

# AVIKOTE AV650

## Petrochemical Grade Cementitious Fireproofing

### Product Information

**Avikote AV650** Petrochemical Grade Cementitious Fireproofing has been developed by Arabian Vermiculite Industries to meet specialty petrochemical fireproofing requirements, conforms to UL 1709 and other International Fire Test Standards of High-Rise Fire with corrosion inhibitors for the protection of the steel and metal lath.

**Avikote AV650** is a Portland cement-based spray and/or trowel applied product. Only the addition of water at the job site is required for application.

**Avikote AV650** may be used for protection of structural steel, vessel skirts/supports and hydrocarbon storage tanks in petrochemical, chemical processing, gas processing, refinery facilities and specialty utility applications including protection of concrete tunnels.

**Avikote AV650** is supported by a specialized staff of fire protection representatives trained in fireproofing requirements. They are dedicated to fire protection only.



### Features and Benefits

**Fire Tested:** Tested in accordance with Underwriters Laboratories, Inc. 1709 and ASTM E 119 (UL263); BS 476 (Part 20) followed by Hose Stream as per NFPA 251; OTI 95 634 for Jet-Fire and RWS Fire Exposure to Concrete Tunnels. **Avikote AV650** has been investigated by UL for exterior use.

**Durability:** **Avikote AV650** has been tested for Bond Strength, Hardness, and other properties in accordance with API Guidelines (Publication 2218) and ASTM test procedures.

**Equipment Versatility:** **Avikote AV650** may be applied by a wide range of pumping equipment - Mon, Rotor Stator, Piston or Hydraulic. **Avikote AV650** may be used with paddle mixers and some continuous mixers.

**Economical:** **Avikote AV650** can build to higher thicknesses per pass and allows for greater applicator efficiency. This reduces time of the jobsite and the labor required in application compared to other products.

PERFORMANCE CHARACTERISTICS		
Product Property	Values	Test Methods/Notes
Dry Density	640 kg/m <sup>3</sup> (40 pcf)	ASTM E 605
Bond Strength	478 kN/m <sup>2</sup> (10000 pcf)	ASTM E 736
Compressive Strength	3780 kN/m <sup>2</sup> (550 psi)	ASTM E 761
Harness (Shore D)	40	ASTM D 2240
Air Erosion	0.000 g/m <sup>2</sup> (0.000 g/ft <sup>2</sup> )	ASTM E 859
Yield	1.39 m <sup>2</sup> at 25mm thickness (15.0 bd. ft.)	Theoretical Maximum
Packaging	22.27 kg/bag (49 lbs/bag)	Polyethylene Lined Kraft Bag
Colour	Grey	Other colours upon request

### Approvals:

- Hydrocarbon fire up to 4 hours duration  
Certified by Lloyds Register EMEA, UK  
Certificate of Fire Approval No. SAS F050340
- Jet Fire Compliance No. LPA/SPS/1-8NREG for 2 hours in accordance with OTI 95 634 Test Standard
- Fire tested under RWS fire exposure of up to 4 hours for protection of the concrete soffits of transport tunnels vide Efectis Nederlands BV Test Certificate No. 2006-CVB-R0310-D

### Coatings Requirements

**Steel Primers:** **Avikote AV650** constrains corrosion inhibitor that does not promote corrosion of steel. For use in wet or corrosive environments, a corrosion inhibitive, non-alkali sensitive, primer should be applied to the steel prior to application of fireproofing.

Contact an AVI representative for a list of recommended coatings.

**Fireproofing Sealer:** The use of a latex, polyurethane or epoxy based overcoat will enhance the surface characteristics of **Avikote AV650**. Contact an AVI representative for a list of recommended surface sealers.

#### **Delivery and Storage**

All material to be used for fireproofing shall be delivered in original unopened packages bearing the name of the manufacturer, the brand and proper Underwriters Laboratories, Inc. labels for fire hazard and fire resistance classifications.

The material shall be kept dry until ready for use. Packages of material shall be kept off the ground, under cover and away from sweating walls and other damp surfaces. All material that has been exposed to water before use shall be discarded. Stock of material is to be rotated and used before its expiration.

#### **Steel Surfaces**

Prior to the application **Avikote AV650** fireproofing, an inspection shall be made to determine that all steel surfaces are acceptable to receive fireproofing. Where necessary, the cleaning of steel surfaces to receive fireproofing shall be the responsibility of the general contractor.

#### **Mixing**

**Avikote AV650** fireproofing shall be mixed by machine in a conventional, plaster type mixer, continuous mixer, or hand held mixer, specifically modified for cementitious fireproofing. The mixer shall be kept clean and free of all previously mixed material. The mixer speed shall be adjusted to the lowest speed which gives adequate blending of the material and a mixer density of 830 kg/m<sup>3</sup> - 940 kg/m<sup>3</sup> (52-59 pcf).

Using a suitable metering device and mixer, approximately 13 litres (3.5 US gals) per bag shall be first added to the mixer as the blades turn. Mixing shall continue until the mix is lump-free with a creamy texture. Mixing time limited to 2-1/2 minutes is suggested. All material is to be thoroughly wet. Target density of 830 kg/m<sup>3</sup>-940 kg/m<sup>3</sup> (52-59 pcf) is most desirable. Over mixing **Avikote AV650** will reduce pumping rate and density.

#### **Application**

**Avikote AV650** fireproofing material shall not be used if it contains partially set, frozen or caked material.

**Avikote AV650** shall have a minimum average dry, in-place density of 640 kg/m<sup>3</sup> (40 pcf).

**Avikote AV650** is formulated to be mixed with water at the job site.

**Avikote AV650** is applied directly to the steel, at various

rates of application which will be job dependent using standard plastering type equipment or continuous mixer/pump units. A spray gun with a properly sized orifice with spray shield, and air pressure at the nozzle of approximately 140 kN/m<sup>2</sup> (20 psi) will provide the correct hangability, density and appearance.

**Avikote AV650** may also be troweled directly from the mixer. Please contact your local AVI representative for specific density recommendations should you desire to trowel from the mixer.



#### **Temperature and Ventilation**

An air substrate above 4°C (38°F) shall be maintained for 24 hours prior to application, during application and for a minimum of 24 hours after application of **Avikote AV650**.

Provisions shall be made for ventilation to properly dry the fireproofing after application. In enclosed areas lacking natural ventilation, air circulation and ventilation must be provided.

#### **Safety**

**Avikote AV650** is slippery when wet. The general contractor and applicator shall be responsible for posting appropriate **SLIPPERY WHEN WET** signs. Signs should be posted in all areas in contact with wet fireproofing material.

Anti-slip surfaces should be used on all working surfaces.

#### **Conditions Not Recommended**

Operating temperatures in excess of 93°C (200°F)  
Use on aluminum or other non-steel surfaces.  
Use as a refractory cement.

**Material Safety Data Sheet for Avikote AV650 is available upon request.**