DOCUMENTATION

RISEFR AA-125

With reference to the national code of building regulations of 27 June 2008 with the Norwegian building regulations of 1 July 2017 and belonging guidance, RISE Fire Research AS document, on the basis of test certificates, evaluations and installation instructions, that this product meets the requirements of the Norwegian authorities as to the fire related qualities.

Building material: **Roxtec Cable and Pipe Penetration Seals**

Product responsible: **ROXTEC International AB**
Box 540, 371 23 Karlskrona, Sverige

The documentation is conditional on that the product is in accordance with the specifications given in the appendix and that the products is applied and used in accordance with regulations and all important details in this process follow precisely what is described in a user instruction, which is checked by RISE Fire Research AS. Both the user instruction and the RISE Fire Research AS Documentation shall follow the product or be available for the purchaser, user, inspector and the local authority.

The product shall be labelled with **RISEFR AA-125**, trade name, product responsible and/or manufacturer together with a reference to the production for traceability. The labelling shall have good visibility.

Detailed product design and principle design of installation details are described in "Standard construction details for Roxtec Cable and Pipe Penetration Seals, belonging to Documentation RISEFR AA-125". The version of the construction details filed at RISE Fire Research AS at any time is a formal part of the approval.

The product must have at least one annual, external inspection related to the internal system for control of quality. The inspection is adjusted to the type of product and other existing inspection arrangements. Details specified in a written agreement with RISE Fire Research AS.

First issued: **2002-03-14**. A renewal may be issued based on a written application. Termination by the applicant shall be asked for in writing and with 6 months notice. RISE Fire Research AS as may withdraw this documentation when irregularities or misuse happens and written instructions are not respected.

Issued: 2017-10-30
Valid until: 2023-01-01

Asbjørn Østnor,
Department Manager Documentation

Jan P. Stensaas
Discipline Manager Documentation

This document is an English version of the Norwegian documentation RISEFR AA-125 dated 2017-10-30.

RISE Fire Research AS

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Appendix 1 to Documentation RISEFR AA-125 av 2017-10-30.

1. Owner of the Documentation

ROXTEC International AB
Box 540,
371 23 Karlskrona,
SWEDEN, www.roxtec.com

2. Manufacturer

ROXTEC International AB, www.roxtec.com

3. Product Description

Cables

Rectangular G- and B-frames are adjusted into the edge of a masonry wall or floor and filled with modules of synthetic rubber. Circular R-frames pressed into moulded or core drilled apertures or bolted sleeves with flange and filled with blocks of synthetic rubber. The thickness of the blocks is 60 mm and is adapted to the number and type of cables that are required in the penetration. (See fig. 1).

Components: Rectangular/circular frame and blocks in different sizes.

Pipes

One-sided installed RS PPS/S- and R penetration system for PVC- and metal pipes in walls. Roxtec RS PPS/S is a circular penetration system for penetration of PVC-pipes. Roxtec R has a circular expansion frame med quadratic shaped seal assembly for metallic pipes. The penetration system makes it possible to install adjacent to existing pipes.

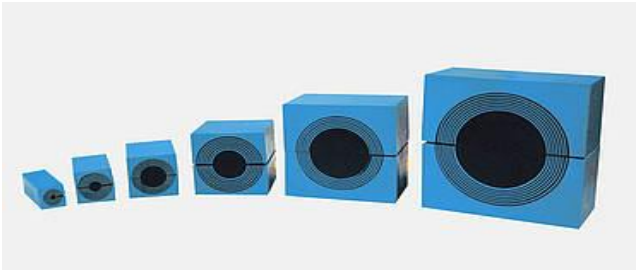
Components: Rectangular/circular frame and circular tube (RS PPS/S-system) and rectangular blocks (R-system).

4. Fields of Application

Typical range of use for Roxtec Cable and Pipe Penetration Seals are penetration seals for cables and plastic/metallic pipes in fire partitions. Roxtec Cable and Pipe Penetration Seals can be used in situations where it is required a corresponding fire resistance of class 'EI' according to TEK (The Norwegian building regulations).

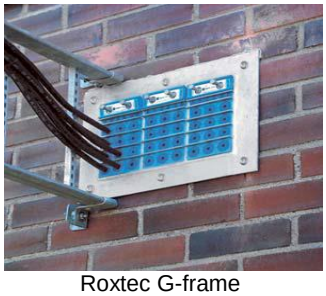
5. Properties

Table 1 shows the fire resistance of penetration seals of cables in wall/floors of concrete of thickness ≥ 150 mm. Table 2 shows the fire resistance to penetration seals of pipes in flexible and concrete walls with a thickness ≥ 95 mm. The fire resistance is predicted by means of fire tests as given in item 7.



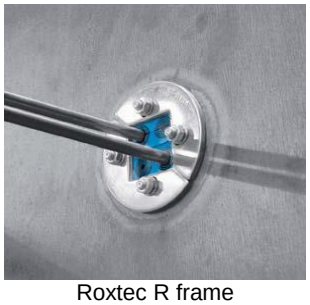
Roxtec modules

Roxtec B-frame



Roxtec G-frame

Roxtec RS PPS/S frame



Roxtec R frame

Fig.1
Examples of use of Roxtec Cable and Pipe Penetration Seals.

6. Special Conditions for Use and Installation

Roxtec Cable and Pipe Penetration Seals shall be installed according to installation details shown in "Standard Construction Details for Roxtec Cable and Pipe Penetration Seals belonging to RISE Fire Research AS documentation RISEFR AA-125".

7. Basis for the Documentation

This documentation is based on the properties that are documented in the following reports:

- Test report: 71765/A dated 1997-11-03 and 67744 dated 1996-11-19 from Warrington Fire Research og R10046 dated 1990-09-26 from SP The Swedish Research Institute, according to ISO 834, BS 476 and prEN 1366-3.
- Test report: P705521 dated 2008-04-21, according to NS-EN 1366-3:2004, from SP Swedish Research Institute.

Table 1
The fire resistance of Roxtec Cable and Pipe Penetration Seals in penetrations of cables in wall/floor of concrete of thickness ≥ 150 mm (in case of two-sided seals the thickness og wall/floor ≥ 200 mm).

Frame type (Size)	Max. conductor area per cable	Fire resistance[1)] One-/two-sided (minutes)
G (2-8 plus combinations)	3 x 185/90 mm² Cu. 1 x 150/25 mm² Al.	60 / 90 60 / 120
B (2-8 plus combinations)	3 x 185/90 mm² Cu. 1 x 150/25 mm² Al.	60 / 90 60 / 120
R (70 - 200)	3 x 185/90 mm² Cu. 1 x 150/25 mm² Al.	60 / 90 60 / 120
RS (23 - 150)	4 x 185/50 mm² Cu. 1 x 150/25 mm² Al.	60 / 120 60 / 120

1) Satisfies functional requirement for temperature og integrity. Can be used in situations where it is required a corresponding fire resistance of class 'EI' according to TEK (The Norwegian building regulations).

Table 2
The fire resistance of Roxtec Cable and Pipe Penetration Seals in penetrations of pipes in flexible and concrete walls of thickness ≥ 95 mm.

Name of penetration seal (diameter (mm))	Pipe material, max pipe diameter and wall thickness (mm)	Fire resistance[1)] (minutes)
RS PPS/S (Ø 31-150)	PVC: Ø 5 – 110, Wall thickness: 0,5–2,0	90
R (Ø 70-200)	Steel, Cu[2)]: Ø 10 – 28,	60

1) Satisfies functional requirement for temperature og integrity. Can be used in situations where it is required a corresponding fire resistance of class 'EI' according to TEK (The Norwegian building regulations).
2) 400 mm long og 50 mm thick insulation of mineral wool of minimum density of 100 kg/m^3.

8. Validity
The validity of the appendix is uniquely linked to the first page of the document with the requirements, conditions and time stamps that are presented there.

9. Technical Management
Project manager for this approval is Jan P. Stensaas, Discipline Manager Documentation, RISE Fire Research AS, Trondheim.