

SELECTION & SPECIFICATION DATA

Type	Carbon-filled vinyl ester tile grout
Description	Pennchem CIP Tile Grout is a 3-component carbon-filled vinyl ester tile and paver floor grout.
Uses	Brick and tile flooring in: <ul style="list-style-type: none"> • CIP and COP areas in food processing facilities • Breweries and distilleries • Bottling plants • Meat and poultry processing plants • Pharmaceutical plants • Chemical process facilities
Features	<ul style="list-style-type: none"> • Resistant to hot 50% sodium hydroxide • Resistant to oxidizing sanitizers containing bleach, chlorine, nitric acid, acetic acid and hydrogen peroxide • Easy to mix and apply • High bond strength
Limitations	<ul style="list-style-type: none"> • Not suitable for vertical wall tile applications. • Not water washable. • Use care in operating food plants to protect product from grout odor until it has fully cured. • Not for use beyond its chemical resistance or thermal capabilities. Consult ErgonArmor with specific questions.

INSTALLATION GUIDANCE

Reference Specifications	CES-309 Installation of direct bond tile floors
Installation Conditions	Pennchem CIP Tile Grout is formulated for ideal handling at 70°F (21°C). Materials and substrate should be acclimated to the air temperature prior to installation, and the air temperature should be between 50°F (10°C) and 90°F (32°C) during installation and cure. Bricks or tiles must be clean, dry and neutral pH.
Ratio	1.0 resin: 0.016 hardener: 1.67 filler by weight. Mix ratio may be varied slightly by adjusting filler loading to suit individual tile setter preferences.
Mixing	Pour measured quantity of resin into clean, dry mixing vessel. Slowly add measured quantity of hardener to resin and mix thoroughly. Add filler and mix until filler is thoroughly wetted and grout is creamy, free of lumps and trowelable.
Work Life	30-45 minutes at 70°F (21°C) Work life is shorter at higher temperatures. A larger volume of mixed material will have a shorter work life than a smaller volume.
Cleanup	Methyl ethyl ketone (MEK)

CURE TIME

Brick or Tile Temperature	Initial Set	Full Cure
70°F (21°C)	1-1.5 hours	36 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.

PACKAGING & ESTIMATING

Product	Code	Packaging
Penntrowel Vinyl Ester Resin Clear	29464	43 lb (5 gal) pail
CHP Hardener	19552	0.75 lb (11.2 fl oz) bottle
Penntrowel L/F Filler Carbon	29446	36 lb bag

A 116 lb (1.18 ft³) unit consists of 1 x 43 lb pail of resin, 1 x 0.75 lb bottle of hardener and 2 x 36 lb bags of filler.

Theoretical Coverage Consumption will vary based on tile size and joint width. Consult estimating guide CES-145 or ErgonArmor for assistance.

Storage & Shelf Life Maintain products in original packaging and sealed until ready for use. Estimated shelf life of Penntrowel Vinyl Ester Resin is 4-6 months and estimated shelf life of CHP Hardener and Penntrowel L/F Filler Carbon is 12 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 ErgonArmor.

TYPICAL PHYSICAL PROPERTIES

Property	Typical Value
Color	Black
Density, ASTM C138	98 lb/ft ³ (1,570 kg/m ³)
Compressive strength, ASTM C579	>15,000 psi (103 MPa)
Tensile strength, ASTM C307	>1,500 psi (10.3 MPa)
Bond to tile, pull blocks	>1,200 psi (8.3 MPa)
Water absorption, ASTM C413	0.2%
Adhesion to concrete, ASTM C321	Exceeds strength of concrete
Maximum service temperature	225°F (107°C)

Rev 01/2021

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