K14™ Mortar

SELECTION & SPECIFICATION DATA

Type

High temperature potassium silicate brick mortar

Description

K14 Mortar is a 2-component, halogen-free high temperature potassium silicate brick mortar used to bond and bed acid brick in chemical environments.

Uses

- Butter industrial ceramics such as acid brick and firebrick
- Brick linings in roasters, kilns, scrubber hot gas inlets, furnaces, dryers, boilers, incinerators, chlorinators, reactors and other chemical process equipment
- Use where temperature conditions exceed capabilities of conventional potassium silicate mortars
- Use where refractory mortars do not offer sufficient chemical resistance

Features

- High temperature resistance
- Creamy, buttery consistency
- Resists strong oxidizing acids including nitric, chromic and sulfuric
- Low shrinkage
- High bond strength
- No acid washing required
- Fluoride-, sodium- and calcium-free eliminates potential sulfation hydration reactions

Limitations

- Not for use beyond its chemical resistance or thermal capabilities. Do not use in hydrofluoric acid service or caustic environments. Consult Armor with specific questions.

INSTALLATION GUIDANCE

Reference Specifications

CES-358 Armor Specification for Brick Mortar Mixing

Installation Conditions

K14 Mortar is formulated for ideal handling at 70°F (21°C). Do not use if temperature of mortar or components are below 50°F (10°C). If temperatures are below 50°F (10°C), condition components and substrate before application.

Ratio

1.0-part solution: 2.5 parts powder by weight.

Powder loading may be adjusted slightly to suit individual bricklayer handling preferences.

Mixing

Pour measured quantity of solution into clean, dry mixing vessel. Slowly add measured quantity of powder to solution and mix thoroughly until fully blended.

Work Life

2-3 hours at 50°F (10°C)
20-25 minutes at 70°F (21°C)
15-20 minutes at 90°F (32°C)

Cleanup

Water

CURE TIME

Temperature	Initial Set	Full Cure
70°F (21°C)	5-6 hours	72-96 hours

SAFETY

Safety

Mixes and applications of this product present a number of hazards. Read and follow the hazard information, precautions and first aid directions on the individual product labels and safety data sheets before using.

Ventilation

Provide thorough air circulation during and after application until the material has cured when used in enclosed areas.

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PACKAGING, ESTIMATING & HANDLING

Product	Code	Packaging
K14 Solution	19530 19529	44 lb (20 kg) pail 600 lb (272 kg) drum
K14 Powder	19528	55 lb (25 kg) bag

A 1.32 cubic foot (154 lb or 70 kg) unit consists of 1 x 44 lb (20 kg) pail of solution and 2 x 55 lb (25 kg) bags of powder.

Theoretical Coverage

Consumption will vary based on brick size and joint width. Consult estimating guide CES-145.

Storage & Shelf Life

Maintain products in original packaging and sealed until ready for use. Protect K14 Solution from freezing. Estimated shelf life for K14 Powder and Solution is 18-24 months when stored in a dry area at 70°F (21°C). Actual shelf life may vary with storage conditions.

If there is any question with respect to the quality of the components, check reactivity prior to use. For assistance consult with Armor.

TYPICAL PHYSICAL PROPERTIES

Property	Typical Value
Color	White
Density, ASTM C138	117 lb/ft^3 (1,874 kg/m^3)
Compressive strength, 28-day, ASTM C579	>3,150 psi (22 MPa)
Tensile strength, 7-day, ASTM C307	>570 psi (3.9 MPa)
Flexural strength, ASTM C453	>900 psi (6.2 MPa)
Bond strength to brick (pull blocks)	>450 psi (3.1 MPa)
Maximum service temperature	2550°F (1400°C)

Temperature limitations will vary with chemical exposure. Consult Armor Technical Service for guidance.

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