

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)

**Roxtec GK Firestop Sealing Kit, GK FS SK KIT ROUND 89 - 273 and
GK FS SK KIT OVAL 200x150 - 250x170 or 2x(250x170)**

Issued to

**Roxtec International AB
Karlskrona, Sweden**

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

Regulation **(EU) 2019/1397,**

**item No. MED/3.26a. SOLAS 74 as amended, Regulation II-2/9, IMO 2010 FTP Code and IMO
MSC.1/1488**

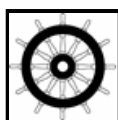
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-04-07**.

Issued at **Hamburg** on **2020-04-08**

DNV GL local station:
Sweden CMC

Approval Engineer:
Carsten Hunsalz



Notified Body
No.: **0098**

for **DNV GL SE**

Gerhard Aulbert
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, and amended by Decision No 1/2018 dated February 18th, 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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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

"GK FS SK sealing kit" consisting of a fiberglass cloth with built in heat activated intumescent material to be wrapped around cable bundles and fitted into circular or oval steel pipe sleeves. Folded back on each side with ends sealed off to create a cold smoke tight seal and secured by metal cable ties.

"GK FS SK sealing kit" is intended to be used for bundled cables or as a blank fire stop solution. The installation shall be made in symmetrically welded or bolted pipe sleeves.

GK FS SK KIT ROUND A-60:

The coaming is welded or bolted symmetrically of the deck/bulkhead.
Installation details according drawings Roxtec No. S1548366, S1549395

Application	Size Ø (mm)	Length (mm)	Tested minimum filling rate (%)	Tested maximum filling rate (%)	Tested cable maximum diameter (mm)
Bulkhead	84 - 273	105 - 205	0	68	50
Deck	84 - 273	105 - 205	0	68	50

GK FS SK KIT OVAL A-60:

The coaming is welded or bolted symmetrically of the deck/bulkhead.
Installation details according drawings Roxtec No. S1548366, S1549395

Application	Size (mm) (Ø x L)	Length (mm)	Tested minimum filling rate (%)	Tested maximum filling rate (%)	Tested cable maximum diameter (mm)
Bulkhead	200x150 - 250x170 or 2x(250x170)	105 - 205	0	68	50
Deck	200x150 - 250x170 or 2x(250x170)	105 - 205	0	68	50

GK FS SK KIT ROUND A-0:

The coaming is welded or bolted symmetrically of the deck/bulkhead.
Installation details according drawings Roxtec No. S1548402, S1549390

Application	Size (mm) (Ø x L)	Length (mm)	Tested minimum filling rate (%)	Tested maximum filling rate (%)	Tested cable maximum diameter (mm)
Bulkhead	84 - 273	105 - 205	0	68	50
Deck	84 - 273	105 - 205	0	68	50

GK FS SK KIT OVAL A-0:

The coaming is welded or bolted symmetrically of the deck/bulkhead.
Installation details according drawings Roxtec No. S1548402, S1549390

Application	Size (mm) (Ø x L)	Length (mm)	Tested minimum filling rate (%)	Tested maximum filling rate (%)	Tested cable maximum diameter (mm)

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Bulkhead	200x150 - 250x170 or 2x(250x170)	105 - 205	0	68	50
Deck	200x150 - 250x170 or 2x(250x170)	105 - 205	0	68	50

*Definition filling ratio:

Cable filling ratio = (The sum cross section of the cables) / (the inside cross section area of Coaming)

*Cross sectional of the cable= $R^2 \times 3.14$

*R=Radius of Cable and the Seal.

Application/Limitation

Water- / Gas- tightness: Not applicable

Approved for use as a blank, single or multiple cables penetration system (combined in one or more cable bundles) in class A-60 and A-0 steel bulkheads and decks. Other applications are subject to case-by-case approval. Approved for use in class 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 68%.

In general approved maximum cable diameter: 50 mm.

The bolted sleeves shall be installed with screws + spring washer.

Sleeves with lengths $L=105$ to 205mm with or without intumescent strips can be used.

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.

Job Id: **344.1-010192-1**
Certificate No: **MEDB000069T**

Type Examination documentation

Test Reports A60 Fire Class:

RS-19/B-255/E, dated 2019-08-20; RS-19/B-225/E, dated 2019-08-01; RS-19/B-256/E, dated 2019-08-20; RS-19/B-355/E, dated 2019-10-16; DMT-DO-53-112, dated 2019-05-22

Test Reports A0 Fire Class:

PGA11387A, dated 2019-07-05; RS-19/B-423/E, dated 2019-11-19; RS-20/B-081/E, dated 2020-03-31; 8P07092, dated 2019-09-27; 8P07094, dated 2019-09-23; PGA11610A, dated 2020-01-10

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

Installation Drawings:

Roxtec No. S1549395 dated 2020-04-07, S1549390 dated 2020-02-21, S1548366 dated 2020-04-07, S1548402 dated 2020-02-21

General Arrangement Drawings:

Roxtec No. S1543766 dated 2019-10-23, S1543765 dated 2019-10-22, S1535795 dated 2019-10-22

Sleeve Drawings:

Roxtec No. S1535700 dated 2020-02-13, S1550433 dated 2019-12-17, S1540158 dated 2019-12-20

Tests carried out

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

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):

END OF CERTIFICATE