Polished Concrete Surface Repair and Joint Treatment

Presented by
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Retailers, schools and many other buildings that previously received tile or other floor coverings are increasingly moving towards stained and/or polished concrete floors.

Many retailers and warehouse clubs who have already been using concrete as a showroom surface are now repairing, restoring and refinishing these surfaces...

A polished concrete floor serves as both the work surface and the show room surface for a retailer…


Traditional “functional” repairs will often not meet aesthetic expectations…

Surface repair materials and joint fillers must meet both performance and aesthetic demands…


Repair materials and finished
condition of repairs must blend in
as seamlessly as possible…

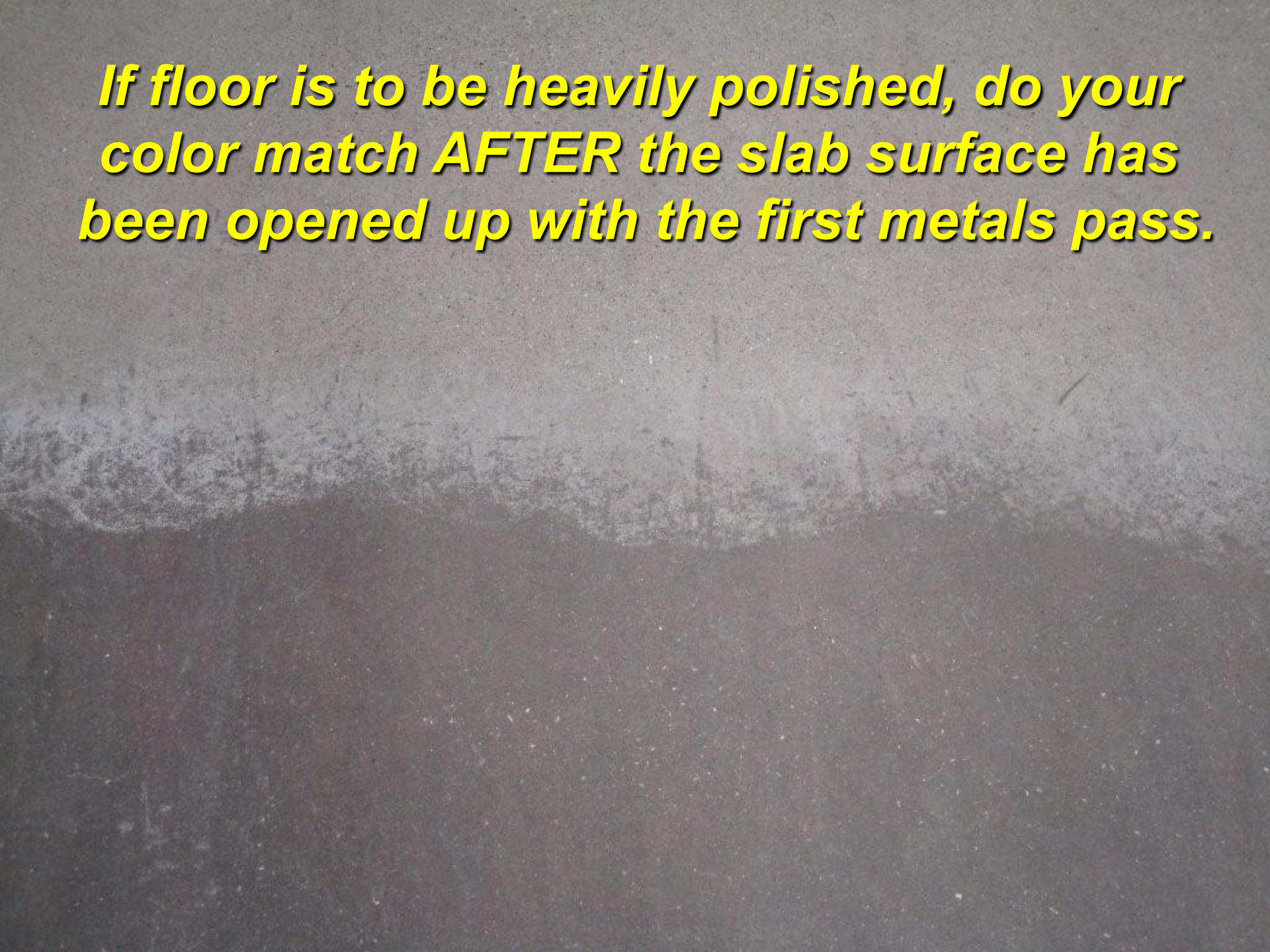
Meeting the Owner's Expectations with Color Matched Surface and Joint Repairs

Best color match is often subjective…have owner and/or GC sign off on color selection to ensure expectations are met.

Hint: When in doubt, darker is often better…

Confirm long term color stability of repair materials with manufacturer.


Don’t count on repair materials accepting or maintaining stain. Stain will often fade and/or be removed with regular scrubbing.


If floor is to be heavily polished, do your color match AFTER the slab surface has been opened up with the first metals pass.


Surface Repairs
- Surface Pitting & Pop-outs
- Bolt Holes & Surface Spalls
- Random Cracks
- Joint Repair/Treatment

Multiple Surface Pitting

Clean surface pits with a soft wire wheel to remove loose debris; vacuum clean.


Over apply pre-colored low viscosity structural urethane/polyurea or epoxy
- Use notched trowel to break surface tension and ensure slight overfill
- Allow material to cure and remove overfill with metals or 100-200 resin pads


Finished Repair Example
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Finished Repair Example

Bolt Holes & Surface Spalls

Bolt Holes & Surface Spalls

- Use soft wire wheel/brush to loosen debris
  and clean defect. Vacuum clean.

Bolt Holes & Surface Spalls

- Slightly overfill with pre-colored or clear low viscosity urethane/epoxy. If using colored aggregates or grinder dust, mix in with material or place prior to material set.

Bolt Holes & Surface Spalls

-Allow material to cure into solid.
-Check with manufacturer for earliest recommended grind time.

Bolt Holes & Surface Spalls

- Grind overfill off using medium grit finishing pad or disc.


Bolt Holes & Surface Spalls
-Ensure finished repair is flush with surface.

Finished Repair Example


Random Cracks

General Guidelines & Typical National Repair Specifications

Less than .030 (1/32”)

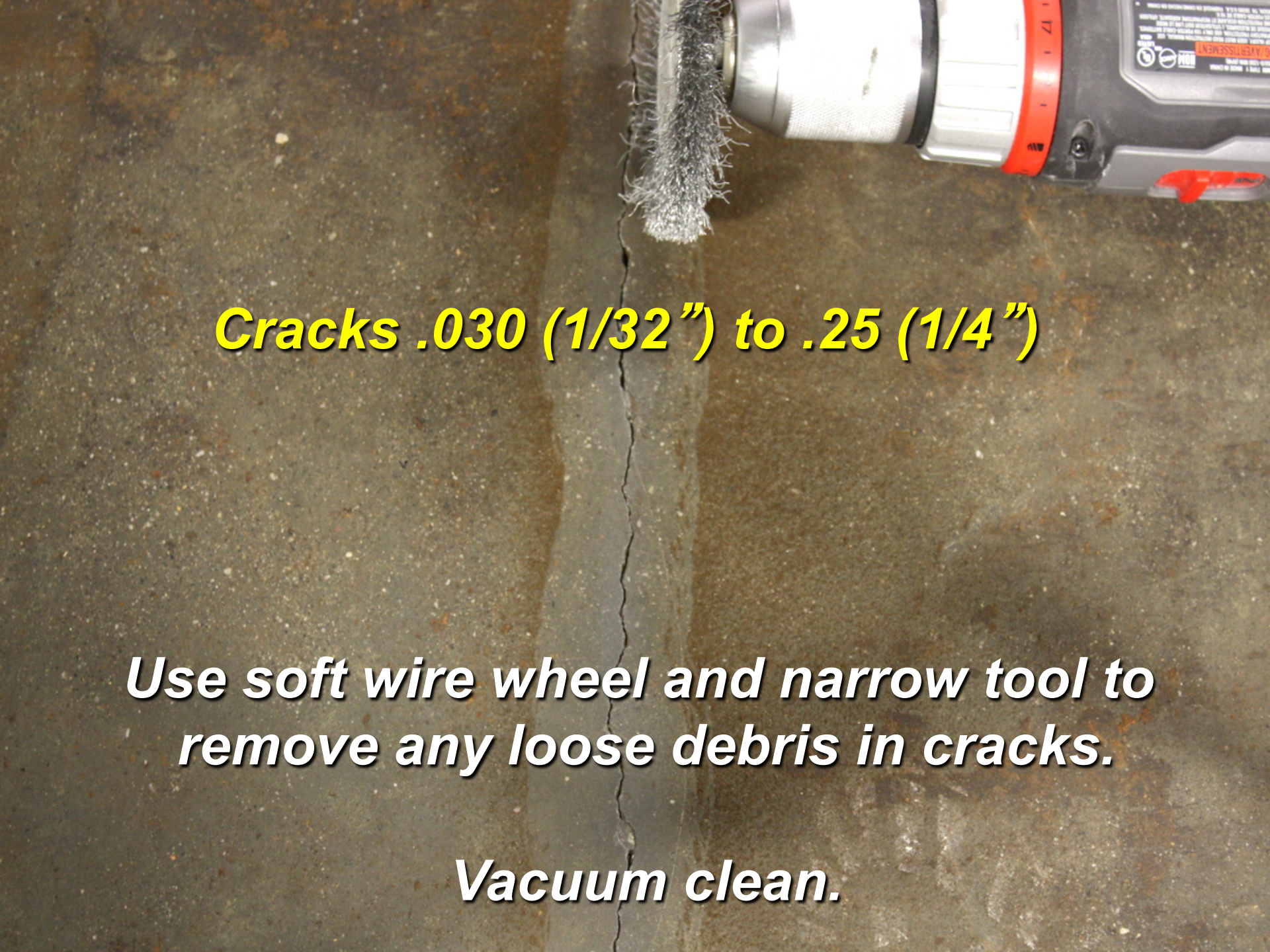
No Repair Needed

.030 (1/32”) - .25 (1/4”)

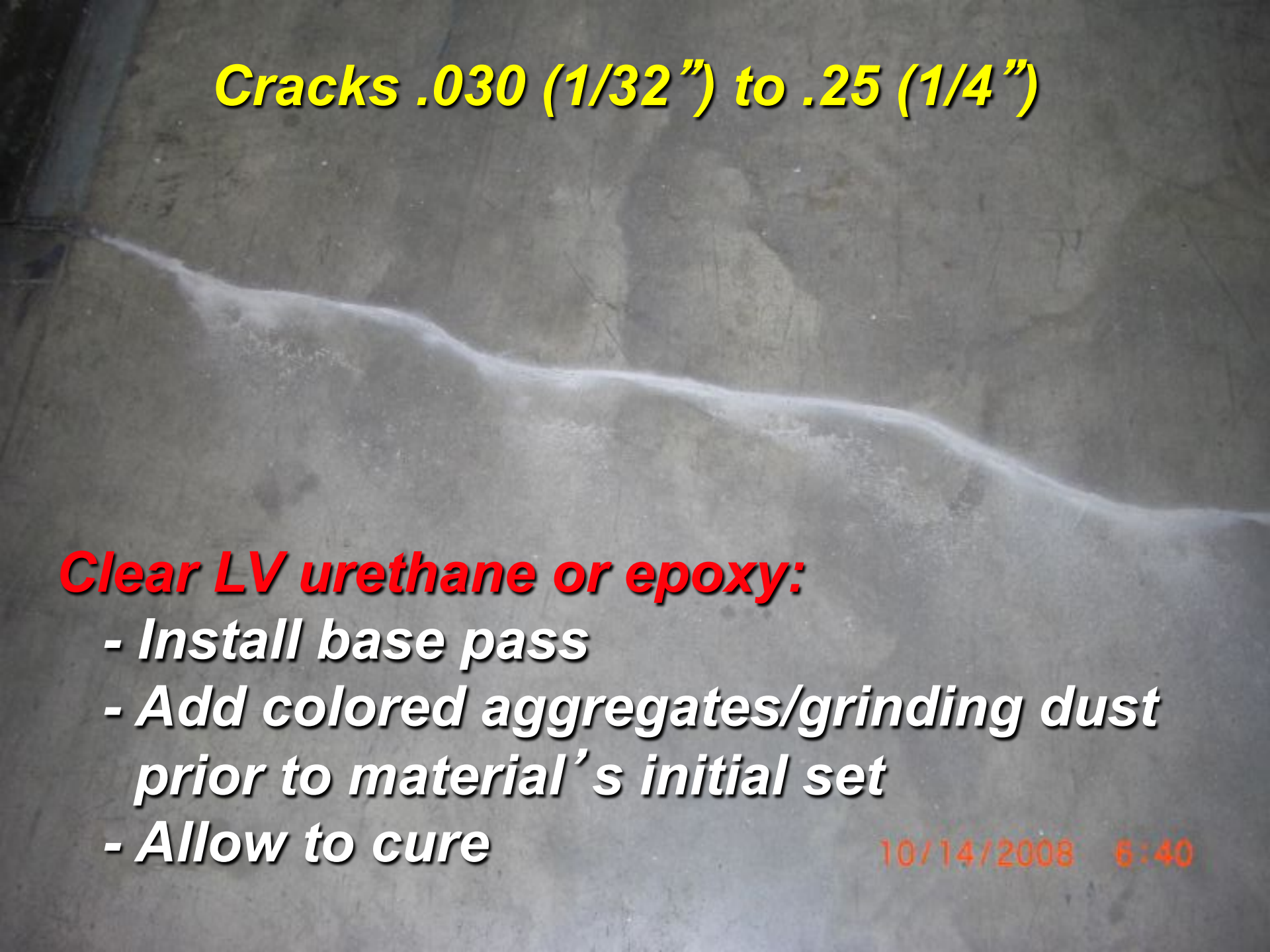
Do not open, fill with pre-colored or clear structural urethane or epoxy

.25 (1/4”) or Greater

Chase out to nominal depth of ½” – ¾”; fill with colored semi-rigid polyurea or epoxy


Cracks .030 (1/32”) to .25 (1/4”)
Use soft wire wheel and narrow tool to remove any loose debris in cracks.
Vacuum clean.


Cracks .030 (1/32”) to .25 (1/4”)
Pre-colored/clear LV urethane or epoxy:
- Slightly overfill crack
- Monitor for seepage and refill as needed
- Allow to cure


Cracks .030 (1/32”) to .25 (1/4”)
Clear LV urethane or epoxy:
- Install base pass
- Add colored aggregates/grinding dust prior to material’s initial set
- Allow to cure
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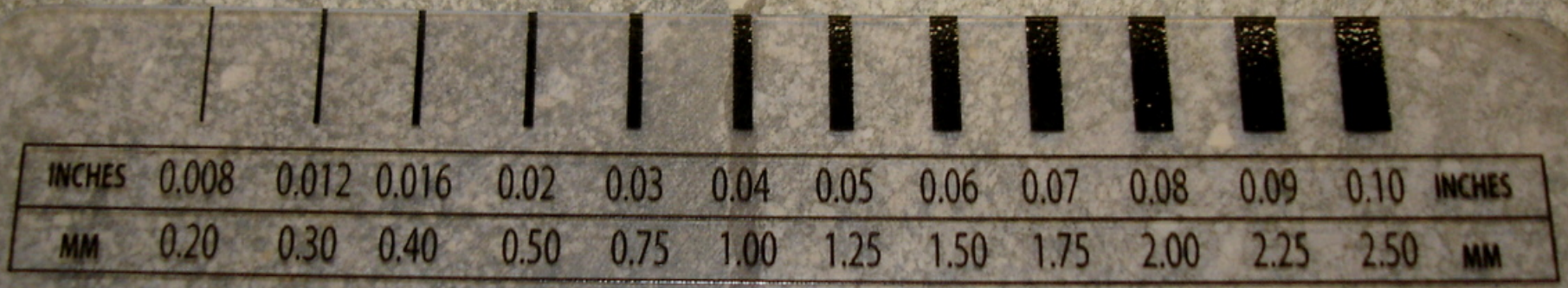
Cracks .030 (1/32”) to .25 (1/4”)
Finish flush with floor surface
- Use medium grit finishing pads/discs
- Razor off overfill IF product allows while leaving a smooth, flush profile
Note: Many do not…


Cracks .030 (1/32”) to .25 (1/4”)
Finished Repair Example

Cracks .030 (1/32”) to .25 (1/4”)

Finished Repair Example



INCHES	0.008	0.012	0.016	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	INCHES
MM	0.20	0.30	0.40	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	MM

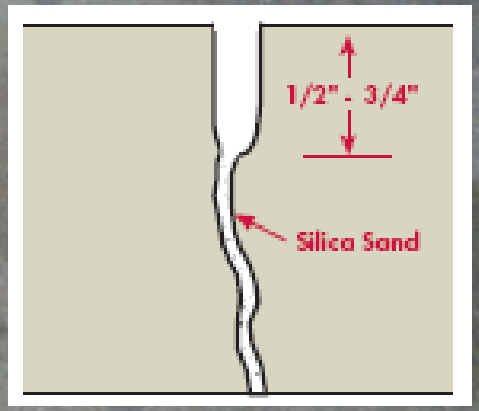
Industry Standard Industrial Floor
Joint Fillers and Repair Products

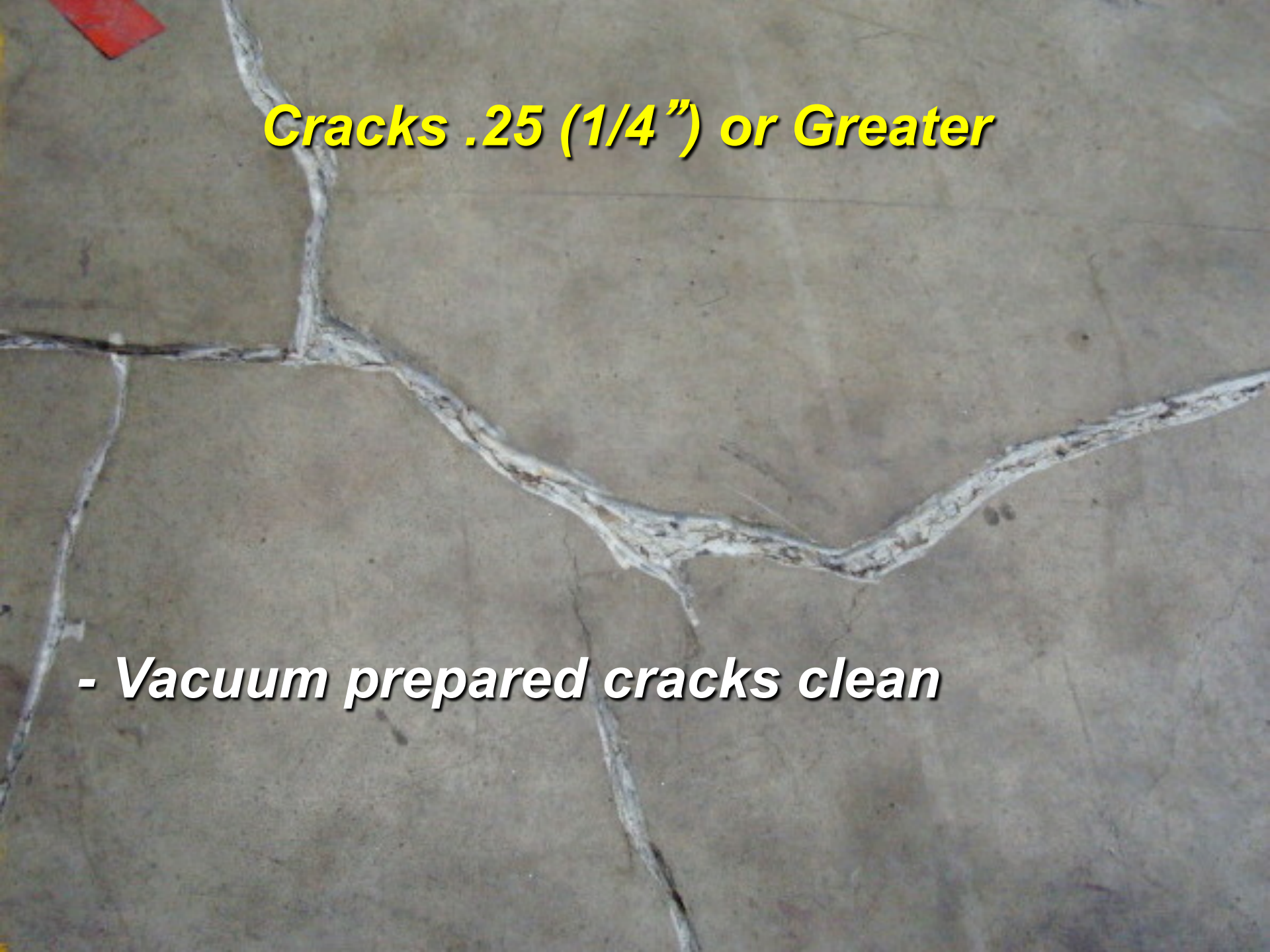
800-223-6680

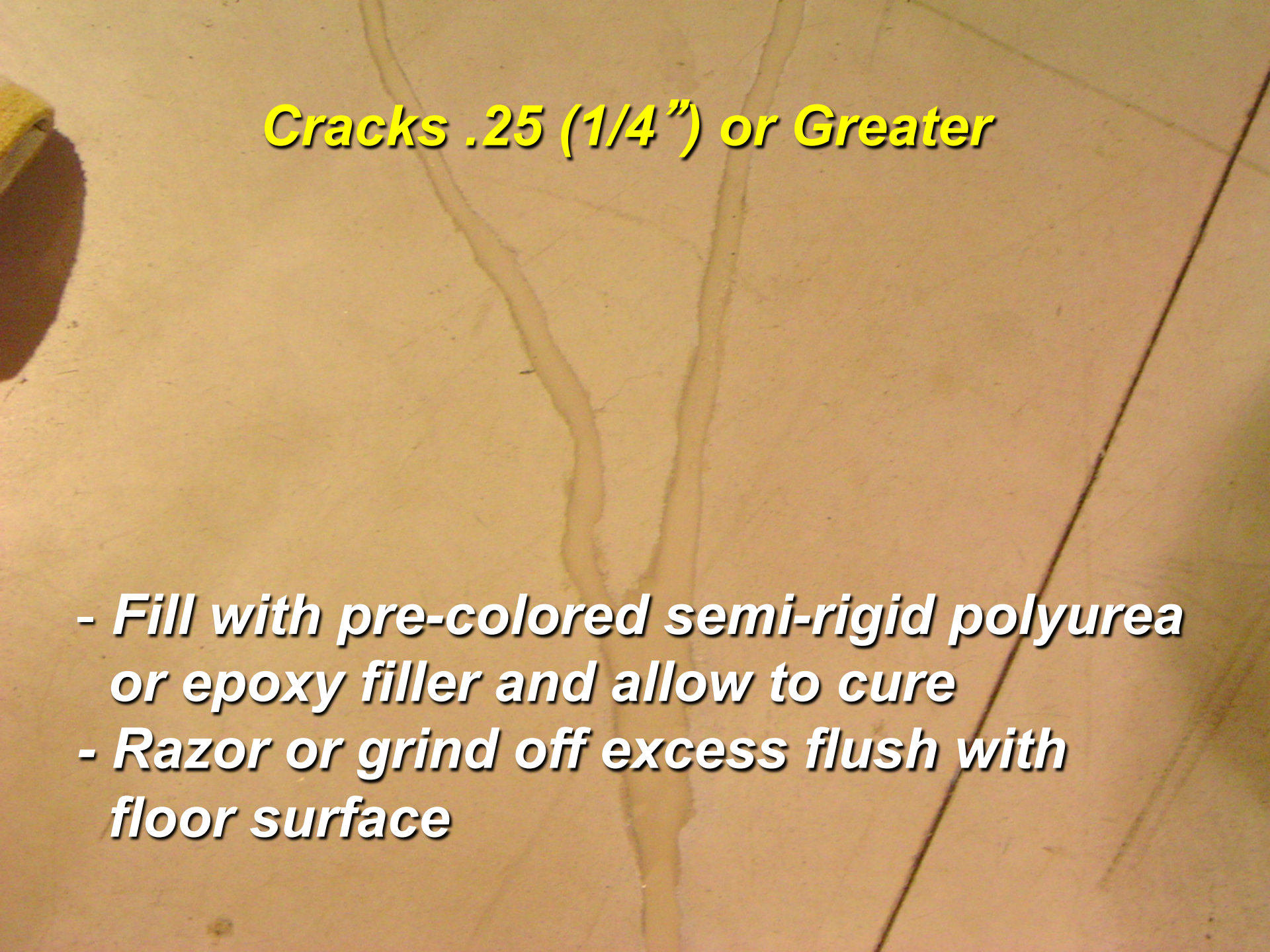

Cracks .25 (1/4”) or Greater
- Use narrow tool to remove any loose sections/islands

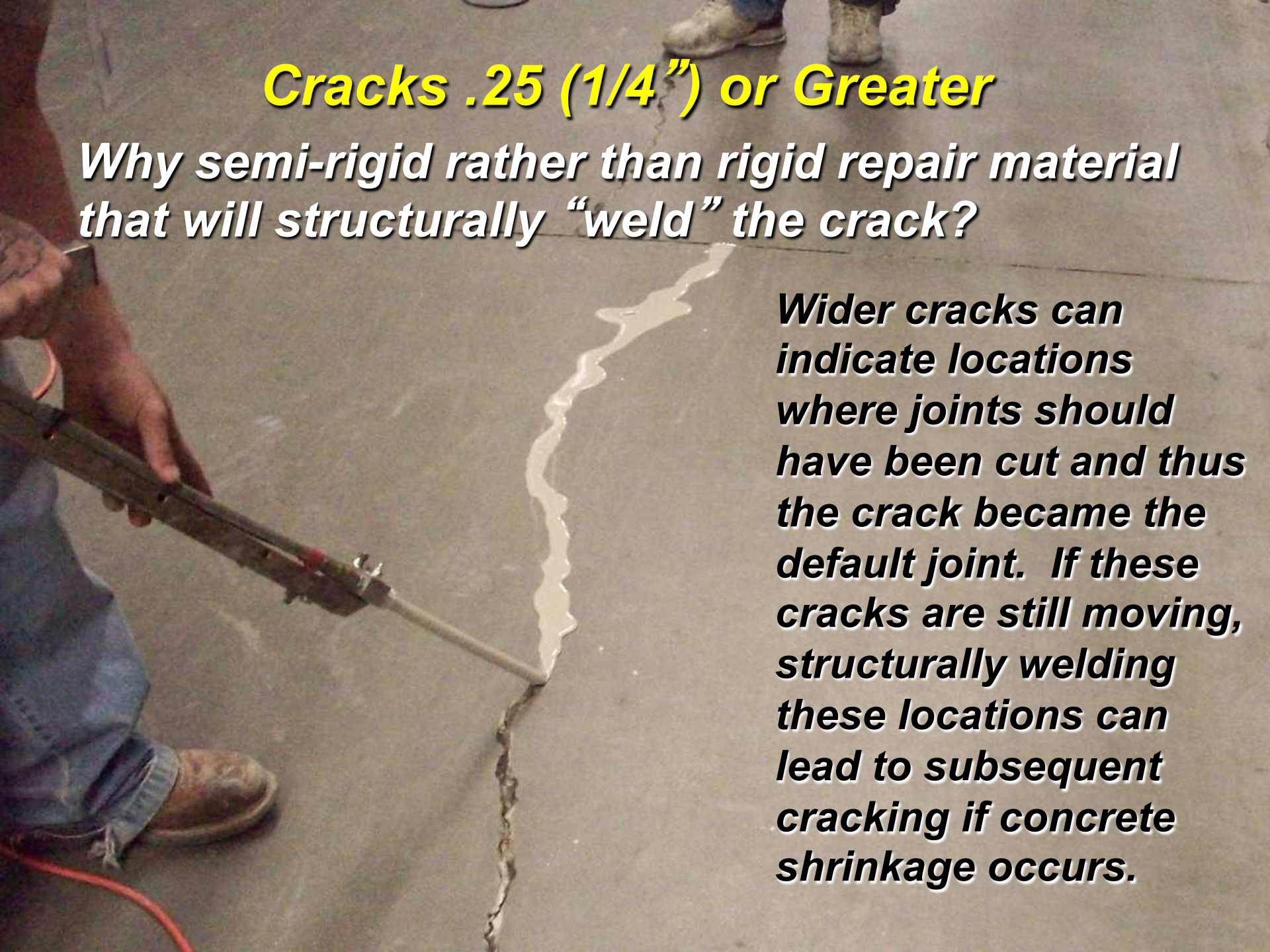
Cracks .25 (1/4”) or Greater

- Chase crack out using dustless angle grinder or crack chasing saw equipped with “U” or “V” shaped diamond blade




Cracks .25 (1/4”) or Greater
- Vacuum prepared cracks clean


Cracks .25 (1/4”) or Greater
- Fill with pre-colored semi-rigid polyurea or epoxy filler and allow to cure
- Razor or grind off excess flush with floor surface

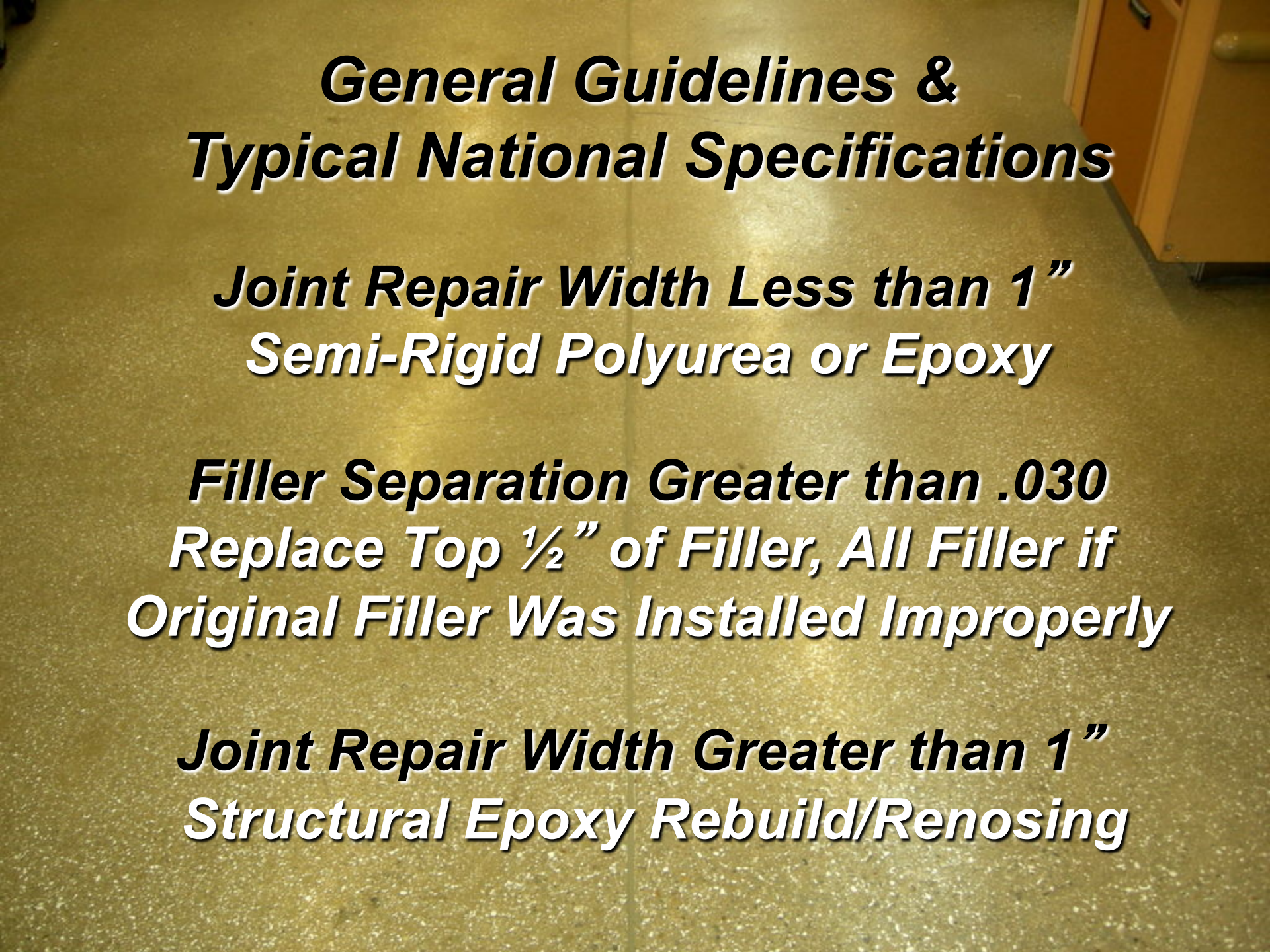


Cracks .25 (1/4”) or Greater

Why semi-rigid rather than rigid repair material that will structurally “weld” the crack?

Wider cracks can indicate locations where joints should have been cut and thus the crack became the default joint. If these cracks are still moving, structurally welding these locations can lead to subsequent cracking if concrete shrinkage occurs.

Joint Repair


General Guidelines &
Typical National Specifications
Joint Repair Width Less than 1”
Semi-Rigid Polyurea or Epoxy
Filler Separation Greater than .030
Replace Top ½” of Filler, All Filler if
Original Filler Was Installed Improperly
Joint Repair Width Greater than 1”
Structural Epoxy Rebuild/Renosing

Pre-Joint Filling Considerations

Potential for Staining/Surface Etching

- Some fillers may leave stain/film
- Some fillers may dull or lift "guard" type surface products or other polished surface treatments

Solution:

Perform test; use stain prevention films or tape/mask joints prior to filling

Pre-Joint Filling Considerations

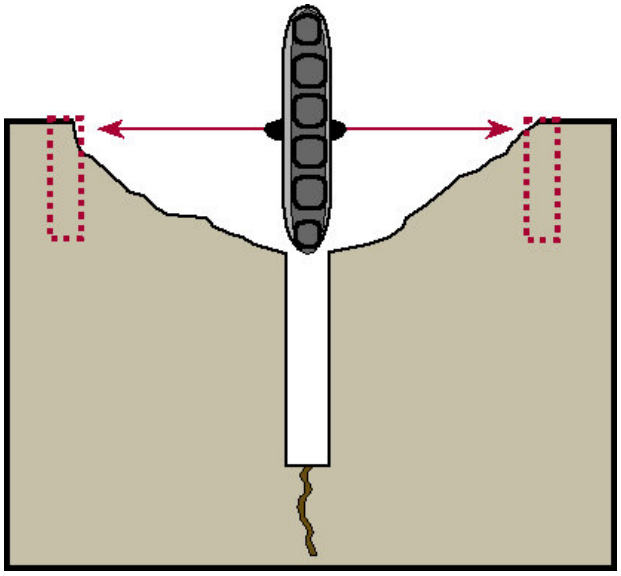
Potential for Moisture Reaction

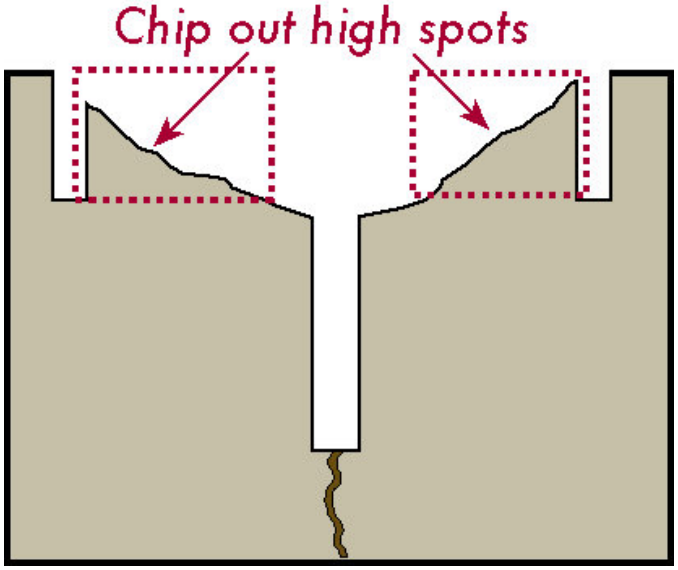
- Some fillers may react with moisture
- Moisture reaction can lead to air bubbles and/or compromised adhesion

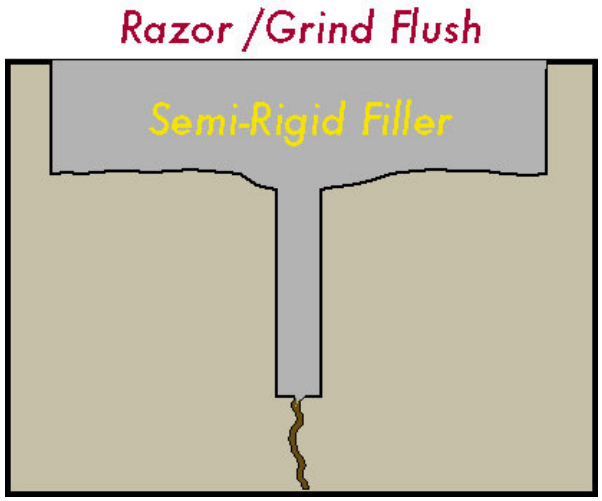
Solution:

Ensure GC/Owner defer scrubbing for 72 hours or longer prior to start of filling.

Joint Repair Less than 1”







Joint Repair Less than 1”

Clean/Prepare Joint for Filling

- Remove existing filler (if any) with dustless concrete saw
- Saw cut behind spalled area to restore square edge to joint


Joint Repair Less than 1”
Clean/Prepare Joint for Filling
- Remove any loose debris
- Vacuum clean after saw cutting


Joint Repair Less than 1”
Remove all existing filler for more uniform look...


Joint Repair Less than 1”
Joint Filling
- Gradually fill prepared joint from bottom up with pre-colored semi-rigid polyurea/epoxy to avoid entrapping air


Joint Repair Less than 1”
Joint Filling
- Slightly overfill joint, allow material to cure into solid


Joint Repair Less than 1”
Finishing the Repair
- Razor off or grind off overfill flush with floor surface

IMPORTANT!

SHAVE TIMING AFFECTS FINISHED PROFILE…

Consult manufacturer and test various razor times to ensure flushest profile!

Finished Repair Example

Finished Repair Example

Joint Filler Separation or Concave Profile Repair


Joint Filler Separation or
Concave Profile Repair
If existing filler is installed to proper depth:
Remove top ½” of existing filler
If filler is loose, installed shallow over dirt/backer rod, etc:
Remove filler completely

Joint Filler Separation or Concave Profile Repair

Finishing the Repair

- Razor off or grind off overfill flush with floor surface

REMEMBER: AESTHETIC EXPECTATIONS FOR STAINED & POLISHED FLOOR REPAIRS WILL ALWAYS BE HIGH!

ATTENTION TO DETAIL AND COLOR MATCHED REPAIR MATERIALS CAN HELP YOU BEST MEET EXPECTATIONS!