



# MANDOVAL

VERMICULITE INNOVATION



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## **INTRODUCTION:**

At Mandoval we are committed to establishing market opportunities for Vermiculite usage in South Africa and abroad.

The company is based in Alrode, Gauteng, South Africa with branches in Cape Town, and Durban. Mandoval is recognised by its customers for its professional approach to product quality and customer service.

The company also has an excellent relationship with all its staff some of which have been with the company for over 35 years.

## **OUR PURPOSE:**

To create value for all stakeholders through our experience, expertise and excellence.



- Teamwork
- Communication

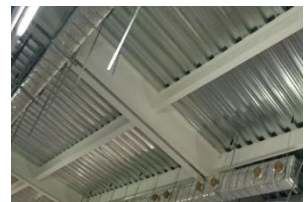
We accept that we function as a team and that decisions have knock-on effects. We listen well and seek to understand before reacting. We communicate clearly and provide honest, helpful and timely feedback to stakeholders.

- Ownership
- Responsibility and Accountability

Responsibility is distributed amongst a team that respect and trust each other. We let go when we're not directly responsible, we take action when we are and accept accountability for our actions. Individual ownership ensures anticipated outcomes.

- Integrity
- Innovation

We are genuine, impartial and transparent. We find solutions to overcome challenges and suggest better approaches. We minimise complexity and find time to simplify.



# VICORE VERMICULITE



Technically Vermiculite encompasses a large group of Hydrated Laminar Magnesium-Aluminium Iron Silicates which resemble Mica.

There are two key properties of Vermiculite. The first is its laminar (or layered) crystalline structure which provides the hinged plates that make the material expand or unfold in a linear manner like an accordion. The second is that it contains trapped water which flashes into steam when heated to force the layers open.

There are a many naturally occurring Vermiculite minerals and soils and their identification often requires sophisticated scientific analysis. One of the most common forms of Vermiculite is generally known as Commercial Vermiculite. It is derived from rocks containing large crystals of the minerals Biotite and Iron-bearing Phlogopite. As these rocks are exposed to the weather they start to decompose allowing water to enter and react with the various chemicals present. As the decomposition and chemical reaction proceed Vermiculite is formed.

| GRADE      | BAG SIZE | PARTICLE SIZE           |
|------------|----------|-------------------------|
| LARGE      | 25kg     | -8.0 mm to +2.8 mm      |
| MEDIUM     | 25kg     | -4.0 mm to + 1.4 mm     |
| FINE       | 25kg     | -2.0 mm to + 0.710 mm   |
| SUPER FINE | 25kg     | -1.0 mm to 0.355 mm     |
| MICRON     | 25kg     | -0.710 mm to + 0.250 mm |



## APPLICATIONS:

### **AGRICULTURAL**

Production of Concentrated Feed Mix Additive



### **INDUSTRIAL**

Insulation of Molten Metal in Steel Foundries





## VICAFIL VERMICULITE



The exfoliation of Vermiculite is critical to ensuring the maximum attributes of the products are obtained. Poor exfoliation reduces the absorption properties being water or chemicals. It also affects the material density.

Mandoval's products are exfoliated using a system of maximum heat and controlled feed of the raw material thus ensuring our products are supplied according to stringent quality standards.

| GRADE      | BAG SIZE | PARTICLE SIZE           |
|------------|----------|-------------------------|
| LARGE      | 7 kg     | -8.0 mm to +2.8 mm      |
| MEDIUM     | 8 kg     | -4.0 mm to + 1.4 mm     |
| FINE       | 9 kg     | -2.0 mm to + 0.710 mm   |
| SUPER FINE | 10 kg    | -1.0 mm to 0.355 mm     |
| MICRON     | 10 kg    | -0.710 mm to + 0.250 mm |



## APPLICATIONS:

### **AGRICULTURAL**

Animal Feed  
Pet Enclosures

### **HORTICULTURAL**

Growing Medium  
Soil Conditioner  
Hydroponics

### **INDUSTRIAL**

Friction Linings  
Insulation in Steelworks and Foundries  
Packaging Materials and Spillage Absorbent

### **COMMERCIAL**

Loose Fill Insulation  
Light Weight Screeding



## PASSIVE FIRE PROTECTION

Passive Fire Protection products play a major role in all building design and are incorporated under section T of the National Building Regulations 0400. Containing a potential fire to its source and preventing the spread of toxic and corrosive gases from spreading throughout a building is an integral part of building safety as well as the prevention of structural collapse. Mandoval's Passive Fire Protection products include fire stopping seals, coatings for structural steel and fire rated boards.

## FIRE PROTECTIVE PLASTERS

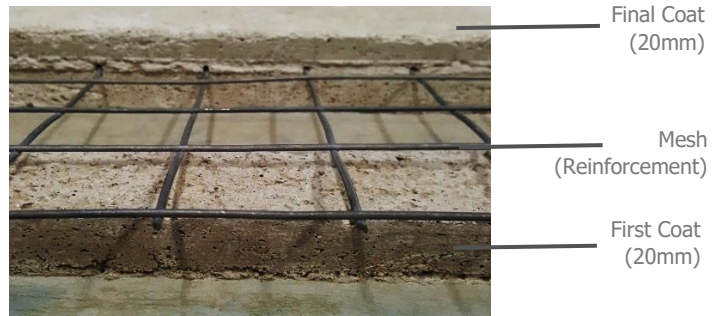
Mandoval Vermiculite Plasters are used in general building plasters (both hand and spray applied) to improve coverage, ease handling, adhesion to a wide variety of substrates and resistance to chipping/cracking/shrinkage.



### TEKROK C

Tekrok C is a new generation fireproofing plaster for use in the Chemical and Petrochemical Industries. It has recently been modified using advanced chemical technology improving durability and workability. This plaster is a factory pre-mix product that can be troweled or spray applied and has been officially tested by the SABS for 120-minute fire protection and is in compliance with the NFPA58 specification for flammable gas storage vessels. Tekrok C is packaged in 20kg PVC bags.

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| <b>Dry Density</b>                    | 750 – 900 kg/m <sup>3</sup>         |
| <b>Wet Density</b>                    | 765 kg/m <sup>3</sup>               |
| <b>Colour</b>                         | Grey                                |
| <b>Mix Ratio</b>                      | 1 x 20kg bag : 13 – 18 Litres water |
| <b>Compressive Strength</b>           | 3.2 MPA                             |
| <b>Shelf Life</b>                     | 12 months @ 23°C and 50% humidity   |
| <b>PH Value</b>                       | 12 – 12.5                           |
| <b>Thermal Conductivity (K-Value)</b> | 0.19 W/m° C                         |
| <b>Initial setting time</b>           | Min 45 minutes Max 5.5 hours        |
| <b>Final setting time</b>             | 28 days                             |
| <b>SABS Test report number</b>        | FPE9/84228/02                       |



#### Product features:

Medium density, durable, chemically resistant and has excellent substrate adhesion

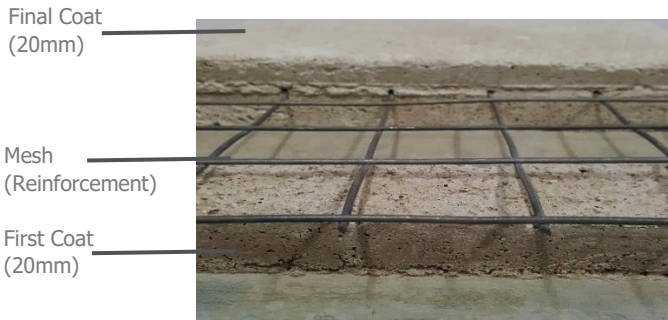
#### Applications:

Structural steel, LPG vessels, vessel skirts, cables and junction boxes

## TEKROK S

Tekrok S is an economically proven cement pre-mix material for fireproofing structural columns and beams in commercial buildings or as a fire barrier system. It also has applications such as a condensation control material and as a spray applied monolithic coating.

Tekrok S is of particular benefit where economic and speed of application are the main considerations. Tekrok S provides a number of benefits over conventional materials including durability, being light weight and asbestos free. Tekrok S is packaged in 15kg PVC bags.



|                                       |                                     |
|---------------------------------------|-------------------------------------|
| <b>Dry Density</b>                    | 380 kg/m <sup>3</sup>               |
| <b>Wet Density</b>                    | 765 kg/m <sup>3</sup>               |
| <b>Colour</b>                         | Off white                           |
| <b>Mix Ratio</b>                      | 1 x 15kg bag : 20 – 24 Litres water |
| <b>Compressive Strength</b>           | 0.380 MPA                           |
| <b>Shelf Life</b>                     | 12 months @ 23°C and 50% humidity   |
| <b>PH Value</b>                       | 12 – 12.5                           |
| <b>Thermal Conductivity (K-Value)</b> | 0.091 W/m° C                        |
| <b>Initial setting time</b>           | 2 – 6 hours                         |
| <b>Final setting time</b>             | 28 days                             |
| <b>Test report number</b>             | 5409/84047/00                       |

### Product features:

Low density, durable, good substrate adhesion and excellent thermal properties

### Applications:

Fire protective layer on structural steel, insulation on sludge digesters, condensation control, fire protection on lift shafts, insulation of parking garages, hotels and kitchens



## TEKROK T.G.

Tekrok T.G is a modified form of Tekrok C through the addition of chemical additives. Tekrok T.G is used as a penetration seal for 120 minutes' fire protection where material structural stability is required. Tekrok T.G plaster consists of Vermiculite, cement, lime, mica and thixotropic chemical additives which assist when trowelling. The plaster may only be applied by an approved specialist contractor for the use on structural steel and LPG Vessels in the Petrochemical Industry. Tekrok TG is specifically designed to meet the needs of Hydrocarbon and Chemical Processing Industries to withstand high thermal shock experienced in high intensity hydrocarbon fuelled fires. Tekrok T.G is packaged in 20kg PVC bags.

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| <b>Dry Density</b>                    | 750 – 900 kg/m <sup>3</sup>         |
| <b>Wet Density</b>                    | 765 kg/m <sup>3</sup>               |
| <b>Colour</b>                         | Grey                                |
| <b>Mix Ratio</b>                      | 1 x 20kg bag : 13 – 18 Litres water |
| <b>Compressive Strength</b>           | 3.2 MPA                             |
| <b>Shelf Life</b>                     | 12 months @ 23°C and 50% humidity   |
| <b>PH Value</b>                       | 12 – 12.5                           |
| <b>Thermal Conductivity (K-Value)</b> | 0.19 W/m° C                         |
| <b>Initial setting time</b>           | Min 45 minutes Max 5.5 hours        |
| <b>Final setting time</b>             | 28 days                             |
| <b>Test report number</b>             | 653/80679/U496                      |



### Product features:

Durable, chemically resistant, excellent substrate adhesion and medium density material

### Applications:

Structural steel and LPG vessels in the Petrochemical Industry



|                                       |                                    |
|---------------------------------------|------------------------------------|
| <b>Colour</b>                         | Grey                               |
| <b>Density</b>                        | 856 – 10<br>50 kg/m <sup>3</sup>   |
| <b>Mix Ratio</b>                      | 1 x 25kg bag : ±18 Litres of water |
| <b>Compressive Strength</b>           | 3.2 MPA                            |
| <b>Shelf Life</b>                     | 12 months @ 23°C and 50% humidity  |
| <b>PH Value</b>                       | 12 – 12.5                          |
| <b>Thermal Conductivity (K-Value)</b> | 0.19 W/m° C                        |
| <b>Initial setting time</b>           | Min 45 minutes Max 5.5 hours       |
| <b>Final setting time</b>             | 28 days                            |

### Product features:

Durable, non-toxic, non-combustible and non-hazardous

### Applications:

Enhancement for structural columns, fire protection aesthetics, penetration seals and cables through walls and floors

## TEKROK CAST

Tekrok Cast has been specially formulated as a cast-in place material. Tekrok Cast is used as an encasement for structural columns where fire protection as well as aesthetics are required. Tekrok Cast is packaged in 25kg PVC bags.



## BENEFITS OF MANDOVAL'S FIRE PROTECTIVE PLASTERS

- Durability
- Easy handling
- Asbestos free
- Excellent coverage
- Good adhesion to a wide variety of surfaces
- SABS Tested to 120 minutes in Hydrocarbon conditions
- Tested to NFPA 58 for protection of flammable liquid storage vessels

## DECORATIVE AND ACOUSTIC PLASTERS

### VIP

VIP plaster is a specially formulated blend of Vermiculite, gypsum and other additives. This plaster is used in many applications such as infill of large cracks and voids, infill of electrical conduit channels, and junction box cavities, etc. VIP Plaster is packaged in 25kg PVC bags.

|                             |                                    |
|-----------------------------|------------------------------------|
| <b>Colour</b>               | White                              |
| <b>Mix Ratio</b>            | 1 x 25kg bag : ±18 Litres of water |
| <b>Shelf Life</b>           | 12 months @ 23°C and 50% humidity  |
| <b>Initial setting time</b> | Min 45 minutes Max 5.5 hours       |
| <b>Final setting time</b>   | 28 days                            |



#### Product features:

Asbestos free, non-toxic and non-combustible

#### Applications:

Skimming of ceiling, penetration and conduit casings as well as a filler for large crack and voids



|                                       |  |
|---------------------------------------|--|
| <b>Colour</b>                         | Natural off White (Colours on request) |
| <b>Dry Density</b>                    | 520 kg/m <sup>3</sup>                  |
| <b>Thermal Conductivity (K-Value)</b> | 0.14 W/m° C                            |
| <b>Mix Ratio</b>                      |  |
| <b>Spreading Rate</b>                 | 6.5 kg/m <sup>2</sup> at 12 mm         |
| <b>Shelf Life</b>                     | 12 months @ 23°C and 50% humidity      |
| <b>Setting time</b>                   |  |
| <b>Test Report</b>                    | 5462/1543752T43                        |

#### Applications:

Theatres and recording studios

#### Product features:

Decorative, excellent sound absorption, non-combustible, non-toxic, asbestos free and durable

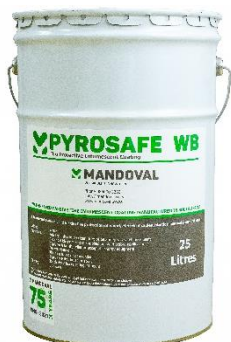
### MANDOVAL ACOUSTIC SPRAY

Mandoval Acoustic Spray is a decorative acoustic material with proven history of successful sound control. It consists of Vermiculite and mineral binders. It is clean to handle and is asbestos free. Mandoval Acoustic Spray is applied by a special spraying process giving an attractive textured finish and ensuring maximum sound absorption. Mandoval Acoustic Spray is packaged in 15kg PVC bags.

| FREQUENCY Hz | SOUND ABSORPTION COEFFICIENT |
|--------------|------------------------------|
| 100          | 0.01                         |
| 500          | 0.16                         |
| 2000         | 0.16                         |
| 4000         | 0.22                         |
| 5000         | 0.27                         |



## FIRE PROTECTIVE COATING



### **PYROSAFE WB**

Pyrosafe WB is a water-based intumescent fire-retardant coating which provides excellent protection to structural steel and can also be used as a fire protective coating on wood and electrical cables. Pyrosafe WB is non-toxic, easy to apply, and has excellent adhesive properties. Pyrosafe WB provides fire rating up to 60 minutes. Pyrosafe WB is packaged in 5 Litre and 25 Litre drums.

|                                       |                              |
|---------------------------------------|------------------------------|
| <b>Solids by volume</b>               | 62% - 66%                    |
| <b>Colour</b>                         | White                        |
| <b>Gloss Level</b>                    | Matt                         |
| <b>PH Value</b>                       | 9.1 – 9.3                    |
| <b>Shelf Life</b>                     | 12 months unopened container |
| <b>Surface Drying time @ 25°C</b>     | 1 hour                       |
| <b>Touch dry @ 25°C</b>               | 6 hours                      |
| <b>Recoating</b>                      | 6 hours                      |
| <b>Test report – Timber</b>           | 653/82943/9513               |
| <b>Test report – Chipboard</b>        | 653/82223/63613              |
| <b>Test report – Structural Steel</b> | 55059554/8                   |

#### **Product features:**

Decorative, easy to maintain, easy to apply and provides 60-minute fire rating

#### **Applications:**

Interior structural steel, timber and electrical cables



### **SAPPHIRE**

Sapphire is a clear water-based flame retardant chemical, used to reduce the flame spread along natural fibres, synthetic materials and blended fabrics. Sapphire is especially adapted to the treatment of natural and synthetic fibre textiles. Sapphire is packaged in 25 litre drums.

|                         |   |
|-------------------------|---|
| <b>Appearance</b>       | Clear colour liquid                     |
| <b>PH</b>               | 5.0                                     |
| <b>Methods</b>          | Spraying, dipping, sponging or brushing |
| <b>Test report SABS</b> | 5409/83384/98                           |
| <b>Test report CSIR</b> | 5032/9566                               |

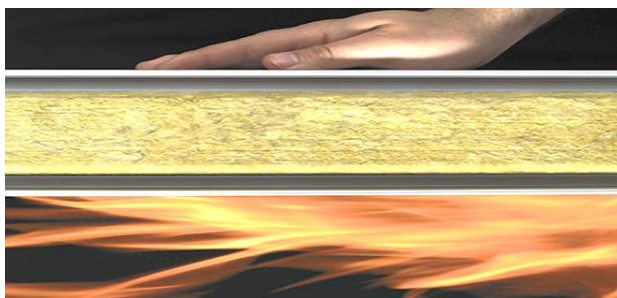
#### **Applications:**

Fire protection of fabrics, work clothes, gloves, upholstery and textiles such as curtains

#### **Product features:**

Non-toxic, non-irritating and non-dermatitic

## **FIRE PROTECTIVE SYSTEMS**



### **MINERAL WOOL PANELS**

Mineral Wool Panels are matt brown fibrous wool panels which are bio-soluble and have no adverse environmental effects. Mineral Wool Panels can be used for various applications such as thermal insulation, acoustic insulation, fire stopping seals and heat and fire insulation. The Mineral Wool Panel unit size is 1.2m x 0.6m x 50mm.



|  |                       |
|--|-----------------------|
| <b>Density</b>                         | 160kg/m <sup>3</sup>  |
| <b>Thermal conductivity (K-Value)</b>  | Maximum 0.043 W/mK    |
| <b>Thermal resistance (R-Value)</b>    | 3.7m <sup>2</sup> K/W |
| <b>Sound absorption coefficient</b>    | 0.14 – 0.99           |
| <b>Moisture absorption coefficient</b> | 0.3%                  |
| <b>Recoating</b>                       | 6 hours               |

#### **Product features:**

Non-combustible, bio soluble, dust free, odourless and excellent thermal properties

#### **Applications:**

Thermal insulation for commercial and industrial applications, acoustic insulation between dry walling or as roof insulation and fire stopping seals used in combination with Pyrosafe WB or KBS Coating

### **CALCIUM SILICATE FIRE BOARD**

Calcium Silicate Fire Board is a smooth, asbestos free fire board with good thermal conductivity. Calcium Silicate Boards can be used for various applications, including ceilings, roofs, floor partitions, external walls, ventilation and smoke extraction ducts, tunnel fire protection, smoke barriers, as well as a cladding material around wooden panelling. The Calcium Silicate Board unit size is 1.220m x 2.440m x 12mm.



|                                       |                               |
|---------------------------------------|-------------------------------|
| <b>Density</b>                        | 1100 – 1400 kg/m <sup>3</sup> |
| <b>Thermal conductivity (K-Value)</b> | ± 0.17 W/mK                   |
| <b>Thermal resistance (R-Value)</b>   | 0.069m <sup>2</sup> W/mK      |
| <b>Moisture content</b>               | ± < 11.5                      |
| <b>Weight</b>                         | 50kg                          |
| <b>Compressive strength</b>           | 8 N/mm <sup>2</sup>           |
| <b>Test Report</b>                    | 201530469                     |

#### **Product features:**

Non-combustible, moisture resistant and excellent thermal properties

#### **Applications:**

Structural steel, ceiling, roofs, floor penetration, external walls, smoke barriers, concrete upgrading, ventilation and smoke extraction ducts



# KBS FIRE PROTECTION SYSTEMS



|                                       |           |
|---------------------------------------|-----------|
| <b>Colour</b>                         | Off white |
| <b>Thermal conductivity (K-Value)</b> | 0.69 W/mK |
| <b>Thinning</b>                       | Water     |
| <b>Drying time touch dry</b>          | 24 hours  |
| <b>Drying time cured</b>              | 3 days    |
| <b>Solids by volume</b>               | 70%       |
| <b>Recoating</b>                      | 24 hours  |
| <b>PH Value</b>                       | 8         |
| <b>Shelf life</b>                     | 18 months |

### Product features:

Durable, flexible, weather and water resistant

### Applications:

Fire protection of grouped or bundled cables and fire protection for penetration seals



## KBS® COATING

KBS Coating is a water-based fire-retardant coating for electrical cables and as coating and sealant for use in combination with mineral wool panels as through penetration fire stops. KBS Coating as a coating for electrical cables can prolong the circuit integrity of the cables up to 52 minutes. KBS Coating used in combination with Mineral Wool Panels provides up to 200 minutes' fire rating. KBS Coating is packaged in 7kg and 35kg drums.



## KBS® CAULKING

KBS Caulking is a viscous, one component fire retardant intumescent caulk used to seal electrical cables, plastic and steel pipes which penetrate fire rated walls and floors. KBS Caulking provides up to 120 min fire rating. KBS Caulking is packages 310ml cartridges.

|                            |                         |
|----------------------------|-------------------------|
| <b>Colour</b>              | Grey                    |
| <b>Density</b>             | ± 1.40g/cm <sup>3</sup> |
| <b>Solids</b>              | ±75%                    |
| <b>Drying time</b>         | 2 weeks @ 5mm thickness |
| <b>Elongation to break</b> | ±50%                    |
| <b>Shelf life</b>          | 12 months               |

### Product features:

Humidity and moisture resistant, free of halogens and solvents

### Applications:

Sealing electrical cables, plastic and steel pipes which penetrate fire rated walls and floors







|                             |                               |
|-----------------------------|-------------------------------|
| <b>Colour</b>               | Red                           |
| <b>Dry density</b>          | ±600 g/l                      |
| <b>PH Value</b>             | 12.3                          |
| <b>Compressive strength</b> | ± 0.6 – 0.7 N/mm <sup>2</sup> |
| <b>Expansion</b>            | ± 3 vol%                      |
| <b>Complete curing</b>      | ±3days                        |
| <b>Shelf life</b>           | 24 months                     |
| <b>Workability</b>          | 60 minutes                    |
| <b>Storage temperature</b>  | -20°C - 40°C                  |

## KBS® MORTAR SEAL

KBS Mortar Seal is a dry mortar mix with controlled swelling effect to provide a non-shrinking, homogeneous and smoke gas-tight fire seal for cable and utility penetrations. KBS Mortar seal expands while it sets (up to 3%), assuring a tight and crack-free seal. KBS Mortar Seal provides up to 120 minutes' fire rating. KBS Mortar Seal is packaged in 25kg bags.

### Product features:

Light weight, non-shrinking, homogenous smoke and gas tight

### Applications:

Fire protection of large opening with complex cable installations



## KBS® SEALBAGS

KBS Sealbags are unique pillows ideal for penetration seals where changes such as retrofitting of cables or metal pipes are the rule rather than the exception. KBS Sealbags provide up to 120 minutes' fire rating. Each Sealbag weighs 720g and is packaged in a box of 20 Sealbags.

### Product features:

Weather, water and electrical resistant

### Applications:

Penetration seals where subsequent retrofitting and changes are expected



|                         |  |
|-------------------------|--|
| <b>Size</b>             | 340 x 180 x 35mm                         |
| <b>Appearance</b>       | Pulvinated elements with orange printing |
| <b>Expansion rate</b>   | 45%                                      |
| <b>Ceramic reaction</b> | @800°C                                   |

## KBS® PIPE SEAL

KBS Pipe Seals are strangler seal for thermoplastic pipes. KBS Pipe Seals offer protection for pipes of all dimensions and installations up to 500 mm diameter. They consist of a round steel casing, supplied in two halves, with a heat-expanding inner shell. KBS Pipe Seals provide 2-hour fire resistance.

### Product features:

Weather, water and electrical resistant

### Applications:

Penetration seals where subsequent retrofitting and changes are expected



|                            |               |
|----------------------------|---------------|
| <b>Integrity F-Rating</b>  | Up to 2 hours |
| <b>Insulation T-Rating</b> | Up to 2 hours |

## FSI FIRE STOPPING SYSTEMS



|                                |   |
|--------------------------------|---|
| <b>Colour</b>                  | White, paste, matt finish                 |
| <b>Slump</b>                   | 5mm after 1hr in 30mm joints              |
| <b>Cured Rate</b>              | 3mm per day at 50% relative humidity 23°C |
| <b>Shrinkage</b>               | Approximately 12%                         |
| <b>Application Temperature</b> | +5°C to 40°C                              |
| <b>Water Resistance</b>        | Good when fully cured                     |
| <b>UV Resistance</b>           | Good                                      |
| <b>Shelf life</b>              | 18 months                                 |
| <b>Fire Rating</b>             | Up to 240 minutes                         |



ETA 13-1069  
ETA 13-1070  
CE 1121-CPR-JA5009

### PYROPRO® – HPE

PyroPro® HPE Sealant is a water based acrylic sealant used to reinstate the fire resistance of wall and floor constructions in apertures when penetrated by single or multiple services. PyroPro® HPE Sealant has been developed utilizing specialist intumescent technologies which result in the sealant expanding in the presence of heat or fire to reinstate fire resistance where combustible services are present. The expansion of PyroPro HPE is fast acting and up to 25 times. The expanding sealant fills the void left by combusting materials and remains in place, exerting a pressure on the surrounding substrate upholding the fire resistance of the compartment.

|                                |                                  |
|--------------------------------|----------------------------------|
| <b>Colour</b>                  | Dark Grey / Black                |
| <b>Shore Hardness</b>          | 68                               |
| <b>Cured Time</b>              | 1.7mm per 24 hours               |
| <b>Density</b>                 | Ca. 1.23 – 1.33g/cm <sup>3</sup> |
| <b>Application Temperature</b> | +5°C to 35°C                     |
| <b>Expansion Ratio</b>         | Up to 25 times                   |
| <b>Insulation</b>              | 120                              |
| <b>pH</b>                      | 6-9                              |
| <b>Fire Rating</b>             | Up to 240 minutes                |



ETA 13-1069  
ETA 13-1070  
CE 1121-CPR-JA5009

### PYROCOUSTIC® INTUMESCENT

Pyrocoustic® Fire Resistant Sealant is a water based acrylic sealant used to reinstate the fire resistance of wall and floor constructions where apertures are penetrated by multiple services and linear gap seals where wall and floor constructions abut. Pyrocoustic® Sealant is extensively tested for global requirements, it is supplied in: 600ml foils.

#### Product features:

Provides a smoke seal  
Easy gunning and tooling  
Halogen free, resist fungi and vermin  
Flexible, high performance water based fire sealant

#### Applications:

Head of walls  
Blank openings  
Multi service penetrations  
Cable trays and cable ladders  
Metallic Pipes, Cables and Cable bunches  
Flexible walls, rigid walls and rigid floors



#### Product features:

Causes no known affects to plastic pipes, plastic cables, sheathing or metallic components  
Easy clean up with water and is odourless  
Over paintable  
Smoke, gas, watertight and airtight  
High Expansion Ratio

#### Applications:

Rigid wall and floors, flexible wall and batts in wall and floor.  
Linear Joints up to 20mm wide  
Large service openings up to 300mm x 100mm  
Batt aperture up to 1100mm x 750mm  
Metallic Pipes, Cables, Cable Bunches (incl. Telecommunication),  
Cable Trays and Cable Ladders

## FLEXI COAT®

Flexi-Coat® is a highly flexible water based, acrylic coating used in linear gaps where voids are present in floor and wall constructions as well as service penetrations to reinstate the fire resistance performance.

The Flexi-Coat® system offers excellent movement and acoustic capabilities. Flexi-Coat® can offer up to 50% movement. Supplied in liquid form in 20kg, pails, the Flexi-Coat® can be poured, trowelled or sprayed into the aperture between the separating elements to a specified depth utilising Mineral Wool backing material.



|                                |   |
|--------------------------------|---|
| <b>Colour</b>                  | White                                       |
| <b>Coating Thickness</b>       | 2.5mm Nominal, wet coating thickness        |
| <b>Cured Rate</b>              | 3mm per day at 50% relative humidity 23°C   |
| <b>Coverage</b>                | 2.8kg/m <sup>2</sup> , 2.24L/m <sup>2</sup> |
| <b>Application Temperature</b> | +0C to +30C                                 |
| <b>Applied by:</b>             | Spray, brush or trowel applied              |
| <b>Shelf life</b>              | 18 months unopened                          |
| <b>Fire Rating</b>             | Up to 120 minutes                           |



ETA 13-1057  
ETA 15-0434  
CE 1121-CPR-JA5010

### Product features:

Highly flexible and water resistant  
Halogen free, resist fungi and vermin

### Applications:

Cable trays and cable ladders  
Flexible linear joint sealing system  
Suitable for voids up to 500mm wide  
Metallic Pipes, Cables and Cable bunches



## PIPEBLOC® PWP® INTUMESCENT PIPE WRAP

PipeBloc® PWP Wraps are designed and tested to seal service penetration apertures containing plastic pipes formulated with thermoplastic composites based on reactive intumescent technology. The individual PWP Wraps have been developed to provide a high volume expansion and pressure seal during a fire. The PipeBloc® PWP wraps can be used to a maximum diameter of 200mm. The ultra-thin design of PipeBloc® PWP wraps ensures that they can be installed into the tightest of locations.

### Product features:

Internal use only  
High performance intumescent  
Not affected by fungus, vermin or rodents  
Based on a thermoplastic composite and is therefore on-toxic  
Halogen free, contains no asbestos, ceramic or mineral fibres and is environmentally friendly

### Applications:

Flexible walls, rigid walls, rigid floor constructions, in bat seals and combustible plastic pipe penetrations

|                                 |  |
|---------------------------------|--|
| <b>Colour</b>                   | Green plastic packaging  |
| <b>Sizes</b>                    | 110mm and 160mm x 40mm   |
| <b>Thickness</b>                | 2mm at 32mm upto 12mm at 250mm   |
| <b>Density</b>                  | Approximately 1.2 g/cm <sup>3</sup>                                      |
| <b>Volume Expansion</b>         | Approximately 25 times   |
| <b>Expansion Pressure N/mmP</b> | 1.30   |
| <b>Compatible with</b>          | Polypropylene (PP), polyethylene (PE) and polyvinylchloride (PVC) pipes. |
| <b>Shelf life</b>               | N/A  |
| <b>Fire Rating</b>              | Up to 240 minutes  |



ETA 15-0490  
CE 1121-CPR-JA5081





## PIPEBLOC EL®

PipeBloc® EL system is designed and tested to seal service penetrations in apertures containing combustible services. PipeBloc® EL has been developed utilizing specialist intumescent technologies which result in the wrap expanding in the presence of heat or fire. This expansion is fast acting and up to 25 times. The expanding intumescent fills the void left by combusting materials and remains in place, exerting a pressure on the surrounding substrate upholding the fire resistance of the compartment. This uniquely formulated product allows it to be tested and Certified to internationally recognised standards, including, Certifire, CE marking and UL Listings. PipeBloc® EL Wrap has been tested and Certified as part the FSi Fire Stopping range. The PipeBloc® EL system can be installed across a variety of services and substrates.

|  |                                       |
|--|---------------------------------------|
| <b>Colour</b>                              | Black                                 |
| <b>Sizes</b>                               | Pipes 32 – 200mm (L- 25m roll W-40mm) |
| <b>Installation Temperature</b>            | +5 - 35°C                             |
| <b>Shelf life</b>                          | 18 months if stored correctly         |
| <b>Density</b>                             | Approximately 1.2g/cm <sup>3</sup>    |
| <b>Volume Expansion @450°C</b>             | Approximately 25 times                |
| <b>Expansion Pressure N/mm<sup>2</sup></b> | Up to max 1.30                        |
| <b>Fire Rating</b>                         | Up to 120 minutes                     |

### Product features:

Ultra-thin design to allow installation into tightest of areas  
 High performance intumescent  
 Not visible once installed

### Applications:

Flexible walls, rigid walls, rigid floor constructions, in bat seals and combustible plastic pipe penetrations



## PIPEBLOC EL® – 25M ROLL APPLICATION GUIDELINE

| Pipe Diameter | Intumescent Thickness |                      |
|---------------|-----------------------|----------------------|
|               | No of Layers / Wraps  | Total Thickness (mm) |
| 40            | 1                     | 2                    |
| 55            | 2                     | 4                    |
| 63            | 2                     | 4                    |
| 75            | 2                     | 4                    |
| 82            | 2                     | 4                    |
| 90            | 3                     | 6                    |
| 110           | 3                     | 6                    |
| 125           | 4                     | 8                    |
| 160           | 4                     | 8                    |
| 200           | 5                     | 10                   |

## PIPEBLOC PCP® COLLARS

PipeBloc® PCP Collars are designed and tested to seal service penetration apertures containing plastic and metallic pipes both with and without insulation. PipeBloc® PCP has been developed to provide a high volume expansion and pressure seal in the event of a fire. The PipeBloc® PCP Collars can be used on pipes to a maximum diameter of 250mm for internal and external applications. The ultra-thin profile of PipeBloc® PCP Collars shells, a depth of 30mm or 40mm allows for the installation into the tightest of locations.



|  |   |
|--|---|
| <b>Colour / Appearance</b>                 | Green Steel – 3 Fixing Tabs                 |
| <b>Plastic Types</b>                       | PVC-U, PVC-C, ABS, SAN + PVC, PE-HD, PE, PP |
| <b>Expansion Rate</b>                      | 20:1  |
| <b>Expansion Pressure N/mm<sup>2</sup></b> | 1.30  |
| <b>Working Temperature</b>                 | -20°C to +120°C                             |
| <b>Shelf life</b>                          | N/A   |
| <b>Fire Rating</b>                         | Up to 240 minutes                           |

### Product features:

- Internal use only
- Environmentally friendly
- Halogen free, resist fungi and vermin
- Allows thermal and mechanical movement of pipe
- Halogen free, contains no asbestos, ceramic or mineral fibres

### Applications:

- Stopseal Bat system
- Around combustible pipes
- Angled combustible pipes through walls
- Rigid floors with 150mm minimum thickness
- Rigid wall with > 100mm minimum thickness
- Flexible walls with > 100mm minimum thickness



ETA 15-0489  
CE 1121-CPR-JA5080



## NS PUTTY PADS®

NS Putty® Pads are a pre-cut ablative pads designed for easy application around single and double electrical sockets where fire resistance must be upheld in the event of a fire.

### Product features:

- Simple to install
- Internal use only
- High tack adhesion
- Environmentally friendly
- Highly flexible and water resistant
- Not affected by fungus, vermin or rodents
- Pliable and mouldable with excellent self-bonding properties
- Halogen free, contains no asbestos, ceramic or mineral fibres

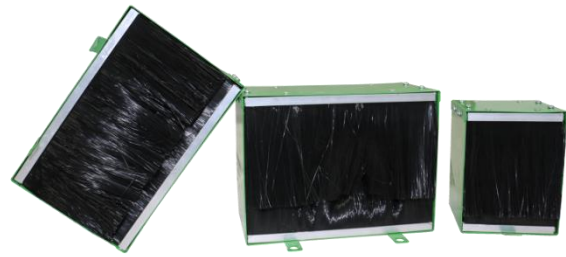
### Applications:

Maintains a fire and smoke barrier around sockets in flexible wall systems

|                        |                              |
|------------------------|------------------------------|
| <b>Colour</b>          | Green                        |
| <b>Size</b>            | 170mm x 170mm x 4mm          |
| <b>Density</b>         | 1.55 – 1.6 g/cm <sup>3</sup> |
| <b>Activation</b>      | 250°C                        |
| <b>Shelf life</b>      | 12 months                    |
| <b>Fire Resistance</b> | Up to 120 minutes            |

## PASS-IT TRANSIT SYSTEM®

Pass-It® Transit System is a pre-assembled, multi layered reactive intumescent device encased in a 2 part powder coated steel shell. It is designed to prevent the passage of fire between compartment floors and walls, whilst still allowing for the easy installation and removal of services without destruction of the seal. There are a wide range of different sizes available depending on the number and size of the services required to penetrate. It can be formed into a modular grid or linear format, allowing an easy route for services to travel.



### Product features:

- Internal use
- Instant entry / re-entry
- Easy installation of services
- 11 different size combinations
- Brackets included in the pack
- Can be module fixed together
- Superior Level of Sustainability
- Good Acoustic Isolation on Properties
- Use of advanced Intumescent Technology
- Ideal for Historical Building Upgrades or new build

### Applications:

- Modular builds
- Reinstate fire resistance through walls
- Penetration of multi-service penetrations

|  |   |
|--|---|
| <b>Colour / Appearance</b>                 | Green Steel – 3 Fixing Tabs                 |
| <b>Plastic Types</b>                       | PVC-U, PVC-C, ABS, SAN + PVC, PE-HD, PE, PP |
| <b>Expansion Rate</b>                      | 20:1  |
| <b>Expansion Pressure N/mm<sup>2</sup></b> | 1.30  |
| <b>Working Temperature</b>                 | -20°C to +120°C                             |
| <b>Shelf life</b>                          | N/A   |
| <b>Fire Rating</b>                         | Up to 120 minutes                           |





## PRODUCT OVERVIEW

| PRODUCT                                   | DESCRIPTION  | FIRE RATING   | TEST REPORT /CERTIFICATION                         | PAGE |
|---|--|---------------|--|------|
| <b>VERMICULITE</b>                        |  |               |  |      |
| VICORE                                    | Raw Vermiculite  | N/A           | Asbestos free certification                        | 2    |
| VICAFIL                                   | Exfoliated Vermiculite   | N/A           | Asbestos free certification                        | 3    |
| <b>FIRE PROTECTIVE PLASTERS</b>           |  |               |  |      |
| TEKROK C                                  | Exterior fire protective plaster on structural steel             | 120 minutes   | FPE9/84228/02                                      | 4    |
| TEKROK C                                  | Exterior fire protective plaster on LPG Vessel                   | 120 minutes   | FPE9/84228/02                                      | 4    |
| TEKROK S                                  | Interior fire protective plaster on structural steel             | 120 minutes   | 5409/84047/00                                      | 5    |
| TEKROK TG                                 | Trowel grade fire protective plaster                             | 120 minutes   | 653/80679/U496                                     | 5    |
| TEKROK CAST                               | Cast-in-place plaster as steel columns encasement                | N/A           | N/A  | 6    |
| <b>DECORATIVE &amp; ACOUSTIC PLASTERS</b> |  |               |  |      |
| VIP PLASTER                               | Gypsum plaster for skimming ceilings and filling cracks and gaps | N/A           | N/A  | 7    |
| ACOUSTIC SPRAY                            | Acoustic spray   | N/A           | 5462/1543752T43                                    | 7    |
| <b>FIRE PROTECTIVE COATING</b>            |  |               |  |      |
| PYROSAFE WB                               | Intumescent coating on structural steel                          | 60 minutes    | 5505955418   | 8    |
| PYROSAFE WB                               | Intumescent coating on chipboard                                 | 60 minutes    | 653/82223/63613                                    | 8    |
| PYROSAFE WB                               | Intumescent coating on timber                                    | 60 minutes    | 653/82943/9513                                     | 8    |
| PYROSAFE WB PANEL SEAL                    | Penetration fire stopping seal                                   | 120 minutes   | 653/83060/95                                       | 8    |
| SAPPHIRE                                  | Fabric fire protection   | 60 minutes    | 5409/83384/981                                     | 8    |
| <b>FIRE PROTECTIVE SYSTEMS</b>            |  |               |  |      |
| MINERAL WOOL PANEL                        | Insulation panel   | N/A           | N/A  | 9    |
| CALCIUM SILICATE BOARDS                   | Fire board   | 60 minutes    | 201530469  | 9    |
| <b>KBS FIRE PROTECTIVE SYSTEMS</b>        |  |               |  |      |
| KBS COATING                               | Flammastik fire protective coating                               | 120 minutes   | 653/80725/U588                                     | 10   |
| KBS PANEL SEAL                            | Penetration fire stopping seal                                   | 120 minutes   | 653/81628/D2538                                    | 10   |
| KBS CAULKING                              | Intumescent caulk seal   | 120 minutes   | N/A  | 10   |
| KBS MORTAR                                | Mortar mix seal  | 120 minutes   | 653/81628/D2541                                    | 11   |
| KBS SEALBAGS                              | Penetration seal pillows for retrofitting                        | 120 minutes   | 653/81628/D2540                                    | 11   |
| KBS PIPE SEAL                             | Fire protective pipe seal  | 120 minutes   | 10110905-W   | 11   |
| <b>FSI FIRE STOPPING SYSTEMS</b>          |  |               |  |      |
| PYROCOUSTIC INTUMESCENT                   | Fire Resistance Penetration Seals                                | Up to 240 min | EN1366-3:2009                                      | 12   |
| PYROCOUSTIC INTUMESCENT                   | Fire Resistance Linear Seals                                     | Up to 240 min | EN1366-4:2009                                      | 12   |
| PYROCOUSTIC INTUMESCENT                   | Fire Resistance  | Up to 240 min | EN13501-2  | 12   |
| PYROPRO HPE                               | Fire Resistance  | Up to 240 min | EN1366-3 and EN1366-4                              | 12   |
| FLEXI COAT                                | Fire Classification  | Up to 240 min | EN13501-2  | 13   |
| FLEXI COAT                                | Reaction to fire   | Up to 120 min | EN13501-1  | 13   |
| PIPEBLOC PWP WRAP                         | Fire Resistance Penetration Seals                                | Up to 240 min | EN1366-3:2009                                      | 13   |
| PIPEBLOC PWP WRAP                         | Fire Resistance  | Up to 240 min | EN13501-2  | 13   |
| PIPEBLOC EL                               | Fire Resistance  | Up to 240 min | EN 1366-3: 2009 and EN 13501-2 Result Up to EI 120 | 14   |
| PIPEBLOC PCP COLLARS                      | Fire Resistance Penetration Seals                                | Up to 240 min | EN1366-3:2009                                      | 15   |
| PIPEBLOC PCP COLLARS                      | Fire Resistance  | Up to 240 min | EN13501-2  | 15   |
| NS PUTTY PADS                             | Fire Resistance Penetration Seals                                | Up to 240 min | EN1366-3:2009                                      | 15   |
| PASS-IT TRANSIT SYSTEM                    | Fire Resistance Penetration Seals                                | Up to 120 min | EN1366-3:2009                                      | 16   |