TECHNICAL DATA SHEET

MiraCLAY® GM

GeoMembrane Sodium Bentonite Waterproofing

Physical Property	Typical Value	Test Method
Thickness	.25 in	-
Bentonite Mass/ Unit Area	0.893 lbs/ft² MARV (4.34 kg/m² MARV)	ASTM D5993
Nonwoven	6.0 oz/yd² MARV (200 g / m² MARV)	ASTM D5261
Woven	3.1 oz/yd² MARV (105 g / m² MARV)	ASTM D5261
Swell Index	24 ml (2g) min	ASTM D5890
Moisture Content	12 % max	ASTM D4643
Fluid Loss	18 ml max	ASTM D5891
Tensile Strength[2]	30 lb/in MARV (5 kN/m MARV)	ASTM D6768
Peel Strength	3.5 lb/in MARV (610 N/m MARV)	ASTM D6496
Permeability[3]	5 x 10^{-9} m/s max	ASTM D5887
Index Flux[3]	1 x 10^{-8} m3/m2/s max	ASTM D5887
Internal Shear Strength[4]	500 psf (24 kPa)	ASTM D6243
Elongation[5]	150 m³/m²/s max%	ASTM D4632
Low Temperature Flexibility	Unaffected @-250°F (-320°C)	ASTM D1970
Hydrostatic Head Pressure	228 ft. (59.49 m)	ASTM D751
Adhesion to Concrete	17.7 lb/in. (8 kg/cm)	ASTM D903

1. Minimum Average Roll Value.
2. Tested in machine direction.
3. Deaired, deionized water @ 5 psi (24.5 kPa) maximum effective confining stress and 2 psi (13.8 kPa) head pressure.
4. Typical peak value for specimen hydrated for 24 hours and sheared under a 200 psf (9.5 kPa) normal stress.
5. Measure at maximum peak, in the weakest principle direction.

Description

Henry MiraCLAY® GM Bentonite CLAY Waterproofing Membrane with a GeoMembrane Liner is a needle-punched, thermally reinforced composite comprised of a uniform layer of sodium bentonite clay sandwiched between a puncture-resistant, non-woven geotextile and a slit film woven geotextile. Needle-punched fibers are then thermally fused to the woven geotextile and an HDPE film is applied to the woven surface for lower hydraulic conductivity.

MiraCLAY GM is designed for waterproofing below-grade structural slabs as well as construction methods incorporating lagging, concrete caisson or shotcrete retention walls. **MiraCLAY GM** is also very effective in rehab waterproofing and zero clearance property line construction.

Features & Benefits

- The **MiraCLAY GM** waterproofing membrane has the ability to heal itself if ripped or punctured.
- In a hydrated state, the bentonite clay has tremendous impermeability and excellent resistance to chemicals (i.e. acids, bases and hydrocarbons).
- Has the ability to expand and seal minor cracks in concrete up to 1⁄16" in width.
- Polyethylene membrane attached for added waterproofing protection.
- Tested and certified by NSF*.

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Application

Underslab Applications:

MiraCLAY GM is designed for use under reinforced concrete slabs 4" (100 mm) thick or greater on a compacted earth/gravel substrate. If installed over a mud slab, **MiraCLAY GM** requires a minimum 5" (150 mm) thick reinforced concrete slab.

When hydrostatic conditions exist, **MiraCLAY GM** should be installed under footings and grade beams as shown in **MiraCLAY** details.

Substrate Preparation: NOTE: Do not begin construction in work areas where there is standing water or in situations which may cause the **MiraCLAY GM** to prematurely hydrate.

Before installing **MiraCLAY GM**, the substrate must be properly prepared. Substrate may be concrete, earth, sand, pea gravel or crushed stone. Earth and sand substrates should be compacted to a minimum 85% Modified Proctor density. Crushed stone should not be larger than ¾" (18 mm) in size. Substrate should be smooth and uniform without sharp projections or pockets.

Complete all required elevator pit, sump pit and grade beam and piling work before installing **MiraCLAY GM** under main slab area.

Installation: Install **MiraCLAY GM** on conventional concrete wall with the non-woven geotextile fabric facing the structural concrete substrate. On lagging walls and mudslab applications, install **MiraCLAY GM** with the non- woven geotextile fabric facing the structural concrete placement. Overlap adjoining edges a minimum of 4" (100 mm), stagger sheet ends a minimum of 24" (600 mm), and nail or staple edges together as required to prevent any displacement during concrete placement**. MiraCLAY Granules** may also be placed in the seam for additional waterproofing performance.

When the slab is poured in sections, **MiraCLAY GM** should extend a minimum 12" (300 mm) beyond the slab edge. When the installation reaches the outer edge of the slab, continue **MiraCLAY GM** up and out of the form a minimum of 12" (300 mm). At the corner, **MiraCLAY GM** should remain in contact with the substrate and inside the surface of the concrete form. When the form is removed, the **MiraCLAY GM** outside the form should be positioned and fastened onto the footing or vertical wall. Overlay the **MiraCLAY GM** a minimum of 6" (150 mm) with the succeeding vertical waterproofing membrane.

At property line retaining walls, such as soldier pile or lagging, continue the underslab **MiraCLAY GM** application up the retaining wall a minimum 12" (300 mm) above the top edge of the slab or footing and secure. Overlap the vertical **MiraCLAY GM** waterproofing membrane by a minimum of 6" (150 mm) or a minimum of 12" (300 mm) under hydrostatic head conditions.

Property Line or Lagging:

Substrate Preparation: Gaps between the wood lagging greater than 1" (25 mm) must be filled with cementitious grout. In areas with large gaps (1" to 5" / 25 mm to 125 mm) between lagging, install plywood to provide a uniform substrate. Where drainage issues may arise, install **MiraDRAIN** to provide a uniform substrate as well as to facilitate drainage.

Installation: Install **MiraCLAY GM** with the non-woven side facing the installer. Secure the **MiraCLAY GM** into position with fasteners and 1" (25 mm) washers. Use the appropriate fasteners for the type of substrate used to receive the **MiraCLAY GM**. Install succeeding courses of **MiraCLAY GM** by overlapping the previous course a minimum of 4" (100 mm). Stagger the seams a minimum of 24" (600 mm). Install in shingle fashion so that the upper roll of **MiraCLAY GM** is overlaps the lower roll. Fasten membrane once every 18" (45 cm) on seams or as required to prevent blousing.

At grade line, after the wall has been poured, terminate **MiraCLAY GM** with a rigid termination bar or fasten 12" (300 mm) on center. Embed the top edge of **MiraCLAY GM** and termination bar with a thick bead of **MiraCLAY Sealant** 2" (50 mm) wide by ½" (12 mm) thick.

Standard Foundation Walls:

Substrate Preparation: The substrate must be properly prepared to receive the **MiraCLAY GM** waterproofing membrane. All honeycombs, form-tie cavities and indentations should be filled with **MiraCLAY Sealant** or filled with latex Portland Cement. Substrate must be smooth and uniform, removing any protrusions over ½" (12 mm) from the surface. Footings must be free of soil, rocks or debris to provide a suitable substrate to receive the **MiraCLAY GM** waterproofing membrane.

Installation: The **MiraCLAY GM** waterproofing membrane should be installed with the non-woven side facing the applicator. Create a cant at any vertical to horizontal transition by applying a 1½" (39 mm) to 2" (50 mm) of **MiraCLAY Granules** along that junction. At the base of the foundation wall where the vertical wall meets the horizontal footing, install **MiraCLAY GM** in a horizontal manner extending out onto the footing a minimum of 12" (300 mm). Fasten the **MiraCLAY GM** in place with concrete fasteners and 1" (25 mm) washers. Install succeeding courses of **MiraCLAY GM** by overlapping the previous course a minimum of 4" (100 mm). Stagger the seams a minimum of 12" (300 mm). Install in shingle fashion so that the upper roll of **MiraCLAY GM** overlaps the lower roll. Fasten membrane once every 18" (45 cm) on seams or as required to prevent blousing. At grade line, terminate **MiraCLAY GM** with a rigid termination bar or fasten 12" (300 mm) on center. Embed the top edge of **MiraCLAY GM** and termination bar with a thick bead of **MiraCLAY Sealant** 2" (50 mm) wide by ½" (12 mm) thick.

Product Use: Many factors beyond Henry's control and uniquely within user's knowledge and control can affect the use and performance of a product in a particular application. Given the variety of factors that can affect the use and performance of a Henry product, user is solely responsible for evaluating the Henry product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warnings and Hazards

- **MiraCLAY** membranes should remain dry before and during installation.
- Improper storage could lead to product deterioration.
- Not for use on CMU foundations.

Detail Requirements

For standard installation details, follow the **MiraCLAY** details drawings. For non-standard installation instructions contact your local Henry representative.

Packaging

Square Footage: 70 ft (21.34 m²)
Dimensions: 5 ft x 14 ft (1.52 m x 4.27 m)

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