



TECHNICAL DATA SHEET
MiraCLAY®

Nonwoven Polypropylene Fabric, Sodium Bentonite Clay

Physical Property	Typical Value	Test Method
Thickness	0.25 in	-
Bentonite Mass/Unit Area	0.893 lbs/ft ² MARV (0.123) (kg/m ² MARV)	ASTM D5993
Nonwoven	6.0 (200) oz/yd ² MARV1	ASTM D5261
Woven	3.1 (105) (g / m ² MARV)	ASTM D5261
Swell Index	24 ml (2g) min	ASTM D5890
Moisture Content	12 % max	ASTM D4643
Fluid Loss	18 ml max	ASTM D5891
Puncture Resistance	450 N	ASTM D4833
Tensile Strength ²	30 lb/in MARV (5 kN/m MARV)	ASTM D6768
Peel Strength	3.5 lbs/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 m ³ /m ² /s max	ASTM D5887
Internal Shear Strength ⁴	500 psf (24 kPa)	ASTM D6243
Elongation ⁵	150 %	ASTM D4632
Low Temperature Flexibility	Unaffected @ -25°F (-32°C)	ASTM D1970
Hydrostatic Head Pressure	228 ft (69.49 meter)	ASTM D751
Adhesion to Concrete	17.7 lb/in (8 kg/cm)	ASTM D903

¹Minimum Average Roll Value.

²Tested in machine direction.

³Deaired, deionized water @ 5 psi (24.5 kPa) maximum effective confining stress and 2 psi (13.8 kPa) head pressure.

⁴Typical peak value for specimen hydrated for 24 hours and sheared under a 200 psf (9.5 kPa) normal stress.

⁵Measure at maximum peak, in the weakest principle direction.

Description

Henry MiraCLAY® Bentonite Clay Waterproofing Membrane features a layer of sodium bentonite clay sandwiched between a puncture-resistant, nonwoven polypropylene fabric and a high-tensile strength woven polypropylene fabric, then needle-punched together with durable denier yarns. These fibers are then thermally fused to the polypropylene in a proprietary Infrabond™ technique, locking the sodium bentonite into place.

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

Features & Benefits

- Self-healing 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)
- Expands and seals cracks in concrete up to 1/16" in width

Application

Underslab Applications:

MiraCLAY 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** requires a minimum 5" (150 mm) thick reinforced concrete slab. For contaminated site water conditions, as determined by a site water analysis, **MiraCLAY EF** should be used. When hydrostatic conditions exist, **MiraCLAY** 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** to prematurely hydrate.

Before installing **MiraCLAY**, 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. Honeycombing, voids and aggregate pockets exceeding 1" in diameter or have a depth greater than ¾" should be filled with a non-shrink cementitious grout. Fill tie-rod holes with a non-shrink cementitious grout. 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** under main slab area.

Installation: Install **MiraCLAY** over the properly prepared substrate with the non-woven geotextile side up. 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** should extend a minimum 12" (300 mm) beyond the slab edge. When the installation reaches the outer edge of the slab, continue **MiraCLAY** up and out of the form a minimum of 12" (300 mm). At the corner, **MiraCLAY** should remain in contact with the substrate and inside the surface of the concrete form. When the form is removed, the **MiraCLAY** outside the form should be positioned and fastened onto the footing or vertical wall. Overlay the **MiraCLAY** 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** 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** 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** with the white non-woven side facing the installer. Secure the **MiraCLAY** into position with fasteners and 1" (25 mm) washers. Use the appropriate fasteners for the type of substrate used to receive the **MiraCLAY**. Install succeeding courses of **MiraCLAY** 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** overlaps the lower roll. Fasten membrane once every 18" (45 cm) on seams or as required to prevent blousing.

Extend waterproofing membrane to 6" below grade and fasten membrane to the substrate to maintain constant compression using a 1/8" x 1" (3 x 25 mm) minimum termination bar. Embed the top edge of **MiraCLAY** 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** 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** waterproofing membrane.

Installation: The **MiraCLAY** waterproofing membrane should be installed with the white 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** or **MiraCLAY Sealant** along that junction. At the base of the foundation wall where the vertical wall meets the horizontal footing, install **MiraCLAY** in a horizontal manner extending out onto the footing a minimum of 12" (300 mm). Fasten the **MiraCLAY** in place with concrete fasteners and 1" (25 mm) washers. Install succeeding courses of **MiraCLAY** 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** overlaps the lower roll. Fasten membrane once every 18" (45 cm) to 3' (90 cm) on seams or as required to prevent blousing. At grade line, terminate **MiraCLAY** with a rigid termination bar or fasten 12" (300 mm) on center. Embed the top edge of **MiraCLAY** and termination bar with a thick bead of **MiraCLAY Sealant 2"** (50 mm) wide by ½" (12 mm) thick. Backfill must be compactible soils free of construction debris and must be uniformly compacted to a minimum 85% Modified Proctor on each lift.

Detail Requirements

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

Recommendations

Henry recommends the use of **MiraDRAIN**, a geocomposite sheet drain, to facilitate the removal of water away from the structure. The **MiraCLAY EF** and **MiraDRAIN** waterproofing and drainage system provides maximum protection against water penetration.

Packaging

Available in 5 ft x 14 ft (70 sq ft) rolls

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