



TECHNICAL DATA SHEET MiraCLAY® EF

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 |
| 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® EF has a uniform layer of sodium bentonite clay that is sandwiched between a durable puncture-resistant nonwoven polypropylene fabric and a high-tensile strength woven polypropylene fabric and then needle punched together with thousands of high-strength denier yarns. These fibers are then thermally fused to the polypropylene in a proprietary Infrabond™ procedure that locks the sodium bentonite into place.

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

Features & Benefits

- **MiraCLAY EF** is used where ground water is contaminated with either salt, chemicals or other foreign substances, as determined by a site water analysis, which can keep **MiraCLAY** from hydrating.
- 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.

Application

Underslab Applications:

MiraCLAY EF 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 EF** requires a minimum 5" (150 mm) thick reinforced concrete slab.

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

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

Before installing **MiraCLAY EF**, 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 3/4" (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 EF** under main slab area.

Installation: Install **MiraCLAY EF** 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 EF** should extend a minimum 12" (300 mm) beyond the slab edge. When the installation reaches the outer edge of the slab, continue **MiraCLAY EF** up and out of the form a minimum of 12" (300 mm). At the corner, **MiraCLAY EF** should remain in contact with the substrate and inside the surface of the concrete form. When the form is removed, the **MiraCLAY EF** outside the form should be positioned and fastened onto the footing or vertical wall. Overlay the **MiraCLAY EF** 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 EF** 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 EF** 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 EF** with the non-woven side facing the installer. Secure the **MiraCLAY EF** into position with fasteners and 1" (25 mm) washers. Use the appropriate fasteners for the type of substrate used to receive the **MiraCLAY EF**. Install succeeding courses of **MiraCLAY EF** 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 EF** 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 EF** with a rigid termination bar or fasten 12" (300 mm) on center. Embed the top edge of **MiraCLAY EF** and termination bar with a thick bead of **MiraCLAY Sealant 2"** (50 mm) wide by 1/2" (12 mm) thick.

Standard Foundation Walls:

Substrate Preparation: The substrate must be properly prepared to receive the **MiraCLAY EF** 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 1/2" (12 mm) from the surface. Footings must be free of soil, rocks or debris to provide a suitable substrate to receive the **MiraCLAY EF** waterproofing membrane.

Installation: The **MiraCLAY EF** 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 1 1/2" (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 EF** in a horizontal manner extending out onto the footing a minimum of 12" (300 mm). Fasten the **MiraCLAY EF** in place with concrete fasteners and 1" (25 mm) washers. Install succeeding courses of **MiraCLAY EF** by overlapping the previous course a minimum of 4" (100 mm). Stagger the seams a minimum of 24" (61 cm). Install in shingle fashion so that the upper roll of **MiraCLAY EF** is overlaps the lower roll. Fasten membrane once every 18" (45

cm) on seams or as required to prevent blousing. At grade line, terminate **MiraCLAY EF** with a rigid termination bar or fasten 12" (300 mm) on center. Embed the top edge of **MiraCLAY EF** and termination bar with a thick bead of **MiraCLAY Sealant 2"** (50 mm) wide by ½" (12 mm) thick.

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

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.

For more information, visit www.henry.com or for technical assistance call us at 800-486-1278. For more information on Henry's® product warranty and liability disclaimer please visit www.henry.com/warranty. Refer to the Safety Data Sheet prior to using this product. The Safety Data Sheet is available at www.henry.com or by emailing Henry® Product Support at productsupport@henry.com or by calling 800-486-1278.

Henry is a registered trademark of Henry Company.

The technical and application information herein is based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use. Henry® Company data sheets are updated on a regular basis; it is the user's responsibility to obtain and to confirm the most recent version. Information contained in this data sheet may