
CERTIFICATE OF APPROVAL
No. ME0159

This is to certify that the referenced products of

PROMAT MIDDLE EAST

Suite 1805, 18th Floor, Dubai Festival City Tower, PO Box 123945
Dubai, UAE

Tel: 00 971 4 232 9780

Fax:00 971 4 232 9781

have been assessed against the requirements of the *warringtonfire – mideast certification scheme* and are approved for use within the scope of the test and/or assessment report(s) referenced.

Vicuclad Steel Ductwork Systems

Certificate Reference	Valid Until
CERTIFIRE Certificate CF419	12 th April 2011

CERTIFICATE OF APPROVAL

ME0159

Promat UK Ltd – Vicuclad Steel Duct Systems

Horizontal ducts

The general arrangement of the Vicuclad steel duct systems consists of a steel duct protected on the outside with Vicuclad board. The steel duct must be constructed in accordance with the requirements of DW/144 – Specification for sheet metal duct work – low, medium and high pressure/velocity air systems (published by the Heating and Ventilating Contractors' Association), or equivalent specification. The steel ducts are constructed with rolled steel angle-flanged cross joints and the longitudinal seams are formed using the Pittsburgh lock seam or the grooved corner seam. This specification gives details and minimum sizes of the steel sheet, stiffeners and sizes of angle-sections to be used at various duct sizes.

Vicuclad battens are fitted around the duct at maximum 610mm centres. The battens are the same thickness as the outer casing, with a width equal to twice the board thickness. The battens are fastened together at the corners with Vicubond WR adhesive and steel wire nails. The length of the nails is equal to twice the board thickness. The battens are not directly fastened to the steel duct. Where the stiffening angles or the cross joint angles are required to be greater than the batten thickness, the batten thickness must be increased in size to accommodate them.

For insulated ducts, rock wool mineral wool, to the required thickness and density (Table 2), is fitted around the steel duct between the battens. Vicuclad boards (Table 1) are fitted around the duct. They are bonded to the battens and to each other at longitudinal corner joints with Vicubond WR adhesive and wire nails at 300mm nominal centres. Transverse board joints must coincide with the battens. The adhesive must fully fill all the board joints. The length of the nails is equal to twice the board thickness.

The duct assembly is supported by steel hangers, which consist of a pair of threaded rods and an angle rail under the clad duct. The maximum spacing of the hangers is 1.22m. They are positioned to coincide with a batten collar. The sizes of the rods and angles and the spacing of the hangers must be adjusted so that the tensile stress in the rods and the bending stress in the angles do not exceed 18N/mm^2 for fire ratings up to 30 minutes, 15N/mm^2 for fire ratings up to 60 minutes, 10N/mm^2 for fire ratings up to 120 minutes and 6N/mm^2 for fire ratings up to 240 minutes. The fixings used to fasten the threaded rod hangers to concrete soffits must be all-steel expanding anchors with a penetration in the concrete of at least 60mm. The anchors must match the size of the threaded rods, be of sufficient strength to support the weight of the duct and be fitted in accordance with the manufacturer's instructions. When the hangers are suspended from protected structural steel beams it is advisable that the hanger rods be protected for at least 300mm from the beams with the same level of protection as the structural beams. Where the rods exceed 2m in length they should be protected with Vicuclad or Vicutube with the same thickness as the duct cladding to prevent excessive thermal expansion.

CERTIFICATE OF APPROVAL ME0159

Promat UK Ltd – Vicuclad Steel Duct Systems

The thickness of Vicuclad board for ducts to satisfy the stability and integrity criteria of BS 476: Part 24: 1987 are given in Table 1:

Table 1 Board thicknesses for internal or external fire exposure, stability and integrity only

Fire resistance - minutes	30	60	90	120	180	240
Thickness - mm	25	30	30	35	45	45

The thickness of Vicuclad board and rock wool for ducts to satisfy the stability, integrity and insulation criteria of BS 476: Part 24: 1987 are given in Table 2:

Table 2 Board and rock wool thicknesses for internal or external fire exposure, stability, integrity and insulation

Fire resistance - minutes	Thickness - mm	Rock wool - thickness x density
30	35	None
60	30	30mm x 60kg/m ³
90	35	30mm x 80kg/m ³
120	40	40mm x 80kg/m ³
180	50	50mm x 80kg/m ³
240	70	60mm x 80kg/m ³

The maximum widths of the steel duct for this fixing method are given in Table 3:

Table 3 Maximum width of steel duct

Board thickness – mm	25	30	35	40	45	50	70
Maximum duct width - mm	900	880	860	840	820	800	720

Note – duct height must not exceed duct width.

At wall penetrations L-shaped collars of Vicuclad, made of strips at least 100mm wide x at least the same thickness as the casing, are fitted around the duct on both sides of the wall. They are bonded to the duct with Vicubond WR adhesive. The space between the duct walls and the reveals of the opening must be filled with rock wool of minimum density 60kg/m³. In the line of the wall, the space between the steel duct and the Vicuclad casing must either be filled with with rock wool of minimum density 60kg/m³ or fitted with a Vicuclad batten collar. In order to prevent any slumping of the top of the steel duct at compartment wall penetrations, either a duct joint or a steel angle stiffener must be located within 100mm of the wall.

CERTIFICATE OF APPROVAL

ME0159

Promat UK Ltd – Vicuclad Steel Duct Systems

Where the steel duct exceeds the sizes given in Table 3, up to a size of 2000mm wide x 900mm high, the soffit Vicuclad boards and battens are fastened to the steel duct. The soffit battens are fastened to the steel duct with M4 steel self-tapping screws at 500mm nominal centres. The soffit boards are fastened to the steel duct, through the battens, with minimum M4 steel self-tapping screws at 300mm nominal centres fitted with large steel washers. The side and top boards do not require to be screwed to the steel duct.

Any longitudinal board joints in the Vicuclad (other than corner joints) must be backed by a Vicuclad batten.

Vertical ducts

The construction of vertical ducts is the same as for the horizontal ducts. The maximum size of duct is as given in Table 3. Where the duct passes through a compartment floor the penetration is sealed with the same seal system as for horizontal ducts. The weight of the duct assembly must be taken by the steel duct and not the Vicuclad board. Steel angles are fitted to the steel duct at the floor penetrations, which bear on the floor slab in order to support the weight of the duct. The angles are protected with Vicuclad board.

Smoke outlet ducts

The ducts may be used as smoke outlet ducts.

Kitchen extract ducts

The ducts may be used as kitchen extract ducts for the protection systems given in Table 4.

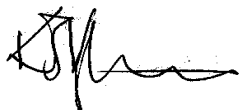
Table 4 Board and rock wool thicknesses for kitchen extract ducts - stability, integrity and insulation

Fire resistance - minutes	Thickness - mm	Rock wool -thickness x density
30	50	None
60	50	60mm x 60kg/m ³
90	70	70mm x 80kg/m ³

Table 5 Maximum loads for drop rods

Nominal rod diameter mm	Tensile stress area mm ² (BS 4190)	Load			
		kN – 2hr (10N/mm ²)	kg – 2hr	kN – 4hr (6N/mm ²)	kg – 4hr
6	20.1	0.20	20.49	0.12	12.29
8	36.6	0.37	37.31	0.22	22.39
10	58.0	0.58	59.12	0.35	35.47
12	84.3	0.84	85.93	0.51	51.56
16	157.0	1.57	160.04	0.94	96.02
20	245.0	2.45	249.75	1.47	149.85

Signed for and on behalf of Warrington Certification



Sir Ken Knight
Chairman - Management Council

Issued: 12th February 2009
Valid to: 12th April 2011