

DVAC

DUCT VENTILATION AIR CONDITIONING Co. (W.L.L.)

Non Coated Fire Rated Ducts Catalogue



Non-Coated Fire Rated Ductwork - DVAC 120

Tested in accordance with BS 476: PART 24:1987





DUCT VENTILATION AIR CONDITIONING Co. (W.L.L.)

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Non-Coated Fire Rated Ducts

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INTRODUCTION

DVAC 120 Fire Duct System is an innovative Non Coated Fire Rated Ductwork that has been designed by Industry Leading Technical Experts. **DVAC 120** Fire Rated Duct is specially designed fire rated ductwork system without coating.

DVAC 120 complies with **BS 476: Part 24: 1987** and **ISO 6944-1 (1985)** and similar Standards For **2 Hours Stability and Integrity for Ducts “Type A” & “Type B” (Outside & Inside)**.

Approximately 85% of deaths in fire situations are caused by smoke inhalation. Non-Coated Fire Resisting Ductwork System can be responsible for allowing the initial spread of fire between compartments and by allowing the rapid spread of smoke and decomposition products. The correct use of Fire Resistant Ductwork will maintain fire compartmentation and assist in the safe dispersal of smoke and hazardous fumes.

DESCRIPTION

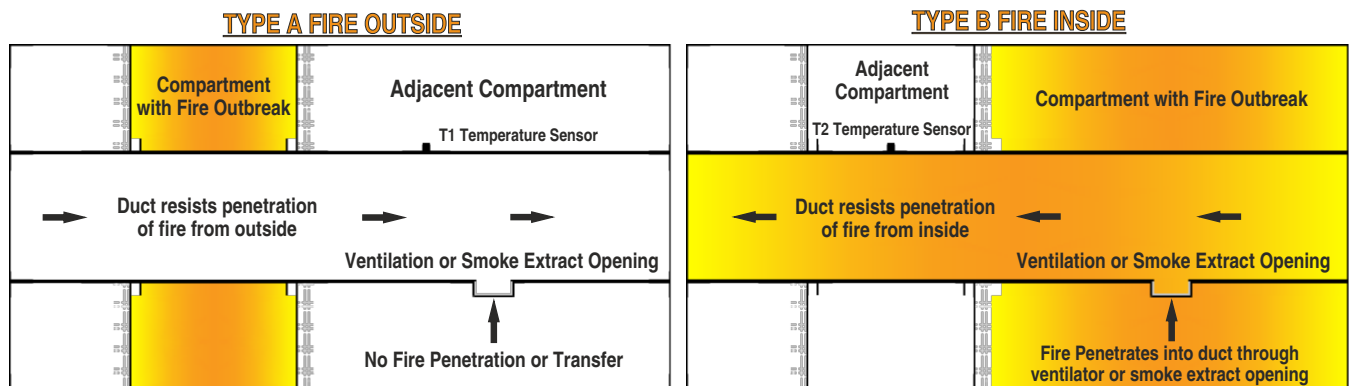
DVAC NON COATED FIRE RATED DUCTS SYSTEM COMPLIES WITH LOCAL CONSTRUCTION STANDARDS AND CIVIL DEFENSE AUTHORITIES IN THE STATE OF QATAR.

A. **DVAC 120 Non-Coated Fire Rated Duct System is tested and approved for:**

1. Mechanical Ventilation System
2. Dual Ventilation
3. Smoke Extraction System
4. Car Park Extraction System
5. Pressurization Duct.

B. **DVAC 120 Non-Coated Fire Rated Duct System Features:**

1. All Ductworks are manufactured according to the Construction Schedule approved by QCDD.
2. **DVAC 120 Non-Coated Fire Rated Duct System is tested and certified as per BS 476: Part 24: 1987 for 2 Hour Stability and Integrity for Type A & Type B.**
3. Tested & certified for Galvanized / Stainless Steel / Carbon Steel Rectangular, Circular and Oval Ducts.



* DVAC 120 (Non-Coated Fire Rated Ducts) complies with BS 476: PART 24: 1987 and ISO 6944-1 (1985) for 2 Hours Stability & Integrity for Type A & Type B Ducts.

TEST RESULT STANDARD AND CRITERIA

DVAC Duct Specimen has been subjected to the condition indicated into the **BS 476: Part 24 (ISO 6944)**, method of determination of fire resistance of ventilation ducts, in order to verify the performance criteria stated in this standard for Horizontal and Vertical Ducts.

A. Stability : **DVAC 120 Non-coated Fire Rated Ductwork System** conforms with the Stability Test Standards. All the support system remained intact and fulfilled the requirements for 2 hrs for both **Type A & Type B** Ducts. **DVAC 120 Non-Coated Fire Rated Ductwork System fulfills the Stability Criteria for 2 hours.**

B. Integrity: **DVAC 120 Non-Coated Fire Rated Ductwork System** when subjected to Integrity test according to **BS 476: Part 24 (ISO 6944) for 2 hours**, it did not show any presence or formation of cracks, holes or any other opening outside the furnace, through which fumes or hot gasses can pass. There were no ignition of cotton pads or appearance of any sustained flaming on the unexposed surface of the duct specimens. **DVAC 120 Non-Coated Fire Rated Ductwork System fulfills the Integrity criteria for 2 hours.**

DVAC 120 BENEFITS

1. Speed

Removing the need for a multi-process coating means that the manufacturing 'turnaround' for **DVAC 120** Ductwork can be quick and meet customers' expectations; especially for any urgent add-on orders.

2. Durability

DVAC 120 Fire Rated Ductwork has no coating that could be damaged during transportation and/or installation or that will degrade over time and/or due to vigorous cleaning. Fire performance relies on a product's dependability and durability.

3. Economy

Using **DVAC 120** can assist in "designing out" Fire Dampers. This allows considerable savings on the total capital cost of dampers, their installation and on-going costs associated with periodic testing, maintenance and ultimately replacement of failed dampers over time. Non-coated product is therefore particularly cost-effective over the lifetime of the building.

4. Cleaning

To minimize the build-up of combustible materials (grease) on the inside of Fire Rated Systems, it is recommended -in both the Building Regulations and DW172- that systems are regularly cleaned. To facilitate thorough cleaning, fire resisting access doors should be positioned every 2m along the ductwork. In addition, fire resisting access doors should be positioned –on either one or two sides– where the ductwork takes a change of direction and also adjacent to any inline plant such as fans, balance dampers, attenuators and heat recovery coils. Non-Coated **DVAC 120** ductwork is easier to clean and maintain than spray coated or clad systems. Visual checks are also simple and quick to conduct, as nothing is concealed.

5. Safety

Unlike some other systems which require the in-situ application of bonding agents & fillers, there is no specific requirement for RPE (Respiratory Protective Equipment) or a well-ventilated work area, over & above normal Health and Safety measures.

6. Environmental

DVAC 120 is manufactured without the need for the additional chemical processes which are required to etch, prime and coat ductwork. This eliminates the environmental impact risk and costs otherwise associated with the production, application and hazardous waste disposal of chemicals.

* **DVAC 120 (Non-Coated Fire Rated Ducts) complies with BS 476: PART 24: 1987 and ISO 6944-1 (1985) for 2 Hours Stability & Integrity for Type A & Type B Ducts.**

FABRICATION PROCEDURES

- I- Rectangular Ducts:** Fabrication of Galvanized Rectangular Ducts shall be based on Drawing/Take-Off provided by the client, following consequently below procedures:
- The Shop Drawings shall be encoded into our Autodesk Fabrication CAD-Mep Software, to be converted into individual plans. All items shall be Tagged on the drawings. Individual duct pieces shall be nested on sheet to maximize the sheet usage on CNC Machine avoiding material loss.
 - An accurate BOQ shall be issued including connectors.
 - The Fabrication Data shall be saved as NC Program, shall be printed out into different Job Orders (for Straight Ducts & Fittings).
 - Job orders shall be sent to the CNC Plasma & Coil Line machines for cutting and items identification, as follows:
 - For Straight Rectangular ducts, the Coil shall be cut into sheets and folded through the Coil Line Machine. It shall be stiffened by mean of beading @ 300mm center distance. (Straight Duct standard length shall be 1220mm).
 - For Fittings (Elbow, Tee, Reducer, etc..) the sheets shall be cut through the Plasma Cutting Machine into individual marked pieces; then shall be taken to the assembly area.
 - Connectors that shall be fixed to the ducts/fittings complying to the Fire Rated Ducts Construction Schedule.
 - Stiffener shall be applied in the outer middle of the duct as per Construction Schedule.




II- Circular Spiral Ducts: Fabrication of **Straight** Galvanized Circular Ducts shall be based on Drawing/Take-Off provided by the client, following consequently below procedures:

- The Job Order shall be encoded in the SPIRO Tubeformer Machine to produce the straight spiral ducts as per diameters and lengths requested.
 - Connectors/Joints shall be according to the project specs (Flanges / Coupling)
- N.B:** Fittings Fabrication shall be same as for the Rectangular Ducts Fittings.

* QA/QC shall be conducted before each delivery in order to indicate the "Passed" or "Rejected" Tags

* Each item shall be holding DVAC Label with a Code; contents as follows:

- Tag No.,
- PO Ref.,
- Date,
- Customer/Company Name,
- Project Name,
- Job Order Ref.,
- Type of Materials (GI, SS, BS, Alum.)
- Steel Thick, Gauge
- Weight, Length, Area,
- Connector Dimensions
- Steel Thick/Gauge
- Type of Item (Straight, Elbow, Tee, Reducer, etc.)
- Item Picture

		Item: SE 22		
P.O. Ref.: 17301195		Date: 04/03/2020		
Customer: M/S. DVAC Duct Ventilation Air Conditioning Co. (W.L.L.)				
Project: DVAC Factory				
Job Name: Mezzanine - Fire Rated				
Material: Galvanized x 18		Taper 550 x 400		
		C1: 550 x 400	C2: 800 x 250	C3:
Weight: 7.68 (kg)			Service: Fire Rated	
Area: 0.80 (sqm)				
Ins: N/A			Length/Angle: 360 (mm)	
Double Wall: No	Skin:	Skin Area: (sqm)	MADE IN QATAR	

* Each Item shall be holding a colored sticker that defines the exact service provided.

* Items Quantity for delivery shall be bar coded by our software, same as mentioned in the Delivery Reports.



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DUCT VENTILATION AIR CONDITIONING Co. (W.L.L.)

Non-Coated Fire Rated Ducts

- Construction Schedule: - GI Rectangular Ducts
- S.S Rectangular Ducts

Tel: +974 44 500 118 - 44 500 119 - Fax: +974 44 500 117 - Doha, State Of Qatar

LIMITATIONS - CONSTRUCTION SCHEDULE FOR RECTANGULAR DUCTS (Horizontal/Vertical Ducts)

- . GALVANIZED Rectangular Duct Construction
- 120 minutes Fire Resistance
- . IFC Certified as per BS 476: PART 24: 1987

Longer Side (mm)	THK (mm)	Standard Straight L (mm)	Hanger Spacing (mm)	Seam	Stiffener				Cross Joint			Duct Bearer (mm)	Drop Rod (mm)
					Intermediate (mm)	Spacing (mm)	Fastening (mm)	Corner (Bolt)	Type / Rating (mm)	Fastening (mm)	Joining (mm)		
0 - 400	1.2	1220	1200	Pittsburgh Lock	RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 40x40x4	10
401 - 600	1.2	1220	1200		RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 40x40x4	10
601 - 800	1.2	1220	1200		RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 50x50x5	10
801 - 1000	1.2	1220	1200		RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 50x50x5	10
1001 - 1600	1.2	1220	1200		RSA 40x40x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 40x40x1.0	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	C Channel 76x38	12
1601 - 2000	1.2	1220	1200		RSA 50x50x5	600	M6 Bolts or Stitch Welded @ 100	M6	Slip on Flange 40x40x1.0	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	C Channel 102x51	14
2001 - 3000	1.2	1220	1200		RSA 60x60x6	600	M6 Bolts or Stitch Welded @ 100	M6	Slip on Flange 40x40x1.0	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	C Channel 152x89	16

- . STAINLESS STEEL Rectangular Duct Construction
- 120 minutes Fire Resistance
- . IFC Certified as per BS 476: PART 24: 1987

Longer Side (mm)	THK (mm)	Standard Straight L (mm)	Hanger Spacing (mm)	Seam	Stiffener				Cross Joint			Duct Bearer (mm)	Drop Rod (mm)
					Intermediate (mm)	Spacing (mm)	Fastening (mm)	Corner (Bolt)	Type / Rating (mm)	Fastening (mm)	Joining (mm)		
0 - 400	1.2	1220	1200	Continuous Welded	RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 40x40x4	10
401 - 600	1.2	1220	1200		RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 40x40x4	10
601 - 800	1.2	1220	1200		RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 50x50x5	10
801 - 1000	1.2	1220	1200		RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 30x30x0.8	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	RSA 50x50x5	10
1001 - 1600	1.2	1220	1200		RSA 40x40x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	Slip on Flange 40x40x1.0	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	C Channel 76x38	12
1601 - 2000	1.2	1220	1200		RSA 50x50x5	600	M6 Bolts or Stitch Welded @ 100	M6	Slip on Flange 40x40x1.0	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	C Channel 102x51	14
2001 - 3000	1.2	1220	1200		RSA 60x60x6	600	M6 Bolts or Stitch Welded @ 100	M6	Slip on Flange 40x40x1.0	M6 Bolts or 4.2mm Self-Drilling Screw @ 150	G Clamp @150	C Channel 152x89	16

LIMITATIONS - CONSTRUCTION SCHEDULE FOR RECTANGULAR DUCTS (Horizontal/Vertical), ROUND & OVAL

- . BLACK STEEL Rectangular Duct Construction
- 120 minutes Fire Resistance
- . IFC Certified as per BS 476: PART 24: 1987

Longer Side (mm)	THK (mm)	Standard Straight L (mm)	Hanger Spacing (mm)	Seam	Stiffener				Cross Joint			Duct Bearer (mm)	Drop Rod (mm)
					Intermediate (mm)	Spacing (mm)	Fastening (mm)	Corner (Bolt)	Type / Rating (mm)	Fastening (mm)	Joining Bolt		
0 - 400	1.5	1220	1200	Continuous Welded	RSA 30x30x1.5	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	RSA 30x30x3	Continuous Welded on Duct	@ 150mm	RSA 40x40x4	10
401 - 600	1.5	1220	1200		RSA 30x30x1.5	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	RSA 30x30x3		@ 150mm	RSA 40x40x4	10
601 - 800	1.5	1220	1200		RSA 30x30x1.5	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	RSA 30x30x3		@ 150mm	RSA 50x50x5	10
801 - 1000	1.5	1220	1200		RSA 30x30x1.5	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	RSA 30x30x3		@ 150mm	RSA 50x50x5	10
1001 - 1600	1.5	1220	1200		RSA 40x40x1.5	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	M6	RSA 40x40x4		@ 150mm	C Channel 76x38	12
1601 - 2000	1.5	1220	1200		RSA 50x50x5	600	M6 Bolts @ 100	M6	RSA 40x40x4		@ 150mm	C Channel 102x51	14
2001 - 3000	1.5	1220	1200		RSA 60x60x6	600	M6 Bolts @ 100	M6	RSA 40x40x4		@ 150mm	C Channel 152x89	16

- . CIRCULAR & OVAL Duct Construction
- 120 minutes Fire Resistance
- . IFC Certified as per BS 476: PART 24: 1987

Diameter (mm)	Type	THK (mm)	Standard Straight L (mm)	Hanger Spacing (mm)	Stiffener			Cross Joint			Duct Bearer (mm)	Drop Rod (mm)
					Intermediate (mm)	Spacing (mm)	Fastening (mm)	Type Flange Ring (mm)	Closure Ring (mm)	Joining (mm)		
0 - 100	Straight Seamed / Spiral Wound Seam	1.2	1220	1200	RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	25x14x0.8	14x9x0.8	Lock Nut	RSA 40x40x4	10
101 - 200		1.2	1220	1200	RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	25x14x0.8	14x9x0.8		RSA 40x40x4	10
201 - 355		1.2	1220	1200	RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	25x14x0.8	14x9x0.8		RSA 50x50x5	10
356 - 630		1.2	1220	1200	RSA 30x30x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	25x21x1.0	20x16x1.0		RSA 50x50x5	10
631 - 800		1.2	1220	1200	RSA 40x40x1.2	600	M6 Bolts or 4.2mm Self-Drilling Screw @ 100	35x33x1.2	35x25x1.2		C Channel 76x38	12
801 - 900		1.2	1220	1200	RSA 50x50x5	600	M6 Bolts @ 100	35x33x1.2	35x25x1.2		C Channel 102x51	14
901 - 1250		1.2	1220	1200	RSA 60x60x6	600	M6 Bolts @ 100	35x33x1.2	35x25x1.2		C Channel 152x89	16

N.B: For "Straight" Seamed Circular / Oval Duct, the Longitudinal Seam shall be "Grooved Seam" or "Continuous Welded".

* DVAC 120 (Non-Coated Fire Rated Ducts) complies with BS 476: PART 24: 1987 and ISO 6944-1 (1985) for 2 Hours Stability & Integrity for Type A & Type B Ducts.

IFC CERTIFICATE



FIRE RATED DUCTWORK & COMPONENTS SCHEME

Certificate number: IFCC 1548

Certificate only valid if verified on website – www.ifccertification.com

Issued by IFC Certification Ltd part of the Kiwa UK Group

This is to certify that

DVAC

(Duct Ventilation Air Conditioning Co. (W.L.L))

Small Industries Zone
Pink Area – Zone 81, Street 13 – Building 57
Doha
Qatar

Telephone: (+974) 44500118

Who supply the following products:

DVAC Non-Coated Fire Rated Duct

have satisfied the requirements of the SDP 26-1 fire resisting ducts (including smoke extraction) and components scheme, Appendix A. This includes the testing of products to **BS 476: Part 24: 1987**. The inspection of their Factory Production Control and continuing surveillance audits and testing of samples of products taken from production. The product specification and field of application to achieve up to **120 minutes stability and integrity** are detailed in the reports referenced on page 2 of this certificate.

Initial Certification: 24 December 2019

Revised: 05 February 2024

Valid to: 23 December 2024

Issue number: 3

David Mowatt
Head of Certification – IFC Certification /
KIWA Group Limited

*This certificate consists of 2 pages.
Publication of this certificate is permitted.*

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IFC CERTIFICATE



Certificate number: IFCC 1548 issue 3



The application of this product should be carried out following the manufacturer's instructions and according to the following documents:

Doorset Description	Fire Rating	Assessment / Test Report
Uninsulated Duct Type A and	120 minutes	19-17654-651 M1
Uninsulated Duct Type B	120 minutes	19/19102-496

Signed on behalf of Kiwa UK

David Mowatt
Head of Certification – IFC Certification /
KIWA Group Limited

The scope of the certification is limited to the details and parameters contained within these reports and all aspects of the specification and limitations defined therein must be satisfied.

It is the certificate holder's responsibility to ensure that the latest version/ revision of the above assessment reports are maintained as part of the audited FPC system.

Failure to comply with all specifications will invalidate the certification and may jeopardise the fire performance.

CERTIFICATE

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