



METZ 7K

POTASSIUM SILICATE CEMENT



DESCRIPTION:

Metz 7K is a two part inorganic potassium silicate cement used in the laying of acid proof brick and tile linings.

FEATURES AND BENEFITS:

- **Excellent Acid Resistance**
Resistant to all acids in all concentrations, except hydrofluoric acid and fluoride salts. Especially recommended for all concentrations of sulphuric, nitric, hydrochloric and phosphoric acids. Unaffected by 98% Sulphuric Acid. Refer Metz Chemical Resistance Chart.
- **Easy to Prepare and Apply**
Two part mix.
- **High Service Temperature**
Withstands temperatures at least 600°C.
- **Safe to Use**
Does not emit hazardous fumes during mixing, application or setting. Not classified Dangerous Goods for transport purposes.
- **Superior Performance**
100% potassium silicate bonded. Outperforms sodium silicate based cements.

RECOMMENDED:

As a bonding cement for acid brick and tile installations:

- Acid tanks
- Power station chimneys
- Sewage treatment
- Industrial chimneys
- Waste acid collection sumps
- Pickling lines
- Floors and drains in acid storage areas
- Absorption and drying towers in sulphuric acid and nitric acid plants
- Fertilizer industry

NOT RECOMMENDED:

- Exposure to hydrofluoric or fluoride salts.
- Exposure to alkaline solutions of any kind (i.e. any solution in pH range 7 to 14).
- Exposure to large quantities of running water.

Metz 7K is an industrial product for use in severe acid environments only. Material smears on bricks and tiles should be expected.

PHYSICAL PROPERTIES:

(Typical Values)

Density g/cm ³	1.95-2.05
Compressive Strength MPa	25
Bond strength to Acid Brick MPa	>1.0
Maximum Service Temperature	at least 600°C
Coefficient of Thermal Expansion per °C	13x10 ⁻⁶
Shrinkage %	1

COVERAGE:

Theoretical quantity (allow for wastage)

For fully bedding and jointing (nominal 3mm joint) Metz Acid Brick (228x112x65mm)	0.3kg per brick
For bonding bricks in independent brick wall	0.2kg per brick
For fully bedding and jointing Metz Acid Tiles 240x115x25mm (6mm joint)	14kgs per square metre

APPLICATION TEMPERATURE:

The recommended temperature range for application is 10°C to 40°C.

At temperatures below 10°C, curing may be inhibited and final technical properties may be affected. At temperatures above 40°C consistency and setting rates may be affected.

Note: Materials should be kept as cool as possible. Reducing material temperature will increase pot life.



Acid Proofing & Industrial Flooring • Specialty Ceramic Tiles





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INSTRUCTIONS FOR USE

1. Temperature of Working Area

Maintain a temperature of between 10°C and 40°C on the Metz 7K Liquid and Powder, brick and substrate during mixing and application. Air temperature in the area where Metz 7K is to be applied should also be between 10°C and 40°C.

At temperatures above 40°C, initial set will take place too rapidly. This difficulty can be overcome by cooling the mixing equipment with ice water, and by cooling the Metz 7K liquid. Materials should be kept as cool as possible. Reducing material temperatures will increase pot life.

2. Surface Preparation

All surfaces must be clean and dry. Metz 7K will not adhere adequately to concrete surfaces. These surfaces should first be coated with a membrane. The type of membrane will depend on physical and chemical conditions. Please consult Metz for recommendations.

Bricks and tiles should be dry.

3. Mixing

a) Equipment:

Mechanical mixing is recommended. A slow speed mortar mixer or a heavy duty drill with a suitable mixing paddle can be used. Small quantities can be mixed by hand, using a trowel or a spatula.

b) Proportions:

Mix 2.7 parts Metz 7K Powder to 1 part Metz 7K Liquid by weight or volume. The Powder proportion can be varied by $\pm 10\%$ to the desired consistency.

Ensure you have the latest mixing instruction refer www.metz.net.au for most current data sheet version.

c) Mixing Procedure:

Pour entire amount of Liquid into the mixing equipment. Add the Powder slowly to the Liquid, mixing constantly to avoid air entrapment. Mix thoroughly until the mortar is smooth and lump free. Material which has begun to set must be discarded.

d) Pot Life

Temperature °C	Pot Life minutes (approx.)
10	80
15	60
20	40
30	20
40	10

e) Clean up:

Mixing equipment, tools, etc. can be cleaned with water prior to initial set of cement.

During installation as much mortar as possible should be removed from the surface of the bricks or tiles, however for the highly acid environments where this product is used a thin film (or smear) of Metz 7K is preferable to excessive cleaning which can reduce performance of the material.

4. Installation:

Bricklayers method

Bricks or tiles should be buttered with Metz 7K using a trowel and well beaten down and tight against the adjoining brick or tile. Joints should be kept to minimum width possible, usually 2-3mm. Ensure there are no voids.

Tilers method

Tiles should be buttered and laid one by one. After setting, joints (typically 5-6mm) can be hand pointed using a steel trowel. Ensure joints are full and there are no voids.

Setting time:

Temperature °C (i)	Final set hours (ii)
10	48
15	36
20	24
30	24
40	24

(i) Final set is achieved when material has set through entire mass.

(ii) Do not use material where surface has skinned

Protect Metz 7K from chemicals, water, steam and temperatures below 10°C until final set is achieved. For installations that will be exposed to temperatures above 90°C, consult Metz for drying cycles.

Acid Treatment:

If, after final set (refer above table), the installation will be exposed to water before it is exposed to acid, it is recommended that Metz 7K be treated with a mixture of 1 part commercial strength (33%) hydrochloric acid to 2 parts water.

5. Storage

Liquid Protect from frost. Remix thoroughly before use.

Powder Keep dry.

6. Shelf life

Store in a cool, dry environment for a minimum shelf life of 12 months

7. Safety Precautions

Liquid

Avoid contact with eyes at all costs.

Wear safety glasses when mixing.

If contact occurs, wash with copious amounts of water.

Seek medical attention.

Avoid contact with skin. Wear protective gloves.

Powder

Avoid breathing dust. Use appropriate respirator and safety glasses when mixing.

Ensure adequate ventilation.

For fully safety precautions refer to the Material Safety Data Sheet for each component.

- The customer must comply strictly with the instructions contained in this product data sheet. Metz is not responsible for any advice or variations to this data sheet which are not confirmed in writing.
- If the customer has a claim against Metz in respect of any product supplied to the customer by Metz whether due to a fault in the product or the negligence or breach of contract by Metz or for any other reason:
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 - Metz may at its option replace the defective product free of charge to the customer or refund all payments made to it by the buyer in respect of the defective product; and the maximum liability of Metz shall be the cost of replacing the defective product.

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