



Technical Bulletin

No. 33 Effective Date January 2020

Gill 33® - Superbond

Type: A liquid, micro-silica based admixture to produce concrete that permanently bonds to existing concrete, is non-shrink and develops high early strength.

Intended Use: Concrete modified using Gill 33®, Gill Modified Concrete, is effective in permanently patching and overlaying damaged concrete. Gill Modified Concrete can be used for thin overlays or full depth pours. Concrete made with Gill 33® may be top coated with paint or a protective coating in 24 to 48 hours depending upon mix design and temperature. This concrete also results in high early strength allowing most vehicular traffic four hours after curing. Specific uses for the Gill 33® are intended for bridge and highway surfaces, industrial plant floors, equipment supports, parking garage decks, wastewater treatment plants, chemical and petroleum secondary containment systems and pump bases, and many others. Gill Modified Concrete is for use only on unpainted, non-coated concrete that has been properly prepared and cleaned per our Procedural Bulletins. For contaminated concrete, use Gill 17 Gill Lock to ensure proper adhesion between old and new concrete. See Technical Bulletin No. 17 for additional information.

Government Agency Acceptance:

Tested/certified to CRD-C-621 US Army Corps of Engineers.

Chemical Resistance: Gill 33® does not prevent chemical attack on concrete. Gill 33® does increase the density, specific gravity, and reduces voids in concrete, significantly lowering permeability. The decrease in penetration of chemically contaminated liquids and vapors does reduce the area of chemical attack. For use in harsh environments, a coating is recommended.

Applications: Gill Modified Concrete can be prepared in buckets, portable mixers, or batch trucks.

Color: Although Gill 33® is black, it does not affect the color of the cured concrete. Gill 33® can be mixed with white portland cement and white sand producing brilliant white concrete.

Drying / Curing Time: Gill Modified Concrete can withstand normal tired vehicular traffic in 4 hours @ 70°F, with suitability for coating within 24 hours at stated temperature. Actual coating time may vary depending upon dosage, temperature, and mix design. For your particular application, consult your coating manufacturer.

Coverage: One cubic yard of Gill Modified Concrete provides the following coverage:

<u>Thickness</u>	<u>Square Feet</u>	<u>Course Aggregate</u>
.125"	2,592	No
.500"	648	No
1.00"	324	Optional
2.00"	162	Optional
4.00"	81	Optional

Shelf Life: Stored in undiluted form, shelf life is indefinite. Once diluted with water, shelf life is about 12 hours. There are no storage restrictions or limitations.

Shipping Weight: 11.2 lbs. per gallon, including container. Standard packaging is one and five gallon containers.

Volatile Organic Compounds: None

Safety Precautions: See Manufacturer's Safety Data Sheet.

Equipment: Mixing equipment of either small portable mixer or batch plant truck, blasting mechanism capable of course grit, several stiff hand brushes, trowels, plastic/burlap, several 1 & 5 gallon buckets plus general masonry equipment. Air compressor and air-hammer are highly recommended if needed.

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Test Data: Test conducted by certified independent test laboratories.

Freeze Thaw: ASTM C-666B	Average Durability Factor Average Cycles	100.00% 300.00%
Bond Strength: ASTM C-862 MOD, ASTM C-1042	4,422 PSI @ 28 days 4,460 PSI @ 28 days	
Compression Strength: ASTM C-39	3,870 PSI @ 1 day 4,790 PSI @ 7 days 5,300 PSI @ 14 days 6,150 PSI @ 28 days	
Flexural Strength: ASTM C-78	675 PSI @ 3 days 830 PSI @ 7 days 1,030 PSI @ 28 days	
Splitting Tensile: ASTM C-496	470 PSI @ 28 days	
Length Change: ASTM C-157	+0.029% change @ 28 days +0.050% change @ 37 days +0.023% change @ 90 days +0.018% change @ 120 days	
Final Set: ASTM C-403	3:33 (hrs:min)	
Non- Shrink Grout: CRD-C-621-89A	Shrinkage/Expansion	0.00%
Absorption: ASTM C-642	Lowers Absorption By	10.47%
Specific Gravity: ASTM C-642	Higher	5.94%
Voids: ASTM C-642	% Less	8.25%

Please contact a Gill representative for your specific applications.

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