Description
DEGADECK® Polymer Concrete is a solvent free, 100% reactive methacrylate liquid component and a specially blended filler component, which includes Powder Hardener. DEGADECK® Polymer Concrete can be extended up to 100% with select aggregates for deeper repairs. Typical cure time is one hour at temperatures ranging from 14 to 104° F (-10 to 40° C).

Yield
0.33 ft³ per unit; unextended
DEGADECK® Polymer Concrete Unit:
- 0.5 gallon (1.9 L) DEGADECK® Polymer Liquid
- 1-37 lb (16.7 kg) bag DEGADECK® Polymer Concrete Filler

Packaging
DEGADECK® Polymer Liquid:
- 4.5 gal (17 kg) pail
- 54 gal (190 kg) drum
DEGADECK® Polymer Concrete Filler:
- 37 lb (16.7 kg) bags

Color
Concrete gray

Shelf Life
All components:
24 months when properly stored

Storage
Store in cool, clean, dry area. Keep out of direct sunlight. Maximum storage temperature is 86° F (30° C). Store in original and unopened container.

Features
- Fast curing (1 hour)
- Can be used at temperatures ranging from 14 to 104° F (-10 to 40° C)
- Extendable with aggregate
- 2 component
- Compatible with other DEGADECK® methacrylate systems
- High strength
- Durable
- UV resistance

Benefits
- On highway and bridge projects, allows fast return of traffic flow, contributing directly to worker and driver safety
- Extended application season
- Variable depth placement consistencies
- User friendly; ease of installation
- Provides complete systems approach to concrete protection
- Excellent bonding capabilities to a variety of concrete substrates
- Withstands freeze-thaw damage

Where to Use
APPLICATION
- Bridge decks
- Parking structures
- Runways
- Civil engineering applications
- Anchor bolts
- Potholes
- Joint nosing repairs
- Bearing pads
- Used to repair spalled concrete

LOCATION
- Exterior
- Formed vertical
- Horizontal

SUBSTRATE
- Concrete

How to Apply
Surface Preparation
1. The substrate must be clean, dry and sound. Completely remove all substances detrimental to bonding, such as dirt, oils, fats, waxes, chemical contaminants, and weak, loose, or unsound concrete.
2. Use routine methods like sandblasting, chipping, and wire brushing; do not acid etch. Obtain a minimum CSP 5 as described by the International Concrete Repair Institute. Do not use a method of surface preparation that will fracture the concrete. Verify the absence of microcracking or bruising in accordance with ICRI Guideline No. 03732.
3. The concrete surface must be dry, maximum 5% moisture content. Damp and wet surfaces may be dried with artificial heat if the concrete will remain dry when the heat source is removed (i.e., the concrete must not be saturated with moisture).
Technical Data

Composition

DEGADECK® Polymer Concrete Filler Component is a non-cementitious, water-free composite material in which fine and coarse aggregates are bound together in a dense matrix with a polymer binder. 

DEGADECK® Polymer Liquid Component is a reactive binder based on Methacrylate monomers used with DEGADECK® Filler Component to form a polymer concrete.

Compliances

- DEGADECK® Polymer Concrete is classified under DOT regulations as Resin Solution, UN 1866, Class 3, PG II.
- DEGADECK® resins are manufactured to ISO 9001 standards.

Typical Properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>RESIN</th>
<th>FILLER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
<td>Grey powder</td>
</tr>
<tr>
<td>Specific gravity, g/cm³</td>
<td>0.93</td>
<td>—</td>
</tr>
<tr>
<td>Bulk density, approx, lb/ft³ (kg/m³)</td>
<td>—</td>
<td>78.5 (1.26)</td>
</tr>
<tr>
<td>Viscosity, cP (mPa-sec)</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>Flash point, ° F (° C)</td>
<td>48 (9)</td>
<td>—</td>
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</tbody>
</table>

Test Data

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>RESULTS</th>
<th>TEST METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive strength, psi (MPa)</td>
<td>7,000 (48.2)</td>
<td>ASTM C 579</td>
</tr>
<tr>
<td>Tensile strength, psi (MPa)</td>
<td>1,150 (7.9)</td>
<td>ASTM C 307</td>
</tr>
<tr>
<td>Flexural strength, psi (MPa)</td>
<td>5,900 (40.7)</td>
<td>ASTM C 580</td>
</tr>
<tr>
<td>Compressive modulus of elasticity, psi (MPa)</td>
<td>0.6 x 10⁶ (4.1 x 10⁵)</td>
<td>ASTM C 469</td>
</tr>
<tr>
<td>Coefficient of thermal expansion, ° F (° C)</td>
<td>38 x 10⁻⁶ (68 x 10⁻⁶)</td>
<td>ASTM C 531</td>
</tr>
<tr>
<td>Linear shrinkage, %</td>
<td>0.08</td>
<td>ASTM C 531</td>
</tr>
<tr>
<td>Water absorption, % / 24 hrs</td>
<td>0.09</td>
<td>ASTM D 570</td>
</tr>
</tbody>
</table>

4. Conduct adhesion tests with the polymer system to ensure proper preparation and good bond strength. Adhesion tests should exhibit failure in the concrete, not at the interface. Concrete failure must be greater than 200 psi (1.4 MPa).
5. Patch perimeter must be sawcut to 1/4" as materials cannot be feather-edged.
6. All DEGADECK® Polymer Concrete Systems require the use of DEGADECK® Primer.

Priming

Prime all surfaces with DEGADECK® Primer at 100 ft/gallon. Mix 1 gallon of DEGADECK® Primer with appropriate amount of powder hardener (see DEGADECK® Primer data sheet for Mixing instructions) and apply immediately. Allow to fully cure prior to placing DEGADECK® Polymer Concrete.

Mixing

1. Mix DEGADECK® Polymer Concrete in 5 gallon pails with a mixing blade or in concrete drum mixers. Measure out no more than 1/2 gallon of DEGADECK® Liquid Component per 37 lb bag of DEGADECK® Filler Component.
2. Add DEGADECK® Liquid Component to container followed by DEGADECK® Filler Component and mix thoroughly for 30-60 seconds to obtain a mortar consistency. When extending, add aggregate as required (see Aggregate Extension Chart below).
3. DEGADECK® polymer mortar can be used in any thickness over 1/2" (12.7 mm) when extended with selected washed and dried aggregate. Aggregate is added after DEGADECK® Liquid Component and DEGADECK® Filler Component are blended.

4. The yields below are per batch (37 lbs DEGADECK® Filler Component + 1/2 gallon DEGADECK® Liquid Component). Please note that yields may vary depending on the type and quality of aggregate available, as well as application procedures at the job site.
5. Powder Hardener is already pre-blended into DEGADECK® Polymer Concrete Filler component.

87.2
**Application**

1. Finish the patch or repair using standard concrete finishing methods. For larger, deeper and vertical repairs, polyethylene or plastic laminate-lined forms may be required.

2. For small, shallow repairs, use a trowel to spread and smooth the DEGADECK® Polymer Concrete. Keep the trowel flat and do NOT overwork the mortar, as improper surface cure will result. The product completely cures and is traffic ready within one hour.

3. The minimum application thickness for DEGADECK® Polymer Concrete is 1/8" (3.18 mm). Applications over 1/2" (12.7 mm) thick must be extended. Washed and dried pea gravel or coarse aggregate is used to extend the mortar mix. The largest aggregate size should not exceed 1/3 the depth of the patch (see Aggregate Extension Mixing Chart above). Never use any extender aggregate less than 1/16" (1.6 mm) with DEGADECK® Polymer Concrete.

**Anchor Bolts**

Holes must be primed prior to addition of polymer mortar. Bolts must be rust-free and preferably galvanized. Other types of metal plating should be tested for compatibility with DEGADECK® prior to use.

**Joint Headers**

DEGADECK® Polymer Concrete is well-suited for header repairs to armored joints, strip joint systems and other similar applications. For retrofit of existing headers, remove all existing header material and any damaged and spalled concrete. Edges should be sawcut to 1/4" (6.4 mm). All surfaces must be properly primed and allowed to cure prior to accepting the polymer concrete. For new construction, the concrete should be cut back 4 – 8" from the joint and 2 – 4" depth depending on design requirements.

**Clean Up**

Clean tools as needed with inhibited MMA, acetone, ethyl acetate or similar solvents.

**For Best Performance**

- Polymer Concrete: Non-cementitious, water-free composite material in which fine and coarse aggregates are bound together in a dense matrix with a polymer binder. Polymer concretes are used for repairing spalled, eroded and deteriorated concrete surfaces. They are specified in environments that demand rapid cure, low maintenance and high functional performance.

  - DO NOT recoat while material is still hot to touch.

  - DO NOT “slick off” material with straight MMA or solvents. This will interfere with the curing process.

- Material must be re-primed prior to over-coating with other DEGADECK® systems

- DEGADECK® Polymer Concrete is not intended for use over bituminous-based substrates.

- DO NOT overwork the product. It will interfere with the curing process.

- Elevated temperatures will accelerate cure time.

- Powder Hardener is already pre-blended into DEGADECK® Polymer Concrete Filler component.

- DEGADECK® resins cure via an addition polymerization mechanism using the Powder Hardener. Free radicals are formed and used to convert the liquid resin into a three-dimensional polymer network. This reaction proceeds easily below 50° F (10° C). Also, during the reaction, all hardener is consumed and the polymer is fully formed within a one-hour period. There is no potential for an excess of unreacted components or extended cure that is typical of other systems. When used correctly, cure is thorough and consistent.

- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current versions.

- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

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**Aggregate Extension**

<table>
<thead>
<tr>
<th>REPAIR THICKNESS</th>
<th>EXTENSION % BY WEIGHT</th>
<th>AGGREGATE GRAIN SIZE</th>
<th>LBS OF AGGREGATE</th>
<th>SQUARE FEET</th>
<th>CUBIC FEET</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 (3.2)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>29.3</td>
<td>0.30</td>
</tr>
<tr>
<td>1/4 (6.4)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>14.6</td>
<td>0.30</td>
</tr>
<tr>
<td>1/2 (12.7)</td>
<td>10</td>
<td>1/16&quot; to 1/8&quot;</td>
<td>4</td>
<td>7.9</td>
<td>0.33</td>
</tr>
<tr>
<td>3/4 (19)</td>
<td>25</td>
<td>1/16&quot; to 1/8&quot;</td>
<td>10</td>
<td>5.9</td>
<td>0.37</td>
</tr>
<tr>
<td>1 (25.4)</td>
<td>50</td>
<td>3/16&quot; to 3/8&quot;</td>
<td>20</td>
<td>5.4</td>
<td>0.45</td>
</tr>
<tr>
<td>1-1/2 (38)</td>
<td>75</td>
<td>3/16&quot; to 3/8&quot;</td>
<td>30</td>
<td>4.2</td>
<td>0.52</td>
</tr>
<tr>
<td>2 (50.8)</td>
<td>100</td>
<td>1/4&quot; to 3/4&quot;</td>
<td>40</td>
<td>3.5</td>
<td>0.59</td>
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</tbody>
</table>
Health and Safety

DEGADECK® POLYMER CONCRETE LIQUID

Warning

DEGADECK® Polymer Liquid contains methyl methacrylate; methacrylic acid ester; n-butyl acrylate; substituted tertiary amine; aliphatic hydrocarbon.

Risks

May cause skin, eye or respiratory irritation. Ingestion may cause irritation. Contains small free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

Precautions

Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65:

This product contains material listed by the State of California as known to cause cancer, birth defects or other reproductive harm.

VOC Content

0 g/L or 0 lbs/gal less water and exempt solvents.

DEGADECK® POLYMER CONCRETE FILLER

WARNING!

DEGADECK® Polymer Concrete Filler contains silica, crystalline quartz; limestone; benzoyl peroxide.

Risks

May cause skin, eye or respiratory irritation. Ingestion may cause irritation. Contains small free respirable quartz which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

Precautions

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Refer to Material Safety Data Sheet (MSDS) for further information.

For medical emergencies only, Call ChemTrec (1-800-424-9300).

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Technical Service 800-243-6739

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