



AVIKOTE AV-650®

Petrochemical Grade Cementitious Fireproofing

Product information

Avikote AV-650® 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 AV-650® 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

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.

Additional Testing done at TNO Holland for use to the soffits of Transport Tunnels when exposed to RWS Fire Curve.

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.

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.

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.

PERFORMANCE CHARACTERISTICS

Product property	Value (minimum)	Test methods
Dry density:	640 kg/m ³ (40 pcf)	ASTM E 605
Bond strength:	593 kN/m ² (12.412 psf)	ASTM E 736
Compressive strength:	3,780 kN/m ² (550 psi)	ASTM E 761
Hardness Shore D:	42	ASTM D 2240
Air erosion:	0 g/m ² (0 g/ft ²)	ASTM E 859
Yield / Bag:	1,39 m ² at 25 mm	Theoretical maximum
Packaging:	22,2 kg	Polyethylene lined kraft bag
Corrosion:	Does not cause corrosion of steel	ASTM E 937
Thermal conductivity:	0,28 W/mK (1,195 Btu-in/Hr Ft ² °F)	ASTM C 518
Color:	Gray	-

Conditions not recommended

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

Coating requirement

Steel coating

Avikote AV-650® does not cause 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 Edilteco Technical Department 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 Edilteco Technical Department for recommendations on these 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.

Distributed by:



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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 be first 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 1/2 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 (20 psi) will provide the correct hangability, density and appearance.

Avikote AV-650® may also be trowelled directly from the mixer. Contact Edilteco Technical Department for recommendations about this type of application.

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.

Packaging

Weight per bag: 22,2 kg

One container 20' contains 900 bags, composed of pallets of 24 and 28 bags.

Quality declaration

Arabian Vermiculite Industries manufactures its products in its own factories in Saudi Arabia, according to the quality procedures of QUALITY MANAGEMENT SYSTEM, described in ISO 9000.



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