

## Technical Data Sheet

# Performance Specification R RS and H UG

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## Solution descriptions

### Roxtec R UG™

Transit including modules with Multidiameter™ in flexible configuration for multiple cables and pipes.



### Roxtec RS UG™

Two-part seal for installation around single cables or pipes



### Roxtec H3 UG™

Three-part seal that is ideal for cables in trefoil formation.



### Roxtec H3+1 UG™

Four-part seal ideal for power cables in trefoil formation together with a grounding cable.



## Application information

The Roxtec underground solutions are designed to be used in foundations together with Roxtec knock-out sleeves (KOS) but can also be installed into existing core drilled holes or conduits and works as a long-lasting barrier against flooding, gas, humidity and rodents. It can even be installed in wet conditions or environments with running water.

## Product data

Rubber compound. Roxylon™ EPDM rubber

Halogen free. Yes

Asbestos free. Yes

Reach and RoHs compliant. Yes

Front and back fitting quality. Non-magnetic acid proof stainless steel

Fasteners. Non-magnetic acid proof stainless steel

Storage. To be stored in its original packaging at room temperature.

## Environment, health and safety

The product is not classified as hazardous according to the European CLP Regulation or the globally harmonized system of classification and labelling of chemicals.

### Disclaimer

The products manufactured by Roxtec International AB are sold in accordance with Roxtec International AB's general conditions of sale and delivery. The information provided does not release you – the receiver of provided information and/or purchaser of these products – from the obligation to determine independently the suitability of these products for the intended processes and/or installations and/or uses.

## Performance verification

### Background

The Roxtec UG™ underground solutions are designed to work during constant exposure to water under shifting temperatures when installed with cables and pipes.

To ensure the performance of the Roxtec UG™ seals, Roxtec International AB have performed extensive testing of seals installed with cables or mandrels in various diameters covering the complete range of the seal.

### External tests / 3<sup>rd</sup> part witnessed tests

A representative selection of sizes installed in steel sleeves have been tested at RISE (Research Institutes of Sweden) passing an IP68 rating (dust tight and watertight to a pressure level of 1,0 bar for 24 hours).

Roxtec knock-out sleeves (KOS) with intact knock-out plate (without seals) as well as KOS with installed seals and seals installed directly into core drilled holes have all been exposed to a water pressure of 1.0 bar for 24 hours, witnessed by DNV GL.

### Internal tests

Seals are installed and tested in steel sleeves covering the allowed aperture range. The seals and services are re-installed after the retention test prior to the ground settlement test.

Tests are performed at our internal test facilities located at Roxtec HQ in Sweden.

- Gas tightness  
The seal is exposed to helium gas at a set pressure of 0,3 bar.
- Flooding  
The seal is exposed to 40°C and 10°C water to simulate flooding, with a pressure level set to 0,5 bar.
- Temperature cycling  
The seal is temperature cycled between 10°C and 40°C and exposed to a constant water pressure of 0,5 bar.
- Catastrophic water pressure  
The seal is exposed to a pressure of 1.0 bar.
- Cable retention  
Maximum tested retention force until visible cable displacement.
- Cable radial load  
A water pressure of 0,5 bar is set and installed cables are then stressed to simulate ground settling or an immediate cable offset angle near the seal.

## Performance data

### Summary

IP rating	IP 68 (1 bar / 24 hrs)
Gas pressure (test with Helium in steel sleeve)	0,3 bar
Flooding	0,5 bar
Constant water pressure	0,5 bar (10 - 40°C cycling)
Catastrophic water pressure	1 bar
Cable retention	See below table
Cable radial load	0,5 bar + cable movement

### Retention

Seal size / range	Cable/pipe range (mm)	Cable retention
RS 70 - 80 UG	9 - 33	Up to 1700 N
RS 90 - 100 UG	24 - 53	Up to 3300 N
RS 100 - 110 UG	39 - 63	Up to 4500 N
RS 125 - 135 UG	55 - 88	Up to 5700 N
RS 135 - 145 UG	65 - 98	Up to 6600 N
RS 150 - 160 UG	80 - 113	Up to 8000 N
RS 185 - 195 UG	114 - 148	Up to 10000 N
RS 200 - 210 UG	130 - 163	Up to 11000 N
RS 225 - 235 UG	146 - 179	Up to 14000 N
RS 250 - 260 UG	171 - 204	Up to >15000 N*
H3 135 UG	23 - 43	Up to 2200 N
H3 150 UG	24 - 52	Up to 2500 N
H3 185 UG	48 - 64	Up to 2800 N
H3 200 UG	48 - 68	Up to 3300 N

H3+1 150 UG	3x(24-52)+1x(10-23)	Up to 2500 N
H3+1 200 UG	3x(39-68)+1x(10-23)	Up to 3300 N

R 100 UG	23 - 43	Up to 560 N
R 150 UG	24 - 52	Up to 1130 N
R 200 UG	48 - 68	Up to 2470 N

\*The maximum pull force (15kN) of the test equipment was reached before maximum retention of the seals were exceeded.

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<https://www.roxtec.com/en/about-roxtec/legal/general-terms-of-sales/>