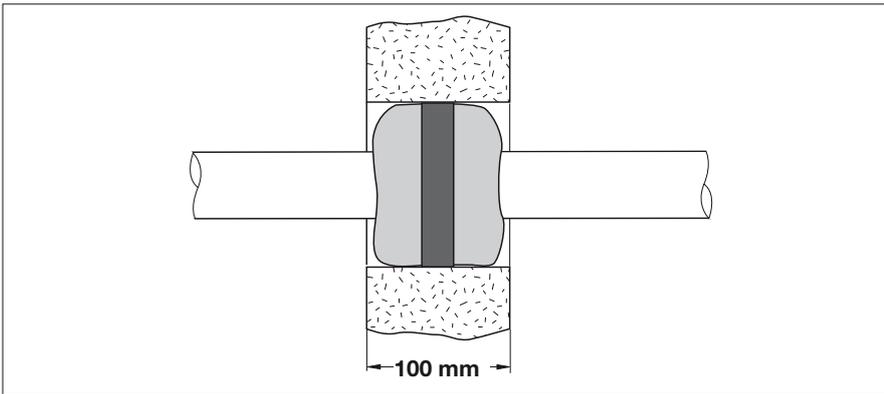


Duct sealing system RDSS



Unsealed cable pipes and ducts need no longer cause dampness and flooding in substation basements, cable vaults and access manholes. In these environments rust, corrosion and a humid environment inevitably result in damage to support structures, metal work and electrical equipment. The most common route for water to enter into such installations can now be blocked simply and effectively by a new technique developed by Raychem.

The Rayplate Duct Sealing System (RDSS) has been designed for use on power cables to provide a watertight seal when used with plastic, concrete or steel ducting systems.

Clean, fast, easy sealing method

The Rayplate seal consists of an inflatable bladder of flexible, metallic laminate, coated on both sides with a sealant strip. With the sealant strips lubricated, the product is simply wrapped around the cable and easily slides into the duct. The bladder is then inflated with a gas pressure tool which presses the sealant coating against the duct wall and the cable. Upon removal of the filling tube, an automatic gel valve system reliably retains the gas pressure in the Rayplate duct seal.

The entire installation is performed within a few minutes – even in congested enclosures.

Versatility and easy removal

The RDSS system adapts itself to any configuration and is independent of duct ovality. Each RDSS seal covers a large range of cable and duct diameters.

The versatility of the wraparound concept enables use not only for new cable installations, but also for existing applications. Unlike other methods that require dry ducts, the Rayplate seals can be installed when water is still flowing out of the duct. The duct seals can be quickly and easily removed from a duct or pipe by deflation. This allows cables to be replaced in an upgrade or repair. Since ducts are not damaged by the RDSS system, they can easily be sealed again.



Performance tested

Tests at room temperature showed water and air tightness at static pressures of more than 0.3 bar, even in conjunction with cable bending, vibration, torsion and axial pull.

Resistance to common chemicals has been proven by immersion tests. The Rayplate system was tested with cables load-cycled at conductor temperatures of 90 °C, similar to specifications required for cable accessories. The sealing tests showed water and air tightness with internal duct pressures of 0.3 bar. Measurements and calculations of the diffusion rate indicate that a typical Rayplate duct seal will withstand a 3 m waterhead for 30 years after installation. The sealing performance after 30 years of life was confirmed by sealing tests with reduced internal bladder pressures. The test methodologies and parameters are set out in a detailed test report available from your local Raychem products representative.

RDSS – Selection table for duct seals and sealing clips

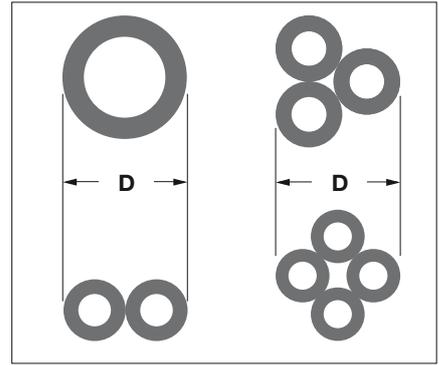
Each RDSS seals empty ducts (except for size 150) and ducts containing up to 2 cables. The table below shows the minimum and maximum diameter of the cable or of the sum of 2 cables depending on the duct size. All dimensions in mm.

Duct inside Ø	Product description					
	RDSS-45 Ø cable	RDSS-60 Ø cable	RDSS-75 Ø cable	RDSS-100 Ø cable	RDSS-125 Ø cable	RDSS-150 Ø cable
32.5	0–14					
35	0–18					
40	0–27					
45	0–32	0–18				
50		0–30				
55		0–38	0–28			
60		0–45	0–30			
65			0–40			
70			0–46			
75			0–56	0–45		
80				0–52		
85				0–60		
90				0–66		
95				0–74		
100				0–80	0–65	
105				0–85	0–75	
110				0–90	0–83	
115				55–95*	0–91	
120				60–100*	0–95	
125					0–103	60–100
130					70–110*	60–107
135					75–115*	60–112
140					80–120*	60–118
145					85–125*	60–123
150					90–130*	60–129
155						60–134*
160						60–139*
165						105–145*
170						110–150*
175						115–155*
180						120–160*
clip selection	RDSS-Clip-45	RDSS-Clip-75	RDSS-Clip-75	RDSS-Clip-100	RDSS-Clip-125	RDSS-Clip-150

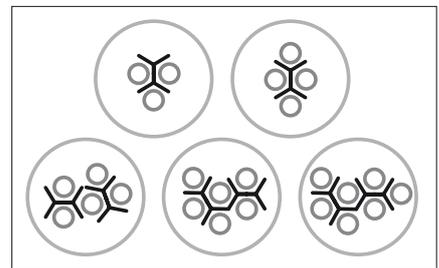
Suitable for empty ducts

With cables only

* RDSS-clips must also be used for 2 or more cable configurations.



Diameter of cable or cable bundles



If three or more cables have to be sealed, a RDSS-Clip is used in combination with the RDSS duct seal. The sealing clip has to be ordered separately.

For each clip used, subtract 5 mm from the maximum cable diameter shown in the table to determine the maximum cable bundle diameter.

One RDSS-clip seals up to 4 cables. If more cables are to be sealed, use one extra clip as shown above.

Tools for easy and quick inflation

Rayflate duct seals can be installed using a wide variety of inflation tools, which have the capability to inflate the bag to 3.0 ±0.2 bar pressure.

For tools recommended by Raychem see page 106: RDSS-IT-16 inflation tool and gas cylinders E7512 0160.

RDSS – Adapter for large duct sizes

The RDSS-AD-210 adapter is designed to be installed together with RDSS-125 and RDSS-150 duct seals for ducts up to 210 mm in diameter.

After the sealant tape has been lubricated the RDSS-AD-210 adapter is coiled over the cable to fit the duct. The coiled adapter slides easily into the duct and when released snaps into position against the inner wall of the duct. Then the RDSS is inserted between the cable and the pre-positioned adapter and inflated in the usual way. Certain configurations may require two adapters, details are given in the selection table.

The RDSS adapter was performance tested together with RDSS duct seals including watertightness even when the cables were subjected to loadcycling, vibration or bending. A detailed test report is available on request.

The table below shows the minimum and maximum diameter of the cable or cable bundle that can be accommodated in a cable duct for a specific combination of RDSS seals and RDSS-AD-210 adapter.

All dimensions in mm.

Duct inside Ø	Product combination			
	1xRDSS-AD-210 RDSS-125 Ø cable	2xRDSS-AD-210 RDSS-125 Ø cable	1xRDSS-AD-210 RDSS-150 Ø cable	2xRDSS-AD-210 RDSS-150 Ø cable
130	0*			
135	0*			
140	0– 40			
145	0– 50			
150	0– 65			
155	0– 83			
160	0– 91			
165	0–103			
170	70–110	0*	60–107	
175	75–115	0– 40	60–112	
180	80–120	0– 50	60–118	
185	90–130	0– 65	60–129	
190		0– 83	60–135	
195		0– 95	60–139	
200		0–103	105–145	60–100
205		75–115	115–155	60–112
210		80–120	120–160	60–118

For sealing of cable bundles select the appropriate RDSS-clip according to the selection table on the previous page

Suitable for empty ducts

With cables only

* Empty ducts only

