

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00001GX
Revision No:
1

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 AS under the authority of the Government 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) 2022/1157,
item No. MED/3.26b. SOLAS 74 as amended, Regulation II-2/9, IMO MSC.1/Circ.1276, IMO 2010 FTP Code and
IMO MSC.1/1488

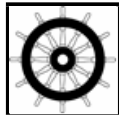
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2027-08-24**.

Issued at **Høvik** on **2022-08-25**

DNV local station:
Ostrava

Approval Engineer:
Izabela Misztal



Notified Body
No.: **0575**

for **DNV AS**

Sverre Olav Bergli
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, and amended by Decision No 1/2019 dated February 22nd, 2019.



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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



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:

1. 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.
2. 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 further details about the insulation and sleeve location, please see drawings listed under Type Examination documentation.

Application/Limitation

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

Approved for use in class A-15 and A-30 penetrations shall be insulated as class A-60 and in addition the division is to be insulated at least 200 mm around the penetration.

Table 1 Approved pipe penetrations in A-60 deck:

Type	Art. No.	Ø Pipe (OD) [mm]	Sleeve size (OD) [mm]	Penetration and pipe fully insulated with SeaRox WM640 mineral wool (under deck side) (layers x thickness - length)	Pipe material	Clamp position
T1S	E97181001	Min. 40	Min. 88.9	2 x 30 mm – 600 mm	Steel	Bottom
				2 x 30 mm – 700 mm + 30 mm – 200 mm		Top & Bottom
	E97183001	70	108	(30+50) mm – 800 mm		Bottom
				(30+50) mm – 900 mm + 50 mm – 200 mm		Top & Bottom
	E97185001	100	152.4	2 x 50 mm – 1000 mm		Bottom
				2 x 50 mm – 1100 mm + 50 mm – 200 mm		Top & Bottom
	E97187001	Max.150	Max. 244.5	2 x 50 mm – 1200 mm		Bottom
				2 x 50 mm – 1400 mm + 50 mm – 300 mm		Top & Bottom
			2 x 50 mm – 1300 mm + 50 mm – 300 mm			
R1S	E97221001	Min. 40	Min. 82.5	2 x 30 mm – 600 mm	Steel	Bottom
				2 x 30 mm – 700 mm + 1 x 30 mm – 200 mm		
	E97223001	Max. 70	Max. 133	(30+50) mm – 1000 mm		
(30+50) mm – 1100 mm + 50 mm – 200 mm						
			(30+50) mm – 1200 mm + 50 mm – 200 mm			
J3S	E97235001	100	152.4	2 x 50 mm – 1000 mm		

Table 2 Approved pipe penetrations in A-60 bulkhead:

Type	Art. No.	Ø Pipe (OD) [mm]	Sleeve size (OD) [mm]	Penetration and pipe fully insulated with SeaRox WM640 mineral wool (layers x thickness - length)	Pipe material	Clamp position
T1S	E97181001	Min. 40	Min. 88.9	2 x 30 mm – 600 mm	Steel	Unexposed side
				2 x 30 mm – 700 mm		
	E97183001	70	108	(30+50) mm – 1000 mm		Unexposed side and exposed side
				(30+50) mm – 1100 mm		Unexposed side
	E97185001	100	152.4	2x50 mm – 1300 mm		Unexposed side and exposed side
				2x50 mm – 1400 mm		Unexposed side
	E97187001	Max. 150	Max. 244.5	2x50 mm – 1700 mm		Unexposed side and exposed side
				2x50 mm – 1900 mm + 50 mm – 270 mm		Unexposed side and exposed side

Table 3 Approved pipe penetration in A-0 deck:

Type	Art. No.	Ø Pipe (OD) [mm]	Sleeve size (OD) [mm]	Sleeve insulation	Pipe material	Clamp position
T1S	E97181001	Min. 40	Min. 88.9	Uninsulated	Steel	Bottom
	E97187001	Max. 150	Max. 244.5			Top & Bottom
R1S	E97221001	Min. 40	Min. 82.5			Bottom
	E97223001	Max. 70	Max. 133			Top & Bottom
J3S	E97235001	100	152.4			Bottom

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

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

Watertightness and gas tightness is not covered in this certificate.

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

Type Examination documentation

Test Report No. Pr.-16-2.237n-En dated 10 January 2017 from Pavus a.s., Czech Republic (A-60 deck).
 Test Report No. Pr.-16-2.238n-En dated 23 January 2017 from Pavus a.s., Czech Republic (A-60 bulkhead).
 Test Report No. Pr.-17-2.005n-En dated 06 February 2017 from Pavus a.s., Czech Republic (A-0 deck).

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product is to be marked with name and address of manufacturer, type designation, fire technical rating, the MED Mark of Conformity and USCG Approval Number if applicable (see first page).