



# Pennchem™ Novolac Concrete

## SELECTION & SPECIFICATION DATA

<b>Type</b>	Novolac epoxy polymer concrete
<b>Description</b>	Pennchem Novolac Concrete is a versatile 3-component, high functional novolac epoxy polymer concrete designed for casting applications at least 1.5 inches (40 mm) thick.
<b>Uses</b>	<ul style="list-style-type: none"><li>Floors, walls, trenches and sumps</li><li>Foundations, footings, pads and pedestals</li><li>Beams, columns, curbs and piers</li><li>Precast structures, shapes and assemblies</li><li>Railcar chemical unloading containment dikes</li><li>Releveling floors before installing acid brick linings or Tufchem™ Tiling Systems</li><li>Rapid repair to deteriorated acid brick floors</li><li>Aprons around Acroline™ Systems anchored thermoplastic lined trenches and sumps</li></ul>
<b>Features</b>	<ul style="list-style-type: none"><li>Resistant to a wide range of aggressive acids, alkalis and solvents</li><li>Thermal shock resistant</li><li>Low porosity and absorption</li><li>High strength</li><li>Abrasion and impact resistant</li><li>Low shrinkage</li><li>100% reactive, no VOCs</li><li>Easy to place and finish</li><li>Stiffness and slump are adjustable to accommodate varying slopes and clearances</li><li>Quick strength gain for quick return-to-service</li></ul>
<b>Limitations</b>	<ul style="list-style-type: none"><li>Requires formwork.</li><li>Not for use beyond its chemical resistance or thermal capabilities. Consult Armor with specific questions.</li></ul>

## INSTALLATION GUIDANCE

<b>Reference Specifications</b>	CES-360 Installation of Armor Resinous Polymer Concretes	
<b>Installation Conditions</b>	<p>Pennchem Novolac Concrete 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.</p> <p>Substrate must be clean, dry and neutral pH.</p>	
<b>Ratio</b>	By weight, 1.0 resin: 0.5 hardener: 13 filler or 1.0-part mixed resin and hardener: 8.6 parts filler	
<b>Mixing</b>	<p>Pour measured quantity of resin into clean, dry mixing vessel. Slowly add measured quantity of hardener to resin and power mix thoroughly. Add filler and power mix until filler is thoroughly wetted.</p>	
<b>Work Life</b>	<p>30-45 minutes at 70°F (21°C)</p> <p>Work life is shorter at higher temperatures. A larger volume of mixed material will have a shorter work life than a smaller volume.</p>	
<b>Cleanup</b>	Xylene or MEK	
<b><u>CURE TIME</u></b>		
<b>Temperature</b>	<b>Initial Set</b>	<b>Full Cure</b>
70°F (21°C)	6-8 hours	3 days
<b><u>SAFETY</u></b>		
<b>Safety</b>	<p>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.</p>	
<b>Ventilation</b>	<p>Provide thorough air circulation during and after application until the material has cured when used in enclosed areas.</p>	



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## PACKAGING, ESTIMATING & HANDLING

Product	Code	Packaging
6710 Resin	19592	40 lb (18.1 kg) pail
6711 Hardener	19595	21 lb (9.5 kg) can
Polymer Concrete Filler	21933	25 lb (11.3 kg) bag
A 4.3 cubic foot (586 lb) unit consists of 1 x 40 lb (4 gal) pail resin, 1 x 21 lb (2.5 gal) can hardener, and 21 x 25 lb bags filler at 1.0-part mixed resin and hardener to 8.6 parts filler by weight.		
Mix can be made more fluid by holding back up to 3 bags of filler. Yield will be reduced when filler is held back.		
<b>Theoretical Coverage</b>	A 586 lb (266 kg) unit yields approximately 4.3 cubic feet (0.12 m <sup>3</sup> ) of grout. When casting as a 2-inch (50 mm) overlay, allow 22.5 mixed lb/ft <sup>2</sup> (110 kg/m <sup>2</sup> ). For a 3-inch (76 mm) casting, allow 33.75 mixed lb/ft <sup>2</sup> (165 kg/m <sup>2</sup> ). Normal wastage allowances should be added. Unit yield will be reduced when filler loading is reduced.	
<b>Storage &amp; Shelf Life</b>	Maintain products in original packaging and sealed until ready for use. Estimated shelf life is 18 months for the resin and hardener and 36 months for the filler 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
Density, ASTM C138	135 lb/ft <sup>3</sup> (2,162 kg/m <sup>3</sup> )
Compressive strength, ASTM C579	>12,500 psi (86 MPa)
Tensile strength, ASTM C307, 7-day	>1,500 psi (10.3 MPa)
Shrinkage, ASTM C531	0.04%
Absorption, ASTM C413, 48-hour immersion	<0.1%
Minimum application thickness	1.5 inches (40 mm). For castings less than 1.5 inches (40 mm), use Pennchem Novolac Grout.
Slump using 8.6 filler: 1.0 mixed resin and hardener mix ratio	Approximately 4-5 inches (100-130 mm).  Flow characteristics of resinous polymer grouts are different from Portland cement grouts. Caution should be used when comparing estimated slump values.
Maximum service temperature	200°F (93°C)
Temperature limitations will vary with chemical service. Consult Armor Technical Service for guidance.	

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