



AVIKOTE AV 650

PETROCHEMICAL GRADE CEMENTITIOUS FIREPROOFING

Product Information

Avikote AV650 Petrochemical Grade Cementitious Fireproofing has been developed by Arabian Vermiculite Industries to meet speciality petrochemical fireproofing requirements. Avikote AV 650 is manufactured and marketed by Arabian Vermiculite Industries (AVI) in Dammam, Saudi Arabia.

Avikote AV 650 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 AV 650 may be used in petrochemical, chemical processing, gas processing, refinery facilities and speciality utility applications. Avikote AV650 is an Exterior Grade material.

Avikote AV 650 is supported by a specialized staff of fire protection representatives trained in fireproofing requirements. They are dedicated to fire protection only.

Features and Benefits

- o **Fire Tested:** Tested in accordance with Underwriters Laboratories, Inc. UL-1709, ASTM E119 (UL-263) and BS 476 (Part 20). Tested to OTI 95 634 at Health & Safety Laboratory UK for Jet-Fire. Investigated by UL for exterior use. Evaluated for protection under NPD and BS 476 (Part 20) Appendix D Hydrocarbon Fires. Tested to Hose Stream as per the requirements of NFPA 251 following a 2-hour Hydrocarbon Fire exposure. Additional Testing done at TNO Holland for use to the soffits of Transport Tunnels when exposed to RWS Fire Curve.
- o **Durability:** Avikote AV 650 has been tested for Bond Strength, Compressive Strength, Hardness, and other properties in accordance with API guidelines (Publication 2218) and ASTM test procedures.
- o **Equipment Versatility:** Avikote AV 650 may be applied by a wide range of pumping equipments – Mono, Rotor Stator, Piston or Hydraulic. Also, Avikote AV 650 may be used with paddle mixers and some continuous mixers.

- o **Economical:** Avikote AV 650 can build to higher thicknesses per pass and allows for greater applicator efficiency. This reduces time on the job site and the labor required in application compared to other products.



Avikote AV 650 Fireproofing material has been designed as a cost-effective alternative for fireproofing protected areas such as control rooms and storage areas.

PERFORMANCE CHARACTERISTICS		
Product Property	Values	Test Methods
Dry Density	640 kg/m ³ (40 pcf)	ASTM E605
Bond Strength	478 kN/m ² (10,000 psf)	ASTM E736
Compressive Strength	3,780 kN/m ² (550 psi min.)	ASTM E761
Hardness (Shore D)	40	ASTM D2240
Air Erosion	0.000 g/m ² (0.000 g/ft ²)	ASTM E859
Yield/Bag	1.39 m ² at 25 mm thick	Theoretical Maximum
Packaging	22.2 kg/bag (49 lbs/bag)	Polyethylene Lined Kraft Bag
Corrosion	Does not Promote Corrosion of Steel	ASTM E937
Thermal Conductivity	1.195 Btu-in/Hr Ft ² °F	ASTM C518
Color	Gray	

Conditions Not Recommended

- o Operating temperature in excess of 93 °C (200 °F)
- o Direct use on aluminium or other non-steel surface
- o Use as a refractory cement

Coating Requirement

Steel Coating: Avikote AV 650 does not promote corrosion of steel. For use in wet or corrosive environments, corrosion inhibitive, non alkali sensitive, coating should be applied to the steel prior to application of fireproofing. Contact AVI representative for recommendations on these coatings.

Fireproofing Sealer: The use of latex, polyurethane or epoxy topcoat will enhance the surface characteristics of Avikote AV 650. Contact AVI for the recommended coatings.

Delivery and Storage: All materials 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 materials that have been exposed to water before use shall be discarded. Stock of material is to be rotated and used before its expiration date.

Steel Surfaces: Prior to the application of Avikote AV 650 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 AV 650 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/m³ to 940 kg/m³.

Using a suitable metering device and mixer, approximately 13 to 15 litres of water per bag

shall first be added to the mixer as the blades turn.

Mixing shall continue until the mix is lump-free with a creamy texture. The mixing time shall however not exceed 2 ½ minutes. All material is to be thoroughly wet. Target density of 830 kg/m³ to 940 kg/m³ is most desirable. Over mixing Avikote AV 650 will reduce pumping rate and density.

Application: Avikote AV 650 fireproofing material shall not be used if it contains partially set, frozen or caked material.

Avikote AV 650 shall have a minimum average dry, in-place density of 640 kg/m³ (40 pcf).

Avikote AV 650 is formulated to be mixed with water at the job site.

Avikote AV 650 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/m² (20psi) will provide the correct hangability, density and appearance.

Avikote AV 650 may also be trowelled directly from the mixer. Contact your local AVI representative for specific density recommendations should you desire to trowel from the mixer.

Temperature and Ventilation: An air and substrate temperature 24 hours prior to the application, during application and for a minimum of 24 hours after the application of Avikote AV 650 should be above 4 °C (38 °F).

Provisions shall be made for ventilation to properly dry the fireproofing after application. Applied fireproofing shall be kept wet for a minimum of 72 hours after application to avoid quick drying.

Safety: Avikote AV 650 is slippery when wet. The general contractor and applicator shall be responsible for posting appropriate cautionary '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.

Material Safety Data Sheet for Avikote AV 650 is available on request.



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