DNV·GL

Certificate No:
TAF00000XM

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A and B Penetration

with type designation(s)
TMZ Piping Penetration A-60, A-30, A-0

Issued to
Shanghai Alafa Marine Equipment Co., Ltd.
Shanghai, China

is found to comply with
DNV GL rules for classification – Ships
DNV GL class programme DNVGL-CP-0165 – Type approval – Cable and pipe penetrations
DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Hamburg** on **2018-06-19**
This Certificate is valid until **2023-06-18**.
DNV GL local station: **Shanghai**

Approval Engineer: **Hagen Markus**

for **DNV GL**

Olaf Drews
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

The "TMZ Series" Pipe Penetration of class A-60, A-30 and A-0" consisting of one sealing plug in each end of a penetration duct (pipe).

For bulkhead and deck penetrations, the duct is to be insulated on both, exposed and unexposed side, provided all over the length with two layers of 20 mm thick type approved ceramic wool insulation of min. density 170 kg/m3.

The steel pipe through the penetration (except the smallest size) is to be insulated with 20 x 200 mm (t x l) of same quality as for the duct on the unexposed side. Refer to installation drawing referenced in below table.

The ducts are to be continuously welded to the steel bulkhead/deck.

Pipe penetration dimensions and seal plug material are shown in the table below.

For insulation and installation, the installation drawings

Application/Limitation

Dimensions and Plug material

Type	Dimensions							
	Duct O.D. (mm)		Steel Pipe O.D. (mm)		Seal plug O.D. (mm)			
	Min[1]	Max[2]	Min	Max	Min	Max	Material	Colour
TMZ-I (A-60)	38 x 200	351 x 300	22,0	273,0	45 x 50	350 x 108	FKM	Reddish brown
TMZ-II (A-30)							Silicone rubber	blue
TMZ-III (A-0)							NBR	black

Notes
[1] Min. thickness of duct 3mm
[2] Min. thickness of duct 8mm

Water and or gas tightness, Installation on tank boundaries

Not approved.

Installation

Type of division	Class	Position of the sleeve	Installation drawing
Steel bulkhead			
TMZ-I	A-60	General application	TMZ / B
TMZ-II	A-30		
TMZ-III	A-0		
Steel deck			
TMZ-I	A-60	General application	TMZ / D
TMZ-II	A-30		
TMZ-III	A-0		

For A-0, A-30 applications, the penetration shall be insulated as for A60 and the division is to be fitted with A-60 insulation for a minimum distance of 200 mm around the penetration.

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

Type Approval documentation

Tests carried out

Marking of product

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

Scope	Example
Manufacturer short sign	
Type designation	TMZ
Inner diameter conduit sleeve - Outside diameter pipe	69 - 32
Plug material	Colour FKM: reddish brown Silicone: blue NBR: black

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNVGL surveyor.
The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:
- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

End of certificate