



## Procedural Bulletin / Patching Cracks

No. 33-2 Effective Date January 2020

# Gill 33<sup>®</sup> - Superbond

**Purpose:** This Procedural Bulletin No. 33-2 is the guideline for patching cracks or holes in concrete regardless of width, depth, or length. All references to Gill 33<sup>®</sup> also include the MCI<sup>®</sup> variant.

### Materials:

- Type I or III fresh<sup>1</sup> portland cement
- Sand - Use washed concrete sand only for larger patches where feather edge is not required. Use washed sand of a #30 grit or less where width is 3/8 inch or less.
- Gill 8 Horizontal / Vertical Mix or Gill 29 Gill Crete may be substituted for cement / sand combination. Refer to Procedural Bulletin No. 8 and 29 respectively.
- Water - Use potable water, do not use industrial water.
- Gill 33<sup>®</sup> Superbond
- Gill 27 Etch N Kleen
- Gill 17 Gill Lock
- Gill 86 Gill Cure

### Procedure:

**Surface Preparation:** Clean all loose material from the problem area by sand blasting, water blasting, scarifying, or use a power tool such as a jackhammer. For hydrocarbon contamination, use Gill 27 Etch N Kleen for surface preparation. See Technical Bulletin No. 27 for additional information.

**Mix Design:** Volumetric proportion is one (1) part cement to two and a half (2.5) parts sand. **Use only fresh<sup>1</sup> portland type I or III cement!**

**Pre-soak:** Wet area to be repaired with water and allow it to soak for 30 minutes. With compressed air, blow away puddles of standing water. Remoisten surface with Gill Water mixing solution.

**Pre-mix:** *Each Gill container should be thoroughly shaken to ensure the micro-silica is fully dispersed in solution and does not adhere to the bottom of the container.* In a separate container, mix a solution of one (1) part Gill 33<sup>®</sup> to seven (7) parts water. This Gill Water solution is to be used for all mixing water in the concrete.

**Bond Coat:** Broadcast fresh<sup>1</sup> portland type I or III cement on the cleaned/pre-soaked concrete to be patched. Using a stiff bristle brush or stiff floor broom, scrub thoroughly into concrete. When completed, this bond coat should have the consistency of thick latex paint. During this procedure you may have to add more water and/or cement to achieve results. **Do not allow to dry!** For contaminated concrete, use Gill 17 Gill Lock. See Technical Bulletin No. 17 for additional information.

**Placement:** Mix the above ratio of cement and sand together. Add Gill Water mixing solution as needed to bring to a workable consistency and trowel into the area to be repaired. Use pressure to fill all air holes and gaps.

**Curing:** Finish surface to match the area being patched and immediately cover using plastic, burlap, or other membrane sealing system such as Gill 86 Gill Cure. See Technical Bulletin No. 86 for additional information. This must remain for 4 hours. Failure to cure properly may result in plastic shrinkage cracks, slab curl and/or improper bond.

**Equipment Cleanup:** Gill 33<sup>®</sup> will not damage mixers or hand tools. To neutralize the effects of Gill 33<sup>®</sup>, rinse all tools with water.

<sup>1</sup> Test cement for freshness by putting a small amount of cement into a container. Add undiluted Gill 33<sup>®</sup> and create a small, stiff putty ball. If cement is fresh, the ball will be hot in 3-5 minutes. If not, replace cement.