LA40 Repair Mortar is a one-component shrinkage-compensated micro concrete. It is designed for large volume repairs, including structural elements, typically in applications from 2" (51 mm) to full depth.

Yield
0.43 ft³ per 55 lb (0.012 m³/25 kg) bag
0.62 ft³ per 80 lb (0.018 m³/36 kg) bag

Packaging
55 lb (25 kg) bags
80 lb (36 kg) bags

Shelf Life
1 year when properly stored

Storage
Store in unopened containers at 60 to 80° F (16 to 27° C) in clean, dry conditions.

Where to Use
APPLICATION
• Large volume structural repairs
• Repair or replacement of spandrel beams, columns, balcony edges
• Partial or full-depth placements of structural concrete elements
• Parking garages
• Water and wastewater tanks
• Tunnels, dams, bridges
• Marine structures

LOCATION
• Interior or exterior

SUBSTRATE
• Concrete

How to Apply

Surface Preparation

CONCRETE
1. Area being repaired must be structurally sound and fully cured.
2. Perimeter cut the edges of the repair to a depth of at least 3/8” (9 mm) to avoid featheredging and to provide a square edge.
3. Break out the concrete to the sawn edge and across the entire repair.
4. Mechanically abrade and clean the surface to remove any dust, unsound or contaminated material, oil, paint, grease, or corrosion deposits. Do not use a method of surface preparation that could damage the concrete.
5. Where breaking out is not required, roughen the surface and remove any laitance by light scabbling or

LA40 REPAIR MORTAR
Pourable and pumpable pre-extended micro concrete

Features
• High bond strength
• Shrinkage compensated
• High early strength
• Low permeability
• Excellent freeze/thaw resistance
• Flowable
• One component
• Self-compacting

Benefits
Self-bonding to SSD concrete substrates
Dual expansion system compensates for shrinkage in plastic and hardened states
Reduces form cycle time
Protects against carbon dioxide and chloride intrusion
Durable in cold, wet environments
Placement by pumping or pouring into congested locations
Only the site addition of clean water is required
Minimizes honeycombing; displaces air without vibration
Technical Data

Composition

LA40 Repair Mortar is a proprietary blend of cement, graded aggregate, shrinkage-compensating agents, and additives.

Test Data

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>RESULTS</th>
<th>TEST METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh wet density, lb/ft^3 (kg/m^3)</td>
<td>142 (2,275)</td>
<td>ASTM C 138</td>
</tr>
<tr>
<td>Compressive strength, psi (MPa); 2&quot; (51 mm) cubes</td>
<td></td>
<td>ASTM C 109</td>
</tr>
<tr>
<td>1 day</td>
<td>2,500 (17.2)</td>
<td></td>
</tr>
<tr>
<td>7 days</td>
<td>5,000 (34.5)</td>
<td></td>
</tr>
<tr>
<td>28 days</td>
<td>6,000 (41.4)</td>
<td></td>
</tr>
<tr>
<td>Compressive strength, psi (MPa); 3 by 6&quot; (76 by 152 mm) cylinders, at 28 days</td>
<td>5,000 (34.5)</td>
<td>ASTM C 39</td>
</tr>
<tr>
<td>Flexural strength, psi (MPa), at 28 days</td>
<td>1,150 (7.9)</td>
<td>ASTM C 348</td>
</tr>
<tr>
<td>Slant shear bond strength, psi (MPa), at 28 days</td>
<td>3,000 (20.7)</td>
<td>ASTM C 882, (modified)</td>
</tr>
<tr>
<td>Splitting tensile strength, psi (MPa), at 28 days</td>
<td>500 (3.4)</td>
<td>ASTM C 496</td>
</tr>
<tr>
<td>Drying shrinkage, μstrain, at 28 days</td>
<td>350</td>
<td>ASTM C 157, (unmodified)</td>
</tr>
<tr>
<td>Drying shrinkage, μstrain, at 21 days</td>
<td>611</td>
<td>ASTM C 157, (modified)</td>
</tr>
<tr>
<td>Freeze/thaw resistance, % RDM^6</td>
<td>100</td>
<td>ASTM C 666</td>
</tr>
<tr>
<td>Coefficient of thermal expansion, in/in/°F (cm/cm/°C)</td>
<td>5.5 x 10^-6 (9.9 x 10^-6)</td>
<td>CRD C 39</td>
</tr>
</tbody>
</table>

^6 RDM = Relative Dynamic Modulus

Results were obtained with a water / powder ratio of 4 quarts/80 lb (3.8 L/36 kg) bag or 2.7 quarts/55 lb (2.6 L/25 kg) bag.

All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

Mixing

1. Ensure that LA40 Repair Mortar is thoroughly mixed; a forced-action mixer is essential. Mixing in a suitably sized container using an appropriate paddle with a slow-speed (400 – 500 rpm) heavy-duty drill is acceptable. Do not use free-fall mixers. Never mix partial bags.
2. Mix for an additional 2 – 3 minutes to obtain a smooth consistency.
3. When using the drill-and-paddle mixing method, place the complete 4 quarts (3.8 L) of water in the mixing drum. With the paddle rotating, add 1 full 80 lb (36 kg) bag of LA40 Repair Mortar and mix 3 minutes until a smooth, even consistency is obtained.
4. Depending on the ambient temperatures and the desired consistency, additional water may be added. The total water content should not exceed 4.2 quarts (3.9 L) per 80 lb (36 kg) bag.

Mixing 80 LB (36 KG) BAGS

1. Measure 4 quarts (3.8 L) of potable water and pour 3 quarts into the mixer. With the machine in operation, add 1 full 80 lb (36 kg) bag of LA40 Repair Mortar and mix for 1 minute before adding the rest of the water. Always add powder into the water. The quantities mixed may be scaled up as required.
2. Mix for an additional 2 – 3 minutes to obtain a smooth consistency.
3. When using the drill-and-paddle mixing method, place the complete 4 quarts (3.8 L) of water in the mixing drum. With the paddle rotating, add 1 full 80 lb (36 kg) bag of LA40 Repair Mortar and mix 3 minutes until a smooth, even consistency is obtained.

Mixing 55 LB (25 KG) BAGS

1. Measure 2.7 quarts (2.6 L) of potable water and pour 2 quarts into the mixer. With the machine in operation, add 1 full 55 lb (25 kg) bag of LA40 Repair Mortar and mix for 1 minute before adding the rest of the water. Always add powder into the water. The quantities mixed may be scaled up as required.

REINFORCING STEEL

1. Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 03730 “Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion.”
2. For additional protection from future corrosion, coat the prepared reinforcing steel with Zinrich Rebar Primer or install Corr-Stops® CM.

abrasive blasting. Remove oil and grease deposits by steam cleaning, detergent scrubbing, or degreasing.
6. Verify the effectiveness of decontamination by a pull-off test.
2. Mix for a further 2 – 3 minutes to obtain a smooth consistency.
3. When using the drill-and-paddle mixing method, place the complete 2.7 quarts (2.6 L) of water in the mixing drum. With the paddle rotating, add 1 full 55 lb (25 kg) bag of LA40 Repair Mortar and mix 3 minutes to reach a smooth, even consistency.
4. Depending on the ambient temperatures and the desired consistency, additional water may be added. The total water content should not exceed 2.9 quarts (2.7 L) per 55 lb (25 kg) bag.

HOT- AND COLD-WEATHER CONDITIONS
1. For cold-weather applications, refer to ACI 306R Cold Weather Concreting; for hot-weather applications, refer to ACI 305R, Hot Weather Concreting.

Application
1. Keep the unrestrained surface area of the repair to a minimum. The formwork should be rigid and tight to prevent loss of material. Properly seal the faces of forms to ensure they absorb no water from the repair material.
2. The formwork should include drainage outlets for presoaking and, if beneath a soffit, provision for air venting. Provide suitable access points to pour or pump the mixed concrete into place.
3. Form design should allow for a minimum of 1-1/2” (38 mm) cover around all steel.
4. Use a suitable form-release agent to facilitate the removal of forms from the cast material.
5. Refer to ACI 347R, Recommended Practice for Concrete Formwork.
6. Several hours before placing LA40 Repair Mortar, saturate the prepared concrete substrates by filling the prepared formwork with clean water.
7. Immediately before the placement of LA40 Repair Mortar, completely drain this water and seal the drainage outlets, leaving the substrate saturated surface-dry (SSD) with no ponded water remaining.
8. In jobsite circumstances where the formwork cannot be filled with water, spray the substrate with clean water to achieve a saturated surface-dry (SSD) condition immediately before placing LA40 Repair Mortar.
9. When using a combination surface-applied bonding agent and corrosion-resistant rebar primer, use Epoxy Adhesive 24LPL or Rebar Primer and Bonding Agent 3. Refer to the appropriate product data sheets for further details (Form Nos. 1018987 and 1018966).

10. Immediately after mixing, pump or pour the LA40 Repair Mortar into the formed area. The material does not require vibrating.

Curing
1. Leave the formwork in place until the compressive strength of the LA40 Repair Mortar reaches 2,500 psi (17.2 MPa) or a strength specified by the engineer.
2. LA40 Repair Mortar must be cured immediately after the formwork is stripped in accordance with good concrete practices. Refer to ACI 308 Standard Practice for Curing Concrete.
3. If the repair area will receive a coating, wet curing is recommended.
4. In cold conditions, protect the finished repair from freezing.

Clean Up
Remove LA40 Repair Mortar from tools, equipment, and mixers with clean water immediately after use. Cured material can only be removed mechanically.
Clean hands and skin immediately with soap and water or industrial hand cleaner; do not use solvents.

For Best Performance
- Minimum ambient, surface, and material temperatures should be 40°F (4°C) and rising at the time of application.
- Do not mix partial bags.
- Do not use to make overlay repairs where the surface of fresh, wet LA40 Repair Mortar will remain unrestrained during cure.
- Do not expose to rain or moving water during application.
- Do not vibrate LA40 Repair Mortar while in the fluid consistency.
- Do not use additives with LA40 Repair Mortar.
- When the minimum placement depth is less than 2”, use LA Repair Mortar (see Form No. 1018996).
- 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 version.
- 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.

Health and Safety
LA40 REPAIR MORTAR

Caution
LA40 Repair Mortar contains crystalline silica, Portland cement, and calcium sulfate.

Risks
Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains a small amount of 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
KEEP OUT OF THE REACH OF CHILDREN. 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 lbs/gal or 0 g/L, less water and exempt solvents

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