



Penntrowel™ Epoxy L/F Lining System

SELECTION & SPECIFICATION DATA

Type	Mat reinforced epoxy lining
Description	Penntrowel Epoxy L/F Lining System is a multi-layer mat reinforced trowel applied laminate lining/flooring system suitable for moderate chemical service conditions.
Uses	<ul style="list-style-type: none">• Trenches• Sumps and pits• Tanks and process vessels• Floors
Features	<ul style="list-style-type: none">• Resistant to a wide range of chemicals• Incorporated heavy 9.8 oz mat reinforcing for maximum thermal stress service• Crack bridging capabilities• Durable and resistant under repeated thermal stresses• Optional carbon grade for hydrofluoric acid and caustic service• Optional cold room hardener to allow curing as low as 40°F (4°C)
Limitations	Not for use beyond its chemical resistance capabilities. Consult Armor with specific questions.

INSTALLATION GUIDANCE

Reference Specifications	CES-352 Penntrowel L/F Lining System Installation specification
Installation Conditions	Materials and substrate should be acclimated to an air temperature of between 50°F (10°C) and 90°F (32°C) during installation and cure. Installation temperature requirements can be lowered with optional cold room hardener.
Mixing/Use	<p>Silica Grade mix ratio Filler:Resin:Hardener is 3.0:1.0:0.08 by weight or 1-part catalyzed resin: 2.75 parts filler by weight. Mix ratio for carbon grade is 1-part catalyzed resin to 1.8 parts Filler..</p> <p>Consult packaging on page 2 for component package sizes. Empty Part A resin and Part B hardener into a clean mixing vessel and mix thoroughly using a slow speed drill with suitable blade mixer such as a Jiffier. Mix for 2 minutes minimum to insure full blending. Slowly add Part C filler until fully wetted out. Apply by flat trowel over properly primed and prepared substrate. Apply base coat to a nominal 1/16" (1.66 mm) thickness. Lay reinforcing mat into wet basecoat. Using a serrated roller apply more catalyzed resin onto the mat and work mat into the base coat, eliminating bubbles and wrinkles. Use smaller pieces of cloth for corners and intricate work. Allow mat reinforcing layer to set hard. Once cured apply a build coat following same mixing and usage rates as the base coat. Trowel lightly to smooth and close the surface. A short nap roller lightly dampened with xylene can be used to help close the surface. Allow to cure per cure time information below before putting into service.</p>
Work Life	30-40 minutes at 70°F (21°C)
Cleanup	MEK or xylene

CURE TIME

Temperature	Initial Set	Full Cure
70°F (21°C)	3-4 hours	72 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

Product	Code	Packaging
Penntrowel Epoxy Resin Gray	19680	4 x 9.2 lb/4.2 kg (1 gal/3.8 l) cans/cs
Penntrowel Epoxy Hardener	19677	4 x 0.75 lb/0.34 kg cans/cs
L/F Filler Silica	19642	55 lb (25 kg) bag
L/F Filler Carbon	29446	36 lb (16.3 kg) bag
10 oz. L/F reinforcing mat	19513	38 in. x 400 ft (1200 sf/111.5 sm) roll
Synthetic veil reinforcing cloth	21925	48 in. x 500 yd (6000 sf/557 sm) roll

Theoretical Coverage

Silica grade: A 150 lb/1.36 cu ft (68 kg/38.5 l) unit consists of 1 case of resin, 1 case of hardener and 2 x 55 lb bags of filler and will cover 262 sf (24.3 sm) at 1/16" (1.6 mm) thickness. Base coat and build coat layers each require the same consumption, above should be reduced 50% for full system requirements.

Carbon grade: A 112 lb/1.1 cu ft (50.8 kg/31.1 l) unit consists of 1 case of resin, 1 case of hardener and 2 x 36 lb bags of filler and will cover 210 sf (19.5 sm) at 1/16" (1.6 mm) thickness. Base coat and build coat layers each require the same consumption, above should be reduced 50% for full system requirements.

When neat resin and hardener is mixed and used as a saturant for the reinforcing layer allow 400 sf (37.2 sm) per 4.48-gal (39.8 lb) (16.9 l/18 kg) unit.

Storage & Shelf Life

Maintain products in original packaging and sealed until ready for use. Estimated shelf life of components 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	Gray, special colors on request Carbon grade is black
Wet density, silica grade Wet density, carbon grade	110 lb/ft ³ (1,762 kg/m ³) 101 lb/ft ³ (1,618 kg/m ³)
Compressive strength, 7-day, ASTM C579	>9,000 psi (62 MPa)
Tensile strength, 7-day, ASTM C307	>1,700 psi (11.8 MPa)
Flexural strength, ASTM C580	>3,000 psi (20.7 MPa)
Bond to concrete, ASTM C321	Exceeds tensile strength of concrete
Shrinkage, ASTM C531	0.13%
Service temperature range, chemical dependent	170°F (77°C)

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