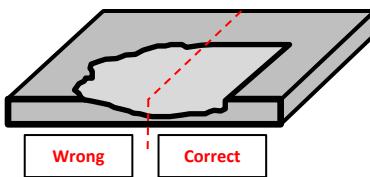


Concrete Repair Tips

Proper Patch Prep

- Remove all loose concrete and stone with a chisel.
- Roughen the substrate with a toothed chisel. The rougher the surface the stronger the bond.
- Patching material shall not be applied at feather edge thickness but at a minimum thickness of 1/4"-1/2" deep.
- Cut or Chisel the patch area to obtain regular geometry with straight edges and near right angles (no curves or sharp angles).
- Remove all dust and debris from area to ensure sound bonding of patchwork.
- Pre-wet the substrate and surrounding existing concrete until the point of complete saturation and allow only the surface of the substrate to dry just prior to patching (SSD = Saturated Surface Dry).
- Follow all mixing and placement directions as specified by your selected product (refer to the product's data sheet).
- If directed to scrub a slurry coat into the substrate prior to patching **BE SURE** to install the patch before the slurry "scrub coat" dries.
- Typically patches thicker than 2" shall contain a 3/8" rounded pea gravel rock.
- Always slow cure your repairs by trapping in the moisture with plastic or continuously dampened burlap for at least 3-5 days.



Wrong Correct

Selecting Proper Repair Mortar

There is no such thing as an "all-in-one" concrete repair mortar. Good quality repair mortars are designed specifically for unique applications.

• Concrete Re-surfacing

Concrete Renew – Mapei

• Repairing Surface Spalled Concrete

Thin Patch – Euclid Chemical

• Partial Depth Horizontal/Vertical Repairs

Red Line – Euclid Chemical
Jahn M90 – Cathedral Stone Products (tintable)

• Full Depth Horizontal Repairs

Sikaquick 1000 – Sika Corp.
Master Emaco T1061 – BASF Master Builders

• Partial Depth Vertical/Overhead Lightweight Patching

Sikaquick VOH – Sika Corp.
Master Emaco 424 – BASF Master Builders

• Partial or Full Depth Horizontal/Vertical Form & Pour Repairs

Sikacrete 211 – Sika Corp.
Master Emaco S440 – BASF Master Builders

• Non-Shrink Grouting Under Load Bearing Members

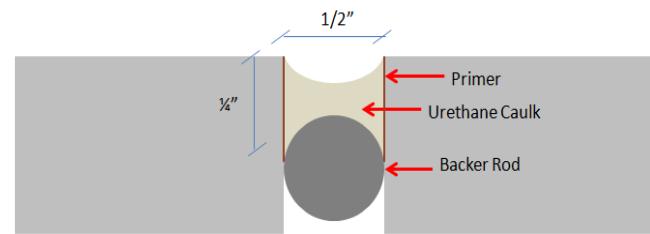
SikagROUT 212 – Sika Corp.
Masterflow 100 – BASF Master Builders

Selecting a Good Contractor

- Find a contractor who specializes in concrete repair.
- Can the contractor provide addresses to jobs they performed 5+ years ago? Visit these jobs.
- Can the contractor provide addresses to jobs they performed in the last year? Visit these jobs.
- Can the contractor provide you with a copy of their insurance certificate showing workman's compensation coverage?
- Is the contractor willing to create sample mockups on your building?
- Ask what materials your contractor plans to use on your project and ask them to provide product data sheets.

Proper Caulking

- Use polyurethane caulking material.
- Caulk shall only be bonded on two sides.
- Use backer rod to de-bond bottom side of caulk joint and to set the proper depth of caulk joint.
- Depth of caulk joint shall be $\frac{1}{2}$ the width at the center.
- Caulk joint shall have convex tooling so as to provide hourglass shape in section.
- Always use caulking primer.
- Never caulk on wet surfaces.
- Only use caulk on moving joints.

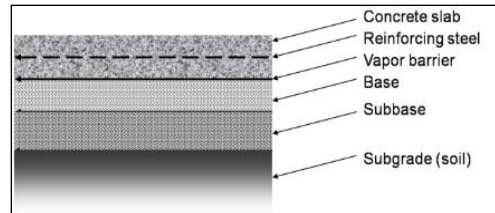


Chemicals and Repellants

- Most concrete is simply stained by general atmospheric dirt. Use a mild masonry detergent (Prosoco's 2010 All Surface Cleaner) mixed with warm water and aggressive scrubbing to remove general soiling.
- Dark blotchy stains are typically due to biological lichen growth. Use a proper masonry grade biological cleaner only (Prosoco Revive).
- Use the weakest effective cleaning solution on your concrete. **STRONGER IS NOT BETTER!**
- Create test panels on every type of substrate to ensure product(s) will not stain or damage concrete.
- Never apply paints, sealers or any other film forming coating to concrete. Only deep penetrating water repellants shall be applied (Prosoco's Saltguard).

New Concrete Placement

- Dig out sub-grade soil to a depth that will accommodate the thickness of the aggregate Bases and the concrete slab.
- Thoroughly pack down the soil sub-grade using a gas powered plate tamper.
- On top of the packed soil lay down several inches of $\frac{1}{2}$ " crushed limestone as a sub base And pack down thoroughly with a gas powered plate tamper. The thicker the stone sub base the more load the concrete slab will be able to handle.
- Install a base layer of coarse torpedo sand over the stone sub base. Spread the sand evenly so that the concrete slab thickness will be consistent throughout. Pack the sand base thoroughly using a gas powered plate tamper.
- Total combined thickness of aggregate bases should be at least 4".
- Install steel reinforcing rebar or wire mesh in concrete slabs that will carry moving (dynamic) loads such as driveways, garage slabs, aprons, etc.
- Pour a 4" thick concrete slab for surfaces that will accept only foot traffic and a 5-6" thick slab for surfaces accommodating vehicular traffic.
- Use a 5 bag mix (3,000 psi) for sidewalks and basement floors. A 6 bag mix (4,000psi) is typically used for city walkways, driveways and garage slabs. A 7 bag mix (5,000 psi) is used for structural concrete for foundations, columns retaining walls etc.
- All exterior concrete should be ordered with air entraining admixtures added to help with freeze/thaw durability.
- Always screed the surface of freshly placed concrete using a long straightedge (2x4 stud works great), sawing it over the surface in a back and forth motion to work coarse aggregate down from the surface. Probing fresh concrete with an electric vibrator is the most effective and least strenuous method of consolidating concrete.
- Trowel the fresh concrete after surface bleed water has subsided. Never trowel bleed water back into the concrete surface as this can lead to surface delamination and spalling. Refrain from misting fresh concrete with additional water prior to troweling.
- Magnesium trowels should be used to finish exterior air-entrained concrete. Steel trowels shall only be used on interior non-air entrained concrete for a very smooth dense surface.
- Exterior concrete should be broomed to provide for a slip resistant walking surface.
- Always allow concrete to cure slowly by keeping it damp for at least 3-7 days. Covering the fresh concrete with plastic, continuously dampened burlap or liquid applied curing agents are all acceptable curing methods.



Trade References

Concrete Material Supply Yards

Henry Frerk Sons, Inc.

3135 W. Belmont Ave.
Chicago, IL. 60618
(773) 588-0800
www.hfsmaterials.com

McCann Industries

2350 S. Laflin St.
Chicago, IL. 60608
(312) 942-9200
www.mccannonline.com

Lance Construction Supplies

4225 Ogden Ave.
Chicago, IL 60623
(773) 522-1900
www.lanceconstruction.com

Glenrock

200 W. Wrightwood Ave.
Elmhurst, IL. 60126
(630) 530-9600
www.glenrock.com

Foundation Waterproofing

Xpert Flood Control

Sean @ (773) 267-5000

Concrete Repair Contractors

Atlas Restoration (Underpinning/Mud Jacking)

Martin @ 847-994-2526

Matt Construction (Patchwork)

Matt @ (773) 349-1142

Guernica Art & Conservation (Patchwork)

Matt @ (630) 670-2773

Carving in Stone (Patchwork)

Pawel @ (773) 414-4641

Prime Group Masonry Exteriors (Patchwork)

Greg @ (708) 267-5148

Concrete Paving Contractors

Steinert Construction

Phil @ (773) 330-8536

JT General Cement

Tom @ 847-226-0208

Merit Concrete

Gerald @ (312) 316-6835