

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Penetrations through "A" class divisions: pipe, duct, trunk, etc penetrations

with type designation(s)
ACO Marine GM-X

Issued to

ACO Industries k.s.
Pribyslav, Czech Republic

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306**,
item No. MED/3.26b. SOLAS 74 as amended, Regulation II-2/9, IMO MSC.1/Circ.1276 and
IMO 2010 FTP Code

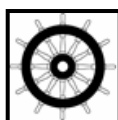
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2022-04-27**.

Issued at **Høvik** on **2017-04-28**

DNV GL local station:
Czechia

Approval Engineer:
Aleksandr Jegorov



Notified Body
No.: **0575**

for **DNV GL AS**

Vidar Dolonen
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Product description

"ACO Marine GM-X" - is a penetration system for GM-X galvanized steel pipes produced by ACO Industries k.s.

Following types of penetrations are covered by this certificate:

- T1S – composed of 8.8 mm thick and 100 mm in length steel sleeve welded to distance piece pipe(a pipe welded to spigot & socket fittings) which is further connected to GM-X pipes by spigot/socket joints incorporating sealing NBR – NANCAR 1052 and steel socket clamps as applicable(ref. tables below). Penetration system of fire class other than A-0 shall be fully insulated including part of the piping (ref. tables below). Sleeve is welded symmetrically into the division.
- R1S and J3S - composed of 8.8 mm thick and 70 mm in length steel scupper welded to distance piece pipe(a pipe welded to spigot & socket fittings) which is further connected to GM-X pipes by spigot/socket joints incorporating sealing NBR – NANCAR 1052 and steel socket clamps as applicable (ref. tables below). Penetration system of fire class other than A-0 shall be fully insulated including part of the piping (ref. tables below). Scupper is welded into the deck on the exposed side.

For detail information about the insulation and sleeve location please see drawings mentioned under Type Examination documentation below.

Application/Limitation

Approved for use as a pipe penetration system in class A-0 to A-60 steel bulkheads and decks (ref. tables below). Other applications are subject to case-by-case approval.

Table 1. A-60 Deck Penetrations

Type	Art. No.	Pipe size	Fully insulated penetration and pipe (underdeck side) (layers x thickness - length)	Clamp position
T1S	E97181001	Min. DN 40	SeaRox WM640: 2x30mm – 600mm	Bottom
			SeaRox WM640: 2x30mm - 700mm + 30mm – 200mm	Top & Bottom
	E97183001	DN 70	SeaRox WM640: (30+50)mm – 800mm	Bottom
			SeaRox WM640: (30+50)mm – 900mm + 50mm – 200mm	Top & Bottom
	E97185001	DN 100	SeaRox WM640: 2x50mm – 1000 mm	Bottom
			SeaRox WM640: 2x50mm – 1100 mm + 50mm – 200mm	Top & Bottom
			SeaRox WM640: 2x50mm – 1200mm	Bottom
			SeaRox WM640: 2x50mm – 1400mm + 50mm – 300mm	Top & Bottom
R1S	E97187001	Max. DN 150	SeaRox WM640: 2x50mm – 1300mm + 50mm – 300mm	Top & Bottom
			SeaRox WM640: 2x50mm – 1300mm + 50mm – 300mm	Top & Bottom
	E97221001	Min. DN 40	SeaRox WM640: 2x30mm – 600mm	Bottom
			SeaRox WM640: 2x30mm – 700mm + 1x30mm – 200mm	Bottom
			SeaRox WM640: (30+50)mm – 1000mm	Bottom
			SeaRox WM640: (30+50)mm – 1100mm + 50mm – 200mm	Bottom
J3S	E97223001	Max. DN 70	SeaRox WM640: (30+50)mm – 1200mm + 50mm – 200mm	Bottom
			SeaRox WM640: (30+50)mm – 1200mm + 50mm – 200mm	Bottom
			SeaRox WM640: (30+50)mm – 1200mm + 50mm – 200mm	Bottom
J3S	E97235001	DN 100	SeaRox WM640: 2x50mm – 1000mm	Bottom

Table 2. A-60 Bulkhead Penetrations

Type	Art. No.	Pipe size	Fully insulated penetration and pipe (layers x thickness - length)	Clamp position
T1S	E97181001	Min. DN 40	SeaRox WM640: 2x30mm – 600mm	unexposed side
			SeaRox WM640: 2x30mm – 700mm	unexposed side
	E97183001	DN 70	SeaRox WM640: (30+50)mm – 1000mm	unexposed side
			SeaRox WM640: (30+50)mm – 1100mm	both sides
	E97185001	DN 100	SeaRox WM640: 2x50mm – 1300mm	unexposed side
			SeaRox WM640: 2x50mm – 1400mm	both sides
	E97187001	Max. DN 150	SeaRox WM640: 2x50mm – 1700mm	unexposed side
			SeaRox WM640: 2x50mm – 1900mm + 50mm – 270mm	both sides

Job Id: **344.1-005868-1**
Certificate No: **MEDB00001GX**

Table 3. A-0 Deck Penetrations

Type	Art. No.	Pipe size	Insulation	Clamp position
T1S	E97181001	Min. DN 40	Nil	Bottom
				Top & Bottom
	E97187001	Max. DN 150	Nil	Bottom
				Top & Bottom
R1S	E97221001	Min. DN 40	Nil	Bottom
	E97223001	Max. DN 70	Nil	Bottom
J3S	E97235001	DN 100	Nil	Bottom

Class A-15 and A-30 shall be insulated as class A-60 and in addition the division shall be insulated at least 200 mm around the penetration.

The insulation material used has to be approved according to the Marine Equipment Directive and bear the Mark of Conformity.

The penetration system is not to be used for penetrating boundaries of tanks.

Watertightness and gastightness is not covered in this certificate.

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

Type Examination documentation

Test reports:

- No. Pr.-16-2.237n-En dated 10 January 2017 from Pavus a.s., Czech Republic (A-60 deck)
- No. Pr.-16-2.238n-En dated 23 January 2017 from Pavus a.s., Czech Republic (A-60 bulkhead)
- No. Pr.-17-2.005n-En dated 6 February 2017 from Pavus a.s., Czech Republic (A-0 deck)

Tests carried out

Tested according to IMO 2010 FTPC part 3.

Marking of product

The product or packing is to be marked with name and address of manufacturer, type designation, fire-technical rating, Mark of Conformity and USCG approval if applicable (see first page).