolic Foam Insulation Material/"Phenolic foam with a normal density of 40 kg/m <sup>3</sup> 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 <sup>3</sup> b) 80 kg/m <sup>3</sup> c) 120 kg/m <sup>3</sup>	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 <sup>3</sup>	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 <sup>2</sup>	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.

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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 <sup>3</sup>	Thai Sekisui Foam Co., Ltd., Thailand	8/10/2014	October 2019	
Thermal Insulation (740)	"PHENOTHERM " Phenolic Foam Insulation with " PAL® DSF-Black 818" Aluminium Foil Facing.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 : 40kg/m <sup>3</sup> ; 25mm thick	Dongguan Juwun Rubber & Plastic Products Co., Ltd., PRC	12/12/2014	November 2018	No assessment was made on the density and toxicity of smoke generated by the material under fire
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 <sup>3</sup> / 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 : Armafex 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.



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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>3</sup> / 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 <sup>3</sup> b) 80 kg/m <sup>3</sup> c) 100 kg/m <sup>3</sup> / 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.
Acoustic Insulation (753)	"LAH" Glass Wool Internal Acoustic Lining / Fiberglass board / blanket of 50mm thick and having a density of a) 32 kg/m <sup>3</sup> b) 48 kg/m <sup>3</sup> / 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 <sup>3</sup> 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.

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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 (758)	"K-Flex" Insulated Pipe Support for Ventilating System / Composite insulation support comprising of rigid PIR, with a density of 120 kg/m <sup>3</sup> , 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 <sup>3</sup> / 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.
Acoustic Insulation (779)	"Wilhams " Acoustic Noise Barrier Mat / "Wilhams " Type WB 5 / Material : A 3 mm thick black barium sulphate loaded thermoplastic polymer faced on one side with glass reinforced aluminium foil. / Density : 5.0kg/m <sup>2</sup> / Application : For external acoustic insulation of ductwork and pipe work.	Wilhams Insulation Ltd., U.K.	14/7/2015	August 2018	No assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Thermal Insulation (783)	"UniFiber <sup>®</sup> " fiberglass with single sided "PAL <sup>®</sup> SSF 515" aluminium foil facing / Density / Thinkness 64 kg/m <sup>3</sup> / 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup> / 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 (785)	"UniFiber <sup>®</sup> " fiberglass with single sided "PAL <sup>®</sup> SSF 515" aluminium foil facing / Density / Thickness 32 kg/m <sup>3</sup> / 25 mm / For external insulation of ventilating ductwork and pipe work in ventilating systems.	UniFiber Manufacturing Ltd., PRC	21/7/2015	January 2018	No assessment was made on the density and toxicity of smoke generated by the material under fire.
Thermal Insulation (800)	"K-Flex" Pipe Support / Material : Insulated pipe support comprising of rigid polyurethane with a density of 180-220 kg/m <sup>3</sup> , 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 / Acoustic Insulations (802)	"TANADA R100 Rockwool" / Material : Yellow rockwool board having a density of 100 kg/m <sup>3</sup> 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 condition.
Thermal Insulation (804)	"Phenotherm <sup>™</sup> " / Phenotherm <sup>™</sup> phenolic foam / Material : A composite insulation panel comprising a phenolic foam core having a density of 60 kg/m <sup>3</sup> bonded on both sides with white glass tissue and embossed aluminium foil of a thickness $\geq$ 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Insulation (805)	"GOODEVER PF" / "GOODEVER PF" Phenolic Foam Insulation with Aluminum Foil Facing / Material : Phenolic foam insulation with a density of 40 kg/m <sup>3</sup> 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.
Acoustic insulation (812)	"Sargents" SILDUCT Silencer / 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 Work Co., Ltd., PRC	23/10/2015	April 2017	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.
Thermal Insulation (819)	"CAPAPHEN-K" Phenolic Foam Insulation Material / Material : Phenolic foam with a nominal density of 120 kg/m <sup>3</sup> 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.
Thermal Insulation (823)	"P-flex <sup>®</sup> " 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 <sup>3</sup> / 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 <sup>®</sup> FG" Closed Cell Nitrile Rubber Insulation / Brand Name : "Durkflex <sup>®</sup> FG" / Material : Black coloured closed-cell elastomeric thermal insulation material comprising of Nitrile Butadiene rubber / Thickness and Density : 19mm and 52 kg/m <sup>3</sup> 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 <sup>®</sup> FG" as a means of identification.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>3</sup>	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 <sup>3</sup> 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 <sup>3</sup> .	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 <sup>3</sup> .	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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup> .	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 <sup>3</sup> .	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 <sup>3</sup> Approx.	Dongguan Penghua Thermal Materjal 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.
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 <sup>3</sup> ) 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>3</sup> - 64 kg/m <sup>3</sup> .	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 <sup>3</sup> .	Armacellular (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 <sup>3</sup> and 150 kg/m <sup>3</sup> .	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 <sup>3</sup>	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 (860)	"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 <sup>3</sup>	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.
<b>(11) Miscellaneous</b>					

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Thermal Connector (532)	"COLAN" AF406/Silicone Glass-Fibre Fabric as Flexible Connector in Ventilation/Smoke Extraction System / "COLAN AF406/Silicon" Glass-fibre fabric / A woven fibreglass fabric with silicon rubber coating on both sides, having a nominal thickness of 0.46 mm and a normal weight of 543 g/m <sup>2</sup> and with a standard reference colour grey.	COLAN Products Pty Ltd., Australia	7/7/2011	July 2016	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.
Aluminium Foil Facing (589)	"UniFiber <sup>®</sup> " Fiberglass Insulation with PAL <sup>®</sup> DSF 818 Double Sided Aluminium Foil Facing / "UniFiber <sup>®</sup> " fiberglass with "PAL <sup>®</sup> DSF 818" aluminium foil facing / Fiberglass wool insulation with doubled sided aluminium foil vapour barrier / Thickness/Density : 50 mm / 64 kg/m <sup>3</sup>	UniFiber Manufacturing Ltd., PRC	6/7/2012	July 2017	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.
Glass Tape as Gasket (595)	"COLAN TTW 30" Glass Tape / a) 'E' type texturised yams b) 3mm thick & 50 mm wide c) Density of 2794kg/cu.m approx.	COLAN Products Pty Ltd., Australia	22/8/2012	August 2017	no assessment was made on the density and toxicity of smoke generated by the product under fire condition.
Aluminium Foil Tape (598)	"INFUNG" AF045 / High strength aluminium foil (30 micron) tape coated on one side with acrylic adhesive / Application: For the sealing of joints in ventilation system	Jiangyin BondTape Technology Corporation, PRC	23/8/2012	August 2017	no assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Duct Sealant (633)	"Foster Duct-Fas 32-19" / Application : For sealing galvanized, aluminum and mild steel ductwork in ventilating systems. Method, coverage range and drying time shall fully comply with the manufacturer's recommendations.	Foster Products Corporation, USA	22/1/2013	January 2018	no assessment was made on the density and toxicity of smoke generated by the material under fire condition.



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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
Aluminium Foil Tape (636)	Ideal Tape 488 ECO / 30 micron (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	4/2/2013	February 2018	no assessment was made on the density and toxicity of smoke generated by the product under fire.
Rubber Insulation Adhesive (649)	"I-Bond 1230" Water Based Adhesive	Guangdong Orient Resien Co., Ltd., PRC	8/5/2013	May 2018	no assessment was made on the density and toxicity of smoke generated by the material under fire condition.
Duct Sealant (653)	"Duct-Fas Duct Sealant / Foster 32-19" Water Based Duct Sealant / Material : (a) Sealant made of Calcium Carbonate, Kaolin Clay, Titanium Dioxide, Crystalline Silica and Cristobalite (b) Density : 1.4 kg/litre	Sam Hwa Chemicals Co., Ltd., Korea	28/5/2013	May 2018	a) No assessment was made on the density and toxicity of smoke generated by the product under fire conditions. (b) No assessment was made on composition / information on the ingredients of the sealant.
Self-adhesive Foil Tape (700)	PAL AT38 & AT38W Class 'O' Self-Adhesive Foil Tapes / a) AT38 - High strength aluminium foil (38 micron thick) coated on one side with permanent synthetic rubber resin adhesive b) AT38W - High strength aluminium foil (38 micron thick) with a white surface finish on the external side and coated on the other side with permanent synthetic rubber resin adhesive.	Phenotherm Asia Ltd., PRC	29/4/2014	September 2018	No assessment was made on the density and toxicity of smoke generated by the products under fire condition.
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 <sup>®</sup> 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.
Aluminium Foil Tap (755)	"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	10/2/2015	October 2016	a) 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 <sup>®</sup> 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 <sup>®</sup> " / "PAL <sup>®</sup> " 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.

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TYPE	BRAND NAME / MODELS / DESCRIPTION	MANUFACTURER	ACCEPTANCE DATE	DATE TO REVIEW	Remarks
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 <sup>2</sup> .	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.