

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Class A and B Penetration**with type designation(s)
WRF and WRF in aluminium

Issued to

WallMax Srl
Milano (MI), Italy

is found to comply with

DNV GL rules for classification – Ships**DNV GL offshore standards****DNV GL class programme DNVGL-CP-0165 – Type approval – Cable and pipe penetrations****Application :****Approved for use as cable penetration system for approved ship cables in class A-60 aluminium bulkheads and decks.****This certificate is recognized by Transport Canada.****For further details see Application/Limitations on page 3 of this certificate.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2017-07-13**This Certificate is valid until **2022-07-12**.DNV GL local station: **Mumbai CMC**for **DNV GL**Approval Engineer: **Carsten Hunsalz**

Duy Nam Le
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

“WRF and WRF”

Cable penetration system consists of a 10 mm thick and depth of 60 mm rectangular coaming. The space between the coaming and cables is filled with EPDM modules. A screw expander is fitted on the upper half of the system to tighten the cables and filling material. The interstices between the cables and modules and between the modules are lubricated with “Wallmax Lubricant”.

The products are manufactured at the premises of Wallmax India Enterprise Limited, Faridabad Haryana, India.

“WRF”:

The coaming is welded symmetrically of the deck/bulkhead.

Insulation details: One layer of 40 mm and two layers of 60 mm thick mineral wool blankets of approved type, minimum density 100 kg/m³ is fitted around the coaming, over the EPDM modules and tightening system and between the cables. The size of the blankets is 400 x 600 mm (w x h). The insulation is fitted on both sides of the bulkhead/deck.

Application	Size (mm) (W x H)	Minimum filling rate (%)	Maximum filling rate (%)	Coaming position in deck/bulkhead	Cables- Minimum Diameter (mm)	Cables- Maximum Diameter (mm)
Bulkhead	298 x 140	7.5	7.5	symmetrically	10	39
Bulkhead	118 x 140	0.5	0.5	symmetrically	9	9
Deck	298 x 140	7.5	7.5	symmetrically	10	39
Deck	118 x 140	0.5	0.5	symmetrically	9	9

“WRF”:

The coaming is welded to a flange with dimensions as specified below. The flange for bulkheads is welded to exposed side and the flange for decks is welded to unexposed side.

Insulation details: One layer of 40 mm and two layers of 60 mm thick mineral wool blankets of approved type, minimum density 100 kg/m³ is fitted around the coaming, over the EPDM modules and tightening system and between the cables. The size of the blankets is 400 x 600 mm (w x h). The insulation is fitted on both sides of the bulkhead/deck. The flange is fully covered by insulation.

Application	Size (mm) (W x H)	Size of flange (mm) (W x H)	Minimum filling rate (%)	Maximum filling rate (%)	Coaming position in deck/bulkhead	Cables- Minimum Diameter (mm)	Cables- Maximum Diameter (mm)
Bulkhead	298 x 140	418 x 260	7.5	7.5	unexposed side	10	39
Bulkhead	118 x 140	238 x 260	0.5	0.5	unexposed side	9	9
Deck	298 x 140	418 x 260	7.5	7.5	exposed side	10	39
Deck	118 x 140	238 x 260	0.5	0.5	exposed side	9	9

Application/Limitation

Approved for use as a cable penetration system in class A-60 aluminium bulkheads and decks. Other applications are subject to case-by-case approval. Approved for use in class A-0, A-15 and A-30 when the penetration system is insulated as A-60. In addition the division is to be insulated with A-60 insulation at least 200 mm around the penetration.

Approved maximum cable diameter: 39 mm.

Approved for air tightness up to a design pressure of 0.1 MPa (1 bar), test pressure - 0.15 MPa (1.5 bar).

Job Id: **262.1-023701-1**
Certificate No: **TAF00000R1**

Type WRF approved for water tightness up to a design pressure of 0.27 MPa (2.7 bar),
test pressure - 0.4 MPa (4.0 bar).
Type WRF 60 approved for water tightness up to a design pressure of 0.4 MPa (4 bar),
test pressure - 0.6 MPa (6.0 bar).

Type WRFF approved for water tightness up to a design pressure of 0.4 MPa (4 bar),
test pressure - 0.6 MPa (6.0 bar).

Penetration systems are not to be used for penetrating boundaries of tanks.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

Fire test report no. 2016CS01481/1 dated 2016-05-04 and no. 2016CS01481/2 dated 2016-05-05 from
RINA test laboratory, Italy.

RINA MED Certificate no. MED999817CS/003

Pressure test report, 18 pages dated 2016-08-29, stamped by DNVGL Mumbai.

Insulation details:

Drawing no. WDVpc16A60AIDA01 and WDVpc16A60AIBHA01 dated 2016-02-05.

Tests carried out

Tested in accordance with IMO 2010 FTP Code Part 3.

Pressure tests with water and gas according to DNVGL-CP-0165 ch. 4.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical
rating.

Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for,
Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the
products listed in this certificate are in accordance with Transport Canada's requirements.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the
validity of this certificate and at least every second year. The arrangement is to be in accordance with
procedure described in DNVGL-CP-0338 Section 4.