

SAUEREISEN

FLOTEMP CEMENT NO. 4

Versatile phosphate-bonded potting material for:

**Thermocouples
Heaters
Furnaces**

**Resistors
Assembling
Sealing**

Sauereisen Flotemp Cement No. 4 is used for potting applications where high electrical insulation and thermal conductivity are required. No. 4 is specially formulated to limit the wicking nature of a porous substrate. This will prevent permeation of water into the substrate and the associated volume loss or cavitation of the cement. The need for double filling of ceramic units may be eliminated.

PHYSICAL PROPERTIES

Coefficient of thermal expansion	6.18 x 10 ⁻⁶ in/in/°F (11.12 x 10 ⁻⁶ cm/cm/°C)
Color	White
Compressive strength	1,385 psi (97 kg/cm ²)
Density	141 pcf (2.25 gm/cm ³)
Dielectric constant	3.0 - 4.0
Dielectric strength @ 70°F (21°C)	50-56 Volts/mil (1991 Volts/mm)
Flexural strength	748 psi (53 kg/cm ²)
Maximum service temperature	2,200°F (1,204°C)
Mix ratio (powder to water, by weight)	5:1
Modulus of elasticity	2.37 x 10 ⁶ psi (1.7 x 10 ⁵ kg/cm ²)
Tensile strength	345 psi (24 kg/cm ²)
Thermal conductivity @ 500°F (260°C)	5.47 BTU·in/ft ² ·hr·°F (1.88 x 10 ⁻³ Cal·cm/cm ² ·sec·°C)
Volume resistivity @ 70°F (21°C)	10 ¹¹ - 10 ¹² ohm-cm

CHARACTERISTICS

- Thermally conductive.
- Withstands temperatures to 2,200°F (1,204°C).
- Resists volume displacement caused by porous substrates.
- Low shrinkage.
- High electrical resistance.
- Chemical set.
- Odorless.

INSTRUCTIONS

Mixing

Sauereisen No. 4 is supplied as a Powder and mixed with potable water as used. No. 4 Powder should be thoroughly remixed before using to ensure proper dispersion of crucial ingredients. Weigh out approximately five parts Powder and one part water. Place measured amount of water into a clean mixing container and gradually add No. 4 Powder to water while mixing. Continue mixing until a smooth uniform consistency is obtained. Mixing may be done with a slow-speed mixer or by hand with a spatula.

Physical properties were determined on specimens prepared under laboratory conditions using applicable ASTM procedures. Actual field conditions may vary and yield different results; therefore, data are subject to reasonable deviation.

A minimum amount of water should be used as excess water reduces mechanical strength, increases shrinkage and delays set time. Failure of cement to adhere indicates setting has begun - discard cement. Do not attempt to retemper by adding more water.

Application

Surfaces to receive the cement should be clean and free of grease and dirt. Highly porous substrates can be dampened slightly with Sauereisen Thinning Liquid No. 14. Priming in this manner will assist the natural anti-cavitation property of the cement and may not be necessary in all applications.

Flotemp Cement No. 4 may be placed by brushing, pouring or other automatic dispensing methods. Since the cement sets by a chemical process that occurs when water reacts with the No. 4 Powder, there are no maximum thickness restrictions for application.

SETTING/CURING

Flotemp Cement No. 4 takes an initial set in approximately one hour at 70°F and develops a strong mechanical bond in 18 to 24 hours at room temperature.

If it is desired to accelerate the cure, low temperature oven drying at 180°F can be used. Avoid steaming while drying. Proper curing of No. 4 is critical to developing maximum strengths. If the cement will be exposed to elevated temperatures that may approach or briefly exceed the recommended service limits, consult Sauereisen for further drying guidelines.

A heat cure is also suggested where humidity resistance is required. In addition, a moisture-resistant lacquer or silicone coating, or Hi-Temp Primer No. 560 may be applied to the exposed surfaces.

PACKAGING

1-gallon cans and 50-lb. moisture-resistant bags on plastic-wrapped pallets.

CLEAN-UP

All equipment should be cleaned with soap and water before Sauereisen cements cure. If removal is required after the cure, a low concentration of sodium hydroxide may dissolve the cement. Consult Sauereisen for other recommendations.

SHELF LIFE

Sauereisen Flotemp Cement No. 4 Powder has a shelf life of one year when stored in unopened, tightly sealed containers in a dry location at 70°F. If there is a doubt as to the quality of the material, consult Sauereisen.

CAUTION

Consult Material Safety Data Sheets and container label Caution Statements for any hazards in handling this material.

WARRANTY

We warrant that our goods will conform to the description contained in the order, and that we have good title to all goods sold. WE GIVE NO WARRANTY, WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE OR OTHERWISE, EXPRESS OR IMPLIED, OTHER THAN AS EXPRESSLY SET FORTH HEREIN. We are glad to offer suggestions or to refer you to customers using Sauereisen cements and compounds for a similar application. Users shall determine the suitability of the product for intended application before using, and users assume all risk and liability whatsoever in connection therewith regardless of any suggestions as to application or construction. In no event shall we be liable hereunder or otherwise for incidental or consequential damages. Our liability and your exclusive remedy hereunder or otherwise, in law or in equity, shall be expressly limited to our replacement of nonconforming goods at our factory or, at our sole option, to repayment of the purchase price of nonconforming goods.

Information concerning government safety regulations available upon request.

Sauereisen also produces compounds for corrosion resistance, electrostatic discharge and grouting.

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