

## FIELDS OF APPLICATION

**BioCement GM 1.5** is a high quality slaked lime plaster ideal for stucco finishes when applied to NHL cements and slaked lime stuccos, permitting endurance cycles that can last intact for centuries.

**BioCement GM 1.5** can be applied to all types of portland cement surfaces, cementitious boards, MGO mineral boards, and almost any type of masonry surface prepared correctly.

**BioCement GM 1.5** can be applied directly to all interior walls surfaces composed of sheetrock, painted or non-painted, using an appropriate primer.

This plaster product is not oil proof, and can be damaged by foods, greases, body oils, color crayons or washable colored markers. Cleaning may damage or change the sheen of the paint.

## PRODUCT FEATURES

**BioCement GM 1.5** is a historical slaked lime plaster, ideal for interior and exterior surfaces, applied on masonry or sheetrock surfaces to provide a classical stucco finish with chromatic color variability.

**BioCement GM 1.5** is made in the ancient tradition, with the capabilities to carbonize to masonry surfaces providing decades of durability, withstanding most climatic conditions and not capitulate to environmental stress. **BioCement GM 1.5** has been formulated to form to a slow set to permit application on large surfaces without “freezing” or setting prematurely. **BioCement GM 1.5** can be applied for exterior finishes without the risk of damage from freeze/thaw, water, or damage from UV. **BioCement GM 1.5** finish provides a flat, opaque finish with sublime shades of color, or with a rough finish using a sponge trowel. A non-acrylic product that provides superior adhesion than typical gypsum lime plasters, with custom color matching available for most medium dark to light colors.

A 100% natural mineral product, completely permeable, breathable, absorbs CO<sub>2</sub>, provides good anchoring power with mineral surfaces by carbonization. Provides protection against the formation of bacteria that forms mold. Product is considered a natural organic product, ideal for use in homes, schools, and hospitals and work sensitive areas.

**BioCement GM 1.5** is specifically designed to be tinted with natural oxide earth tints and 0% VOC colorants to increase esthetic color values with minimal impact to the environment and to provide toxic free air quality for indoors. **BioCement GM 1.5** is an organic paint material as described in the **Bio Category** description.

## TYPE OF PRODUCT

Slaked lime coating according to UNI 8681 with 3% organic stabilizers. No acrylic binders used.

## SHEEN FINISH

Flat

## COLOR

White Base. Color tint up to 8% max with approved tints. Custom color tint matching is available.

## TECHNICAL DATA

CRITERIA	INT. STANDARD	VALUE	UNIT
TVOC & VOC (including tint pigments)	2004/42/CE	7	g/l
Water Absorption Coefficient	EN 1062-3 – DIN 52617	0.15	kg/(m <sup>2</sup> •√h)
Vapor Permeability	DIN 53122 DIN 52615- DIN 18550 – EN ISO 7783-2	0.6 S <sub>d</sub>	g/m <sup>2</sup> = 0.05 μ
pH Value	DIN 19266	13	–
Natural Resistance to Mold	UNI 9805 – UNI 10795	Yes	–
Mineral Finish	DIN 55945	< 3.5%	Thickening Agent
Specific Gravity (23°C)	EN ISO 2811-2	1.8	g/ml
Granulation	DIN 19643	0.8 – 1.00	mm
Gloss Level	UNI EN ISO 2813	< 5	Very Opaque
Natural Paint Lime Base NHL 3.5	DIN 18363 – UNI EN 459	10	%
Reaction to Fire	EN 13501-1:2002	A 1	Incombustible
Toxicity	CEE 88/379	Non-Toxic	–
APEO (Alkyl Phenol Ethoxylates)	–	0%	–
PEG (Polyethylene Glycol)	–	0%	–
PG (Propylene Glycol)	–	0%	–
Formaldehyde	–	0%	–
Biocides	–	0%	–

Does not contain chemicals that can aggravate or cause asthma, see NIH Asthma Report 2012.

## APPLICATION CYCLE INSTRUCTIONS

### TROWEL APPLICATIONS

#### 1<sup>ST</sup> COAT

Prepare surfaces for non-mineral bases or portland cement bases by applying a mineral primer with **BioGrip Primer Medium** (see instructions). Apply one (1) coat of **BioCement GF 1.0** on primed base, applying in an even finish. Allow to dry for 8 – 12 hours. Apply one (1)-coat of **BioCement GM 1.5**, applying an even finish. Allow product to set and finish with a sponge trowel. For a travertine finish, provide same finish as with a sponge trowel then pass over with a metal trowel and flatten surface at 0° – 5° angle. Burnish surface to desired finish.

**2<sup>ND</sup> COAT**

In most cases a 2<sup>nd</sup> coat is not required.

**SKIPPED TROWEL**

For a skipped trowel effect, apply one (1)-coat of **BioCement GM 1.5** as indicated for a 1<sup>st</sup> coat, then re-apply additional material using a steel trowel and apply irregular amounts of product, in a sporadic fashion, onto 1<sup>st</sup> coat base. Application should be made in a 360° pattern, always random, observing periodically from a slight distance to adjust hand movement so that irregular surface finish has a harmonious finish. Allow product to completely dry.

**BRUSH APPLICATIONS**

In some instances for very specific applications techniques, using a base of **BioCement GM 1.5** with either a skipped trowel or sponge finish, visibly dry, use a wet brush to smooth down the rough surface. Allow product to completely dry.

**ROLLER APPLICATIONS**

This product is not recommended for roller applications.

**GRAIN SIZE**

1.5 mm

**TOOLS**

Apply with a stainless steel trowel designed specifically for stucco plaster finishes.

**MIXING**

Prior to utilizing ready-to-use masonry products from new buckets, it is highly recommended to mix product with a drill and masonry paddle to prep material for easier removal and application. Mixing masonry products with a drill properly mixes water content and heats up the material so it renders it more pliable.

**DRYING TIME**

Allow a drying time for the 1<sup>st</sup> coat of **BioCement GM 1.5** of 8 – 12 hours for any decorative finishes using potassium silicate or lime paints. Typical application is one (1)-coat.

Do not apply **BioCement GM 1.5** on the exterior if there is a risk of thunderstorms or showers during the 12-hour drying time needed for product to dry and carbonize correctly. If this risk could occur and the surface is essentially visibly dry and hard to the touch, wet surface quickly and evenly with water, starting from the bottom of the wall moving upward, without using force or sharp water directional spraying, and allow to dry. This process will help protect against flashing or water damages to the **BioCement GF** during the initial carbonization period in the case of rain and subsequent rapid cooling on semi-dried Marmorino.

It is advised not to apply mineral paints or plasters in direct sun with temperatures over 75°F – 80°F / 20°C – 24°C, using shaded sides of walls for applications. Extremely hot and dry climates may require the masonry base coat to be thoroughly dampened prior to application of 1<sup>st</sup> coat of plaster, or if

significant time has passed between 1<sup>st</sup> coat of base application and the initiating of the 2<sup>nd</sup> coat. It is advised to not apply any mineral paints or plasters in temperatures over 88°F / 31°C. Never allow mineral paints or plasters to be stored or placed, with or without lids, directly in the path of the sun. Always keep lids on as is possible during work cycles to prevent the absorption of air, as most mineral products will carbonize in the presence of CO<sub>2</sub>.

## CONSUMPTION/COVERAGE

Approximately 75 ft<sup>2</sup> / 7 mt<sup>2</sup> – 150 ft<sup>2</sup> / 14mt<sup>2</sup> depending on absorption and type of base. Determine exact consumption by performing a test on the surface to be treated.

## PACKAGING

Plastic buckets of 1, 5 and 15 liters.

## APPLICATION CYCLES ON DIFFERENT TYPES OF BASES

Make sure base is solid, dry and well cleaned, prepared with skill. It is recommended to observe the rule VOB DIN 18 363, Part C, paragraph 3.

### NEW SHEETROCK

Virgin sheetrock surfaces must be primed or consolidated prior to application of plaster anchor coat and lime plasters. Sheetrock types are varied and types can affect final results depending on type of sheetrock.

### STANDARD GRAY SHEETROCK ½”– ¾” FIRE RATED AND NON FIRE RATED

Sheetrock finish should be completed to a Level 3 – 4.

Apply one (1)-coat of **EcoForte Consolidator** diluted with water 200% and apply to all surfaces with a brush, roller or sprayer. Apply a 2<sup>nd</sup> coat of **EcoForte Consolidator** diluted with water 50% and re-apply only on sheetrock compound plaster wherever visible. Allow to dry for 8 – 12 hours.

Apply one (1)-coat of **BioGrip Primer Medium** diluted with water 40% and apply to all surfaces with a brush, roller or sprayer. Allow to dry for 8 – 12 hours.

Apply **BioCement GF** and **GM** as indicated in instructions above.

### BLUE BOARD OR PLASTER BASE SHEETROCK ½” – ¾” FIRE RATED AND NON FIRE RATED

Sheetrock finish should be completed to a Level 3 – 4.

Apply one (1)-coat of **BioDomus SuperFlat** diluted with water 25% and apply to all surfaces, with a brush, roller or sprayer. Allow to dry for 8 – 12 hours.

Apply one (1)-coat of **BioGrip Primer Medium** diluted with water 40% and

apply to all surfaces with a brush, roller or sprayer. Allow to dry for 8 – 12 hours.

Apply **BioCement GF** and **GM** as indicated in instructions above.

### GREEN BOARD SHEETROCK ½” - ¾” FIRE RATED AND NON FIRE RATED

Sheetrock finish should be completed to a Level 3 – 4.

Apply one (1)-coat of **BioDomus Matte** diluted with water 25% and apply to all surfaces, with a brush, roller or sprayer. Allow to dry for 8 – 12 hours.

Apply one (1)-coat of **BioGrip Primer Medium** diluted with water 40% and apply to all surfaces with a brush, roller or sprayer. Allow to dry for 8 – 12 hours.

Apply **BioCement GF** and **GM** as indicated in instructions above.

## OTHER RECOMMENDATIONS

### SCREED BOARD USE

For crown or baseboard installations which require true straight wall finishes where caulk or paint is not an option for finishes, it is recommended to install a screed board, both for crown and/or base, to extend 1/8" beyond surface of sheetrock, using a string to create a parallel line, and use wedges or shims to correct discrepancies on the finished stud wall, so that during the application of **BioCement GM 1.0**, the material can be used to correct any uneven surfaces resulting in dips or concave surfaces so as to produce a straight wall. The **BioCement GM 1.0** (typically 1/16" thick millage) can be used to fine tune discrepancy's, not applying more than 3/16" material at a single time, otherwise cracks may form during drying period. Several coats may be required to correct overly deep wall distortions. Apply **BioCement GM 1.5** for desired finish as indicated in instructions above, eliminating a 2<sup>nd</sup> coat of **GF 1.0**.

### TRIM & FLOOR SCHEDULES

It is suggested for all plaster finishes that where possible, window, door, and finish trim, should not be installed until application of 1<sup>st</sup> coat of **BioCement GF 1.0**. Allow product to dry for 8 – 12 hours before installing trim.

Prep, prime, paint or varnish trim with all coats with the exception of the last finish coat. Complete application of 2<sup>nd</sup> coat of **BioCement GM 1.5** and allow to dry for 24 – 48 hours before continuing applying final application of finishes for trim. Finished trim edges adjacent to plaster walls should be taped with an appropriate removable type to reduce damage to a minimum to trim finishes after completion of plaster applications.

Floor finishes should also be completed to the same condition as is typical for trim schedule indicated above. It is recommended that final coat of floor

varnish finish be applied after all plaster and paint schedules have been completed. Trim and floor applicators will have to perform due diligence when applying final finishes as all plaster finishes may be damaged if paints or varnishes are applied in error onto finished plaster walls.

## PAINTED SHEETROCK

Painted sheetrock must be primed with an anchor coat of **BioGrip Primer Medium** diluted with water at 40% and allow to dry for 8 – 12 hours. Any repairs or patches made with sheetrock compound or similar material must be consolidated with **EcoForte Consolidator** or **BioDomus SuperFlat** both diluted with water 25%, and apply to all surfaces with a brush, roller or sprayer. Allow to dry for 8 – 12 hours. It is advised to tape-off all trim areas before the application of any aggregated paints or plasters.

Apply one (1)-coat of **BioGrip Primer Medium** diluted with water 40% and apply to all surfaces with a brush, roller or sprayer. Allow to dry for 8 – 12 hours.

Apply **BioCement GF** and **GM** as indicated in instructions above.

## CEMENTITIOUS BOARD

Prepare butt joints with manufacturer's recommendations for tile backer boards as may apply using mesh tape and modified acrylic mortar or thin-set as directed.

Apply one (1)-coat of **BioGrip Primer Medium** diluted with water 40% and apply to all surfaces with a brush, roller or sprayer. Allow to dry for 8 – 12 hours.

Apply **BioCement GF** and **GM** as indicated in instructions above.

## CONCRETE FLOORS, SIDEWALKS OR DRIVEWAY

**BioCement GM 1.5** cannot be used on Portland Cement based floors, sidewalk or driveways.

## NEW CEMENT STUCCOS

### PORTLAND CEMENTS/REINFORCED CONCRETE

New portland cement should not be painted for about 21 – 28 days to ensure proper anchoring and drying. Apply 1 coat of **BioGrip Micro** or **Medium** diluted 30% with water, 4.5 liters water to one (1)-bucket 15-liters of product; allow to dry for at least 12 hours. Apply **BioCement GF** and **GM** as indicated in instructions above.

### NHL 3.5 & 5.0 CEMENTS

**NHL 3.5** and **NHL 5.0** natural cements do not require the use of a primer when applying **BioCement GF 1.0** and **GM 1.5**. Apply **BioCement GF** and **GM** as indicated in instructions above.

## DECAYING OR CRUMBLING STUCCOS OR POWDERY SURFACES

Chalking surfaces, which could prevent the proper anchoring of the cement coating must be removed and pressure washed. Apply **Potassium Silicate Concentrate**, diluted 100% with water (1:1) on all damaged surfaces, applying 2 – 3 coats in rapid succession and allow to dry for at least 12 hours. Allow to dry for at least 12 hours. Apply 1 coat of **BioGrip Micro** or **Medium** diluted 30% with water, 4.5 liters water to one (1)-bucket 15 liters of product; allow to dry for at least 12 hours. Apply **BioCement GF** and **GM** as indicated in instructions above.

## COATINGS WITH EFFLORESCENCE

Cement surfaces showing efflorescence should be removed with acid and thoroughly rinsed with water. Apply **Potassium Silicate Concentrate**, diluted 100% with water (1:1) on all damaged surfaces, applying 2 – 3 coats in rapid succession and allow to dry for at least 12 hours. Apply 1 coat of **BioGrip Micro** or **Medium** diluted 30% with water, 4.5 liters water to one (1)-bucket 15 liters of product; allow to dry for at least 12 hours. Apply **BioCement GF** and **GM** as indicated in instructions above.

For coatings on surfaces damaged by the saltpeter or efflorescence no guarantees can be provided.

## AGED CEMENT STUCCOS

When new stucco repairs are performed on older cement stuccos, apply **EcoForte Consolidator** diluted 50% with water (2:1), to older surfaces prior to applying new cement stucco. Dirty and/or contaminated surfaces should be cleaned and any attached algae removed manually or by mechanical means, i.e., with a high-pressure washer. Stucco damaged by algae or mold should be treated with **EcoDis**. Apply **EcoForte Consolidator** to any new stucco repairs with the same dilution. Apply 1 coat of **BioGrip Micro** or **Medium** diluted 30% with water, 4.5 liters water to one (1)-bucket 15 liters of product; allow to dry for at least 12 hours. Apply **BioCement GF** and **GM** as indicated in instructions above.

## STUCCO REPAIRS

See Aged Cement Stuccos above.

## STORAGE

Store in a cool, dry and protected from frost. Close the open containers with care. Store liquids only in plastic buckets.

## WARNING!

Do not apply any products in direct exposure to strong/hot sunlight, rain, mist, high humidity (> 80%), at dew-point formation, or in the presence of strong wind. Beware of the danger of frost overnight. If any products are applied by roller or sprayer, protect surrounding surfaces as necessary. Cover glass, ceramic, natural stone, brick, metal, wood, painted surfaces and glazed

tiles. Clean affected areas immediately with water. Prominent elements of the building (cornices, parapets, etc.) should be treated with skill, covering flashings, gutters, copper coatings, etc. ...

Do not work in air temperature lower than 13°C / 55°F and not above 31°C / 88°F. Clean work tools with water immediately after use. Keep out of reach of children. In case of contact with eyes and skin, wash immediately with plenty of water. In cases of consumption, consult a Doctor or call the CDC Poison Center (see Safety Data Sheet).

**Protect eyes from splashes of lime paint or plaster:** In case of contact with eyes, wash immediately with plenty of water and/or a saline solution. Always keep a good supply of saline solution for eyes and use abundant amounts to wash eyes. Do not rub eyelids or physically touch your cornea or surrounding area prior to and during washing. Consult a Doctor immediately in cases of irritation or severe burning sensation. In cases of consumption, consult a Doctor or call the CDC Poison Center (see Safety Data Sheet). Keep out of reach of children.

## **WATER CONTAMINATION HAZARD**

### **CLASS 1**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of information required by the CPR, and it is classified as a non-hazardous material.

## **PRODUCT CONTAMINATION HAZARD**

**CODE CER / NORMATIVE EAC / Decision commuted by the Commission n. 2000/532/CE**

**NOT DANGEROUS** The directive 75/442/CEE, 08 01 production, disposal, formulation, supply, use, and removal of paints and varnishes: 10 13 04 for removal of paints and varnishes; 10 13 04 disposal of lime and hydrated lime products.

## **DISPOSAL**

Do not enter product in its original concentration into drains or open waters. Do not store at public waste disposal sites. In case of conduction into adapted biological purification plants no disturbances need be expected. The preparation has been estimated by conventional method (calculated-procedure) of EG directive 1999/45/EG) and is classified as non-hazardous for the environment.

Dispose according to local regulations. Empty cans should be disposed of according to local regulations; plastic buckets are 100% PBS, NO. 5, approved for food storage; 100% recyclable if cleaned thoroughly prior to recycling.

## **ADDITIONAL INFORMATION**

This Technical Sheet lists data collected on the basis of technique and experience. Given the multiplicity of use of the product they cannot be binding and the user cannot refrain from using common sense and experience for the individual case. This information shall not constitute



any legal obligation and no obligation from the seller or point of purchase, or any agreements inferred by employees who sale this product. Insurance or guarantees issued by our employees or employees should always be confirmed separately in writing. Any information about product adaptability and use of the product, must be verified by user prior to purchase. Check the exact consumption of product for the surface where product may be applied to determine amount of products needed. **The user must verify the color matching before starting work.**

## **MANUFACTURER**

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