

For quick, fast-setting cement-based repairs to concrete and masonry



CONSUMER PRODUCTS

# THORITE®

## GENERAL PURPOSE CONCRETE RESTORATION

### DESCRIPTION

Thorite® General Purpose - Concrete Restoration is a cement-based, polymer modified repair and restoration mortar with fast-setting, very low slump properties suitable for trowel applications to vertical or overhead surfaces without using formwork. Thorite General Purpose - Concrete Restoration, modified with Acryl 60® diluted with water, permanently bonds to properly prepared concrete and masonry substrates to form durable, long lasting repairs which are waterproof to either wind-driven rain or below grade hydrostatic pressure. It can be used to repair cast-in-place or precast, steel reinforced concrete. It can be used to fill and level honeycombs, form tie wire holes, small spalls, surface irregularities and other minor surface defects caused by shallow freezing, impacts or planar irregularities due to misaligned forms or inadequately consolidated concrete. Used neat, Thorite® General Purpose - Concrete Restoration, modified with Acryl 60 diluted with water, can be troweled on in lifts up to 25 mm (1") thick on vertical surfaces and built up in successive layers. Thorite® General Purpose - Concrete Restoration, modified with Acryl® 60, can be used to restore delicate architectural details including cornices, lintels, sills and quoins quickly and easily without using intricate formwork and casting techniques. It is suitable for interior use, below or above-grade.

### SURFACE PREPARATION

Remove all unsound, disbonded concrete, loose aggregates, laitance, form release agents, curing compounds, form release oils, biological residues, contaminants, efflorescence, penetrants, loose wood, stray metal objects or any other materials which might affect proper bonding. If possible, sawcut the perimeter to a depth of 6 mm to 12 mm (1/4" to 1/2") in a rectangular or square shape and slightly under cut. Roughen the perimeter sawcut. Avoid cutting or damaging the steel reinforcing. Remove all unsound concrete using hand-held tools with pointed, not chisel, edges. If possible, maintain a minimum depth of 6 mm to 12 mm (1/4" to 1/2") across the entire patch. Remove all rust from any steel reinforcement to a near white metal specification, the full 360° circumference. Abrasive blasting, (wet or dry) or needle guns can be used. Hydroblasting or hydrodemolition is permitted for removing unsound concrete. Replace all missing or badly corroded steel reinforcement and use temporary shoring if recommended by a structural engineer. Cantilevered architectural details generally require additional steel mesh or steel bars welded to the existing rebar cage as an added precaution and for maximum durability. Expose the aggregates in the parent concrete to provide for maximum interlock, bonding and shear strength of the patch. Remove all cracked, parent concrete on steel reinforced concrete elements: especially if it has a high chloride content and is exposed to salt spray or salt laden, de-icing chemical melt water.

### APPLICATION

Pre-wet the substrate to a saturated, surface dry (SSD) condition. Some substrates may require overnight soaking. Remove any ponding water from the surface before placing bond coat.

#### *Bond Coat*

Apply the fresh mortar by brush to the properly prepared, pre-wet substrate, vigorously scrubbing it into the anchor profile of the repair area. Do not weaken (over-dilute) the bond coat. Do not allow bond coat to dry prior to the placement of the trowel mix. If bond coat dries out before the mortar can be placed, it must be removed as if it were laitance.

#### *Trowel*

Immediately apply fresh mortar to the wet brush coat using firm pressure.

Completely fill all voids around steel reinforcement. Thorite® General Purpose - Concrete Restoration used neat can be placed in lifts up to 25 mm (1") on vertical surfaces without sagging. Small amounts can be placed by using a second trowel to hold the mortar in place until initial set. For overhead placement in cool air temperatures use warm water in the mixing solution and hold material in place until initial bond. As Thorite® General Purpose - Concrete Restoration hardens, score material between layers to improve adhesion. After initial set, apply second layer, building out the patch above the final profile required. Shave back the repair, working from the center towards the perimeter, to achieve the final profile before the patch fully hardens. Use a wet sponge float for final shaping. Finishing with a straightedge may be required to achieve planar values needed for architectural aesthetics.



### MIXING

Prepare the mixing solution of Acryl® 60 diluted with clean, potable water. Add 1 part Acryl 60 to 3 parts water. In hot conditions, keep mixing solutions chilled to below 21°C (70°F) with bagged ice or by using a chiller.

#### *Neat Mix*

Small batches of Thorite® General Purpose - Concrete Restoration may be blended by hand mixing, adding the appropriate amount of mixing solution directly to the Thorite® General Purpose - Concrete Restoration powder. If mechanically mixing, add 2.8 L (3 qts.) of mixing solution to the mixing vessel then add the bag of powder. Mix at low speed just long enough to fully wet out all the powder. Add the remaining 0.23 to 0.70 L (1/4 to 3/4 qts.) of mixing solution only if needed for workability. Do not overmix or beat air into mix. Overmixing can reduce density, strengths and durability. Do not exceed 3.5 L (3.5 qts.) of total mixing solution per 22 kg (50 lb.) bag. Used neat, a maximum quantity of 11.4 kg (25 lbs.) of fresh mortar per placement is recommended. Do not mix more material than can be placed before initial set (approximately 10 to 15 minutes). Do not re-temper. In hot, dry, windy conditions reduce the dilution ratio of Acryl® 60 to 1:2 or 1:1. For highest bonding strength, such as for overhead repairs, reduce the dilution ratio to 2 parts Acryl® 60 and 1 part water.

#### *Extended Mix*

Thorite® General Purpose - Concrete Restoration modified with Acryl® 60 can be extended with clean, saturated dry aggregate. Use up to 6.8 kg (15 lbs.) per 22 kg (50 lb.) bag. For best results use aggregates which match the chemical composition of the aggregates in the parent concrete. Aggregates should be pea gravel, limestone or sandstone composition, with a size not greater than 9.5 mm (3/8"). Dry mix the aggregates into the Thorite® General Purpose - Concrete Restoration powder before adding any mixing solution. If patches are shallow, 25 mm to 50 mm (1" to 2") deep, but extend over a large surface area, apply wet mortar extended with aggregates in several places with a space between placements. After initial set has occurred, begin to fill in the spaces. When extended, up to three 22 kg (50 lb.) bags of powder (20.5 kg [45 lbs.] of aggregate) can be placed in one placement.



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