Passive Fire Protection Range
Technical Datasheet

The Ritherdon Passive Fire Protection Range is specifically designed to enhance and restore the fire resistance of multi-occupancy buildings, such as apartment blocks. These products effectively prevent the spread of fire and smoke through compartment walls and risers. Their performance has been rigorously assessed in accordance with BS EN 1363-1, BS EN 1364-1, and BS EN 1366-3 standards, as recommended by the BS 9991 Code of Practice.

The range as specified in Table 1 below provides up to 90 minutes of passive fire resistance and is constructed using durable 1.2mm steel.

Table 1 - Dimensions and Properties of Product Range

Model	Max. Height [mm]	Max. Width [mm]	Max. Depth [mm]	Fire Rating[1]	Material
FireSeal	1500	950	200	E60	Stainless Steel[3]
FS Riser	2595	763[2]	27.4	E60	Zintec Steel
FS Vented	950	600	100	E90	Stainless Steel[3]
R22 FS	545	470	240	E60	Stainless Steel[3]
R5 Small	582	415	180	E60	Zintec Steel
R5 Medium	657	470	180	E60	Zintec Steel
R5 Large	732	555	180	E60	Zintec Steel

[1]Fire rating according to BS EN 1351-2
[2] Unit width, covering a maximum opening size of 625mm
[3] 4003 Grade

Product Range and Options

FireSeal

The FireSeal as shown in Figure 1 is an access panel designed to cover existing meter boxes or other openings in compartment walls. Engineered for quick and easy installation, it effectively prevents the spread of fire between compartments, reducing the risk of fire traveling further throughout the building.

Figure 1 - FireSeal

FireSeals are fire tested in both directions, meaning they are tested facing towards and away from the furnace and provide 60 minutes of fire resistance (E60).

FireSeals include a smoke leakage rate in accordance with BS EN 1634-3:2004. This certification ensures a leakage rate of no more than $3m^3/m/hour$ when tested at a pressure of 25 Pa.

Figure 2 - FireSeal Riser

FireSeal – Riser FireSeal

The Riser FireSeal as shown in Figure 2 provides an alternative solution to horizontal compartmentation in multi-occupancy buildings. Designed to install over risers, it features intumescent sealing to prevent the spread of fire and smoke between floors, offering an E60 fire resistance. Risers can be customised with options such as inspection door panels, vented panels and bespoke sizing, as well as finishes to match any color scheme.

Figure 3 – Vented FireSeal

FireSeal – Vented

The FireSeal Vented as shown in Figure 3 is a variation of FireSeal, featuring louvres in the door to allow ventilation for items such as gas meters. In the event of a fire, the louvres are sealed by intumescent material, effectively blocking the passage of smoke and flames. Designed for quick and easy installation, typically taking 10 to 15 minutes, FireSeal Vented provides 90 minutes of fire resistance.

Figure 4 - R22 FireSeal

FireSeal – R22

The R22 FireSeal as shown in Figure 4 is an enhanced version of the R22 meter box repair unit, designed to deliver 60 minutes of fire resistance from the inside. It incorporates a high temperature lock and intumescent sealing to effectively block the spread of fire and smoke. Designed for retrofitting, the R22 FireSeal replaces existing GRP surface-mounted gas meter boxes, which typically lack sufficient fire protection and can pose

challenges during fire assessments in multi-occupancy buildings. The R22 FireSeal is available in a single size, tailored to fit the most common type of surface-mounted gas meter box.

Figure 5 - R5 Meter Box

R5 Fire Tested Meter Box

The R5 FireSeal as shown in Figure 5 is fire tested to provide 60 minutes fire resistance both front and rear facing. It features a high temperature lock and a fire resistant backboard. The R5 Meter Box is available in the small, medium and large to match the standard semi-recessed electric meter box.

FireSeal products are manufactured in white as standard but can be customised in any colour to meet specific requirements. For tailored fire tested solutions, please contact Ritherdon to discuss your needs.

Testing

Currently, there is no specific standard test for evaluating systems like the FireSeal, which are designed to reinstate the fire resistance of walls. However, the BS 9991 Code of Practice for Fire Safety specifies that elements within multi-story buildings must provide 30 to 60 minutes of fire resistance, depending on their function. Section 24.3 of the code states that access panels should provide the same level of fire resistance as the element into which they are installed. In accordance with Section 16.2.1, these elements must be tested to the relevant parts of BS EN 1363, 1364, and 1366. Consequently, the Passive Fire Protection products have been rigorously tested to meet these standards.

Additionally, selected products have undergone smoke testing in compliance with BS EN 1634-3:2004.

Figure 6 - Fire testing of various FireSeal products front and rear facing the furnace.

Fire Resistance Testing

Tested in accordance with BS EN 1363-1, BS EN 1364-1, and BS EN 1366-3 covering the whole Passive Fire Protection Range.

- Specimens were mounted onto a supporting construction and exposed to fire conditions using an industrial furnace, simulating the effects and environment of an actual fire.
- Two specimens of each product were tested: one positioned facing the furnace and the other positioned facing away.
- Furnace was controlled to follow temperature-time relationship as specified in BSEN 1363: Part 1: 2012 Section 5.1.1.
- FireSeals 1500mm x 950mm x 200mm maintaining integrity for over 60 minutes achieving E60 rating.
- Vented FireSeals maintained integrity for over 90 minutes, achieving E90 rating.
- Riser FireSeals and R5 Meter Boxes - maintained integrity for over 60 minutes, achieving E60 rating.
- R22 meter-boxes maintained integrity for over 60 minutes, achieving E60 rating from the inside.

Smoke Resistance Testing

Tests carried out in accordance with BS EN 1634-3: 2004 and encompassed the FireSeal up to the maximum size produced.

- Specimens fixed to support structure and exposed to positive and negative pressures
- Leakage measured in $m^3/m/hr$ and was required to be below $3m^3/m/hr$ at 25 Pa
- Specimens tested ranged from 0.09 – 0.29, well below the requirement
- FireSeal Access Panels qualify for smoke leakage rating according to BS EN 1634-3: 2004 for fire doorsets.

Please contact our technical team if you require a more detailed report of the testing, or if you have any other questions and would like to discuss any aspect of this datasheet.