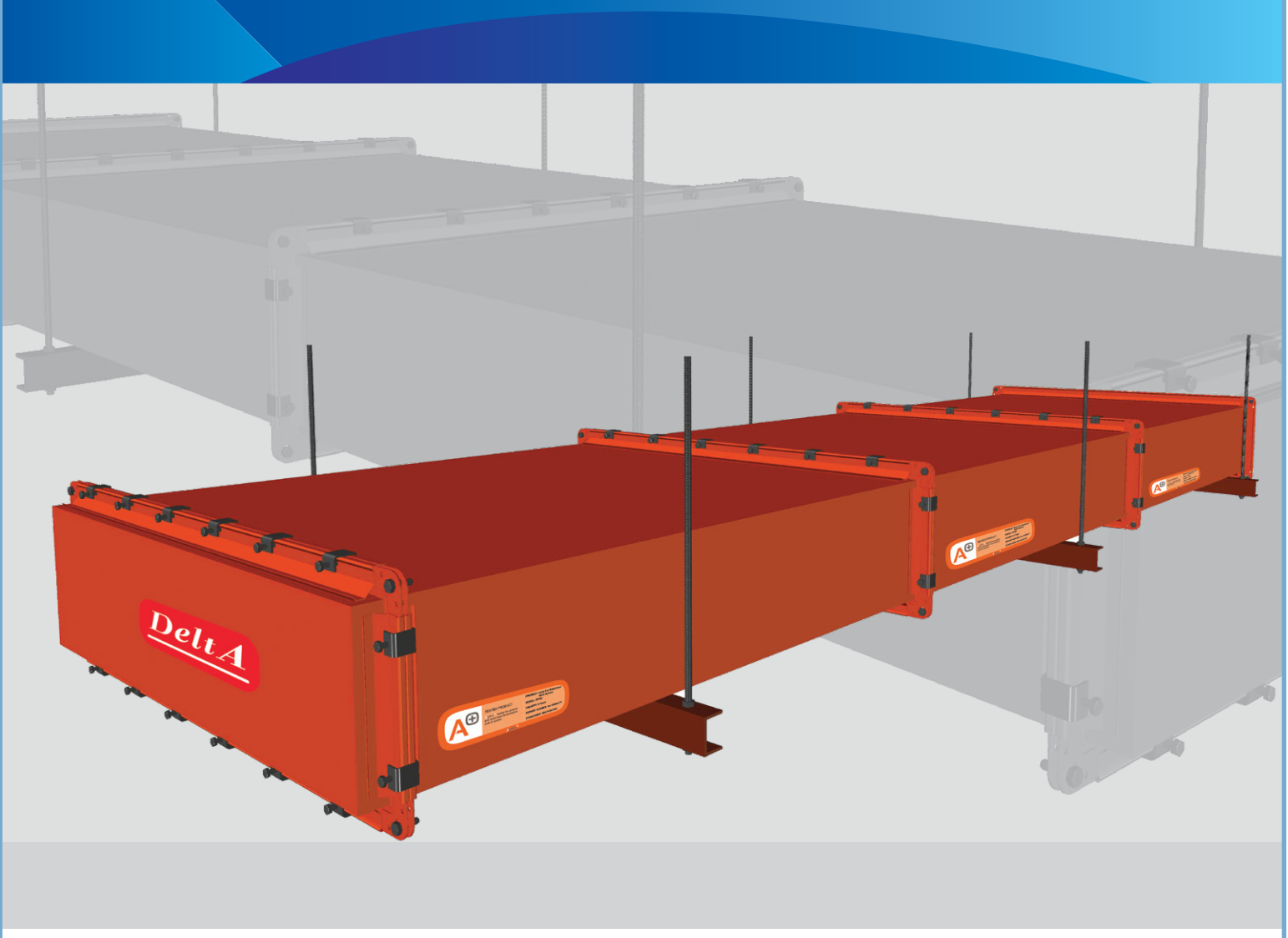




Delta Duct Air Conditioning

Delta Fire Rated Ductwork System



Fire Rated Ductwork Providing 2 Hrs. Fire Resistance when tested to BS 476 Part 24 : 1987

Delta Fire Rated Ductwork System - DFRD

Fire Rated Ductwork providing 2 Hrs. Fire resistance when tested to BS 476 Part 24:1987

Majority of deaths in fire situation are caused by smoke inhalation. Non-fire resisting ductwork system can be responsible for allowing the initial spread of fire between the compartments, and by allowing the rapid spread of smoke.

DFRD System is a coated ductwork system, especially designed for fire rated duct works for Ventilation Fire Ductwork, Smoke Exhaust Ductwork, Car Park Ventilation Ductwork, Kitchen Exhaust Ductwork and Pressurization Ductwork.

DFRD System coating is suitable for the application over the galvanized steel, mild steel and stainless steel rectangular ductwork.

Features:

- Steel ducts manufactured as per Drawing 30, 31, 32, 33 & 34.
- Ducts coated with DFRD system and installed as per installation instruction, will have stability, integrity and insulation as per BS 476 part 24 standard.
- Provides fire resistance for 120 Minutes in accordance with BS 476 part 24.
- Durable and decorative finish.
- Easy Application and clean up with water.
- Coated Duct will have the excellent water resistance quality.
- Coated Duct will have the excellent impact resistance quality.
- Coated Duct will have the excellent UV resistance quality.
- Excellent surface finish.
- Lighter in weight comparative to alternate solution.
- Considerably cheaper than alternative system.
- Maximum aspect ratio for the rectangular duct of the longed side dimension to shorted dimension 4:1

Delta Fire Rated Ductwork System - DFRD

Test Result Standard and Criteria

The Duct has been subjected to the conditions indicated in to BS 476 part 24: 1987 “Fire test on building material and structures. Part 24. Method of determination of fire resistance of ventilation ducts” in order to verify the performance criteria stated in this standard for horizontal duct type A and type B.

Stability : (Chapter 9.2.1 of BS 476 Part 24:1987)

DFRD system when subject to the stability test according to BS 476 Part 24 standard : 1987 standard , did not collapse in such a manner that duct no longer fulfill it’s intended function for 2 Hrs. DRDF system fulfill the stability criteria for 2 Hrs.

Integrity : (Chapter 9.2.3 of BS 476: Part 24:1987)

DFRD system when subjected to Integrity test according to BS 476 : Part 24 : 1987, for 2 hours, it did not showed any presence and formation of cracks, holes or other opening outside the furnace through which fumes or hot gasses can pass. Also there was no ignition of cotton pads or appearance of sustained flaming (10 Sec.) on the unexposed surface of the ducts. DFRD system fulfil the integrity criteria for 2 Hrs.

Insulation : (Chapter 9.2.2 of BS 476: Part 24:1987)

Insulation failures occurs when the temperature rise above initial ambient temperature on unexposed surface of the ducts outside the furnace exceeds either:

- 140°C as an average value; or
- 180°C as a maximum value read by any surface thermocouple.

DFRD system when test as per above mentioned criterial has withstand more than 30 minutes without Insulation.

Delta Fire Rated Ductwork System - DFRD

Time – Temperature Curve.

FURNANCE TEMPERATURE

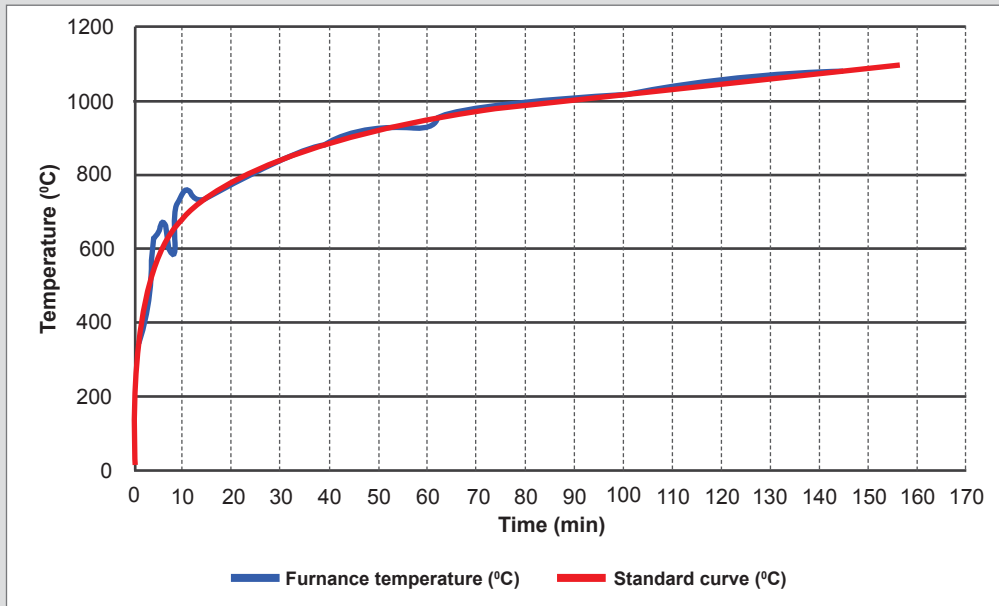


Figure 3.a

MEAN TEMPERATURE

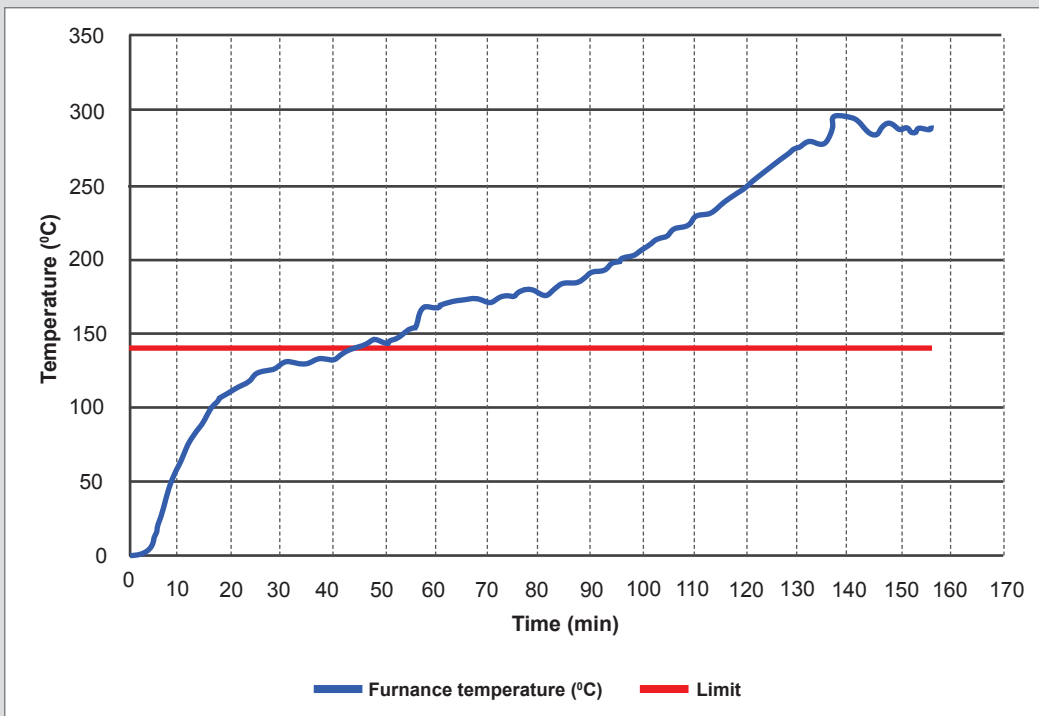
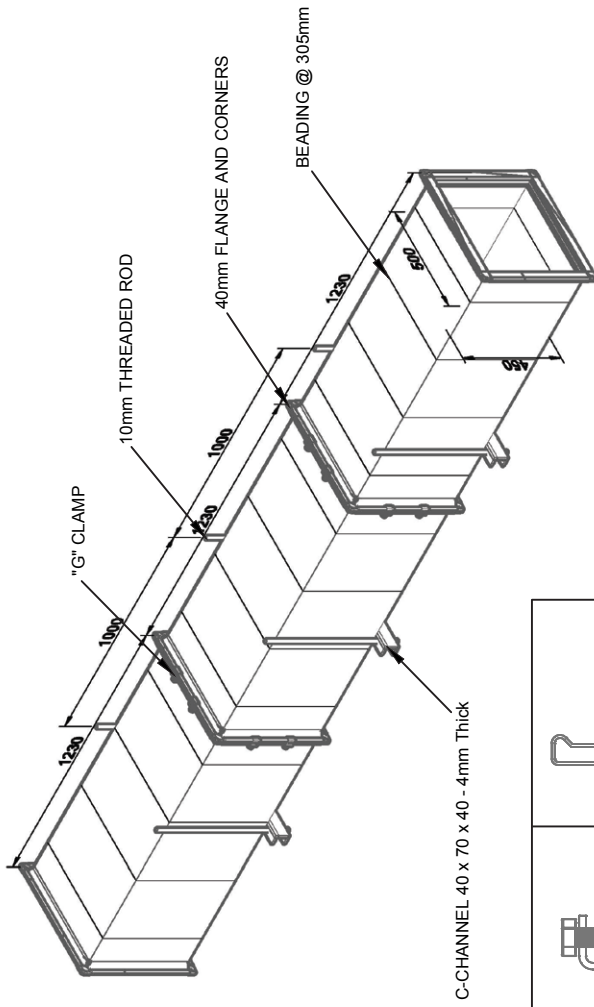
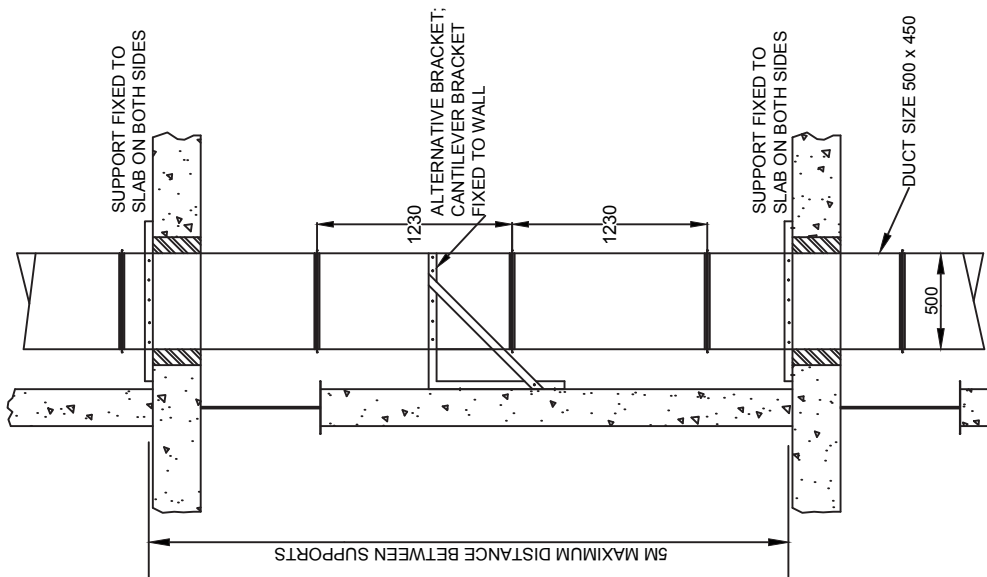
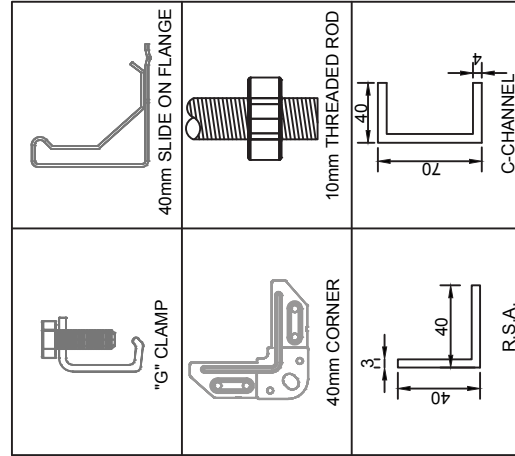


Figure 4

MODEL	MATERIAL	ORIENTATION	SIZE	MAXIMUM SIZE	THICKNESS	LONGITUDINAL JOINT	BEADING	FLANGE	STIFFENER	HANGER THREADED ROD	BEARER MEMBER
DFRD-800	GI STEEL	Horizontal / Vertical	0-800	800 X 800	1.2mm	Pitsburgs Lock seam/ Grooved corner seam	305mm	40mm Slide on flange / 40 X 40 X 3mm Angle	NIL	10mm	C-Channel 40 x 70 x 40 - 4 mm Thick



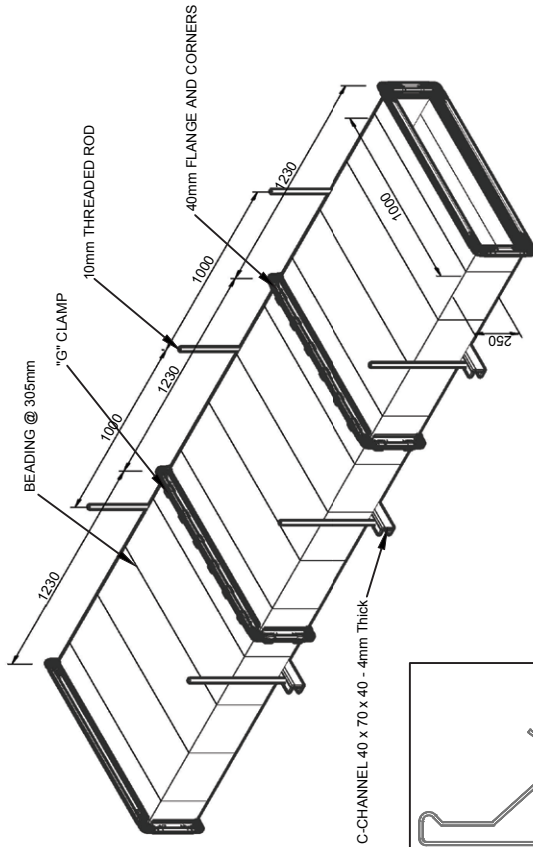
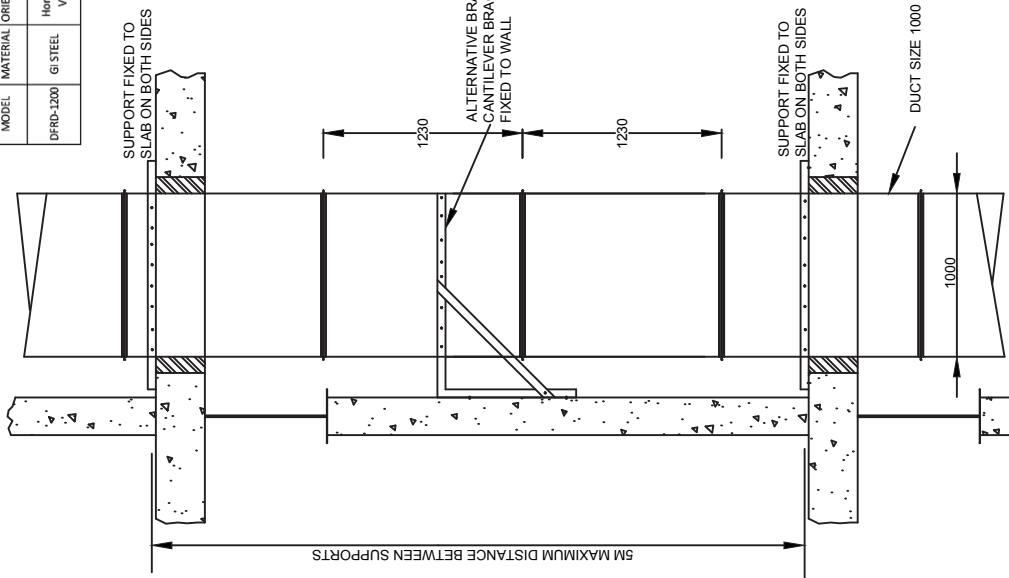
HORIZONTAL DUCTING



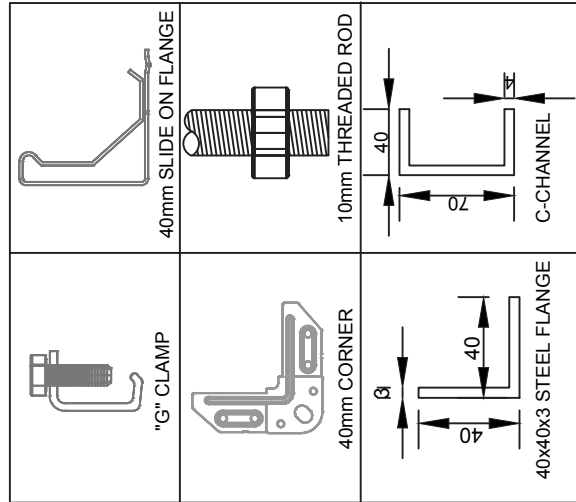
VERTICAL DUCTING

Drawn	MN	Drg No: 30-R-1
Check	RR	All Dimensions are in M.M.
Approve	JT	Date 29-05-2016

MODEL	MATERIAL	ORIENTATION	SIZE	MAXIMUM SIZE	THICKNESS	LONGITUDINAL JOINT	BEADING	FLANGE	STIFFENER	HANGER THREADED ROD	BEARER MEMBER
DFRD-1200	GI STEEL	Horizontal / Vertical	0-1200	1200 X 1200	1.2mm	Plisburgs Lock seam/ Grooved corner seam	305mm	40mm Slide on flange / 40 X 40 X 3mm Angle	NIL	10mm	C-Channel 40x 70x 40 - 4 mm Thick



HORIZONTAL DUCTING



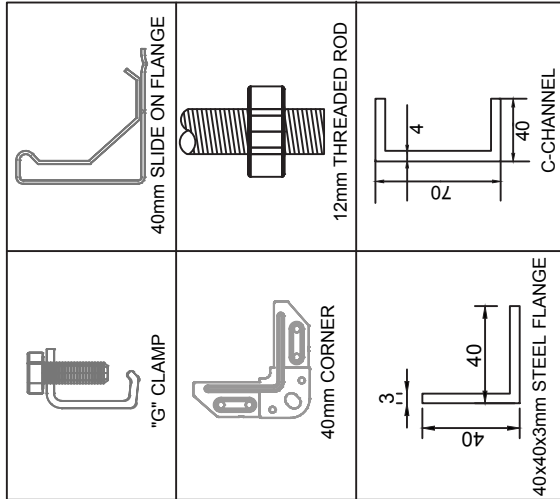
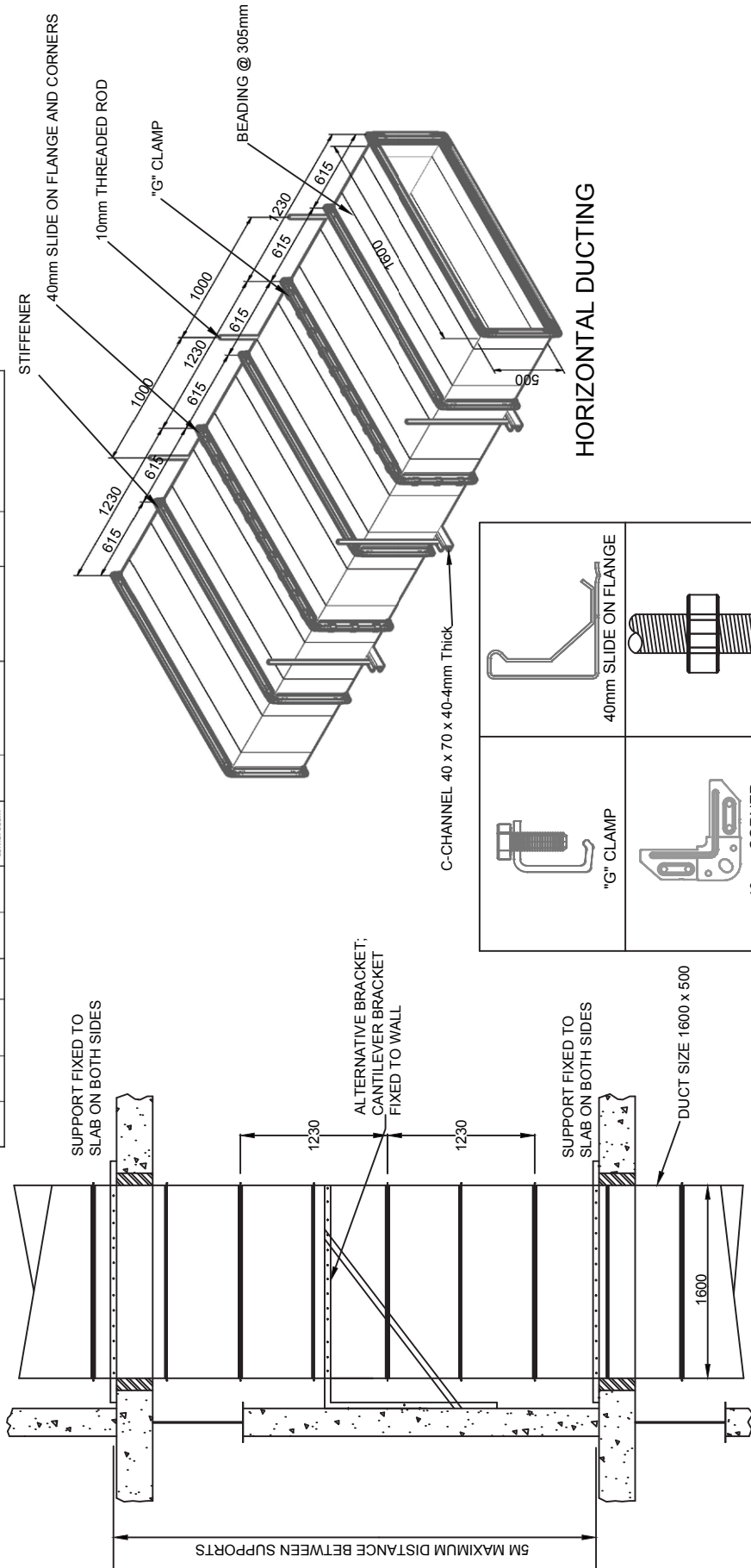
VERTICAL DUCTING

Drawn	MN	Drng No: 31-R-1
Check	RR	All Dimensions are in M.M.
Approve	JT	Date 29-05-2016



FIRE RATED DUCT SYSTEM

MODEL	MATERIAL ORIENTATION	SIZE	MAXIMUM SIZE	THICKNESS	LONGITUDINAL JOINT	BEADING	FLANGE	STIFFENER	HANGER THREADED ROD	BEARER MEMBER
DFRD-1800	GI STEEL Horizontal/ Vertical	Ø 1800	1800 X 1800	1.2mm	Phiburgs Lock Beams / Grooved corner beam	305mm	40mm Slide on flange / 40 X 40 X 3mm Angle	40mm Slide on flange / 40 X 40 X 3mm Angle	12mm	C-Channel 40 X 70 X 40 - 4mm Thick



Drawn	MN	Drawn	Dwg No.: 32-R-1
Check	RR	Check	All Dimensions are in M.M.
Approve	JT	Approve	Date
			29-05-2016

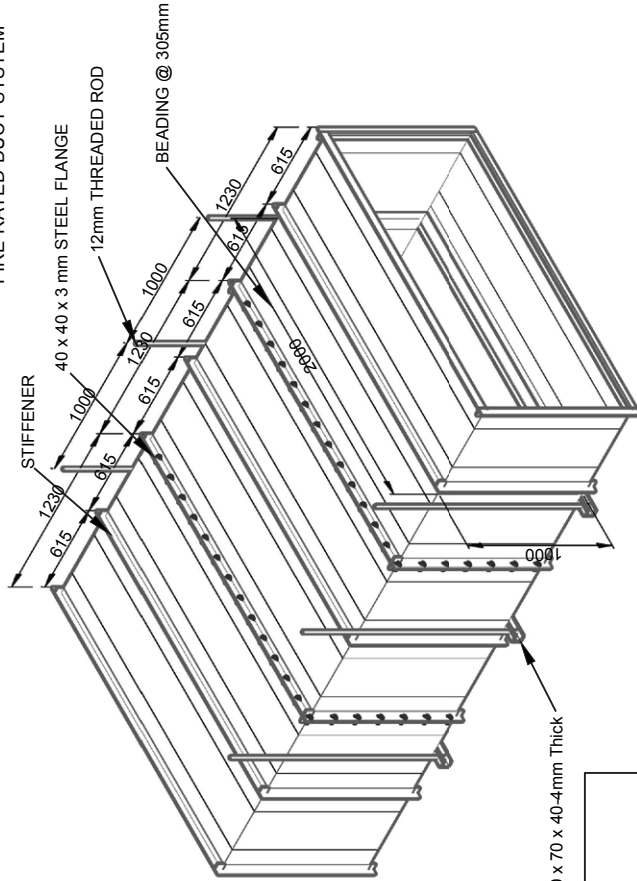
Duct Construction Drawing : 32

Delta Fire Rated Ductwork System - DFRD

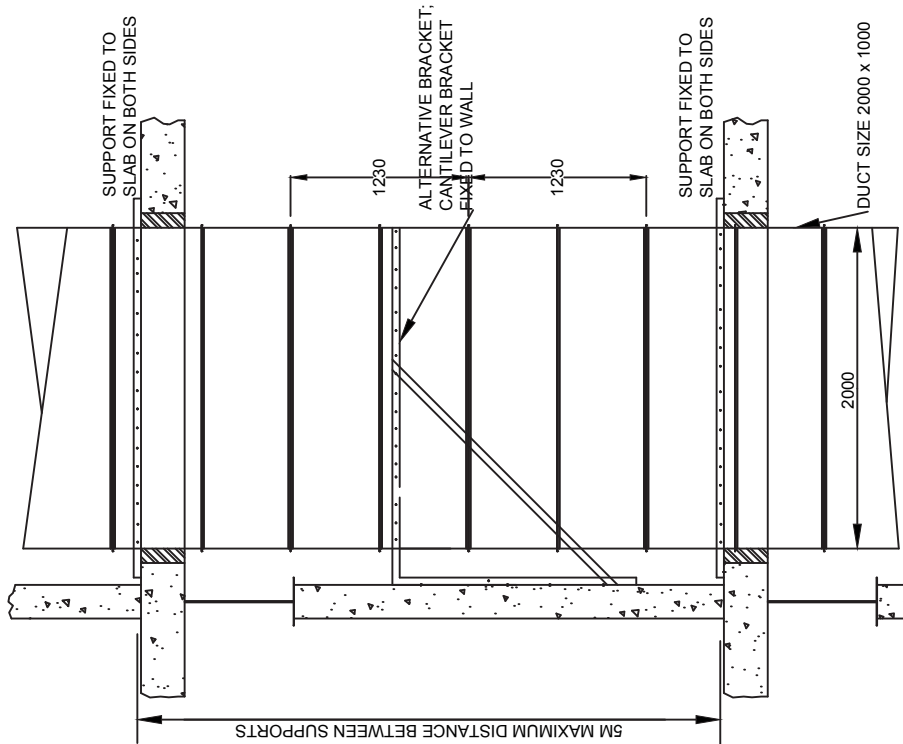
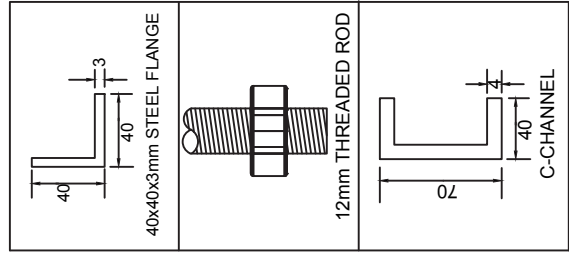


FIRE RATED DUCT SYSTEM

MODEL	MATERIAL ORIENTATION	SIZE	MAXIMUM SIZE	THICKNESS	LONGITUDINAL JOINT	BEADING	FLANGE	STIFFENER	HANGER THREADED ROD	BEARER MEMBER
DFRD-2000	Horizontal / Vertical	0-2000	2000 X 2000	1.2mm	Pittsburgs Lock seam / Grooved corner seam	305mm	40mm Slide on flange / 40X 40 X 3mm Angle	40mm Slide on flange / 40X 40 X 3mm Angle	12mm	C-Channel 40 x 70 x 40 - 4 mm Thick



HORIZONTAL DUCTING



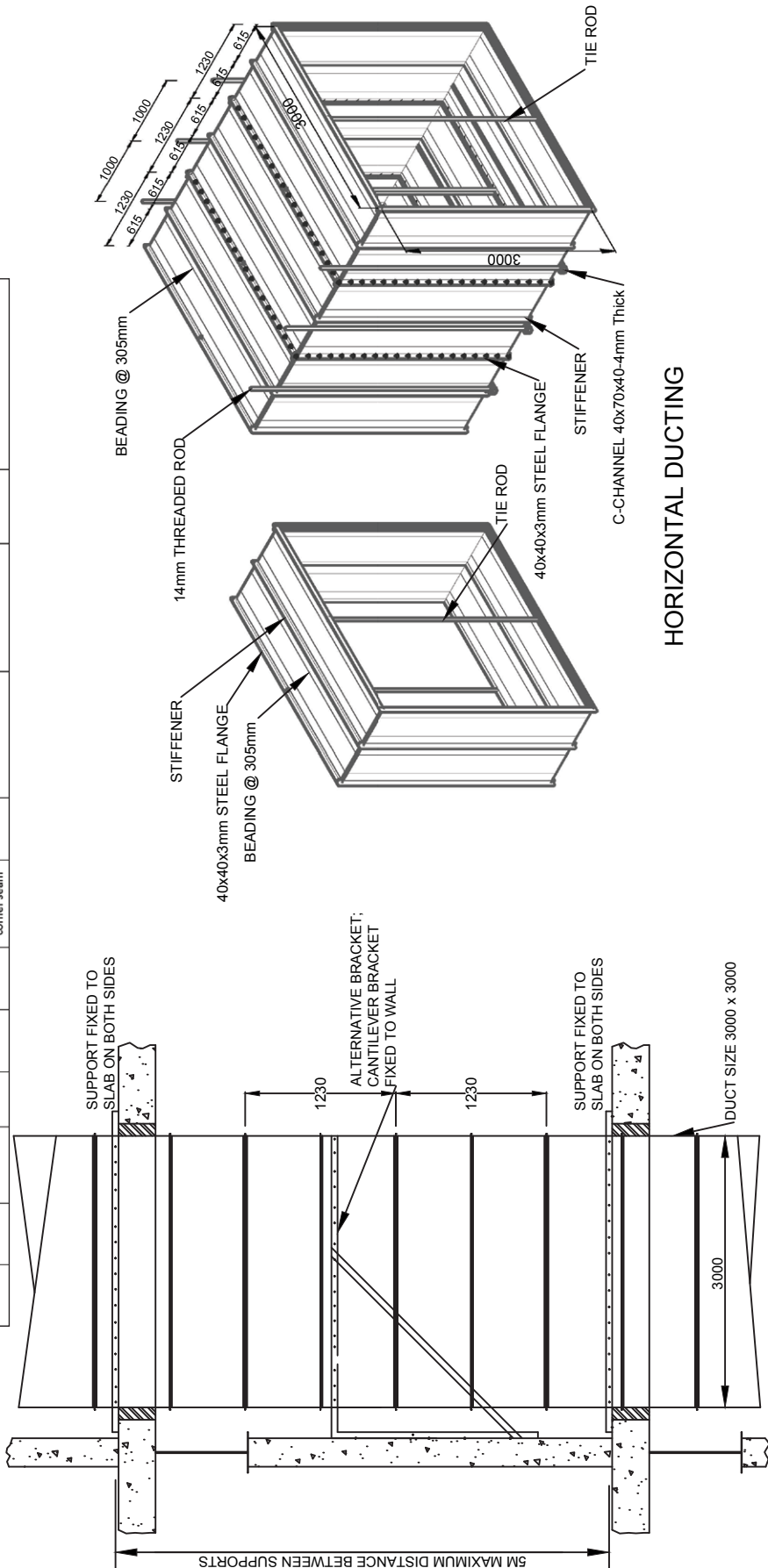
VERTICAL DUCTING

Drawn	MN	Drng No: 33-R-1
Check	RR	All Dimensions are in M.M.
Approve	JT	Date 29-05-2016

Duct Construction Drawing : 33

Delta Fire Rated Ductwork System - DFRD

MODEL	MATERIAL	ORIENTATION	SIZE	MAXIMUM SIZE	THICKNESS	LONGITUDINAL JOINT	BEADING	FLANGE	STIFFENER	HANGER THREADED ROD	BEARER MEMBER
DFRD-3000	GI STEEL	Horizontal / Vertical	0-3000	3000 X 3000	1.2mm	Pittsburgs Lock seam / Grooved corner seam	305mm	40mm slide on flange / 40 X 40 X 3mm Angle	40mm slide on flange / 40 X 40 X 3mm Angle	14mm	C-Channel 40 x 70 x 40 - 4 mm Thick



HORIZONTAL DUCTING



VERTICAL DUCTING

Drawn	MN	Dirg No. 34-R-1
Check	RR	All Dimensions are in M.M.
Approve	JT	Date 29-05-2016

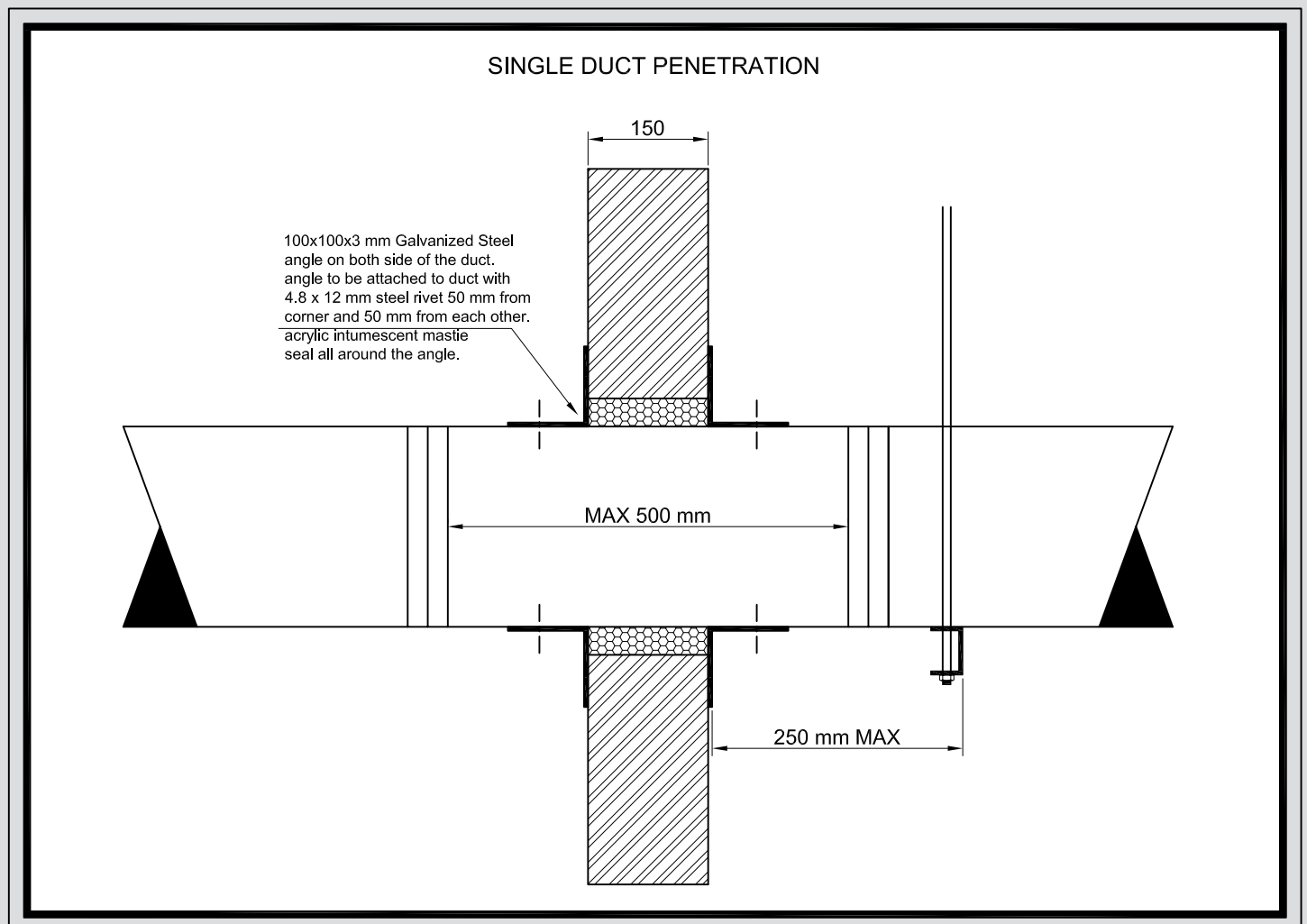
Duct Construction Drawing : 34

Delta Fire Rated Ductwork System - DFRD

Delta Fire Rated Ductwork System - DFRD

Single Duct Penetration :

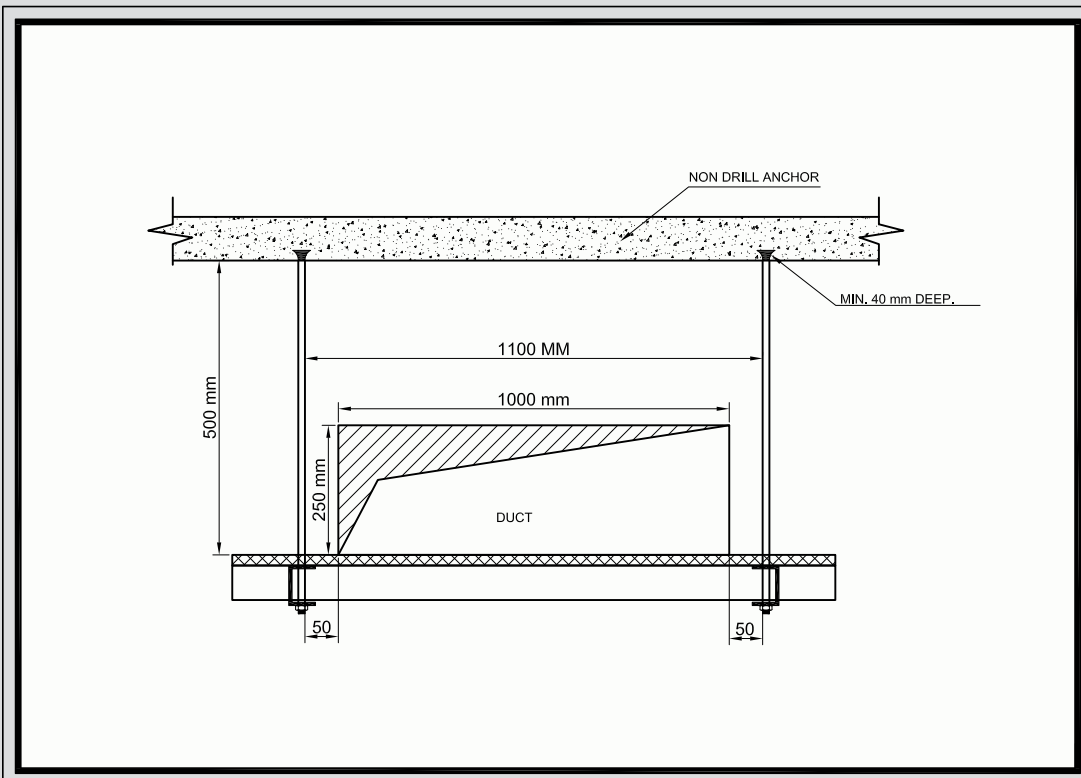
- The gap between duct and the reveal of the opening in the wall was 25MM on each side.
- The gap to be filled with silicate wool “Insulfrax S Blankets” by UNIFRAX, 25MM with density 128kg/m³.
- Galvanized steel angle of 100MM X 100MM X 3MM are installed on both side of the separation wall, attached to the duct with 4.8MM x 12MM steel rivet, positioned 50MM from the corner with separation of 50MM and to the wall with Bolt 10MM.
- Silicate wool “Insulfrax S Blankets” by UNIFRAX, 25MM thick and density 128kg/m³ was placed between the fire separation wall and the steel angle installed on shorter side.
- Steel Rivet covered with sealant.



Delta Fire Rated Ductwork System - DFRD

Hanger & Support System:

- The Ducts should be supported by M10 or M12 threaded rod fixed to a “C” shaped mild steel profile of 40MM x 70MM and 4MM thickness.
- Maximum length of threaded rod to be from 1.50 M to 3.3 M.
- Maximum length of bearer from 1.20 M to 3.20 M.
- Maximum distance between the hangers is 1 M.
- Distance between the face of the wall and the first support, on both the side of wall must not exceed 250MM.



Vertical Duct :

Vertical duct must be supported at each level so that the weight of the duct is taken by the floor. This must not compromise the penetration seal. If the distance between the floor is greater than 5M then intermediate support must be fitted. Also to prevent the buckling of the duct, the distance between supports should not exceed 8 times the smallest lateral dimension across the outside face of the duct.

The design of the penetration seal through the floor is same as the design of the seal through the wall for horizontal duct.

إدارة السلامة الوظيفية - إدارة الأعمال الشركات

ترخيص مصنع - بإمارة دبي

رقم الترخيص: M65
 سنة الترخيص: 2016
 حد الترخيص: 1 - 1

تم إصدار الترخيص استناداً إلى القرار الوزاري رقم (149) لسنة 2012، في شأن تنظيم خدمات الدفاع المدني

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 رقم الترخيص: 533390
 رقم الممول: ***
 رقم الإبريق: ***
 رقم الترخيص: 04-806768
 رقم الترخيص: 04-8067676
 رقم الترخيص: 2015/04/15
 تاريخ الإصدار: 2016/07/25
 تاريخ الانتهاء: 2017/04/10

موقع البريد الإلكتروني: Rahim@bindamal.com

معلومات وأجهزة المعتمدة

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 No. UAE-278

PRODUCT APPROVAL CERTIFICATE FOR THE UNITED ARAB EMIRATES
 APPLUS-IGAT TECHNICAL CERTIFICATES S.A. certifies the following:

TEST REPORT NUMBER: 157985-1002
 INQUIRY: 157985001 Rev. 157985-1558

DATE OF ISSUE: 23/06/2016
 DATE OF EXPIRY: 23/06/2017

DATE OF FABRY: 2016/06/23
 DATE OF EXPIRY: 2016/06/23

FACTORY: ADAR AIR CONDITIONING
 ADDRESS: P.O. Box 5389, Dubai Industrial City, Dubai, UAE

BRANDS: DELTA FIRE SAFE DUCTWORK SYSTEM - DELTA

LOGO ON THE PRODUCT: **Delta** FIRE SAFE DUCTWORK SYSTEM

DATA FROM TEST REPORT:

TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER	TEST REPORT NUMBER
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Delta Duct®

Delta Duct Airconditioning

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