

GSL® M3.4

Premium Gypsum Underlayment

**DESCRIPTION**

GSL® M3.4 premium gypsum cement is an exciting, unique product for creating a high strength underlayment for use over virtually all interior surfaces. GSL M3.4 is also designed for UL fire-rated corrugated steel deck (CSD) construction applications. GSL M3.4 is lighter and thinner than other concretes. It can be poured as thin as 1" over the top of the fluting in the corrugated deck. GSL M3.4 weighs about 12.8 lbs. per square foot (over a 9/16" fluted deck).

Pumpable, GSL delivers high strength, good water resistance and outstanding adhesion. Applications from nearly a featheredge up to 3" depth can be achieved in a single pour. GSL remains flowable for nearly 30 minutes, yet will withstand foot traffic at any depth in about two hours. This product offers high density, yet less finished weight and more flexibility than Portland cement toppings.

Unlike Portland cement, gypsum does not shrink and requires no hand finishing tools other than a darby that establishes thickness and uniformity. Typically installed with a specialty mixing machine capable of placing 20,000 to 30,000 square feet per day. GSL M3.4 is specially formulated to add mass to a floor ceiling assembly and help control airborne noise.

GSL is UL approved on all standard assemblies providing developers the fire safety assurance required in today's multi-family projects.

GSL is designed for installation by trained contractors from KEENE BUILDING PRODUCTS. Please consult with a local representative for a list of contractors in a specific geography.

APPLICATIONS

- Multi-family
- Renovations
- Floor leveling
- Light commercial
- Commercial/retail/office
- Hotel/motel
- Assisted living/senior care
- Sound and fire control applications

UL LISTINGS

G577, G578, G579, G580, G581, G582, G592, H502, J917, J919, J920, J924, J927, J931, J957, J958, J991, J944, L006, L201, L202, L206, L208, L209, L210, L211, L212, L501, L502, L503, L504, L505, L506, L507, L508, L509, L510, L511, L512, L513, L514, L515, L516, L517, L518, L519, L520, L522, L523, L524, L525, L526, L527, L528, L529, L530, L532, L533, L534, L535, L536, L537, L538, L539, L540, L541, L542, L543, L546, L547, L549, L550, L551, L556, L557, L558, L560, L562, L563, L564, L565, L570, L573, L574, L576, L577, L579, L581, L583, L585, L587, L588, L589, L590, L592, L593, M500, M502, M503, M504, M506, M508, M511, M512, M513, M514, M515, M517, M518, M519, M528, M530, M535, M536, M538, M550.

If your listing is not shown here, please contact Keene Building Products.

PACKAGING

- GSL M3.4
- 80 lb. (36 kg.) Bag

CHARACTERISTICS**Flow Properties:**

High Flow with Self-Healing Properties

Water Per Bag:

4.0 - 6.0 US GAL per 80 lb. Bag

CSD Application: 3.5 - 4.5 US GAL per 80 lb. Bag

Final Set Time:

Approximately 2 hours

Compressive Strength:

3200 - 4500 psi

Modified ASTM

Sand Per Bag:

0.80 - 1.8 cu. ft. of washed plaster or concrete sand*

CSD Application: 0.80 - 1.40 cu. ft. of washed plaster or concrete sand*

*Meeting Keene Building Products Sand Gradation

Criteria**Thickness Range:**

0.375" - 3.0" poured in single lift

CSD Application: Typical total thickness 1-9/16".

Minimum 1" depth over top of the flutes of corrugated decking or acoustical mat.

Surface Burning: ASTM E84

Flame Spread: 0

Fuel Contribution: 0

Smoke Density: 0

Dry Density (with aggregate):

110 - 130 lbs./cu.ft.

Color: Gray Powder and mixed to a gray batter consistency

FEATURES AND BENEFITS

- Provides additional protection for fire resistance as shown in UL approved assemblies
- Provides additional sound control enhancements as tested under ASTM E90, Airborne Noise or STC and ASTM E492, Impact Noise or IIC
- Pourable over virtually any surface (especially plywood and OSB subfloors)
- Durable high strength gypsum
- Excellent for floor leveling in deep fill applications
- Outstanding heal that provides a smooth, dense surface
- Open time up to 30 minutes
- Non-Alkaline—adhesive friendly
- Can pour up to 3" in a single lift
- Withstands construction but should be protected when exposed to trade traffic or wheeled loads
- As little as 3/8" coverage over other surfaces

PREPARATION AND APPLICATION

SITE CONDITIONS

- The building must be fully enclosed including doors, windows and roof, protected from sun and wind. Interior ambient temperature of 50°F must be maintained before, during and after the installation of GSL M3.4 until dry.
- Adequate ventilation must be maintained until the moisture in the gypsum has been allowed to evaporate. This requirement is typically a minimum of 5 to 7 days for a 3/4" thick pour, but may be longer depending on thickness of underlayment, humidity and conditions in the local environment.
- Corrugated Steel Deck system: Typical drying period for 1-9/16" thick GSL M3.4 on a CSD application is 14 to 21 days (minimum 50°F, 50% or less humidity).
- Subfloor must be a minimum of L/360, broom swept with all excess wall board mud removed and all holes patched.
- Wood construction must be with tongue and groove subfloor (OSB or plywood).
- For installation on concrete substrates the subfloor must be fully cured (minimum 28 days). Moisture tests should be performed to assure proper hydration under ASTM F1869 to assure MVE level is less than 3.0 lb. per 1000 square feet.
- GSL M3.4 is highly flowable. The perimeter, mechanical and plumbing penetrations, and other gaps in the substrate must be sealed to prevent leaks.
- Prior to pouring GSL M3.4 over corrugated steel decking, an approved priming system for galvanized steel must be used. Consult a Keene Building Products technical representative on the proper priming procedures.
- For below grade applications or over a crawl space, vapor barriers must be applied.

SUBFLOOR PREPARATION

Subfloor must be properly primed. Use GSL PRIMER on all wood and concrete surfaces. Approved priming methods include: roller, soft bristle broom, brush or spray. All supporting surfaces shall be structurally sound, solid, free of movement and well bonded. They shall be dry, free of dust, oil, grease, tar or other contaminants that may act as a bond breaker. Deflection cannot exceed L/360.

Priming

Wood or concrete subfloors: Dilute GSL Primer before application. Dilute 1-part GSL PRIMER concentrate to 4-parts potable water (1:4). Using a long handle roller, soft bristle broom, brush or sprayer, apply GSL PRIMER at a coverage rate of 270-320 sq. ft. per gallon of primer solution. Coverage rate varies depending upon surface porosity. Ensure a complete and uniform coverage. Allow to become very tacky or dry (about 1-hour) before installing GSL.

Corrugated Steel Deck: Dilute GSL Primer before application. Dilute 1-part GSL PRIMER concentrate to 1-part potable water (1:1). Using a soft bristle broom, brush or sprayer, apply GSL PRIMER at a coverage rate of 200-250 sq. ft. per gallon of primer solution. Ensure a complete and uniform coverage over galvanized steel decking. Two coats of primer may be necessary. Allow to become completely dry prior to pouring (minimum 2-3 hours).

Mixing

Follow Keene Building Products guidelines and specifications. GSL is only to be installed by trained contractors approved by Keene Building Products.

Compression Strength

3200 - 4500 psi

Substrate

Plywood, OSB, concrete, precast concrete, approved galvanized corrugated steel decking (Minimum 22-gauge) and approved acoustical treatment are acceptable. Wood substrate must be proper thickness, tongue and groove construction and properly fastened. Concrete should be clean, dry and free of obvious structural problems. Corrugated steel decking shall be free of rust or any other contaminant that may interfere with bonding and have a minimum of 1" thick GSL M3.4 over top of flutes (9/16" deep). All substrates must be properly sealed and/or primed before the GSL floor underlayment is applied.

Storage

Material should be kept in a dry area. Avoid ambient temperature below 50°F and above 110°F for prolonged periods. Shelf-life of six months.

APPLICATION

- **Multiple lifts:** Multiple lifts may not require a primer with GSL. Second lift can be accomplished upon an initial set that can handle the load of the hose operator and finisher.

NOTE: Temperature and humidity levels affect the drying characteristics of GSL. However, unlike Portland cement materials, GSL may be force dried with the use of heat and fans once set.

LIMITATIONS / PRECAUTIONS

- DO NOT USE IN EXTERIOR APPLICATIONS. For Interior use only.
- GSL is NOT a wear surface. Protect with temporary wood planking (minimum 1/8" - 1/4" thick Luan/plywood or equal) in areas subject to wheeled traffic or concentrated loads.
- DO NOT INSTALL WITHOUT TONGUE AND GROOVE SUBFLOOR unless utilizing back bracing.
- GSL MUST BE INSTALLED AFTER THE INSTALLATION OF DRYWALL when pouring over Quiet-Qurl or any other acoustical mat.
- CHECK JOIST DEFLECTION and assure performance greater than L/360
- Deflection Limits of the Structure: Live and dead loads considered, L/240 minimum. Dead loads only, L/360. Deflection limits of the decking material: L/480. More restrictive deflection limits may be required by some types of floor goods. Contact the floor covering manufacturer for minimum specifications.
- ASSURE BUILDING IS COMPLETELY INCLOSED including doors, windows and roof.
- INSTALLATION TEMPERATURE MUST BE 50°F and rising.
- PROVIDE CONTINUOUS VENTILATION before, during and after placement of GSL until dry.
- Minimum Steel Deck Standards: Minimum 22-gauge galvanized steel deck with minimum flute depth of 9/16".
- Drying time before application of floor goods depends on thickness, thickness, ambient temperature, humidity and ventilation. Thicker pours, humid conditions, and poor ventilation will require extended drying times.
- GSL M3.4 is not a structural cement and may crack where there is excess substrate deflection or dynamic loads that exceed the deflection limit of the substrate.

DO NOT USE...

- Where hydrostatic pressure (water) is present or moisture emissions exceeds level permitted for installed floor covering.
- Where surface or ambient temperature falls to or below 50°F 72 hours before or after installation.
- As a trowelled patch or at less than natural minimum flow thickness.
- Exterior, exposed applications or as a wear surface.
- Where GSL will be exposed to continuous moisture or standing water.

LIMITED WARRANTY:

Keene Building Products warrants to the initial purchaser only that the goods sold hereunder will be free from defects in material and workmanship and, except as otherwise set forth herein, will conform to the specifications provided. If any failure to meet this warranty appears within one year from the date of shipment of the goods, on the condition that Keene Building Products. will correct any such failure by either replacing or repairing any defective goods, at Keene Building Products's option.

The preceding paragraph sets forth the exclusive remedy for all claims based on failure of or defect in the goods sold hereunder, whether such failure or defect arises before or during the warranty period and whether a claim, however instituted, is based on contract, indemnity, warranty, tort (including negligence), strict liability or otherwise. The forgoing warranty is exclusive and is in lieu of all other warranties whether written, oral, implied or statutory.

MIXING INSTRUCTIONS

Type	*Mix Design (Cubic Feet of Sand)	*Water (gal)	Slump (Inches)
M3.4	1.4 - 1.8	4.0 - 6.0	9" ± 1-inch

* Sand and Water per 80 Lb. bag

Corrugated Steel Deck:

MIXING INSTRUCTIONS

Type	*Mix Design (Cubic Feet of Sand)	*Water (gal)	Slump (Inches)
M3.4	0.8 - 1.4	3.5 - 4.5	9" ± 1"

* Sand and Water per 80 Lb. bag

24 HOUR EMERGENCY: CHEMTREC® 1-800-424-9300
NON-TOXIC and NON-FLAMMABLE

Keep container closed and keep away from children. May cause slight eye abrasion or irritation if spilled or rubbed in eyes. Flush thoroughly with water.

If taken internally, call a physician. Technical Assistance:
Visit our website: keenebuilding.com or call (877) 514-5336.



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