

SELECTION & SPECIFICATION DATA

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|--------------------|---|-------|---------|-------|------|--------|-------|-------------|-------|----------|-----------|------------|-------|---------|--------|-------------|------------|----------|-------------------|-------------|---------------------|
| Type | Structural epoxy grout | | | | | | | | | | | | | | | | | | | | |
| Description | Tufchem Grout is a versatile 3-component structural epoxy grout designed with low shrinkage, low exotherm, and high flow for grouting and casting applications. It may be placed 3/4 inches (20 mm) to 12 inches (300 mm) deep. | | | | | | | | | | | | | | | | | | | | |
| Uses | <ul style="list-style-type: none"> Restoring and protecting Portland cement concrete structures such as: <table> <tr> <td>Beams</td><td>Columns</td></tr> <tr> <td>Bases</td><td>Pads</td></tr> <tr> <td>Floors</td><td>Piers</td></tr> <tr> <td>Foundations</td><td>Piles</td></tr> <tr> <td>Footings</td><td>Pedestals</td></tr> </table> Grouting base plates of rotating and reciprocating machinery such as: <table> <tr> <td>Ball mills</td><td>Pumps</td></tr> <tr> <td>Blowers</td><td>Mixers</td></tr> <tr> <td>Centrifuges</td><td>Generators</td></tr> <tr> <td>Crushers</td><td>Stamping machines</td></tr> <tr> <td>Compressors</td><td>Paper mill machines</td></tr> </table> | Beams | Columns | Bases | Pads | Floors | Piers | Foundations | Piles | Footings | Pedestals | Ball mills | Pumps | Blowers | Mixers | Centrifuges | Generators | Crushers | Stamping machines | Compressors | Paper mill machines |
| Beams | Columns | | | | | | | | | | | | | | | | | | | | |
| Bases | Pads | | | | | | | | | | | | | | | | | | | | |
| Floors | Piers | | | | | | | | | | | | | | | | | | | | |
| Foundations | Piles | | | | | | | | | | | | | | | | | | | | |
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| Ball mills | Pumps | | | | | | | | | | | | | | | | | | | | |
| Blowers | Mixers | | | | | | | | | | | | | | | | | | | | |
| Centrifuges | Generators | | | | | | | | | | | | | | | | | | | | |
| Crushers | Stamping machines | | | | | | | | | | | | | | | | | | | | |
| Compressors | Paper mill machines | | | | | | | | | | | | | | | | | | | | |
| Features | <ul style="list-style-type: none"> Proportioned components for easy mixing Low exotherm allows deep pours up to 12 inches (300 mm) without overheating Excellent flow characteristics Excellent vibration resistance Good resistance to a broad range of chemicals and oils High physical strength Good bond to concrete and metal surfaces Rapid strength gain | | | | | | | | | | | | | | | | | | | | |
| Limitations | <ul style="list-style-type: none"> Requires use of forming for vertical applications Not for use beyond its chemical resistance or thermal capabilities. Consult Armor with specific questions. | | | | | | | | | | | | | | | | | | | | |

INSTALLATION GUIDANCE

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| Reference Specifications | CES-360 Installation of Armor Resinous Polymer Concretes |
| Installation Conditions | <p>Tufchem 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.</p> <p>For temperatures between 35°F (2°C) and 50°F (10°C) substitute Tufchem Epoxy Hardener with Epoxy Cold Room Hardener in accordance with product data sheet CE-159 Epoxy Cold Room Hardener.</p> <p>Substrate must be clean, dry and neutral pH.</p> |
| Ratio | <p>By weight, 1.0 resin: 0.17 hardener: 7.7 filler or 1.0-part mixed resin and hardener: 6.6 parts filler</p> <p>Where higher flow characteristics are required, reduce filler loading to 1.0 resin: 0.17 hardener: 6.7 filler by weight or 1.0-part mixed resin and hardener: 5.8 parts filler.</p> |
| 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. |
| Work Life | <p>2 hours 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> |
| Cleanup | Xylene or MEK |

CURE TIME

| Temperature | Initial Set | Full Cure |
|-------------|-------------|-----------|
| 70°F (21°C) | 8 hours | 5 days |

SAFETY

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| 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 |
|-----------------------------|-------------------------|---|
| Tufchem Epoxy Resin Gray | 21928 19704 | 4 x 7.8 lb (3.5 kg) can case 47 lb (21.3 kg) pail |
| Tufchem Epoxy Resin Red | 23861 29656 | 4 x 7.8 lb (3.5 kg) can case 47 lb (21.3 kg) pail |
| Tufchem Epoxy Resin Blue | 29657 | 47 lb (21.3 kg) pail |
| Tufchem Epoxy Hardener | 21929 19705 29554 | 4 x 1.3 lb (0.59 kg) can case 7.8 lb (3.5 kg) can 23.4 lb (10.6 kg) can |
| Tufchem Grout Filler | 21931 29553 | 60 lb (27 kg) bag 1,080 lb (490 kg) sack |

A 2.09 cubic foot (276 lb) unit consists of 1 case of 4 x 7.8 lb cans resin, 1 case of 4 x 1.3 lb cans hardener and 4 x 60 lb bags filler.

A 3.14 cubic foot (414 lb) unit consists of 1 x 47 lb pail resin, 1 x 7.8 lb can hardener, and 6 x 60 lb bags filler.

A 9.42 cubic foot (1,244 lb) unit consists of 3 x 47 lb pails resin, 1 x 23.4 lb pail hardener, and 1 x 1,080 lb sack filler.

To enhance flow characteristics, it is permissible to hold back up to one half bag of filler in the 2.09 cubic foot unit and up to two thirds of a bag in the 3.14 cubic foot unit.

Theoretical Coverage

Allow 132 mixed lb/ft³ (2,114 kg/m³) of volume.
Allow 16.5 mixed lb/ft² (80 kg/m²) when casting as a 1.5-inch (38 mm) overlay and 11.0 mixed lb/ft² (54 kg/m²) as a 1.0-inch (25 mm) overlay.
Normal wastage allowances should be added.
Yield will be reduced when filler loading is reduced.

Storage & Shelf Life

Maintain products in original packaging and sealed until ready for use. Estimated shelf life 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 Armor.

TYPICAL PHYSICAL PROPERTIES

| Property | Typical Value |
|--|--|
| Color | Gray. Blue and red available subject to order minimums. |
| Density, ASTM C138 | 132 lb/ft ³ (2,114 kg/m ³) |
| Compressive strength, ASTM C579 | >15,500 psi (107 MPa) |
| Tensile strength, ASTM C190 | >1,500 psi (10.3 MPa) |
| Shrinkage, ASTM C531 | 0.14% |
| Absorption, ASTM C413 | 0.33% |
| Coefficient of thermal expansion, 75°F-210°F ASTM C531 | 22 x 10 ⁻⁶ /°F (39.6 x 10 ⁻⁶ /°C) |
| Minimum application thickness | 0.75 inches (20 mm) |
| Strength gain over time, 70°F (21°C) | 18 hours 6,300 psi (44 MPa) 24 hours 8,250 psi (57 MPa) 30 hours 10,400 psi (72 MPa) 48 hours 12,600 psi (87 MPa) |

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