

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A and B Penetration

with type designation(s)

Roxtec GK Firestop Sealing Kit, GK FS SK KIT sizes 89, 127, 140, 168, 200x150, 250x170, 219, 244,

Issued to

Roxtec International AB
Karlskrona, Sweden

is found to comply with

DNV statutory interpretations DNV-SI-0364 – SOLAS interpretations, Edition July 2021
DNV rules for classification – Ships
DNV offshore standards

Application :

Approved for use as penetration system for approved ship cables in aluminium A60 class divisions

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

Issued at **Hamburg** on **2021-12-17**

for **DNV**

This Certificate is valid until **2026-12-16**.

DNV local station: **Sweden CMC**

Approval Engineer: **Carsten Hunsalz**

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Arne Schaarmann
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.

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

“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 aluminium 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 sealing kit ROUND A-60:

The coaming is welded or bolted symmetrically of the deck/bulkhead.
 Installation details according drawings Roxtec No. S1566086, S1566087

Application	Size Ø (mm)	Length (mm)	Tested minimum filling rate (%)	Tested maximum filling rate (%)	Tested cable maximum diameter (mm)
Bulkhead	84 - 244	105 - 205	0	68	50
Deck	84 - 244	105 - 205	0	68	50

GK FS SK sealing kit OVAL A-60:

The coaming is welded or bolted symmetrically of the deck/bulkhead.
 Installation details according drawings Roxtec No. S1566086, S1566087

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

*Definition filing ratio:

Cable filing 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 aluminium 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 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.

Type Approval documentation

Test Reports A60 Fire Class:

PGB10016A - A60 Aluminium Deck, date 2020-06-03, DBI Copenhagen Denmark,
RS-20/B-082/E – A60 Aluminium Bulkhead, Date 2020-04-21, CTO Gdansk, Poland

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, 8P07092 A-class steel deck, SP Technical Research Institute of Sweden, 8P07094 A-class steel
Bulkhead, SP Technical Research Institute of Sweden

Installation Drawings:

Roxtec No. S1566086 dated 2021-04-14, S1566087 dated 2021-11-24

General Arrangement Drawings:

Roxtec No. S1543766 dated 2019-10-23, S1535797 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

Fire Test acc. 2010 FTP Code, Annex 1: Part 3, IMO Resolution MSC.307(88)

Marking of product

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

Periodical assessment

DNV's surveyor is to be given permission to perform Periodical Assessments at any time during the
validity of this certificate and at least every second year. The arrangement is to be in accordance with
procedure described in DNV-CP-0338 Section 4.