

Unikote[®] Coatings

Product Data Sheet



Product Description

Unikote is a refractory coating material designed to provide a protective surface layer over fiber module linings.

Unikote is available in two grades: M and S.

- M is for low-to-medium temperature, gas-fired furnaces where contaminants are not severe.
- S grade is for medium-to-high temperature use up to 1538°C (2800°F) in harsh applications. It is especially effective resisting iron oxide or chemical attack conditions.

Unikote coating products generally need to be re-applied over a period of time, as necessary. Unikote S must be fired to >1260°C (>2300°F) during service to develop proper bonding or extreme dustiness will result.

Handling

Do not allow Unikote to get wet prior to installation. Normal shelf life is twelve months in unopened containers that have been properly stored.

Installation Information

Unikote is applied to the module hot face surface by either spraying or brushing. It is supplied in a dry state and then mixed with approximately 45% water by weight. The slurry should be thoroughly agitated with a power drill motor until complete mixing is achieved. The solids portion will have a tendency to settle out after a short time so brief re-agitation may be necessary. After installation, it is recommended that Unikote be allowed to air dry for 24 hours before the furnace is fired. No curing schedule is needed thereafter. Coverage rate is approximately 0.75 lbs/SF of dry material.

Features

- Range of grades with different viscosities
- Develop strong bond on drying
- Long shelf life when properly stored
- Non-RCF and Non-Crystalline silica grade available

Applications

- Adhesive to apply foils (stainless or aluminum) to fiber blanket and board
- Adhesive to join vacuum formed ceramic fiber parts together
- Adhesive and insulation for heating elements
- Fiber surface encapsulation

Chemical Properties

Unikote coatings exhibit excellent resistance to chemical attack. Exceptions include hydrofluoric acid, phosphoric acid, and strong alkalis.

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| Properties | Unikote M Coatings | Unikote S Coating |
|---|---|-------------------|
| Colour | white powder | white powder |
| Continuous Use Temperature, °C(°F) | 1371 (2500) | 1538 (2800) |
| Classification Temperature, °C (°F) | 1427 (2600) | 1649 (3000) |
| Melting Temperature, °C (°F) | 1871 (3400) | 1871 (3400) |
| Density, dried @ 110°C(230°F),kg/m ³ (pcf) | 1106 (69) | 1106 (69) |
| Permanent Linear Shrinkage, % 24 hours | | |
| | 1302°C (2375°F) | -0.3 |
| | 1399°C (2550°F) | -0.5 |
| | 1454°C(2650°F) | - |
| | | -0.5 |
| Chemical Analysis, % | | |
| | Alumina, Al ₂ O ₃ | 71 |
| | Silica SiO ₂ | 23 |
| | Other | 6 |
| | | trace |

Shelf Life

- Shelf life for Unikote M is 12 months and Unikote S is 24 months. It is calculated from date of manufacture noted on label.

Standard Dimensions and Availability

- Unikote Coatings are manufactured in the United States. Please contact your regional Morgan Advanced Materials-Thermal Ceramics representative for your local business needs.

| | Unikote M Coatings | Unikote S Coatings |
|---------------|--------------------|--------------------|
| 5 gallon pail | X | X |

Whilst the values and application information in this datasheet are typical, they are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials - Thermal Ceramics.