

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:**That the Penetrations through "A" class divisions: electric cable transits**

with type designation(s)

**GK MC FC ROUND 89/127/140/168/219/244 and GK MC FC OVAL
200x150/350x168/450x170/550x170**

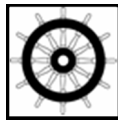
Issued to

**Roxtec GmbH
Hamburg, Germany**

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2017/306,****item No. MED/3.26a. SOLAS 74 as amended, Regulation II-2/9 and IMO 2010 FTP Code**

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

This Certificate is valid until **2022-06-26.**Issued at **Hamburg** on **2017-06-27**DNV GL local station:
Hamburgfor **DNV GL SE**Approval Engineer:
Carsten HunsalzNotified Body
No.: **0098****Sven Dudszus
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 European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", signed February 27th, 2004.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

"GK MC FC Single- and Multiple Cable Penetration System (steel)" Consisting of circular or oval sleeve(s) with or without flange, one side circumferentially welded to a steel division. Sizes GK MC FC ROUND 89 to 244 (circular) and GK MC FC OVAL 200x150 to 550x170 (oval). The GK MC FC cable penetration system is filled with intumescent material and a glass fiber tissue hose, folded back on each side of the sleeves. The glass fiber tissue hose (with or without zipper) and the cable bundle is secured with a plastic covered metal strap on each side. On both sides of the cable transit, the cable bundle is secured with a cold smoke stop.

GK MC FC ROUND:

The coaming is welded symmetrically of the deck/bulkhead.

Insulation details according drawings Roxtec No. S1523166

Application	Size (mm) (Ø x L)	Tested minimum filling rate (%)	Tested maximum filling rate (%)	Coaming position in deck/bulkhead	Tested cable maximum diameter (mm)
Bulkhead	92 x 205	0	77	symmetrically	16,5
Bulkhead	247 x 205	0	68	symmetrically	41,5
Deck	92 x 205	0	77	symmetrically	16,5
Deck	247 x 205	0	68	symmetrically	41,5

GK MC FC OVAL:

The coaming is welded symmetrically of the deck/bulkhead.

Insulation details according drawings Roxtec No. S1523167

Application	Size (mm) (H x B x L)	Tested minimum filling rate (%)	Tested maximum filling rate (%)	Coaming position in deck/bulkhead	Tested cable maximum diameter (mm)
Bulkhead	150 x 200 x 205	0	67	symmetrically	29,5
Bulkhead	2x(170 x 250) x 205	0	68	symmetrically	41,5
Deck	150 x 200 x 205	0	67	symmetrically	29,5
Deck	2x(170 x 250) x 205	0	68	symmetrically	41,5

Accessories:

Textile Hose with Zipper acc. drawing S1523158, dated 2017-05-31

Application/Limitation

Water- / Gas- tightness: Not applicable

Approved for use as a single or multiple cables penetration system (combined in one or more cable bundle) in class A-60 steel 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.

The insulation material used has to be approved according to the Marine Equipment Directive and bear the Mark of Conformity. Each product is to be supplied with its actual manual for installation and use.

Maximum filling ratio of 67%, the cable bundle shall be arranged in the center of the sleeve.

In general approved maximum cable diameter: 41,5 mm.

The systems must not be installed in bulkheads and decks if water- and gas- tightness is required.

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 Examination documentation

Test Reports A60 Fire Class:

No. DMT-DO-53-056, date 2016-08-01; No. DMT-DO-53-060, date 2016-11-17; No. DMT-DO-53-064, date 2016-11-21; No. DMT-DO-53-065, date 2017-01-19; No. DMT-DO-53-068, date 2017-05-10

Test Reports Cold Smoke:

Roxtec No. 29092016-01, dated 2016-09-29; No. 22032017-01, dated 2017-03-22; No. 14122016-01, dated 2016-12-14

Insulation Drawings:

Roxtec No. S1523166 + S1523167, dated 2017-05-29;

General Arrangement Drawings:

Roxtec No. S1523164, dated 2017-05-30

Sleeve Drawings:

Roxtec No. S1523137 and S1523655, dated 2017-05-31

Tests carried out

- IMO Res. MSC.307(88)-(2010 FTP Code), Annex 1: Part 3,
- MSC.1/Circ. 1488

Job Id: **344.1-005816-1**
Certificate No: **MEDB00001FB**

Marking of product

For identification to this type examination certificate the product or packing is to be marked with:

- Manufacturer's name
- Type designation and fire-technical rating
- Mark of Conformity

According to Article 10 of the Council Directive (MED):

- The wheel mark shall be affixed visibly, legibly and indelibly to the product or to its data plate and, where relevant, embedded in its software. Where that is not possible or not warranted on account of the nature of the product, it shall be affixed to the packaging and to the accompanying documents.
- The wheel mark shall be affixed at the end of the production phase.
- The wheel mark shall be followed by the identification number of the notified body, where that body is involved in the production control phase, and by the year in which the mark is affixed.
- The identification number of the notified body shall be affixed by the body itself or, under its instructions, by the manufacturer or the manufacturer's authorized representative.

For specific products, manufacturers may use an appropriate and reliable form of electronic tag instead of, or in addition to, the wheel mark.

END OF CERTIFICATE