



Vetorep ER355

Epoxy-based repair mortar (High strength, abrasion resistant)

Uses

- To repair concrete elements in industrial applications where chemical resistance is needed.
- To reinstate structural elements where minimum shutdown time is required.
- For acid tanks lining, sea walls repair, and industrial floors repair.
- For horizontal and vertical repairs.

Product Description

Vetorep ER355 is a three-component epoxy-based thixotropic solvent-free and fast strength-development repair mortar. Once the kit components are mixed, they become a high-strength abrasion-resistant mortar that can be built up to 50 mm in horizontal repairs in one go.

If a higher build-up of thickness in a single vertical application is required, consider using Vetorep ER356.

Advantages

- Rapid strength development (commissioning in 2 days, full cure in 7).
- Chemically resistant.
- Superior bond to a wide range of substrates.
- Compatible with most coating and topping types.
- Abrasion-resistant (for heavy-duty applications).
- Cures in damp conditions.
- Provides a waterproof repair.
- Structural grade - high ultimate strength.

Standards Compliance

- EN 13062
- EN 1504-3

Design Criteria

Apply Vetorep ER355 in a checkerboard fashion, at a minimum thickness of 5 mm. A single layer of this product applied for horizontal concrete repair should not exceed 50 mm.

Technical Data

Vetorep ER355	Typical Values @ 20°C
Color	Black
Volume of Solids (%)	100
Working Time (Hours)	2
Mixed Density (kg/ltr)	Approx. 1.8
Compressive Strength - ASTM C579 @ 7 Days (MPa)	75
Tensile Strength - ASTM C579 @ 7 Days (MPa)	10
Flexural Strength BS 6319, Pt3 @ 28 Days (MPa)	20
Adhesive Bond (EN 1542) (MPa)	> 2 (Concrete Failure)
Initial Hardness (Hours)	24
Full Cure (Days)	7
Water Penetration (DIN 1048)	Nil
VOC Content - ASTM D2369 (gm / Liter)	< 40 (LEED Compliant)
Service Temperature (°C)	-20 to +70
Application Temperature (°C)	+5 to +35

Continuous immersion chemicals	Concentration %	Resistance
Hydrocarbon Fuels	100	Resistant
Sodium Hydroxide	50	Resistant
Sulphuric Acid	10	Discoloration
Hydrochloric Acid	25	Resistant
Phosphoric Acid	50	Discoloration

Usage Instructions

Surface Preparation

Clean the surface and remove any dust, unsound or contaminated material, plaster, oil, paint, grease, corrosion deposits, or algae.

Roughen the surface and remove any laitance by light scabbling or grit-blasting. Saw cut or cut back the repair locations' extremities to a depth of at least 5 mm to avoid feather-edging and provide a square edge.

Break out the complete repair area to a minimum depth of 5 mm up to the sawn edge.

Remove oil and grease deposits by steam cleaning, detergent scrubbing, or the use of a proprietary degreaser. A pull-off test should then assess the effectiveness of decontamination.

Expose any corroded steel in the repair area fully and remove all loose scale and corrosion deposits—clean steel to a bright condition. Paying attention to the back of exposed steel bars.

Grit-blasting is recommended for this process. If the lost area of steel is less than 25%, then compensate for the loss. Shall the lost steel is higher than 25%, then completely replace the reinforcement steel.

Priming

Prime horizontal substrates by using Vetoprime EP491. Mix the primer according to recommended proportions. Add the entire tin of 'hardener' to the 'base' one. Mix the two components thoroughly for 3 minutes.

Scrub the mixed primer well into the prepared substrate, coat all surface imperfections properly, and avoid 'pudding' in depressions. If the substrate absorbs the primer within 30 minutes, apply a second coat before continuing.

Apply Vetorep ER355 as soon as the primer starts to gel but still has surface 'tack,' this is normally between 30

minutes and 2 hours, depending on the ambient and substrate temperatures. If the primer cures hard, apply another coat before the application of Vetorep ER355. The usable life of the mixed primer is approximately 60 minutes at 20°C or 30 minutes at 35°C.

Mixing

Mix Vetorep ER355 thoroughly to produce a fully homogeneous trowel-able mortar. Mix Vetorep ER355 mechanically. Stir the 'hardener' and 'base' components separately to disperse any settling particles before mixing them together.

Add the entire tin of 'hardener' to the 'base' one. Mix the two components thoroughly for 3 minutes, then empty the mixture into a forced-action mixer of adequate capacity.

Add the aggregate slowly with the mixer and continue mixing for 4 to 5 minutes until all components are thoroughly blended. Do not mix partial quantities. If needed, use a slow-speed heavy-duty drill fitted with a purpose mixer.

Application

Apply the mixed material to prepared substrates using a trowel/float, pressing it firmly into place to ensure positive adhesion and full compaction.

Compact the mortar around any exposed reinforcement thoroughly. In restricted locations or where exposed reinforcing steel appears, application by hand (use gloves) is an acceptable alternative. In all cases, finish the product to a tight surface with a steel trowel.

Vetorep ER355 can be applied in sections up to 50 mm thick in horizontal locations, in a single application, and without formwork.

Thickness Build-Up

Apply multiple layers to achieve additional build-up. Firmly secure exposed steel-reinforcing bars to avoid movement during the application process as this will affect mortar compaction, build, and bond.

Where thicker sections are required, the intermediate applications' surface should be scratch-keyed to provide a suitable surface for subsequent layers. The application of additional layers should follow between 8 and 24 hours after the first application (at 20°C). At higher temperatures, the time will be less than 8 - 24 hours (You may need to re prime and apply more Vetorep ER355).

If sagging occurs during application, Vetorep ER355 should be completely removed and reapplied at a reduced thickness onto the correctly re-primed substrate.

Finishing

Finish Vetorep ER355 using a wooden float and close with a steel trowel. Do not overwork the finished surface.

High temperature working

At ambient temperatures above 35°C, Vetoprime EP491 and Vetorep ER355 will have shorter pot lives and working lives. Store the materials in the shade or in an air-conditioned environment, and do not apply in direct sunlight.

CONCRETE REPAIR

Curing

Curing protection is not necessary for Vetorep ER355. You can overcoat protective/decorative finishes with it, as Vetorep ER355 is extremely durable and resistant to a wide range of acids, alkalis, and industrial chemicals.

It will provide properly protect concrete and embedded steel reinforcement when repaired.

The surrounding parts of the structure may benefit from applying a protective coating, thus bringing them up to the same protective standard as the repair itself. Saveto recommends using the “Vetotop” range of epoxy resin, chemical resistant, protective coatings.

For surrounding areas that are not subjected to chemical attacks or physical wear, Saveto recommends using the “Vetotop” range of anti-carbonation, anti-chloride protective coatings. These products provide a decorative and uniform appearance and protect areas that might otherwise be at risk of environmental forces.

Apply Vetotop epoxy resin protective coatings within 24 hours. Do not apply non-epoxy or urethane Vetotop products until the Vetorep ER355 is at least 3 days old. For further advice, consult your local Saveto office.

Cleaning

Remove Vetoprime EP491 from tools, equipment, and mixers with Vetonit Solvent XX400 immediately after use.

Limitations

- Vetorep ER355 should not be used when the temperature is below 12°C.
- Do not mix partial quantities under any circumstances.
- Vetorep ER355 should not be used in overhead locations - use Vetorep ER356 for this purpose.
- Vetorep ER355 should not be exposed to moving water during application. Exposure to heavy rainfall before the final set may result in surface scouring.

If in doubt about temperature or substrate condition, consult your local Saveto office.

Packaging & Coverage

Product	Pack Size	Consumption
Vetorep ER355	15 Liter Kits	1 m ² @ 15 mm thickness
Vetoprime EP491	4 Liter Kits	(40 m ² /liter) @ 100 ² m (microns) thickness.
Vetonit Solvent XX400	4 Liter Cans	4 Liters / Can

Stated coverage values are theoretical and may change depending on various factors such as the nature of substrate and wastage factors.

Shelf Life & Storage

The original sealed kit of Vetorep ER355 has a shelf life of 12 months, provided it is stored clear of ground in a dry, shaded, and temperature-controlled place (less than 35°C).

Health & Safety

Vetoprime EP491, Vetonit Solvent XX400, and Vetorep ER355 should not contact the skin, eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapor. Some people are sensitive to resins, gardeners, and solvents. Wear suitable protective clothing, gloves, and eye protection. Use barrier creams for additional skin protection. In case of contact with your eyes, rinse with plenty of clean water and seek medical attention immediately. If swallowed, seek medical attention immediately. Do not induce vomiting.

Vetorep ER355 and Vetoprime EP491 are non-flammable. However, Vetonit Solvent XX400 is. Keep away from sources of ignition. Avoid smoking around them. In the event of a fire, extinguish with CO2 or foam. Do not use a water jet.

For more information, refer to the Product Material Safety Data Sheet.

Additional Information

Saveto manufactures a wide range of construction chemicals and specialty products for various applications.

For further information on these products and systems kindly check our website or contact your local Saveto representative.

Saveto also provides various technical information such as CAD details, detailed method statements, specification clauses, application manuals, product selectors and technical support both in contractors and consultants offices as well as construction sites.

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