**GENERAL PRODUCT DESCRIPTION**

AIS FR Graphite Sealant FP 501 is a high specification formulation designed to prevent the spread of fire, smoke and gases through openings in fire rated walls and floors. FP501 expands when it is subjected to fire and closes openings around penetrations when any combustible or low temperature melting materials have burnt away.

FP 501 is designed to fire seal difficult services which traditional fire rated mastics do not achieve such as large plastic pipes.

FP 501 can be used with a suitable filling material, i.e. stone wool or AIS backing material in order to ensure correct width to depth ratio and to reduce the shrinking of the sealant during curing. Minimum depth and maximum width of the joints are included in the installation instructions. Thermal activation takes place at 150 °C when the material will expand (intumesce) to prevent the passage of fire and smoke for periods up to 4 hours.

**PROPERTIES**

* Classified in most constructions for plastic pipes, cables and combustible pipe insulations
* Easy to apply
* High sound insulation
* Low emissions - environmentally and user friendly
* Permanently flexible – will accommodate movement up to 12.5%
* No priming necessary for application to most materials; see the installation instructions for further details
* Suitable for most surfaces, included concrete, bricks, Leca, steel, wood, gypsum, glass, plastics and most non-porous surfaces.
* Hardens quickly, tack free after 1 hour
* The fire performance specification of the joint filler has been derived when the joint filler has been allowed to cure for 30 days
* Minimum 12 months storage time
* 30 years working life

**SOUND INSULATION**

|  |  |
| --- | --- |
| Description | Sound Reduction |
| Single sided seal ≥ 25mm depth | Rw 53 dB |
| Double sided seal ≥ 25mm depth | Rw > 53 dB |

Usage of any backing material is optional, due to the tests being conducted with sealant only.

**EMISSION DATA (INDOOR AIR QUALITY)**

|  |  |  |
| --- | --- | --- |
| COMPOUND | EMISSION RATE AFTER 3 DAYS | EMISSION RATE AFTER 4 WEEKS |
| TVOC | 51 µg/m3 | 20 µg/m3 |
| TSVOC | < 5 µg/m3 | < 5 µg/m3 |
| VOC w/o NIK | < 5 µg/m3 | < 5 µg/m3 |
| R Value | 0.17 | 0.14 |
| Formaldehyde | < 3 µg/m3 | < 3 µg/m3 |
| Acetaldehyde | < 3 µg/m3 | < 3 µg/m3 |
| Carcinogenic | < 1 µg/m3 | < 1 µg/m3 |
| n.d. or < means not detected | | |

**AIR PERMEABILITY**

|  |  |  |  |
| --- | --- | --- | --- |
| POSITIVE PRESSURE (PA) | LEAKAGE (M3/H) | NEGATIVE PRESSURE (Pa) | LEAKAGE (M3/H) |
| 25 | 0.00 | 25 | 0.00 |
| 50 | 0.00 | 50 | 0.00 |
| 100 | 0.00 | 100 | 0.00 |
| 200 | 0.00 | 200 | 0.00 |
| 300 | 0.00 | 300 | 0.02 |
| 450 | 0.03 | 450 | 0.06 |
| 600 | 0.13 | 600 | 0.12 |

**PIPE END CONFIGURATIONS**

When testing pipes, one can choose not to cap (or close) the pipe, or cap the pipe inside the furnace, or outside the furnace, or on both sides. The configuration chosen depends on the intended application of the pipe and/or the installation environment. The code defining if a pipe is capped is stated after the fire classification. For instance EI 60 C/U which means the pipe was capped inside the furnace, and uncapped outside the furnace. The test configuration defines the approvals possible.

Our engineering judgment based on EN 1366-3:2009 are:

|  |  |  |
| --- | --- | --- |
| INTENDED USE OF PIPE | | PIPE END CONDITION 4) |
| Rainwater pipe, plastic | At drainage | U/U 1) |
| Not at drainage | C/C 2) |
| Drainage or sewage pipe, plastic | Ventilated drain | U/U 1) |
| Unventilated drain | U/C 1) |
| Drain w/water trap | U/C 1) |
| Not at drainage | C/C 2) |
| Pipe in closed circuit (water, gas, air, electricity etc.) | | C/C 2) 3) |
| Flue gas recovery system pipe, plastic | | U/C 1) |
| Pipe with open ends and ≥ 50cm length on both sides, plastic | | U/U 2) |
| Pipe supported by suspension system, metal | Fire rated support | C/U 1) |
| Non-fire rated | U/C 1) |
| Waste disposal shaft pipe, metal | | U/C 1) |

1) Suggested in EN 1366-3:2009. 2) AIS’s judgment based on tests. 3) Metal pipes should have fire rated support. 4) U/U classified fire seals cover C/U, U/C and C/C. C/U classified fire seals cover U/C and C/C. U/C classified fire seals cover C/C.

**TECHNICAL SPECIFICATION**

|  |  |
| --- | --- |
| **Condition** | Ready for use, water based graphite sealant |
| **Specific gravity** | 1.50 – 1.60 |
| **pH** | 8.00 – 9.50 |
| **Reaction To Fire** | B – s1 , d0 |
| **Flash point** | None |
| **Expansion rate** | Approx. 1 : 25 |
| **Non-sticky** | 60 minutes |
| **Film forming** | 30 minutes |
| **Totally hardened** | 3 to 5 days depending on thickness and temperature, full cure may take up to 30 days |
| **Flexibility** | Low to medium 12.5% |
| **Durability/service** | Class Z2 - intended for internal conditions with humidity classes other than Z1 excluding temperatures below 0 °C |
| **Thermal conduct.** | 0.85 W/mK (+/- 3%) @ 20mm depth |
| **Storage** | 12 months stored in unopened cartridges. To be stored in temperatures between 5 °C and 30 °C |
| **Working life** | 30 years |
| **Service temp.** | -15 °C to +75 °C |
| **Application temp.** | +4 °C to +30 °C |
| **Compatibility** | Suitable for use with most materials, but should not be used In direct contact with bituminous materials |
| **Limitations** | Should not be used in permanently damp areas or in joints with excessive movement, joints at floor level or joints below the ground |
| **Classification** | Sealant for fire rated penetrations class EI 240 |
| **Colour** | Dark grey (may grow darker during curing) |
| **Packaging** | Box containing 25 cartridges each 310 ml |