

Mapeproof™ Bentonite Clay Below-Grade Waterproofing System

Specification Manual



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MAPEI®

ADHESIVES • SEALANTS • CHEMICAL PRODUCTS FOR BUILDING

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INTRODUCTION

Originally established in 1937, today MAPEI is a privately owned global corporation headquartered in Milan, Italy, with 71 subsidiaries including 68 plants in 31 countries. The company specializes in manufacturing chemical products for building, including waterproofing products, specialty mortars and admixtures for concrete, products for the restoration of historic buildings, and special decorative and protective coatings for concrete surfaces. In addition, MAPEI is the world leader in the manufacturing of mortars, grouts, adhesives and complementary products for the installation of all types of floor and wall coverings. MAPEI Corporation, the division responsible for supporting the North American markets, is based in Deerfield Beach, Florida and employs over 1,000 team members; ranging from Manufacturing and R&D to Technical Support and Sales.

SUPERIOR PRODUCTS

FULL-BREADTH PRODUCT LINES

MAPEI produces the most innovative products for the construction market. Around 1,500 products (adhesives, sealants, mortars, admixtures, latex, etc.) are manufactured in MAPEI's plants, which produce the world's most complete range of building products. Diversified, high-quality chemical products – from powdered adhesives, to liquid and paste products, to polymers – are created with the aim of meeting the requirements of more than 60,000 customers around the world.

 **BELOW-GRADE WATERPROOFING SYSTEMS**

 **TILE & STONE INSTALLATION SYSTEMS**

 **FLOOR COVERING INSTALLATION SYSTEMS**

 **PRODUCTS FOR WOOD FLOORING**

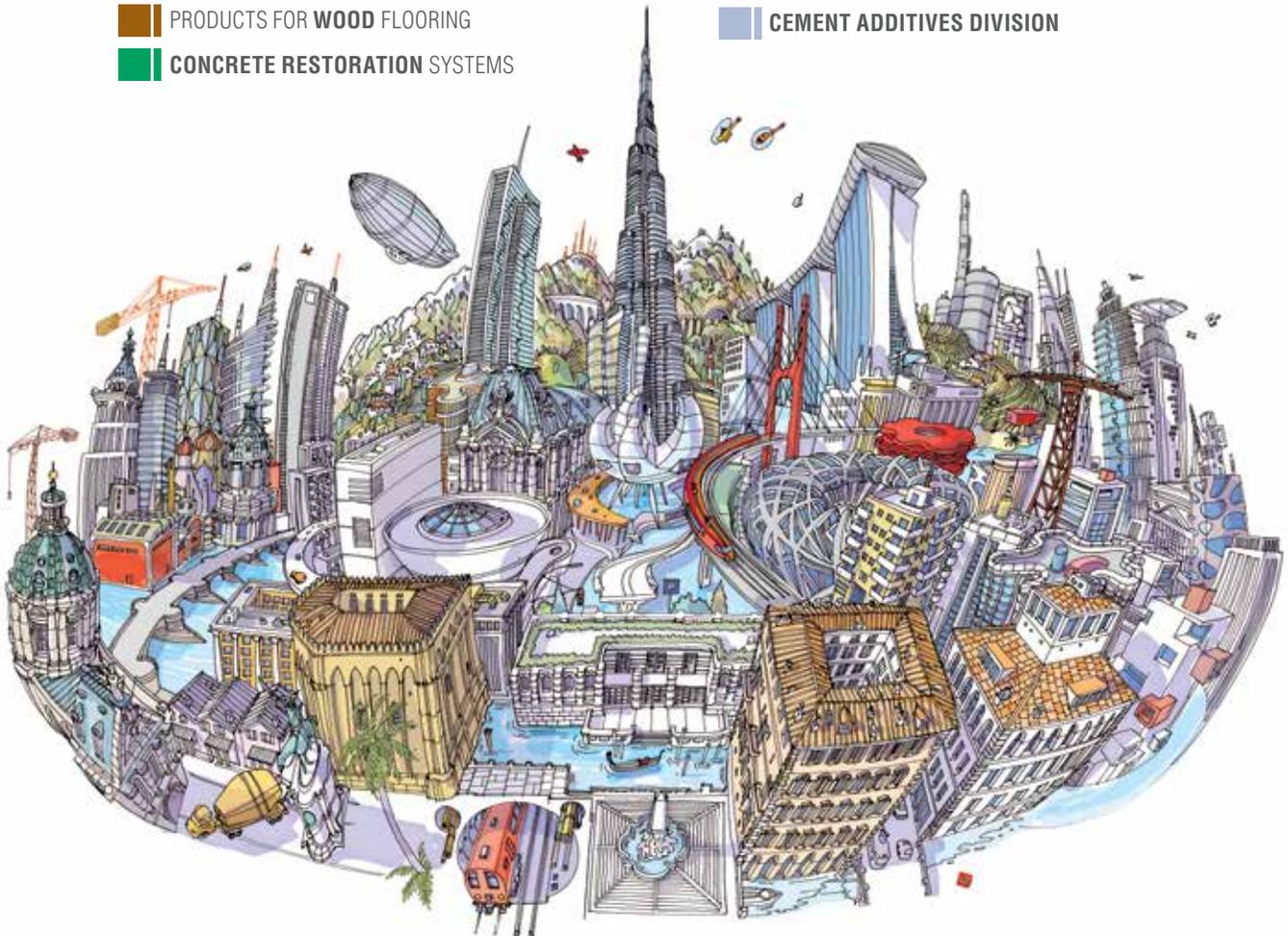
 **CONCRETE RESTORATION SYSTEMS**

 **PRODUCTS FOR STRUCTURAL STRENGTHENING**

 **ADMIXTURES FOR CONCRETE**

 **PRODUCTS FOR UNDERGROUND CONSTRUCTION**

 **CEMENT ADDITIVES DIVISION**



SUPERIOR-QUALITY PRODUCTS

MAPEI is an ISO 9001-2000 certified company. Our products are produced according to exacting standards, strictly adhering to process and procedural guidelines with documented compliance. This rigid production format is vigilantly followed to ensure that every product is produced uniformly from batch to batch.

INNOVATIVE RESEARCH & DEVELOPMENT

Worldwide, more than 12% of MAPEI employees are involved in the development of new technologies and product innovations, keeping our customers at the forefront of the industry. The company has taken the additional initiative of focusing its R&D efforts on environmentally sustainable solutions.

To remain on the cutting edge of innovation, MAPEI reinvests 5% of its annual revenues into researching and developing new products and technologies; in particular, 70% of its R&D efforts are directed to develop eco-sustainable and environmentally friendly products, which meet LEED requirements.



PROFESSIONAL SUPPORT NETWORK

TECHNICAL EXPERTISE

An in-house Technical Services Call Center responds to customers' telephone inquiries with answers to installation challenges in real time. In addition, MAPEI can offer field support for job start-ups, product training and on-site problem resolution.

CUSTOMER SERVICE PLUS

MAPEI's standards for customer service are best-in-class. Our leadership includes such service innovations as:

- Customer-friendly, efficient processes
- One-call resolution
- Employee commitment to effective customer dialog

BEST-BACKEDSM WARRANTY PROGRAM

To bring it all together, MAPEI complements the industry's best products with simple, easy-to-understand requirements for a variety of warranty options.



BENTONITE CLAY WATERPROOFING MEMBRANES

Mapeproof™ HW and Mapeproof SW **Sodium Bentonite Waterproofing Membranes**

MAPEI's *Mapeproof* sodium bentonite waterproofing membranes have been proven, worldwide, to be the most consistent and reliable products of their kind. Certified as manufactured in accordance with ISO 9001, both *Mapeproof HW* and *Mapeproof SW* are constructed using a layer of woven and nonwoven, puncture- and tear-resistant polypropylene fabrics. Encased within these fabrics is high-swelling, self-sealing sodium bentonite, loaded at an industry leading rate of 1.1 lbs. per sq. ft. (5,3 kg per m²), minimum. The process by which the sodium bentonite is encased within these fabrics ensures that, regardless of hydration cycles and/or the geometric plane in which it is installed, the membrane will perform as designed.

When hydrated, *Mapeproof* membranes form a monolithic membrane with very low permeability, protecting underground structures from water ingress. Designed for sites where contaminated or salt groundwater is present, *Mapeproof SW* also contains a proprietary polymer to ensure that the membrane performs as designed when hydrated.

Features and benefits:

- Can be installed over damp or green concrete
- Self-healing if punctured
- Creates a strong mechanical bond to poured concrete
- Can be installed regardless of ambient or surface temperatures
- VOC-free
- *Mapeproof* membranes are not affected if the level of the water table rises and falls.
- The needle-punched pattern in the geotextile fabrics guarantees that the sodium bentonite is held firm and stable, even when applied vertically.

Applications:

- Waterproofing for new and rehabilitation projects
- Below-grade vertical and horizontal foundation structures
- Cast-in-place concrete applications, including backfilled concrete walls
- Underground tunnels with earth-covered roofs
- Below concrete slabs and elevator pits
- Blindside applications, including soldier piles, lagging, steel sheet piling, secant piles, shotcrete and stabilized soil-retention walls

Mapeproof waterproofing system includes:

- *Mapeproof HW* and *Mapeproof SW* waterproofing membranes
- *Mapeproof Sealant*
- *Mapeproof Granules*
- *Idrostop™ 25* waterstop
- *Mapedrain™* drainage composites



Mapeproof warranties:

MAPEI offers a variety of product and system warranty programs. Contact your local MAPEI representative for warranty information on your project.

For more information on the *Mapeproof* waterproofing system, including installation instructions and CAD details, please visit www.mapei.com.

PREFABRICATED DRAINAGE COMPOSITES

Mapedrain™ and fittings

Drainage Composites, Foundation Perimeter Drain and Fittings

Two critical components of virtually all waterproofing systems are the abilities to protect the waterproofing membrane and channel water away from the structure. The proper drainage composite can protect the waterproofing membrane from accidental punctures that may occur, especially when backfilling. It also relieves hydrostatic pressure over the life of the waterproofing system. To meet the needs of various construction applications, MAPEI offers seven distinct drainage composites in addition to four drain fittings, all designed to ensure proper building drainage.

Product construction:

MAPEI's *Mapedrain* drainage composites are composed of a three-dimensional, polypropylene core, which has significantly greater chemical resistance than other products on the market that use polystyrene or other polymeric materials. Each core has a polypropylene geotextile fabric, either woven or nonwoven (depending upon application requirements) heat-welded to the top of the dimples; this fabric retains soil/concrete and filters out any debris that could clog the water channels created by the three-dimensional core. Because filter fabrics are heat-welded to the core, a process far superior to "gluing" them, they have a greater ability to stay in place during backfill or overburden placement.

Mapedrain™ 10

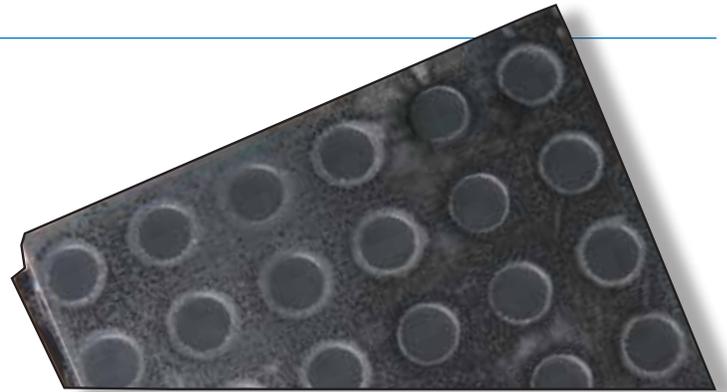
Mapedrain 10 is a basic, single-sided drainage composite for low-depth (< 10 ft. [3.05 m]) foundation walls and is typically used in residential and light commercial construction.

Compressive strength	11,000 psf (527 kN/m ²)
Maximum flow rate	18 g/min/ft (223 L/min/m)
Geotextile fabric	Nonwoven
Core thickness	0.40" (10,16 mm)

Mapedrain™ 20

Mapedrain 20 is the standard for high-flow, high-compressive-strength, vertical, single-sided below-grade drainage.

Compressive strength	15,000 psf (718 kN/m ²)
Maximum flow rate	21 g/min/ft (260 L/min/m)
Geotextile fabric	Nonwoven
Core thickness	0.40" (10,16 mm)



Mapedrain™ 25

Mapedrain 25 provides the same high level of performance as *Mapedrain 20*, with the addition of a backer film to prevent the potential for "die cutting" of a waterproofing membrane that is installed behind the drainage composite.

Compressive strength	15,000 psf (718 kN/m ²)
Maximum flow rate	21 g/min/ft (260 L/min/m)
Geotextile fabric	Nonwoven
Core thickness	0.40" (10,16 mm)

Mapedrain™ 30

Mapedrain 30 is designed for horizontal applications that demand very high compressive strength and flow rates. Its woven filter fabric allows concrete to be poured directly on top of the drainage composite.

Compressive strength	21,000 psf (1 005 kN/m ²)
Maximum flow rate	23 g/min/ft (286 L/min/m)
Geotextile fabric	Woven
Core thickness	0.40" (10,16 mm)

Mapedrain™ 40

Mapedrain 40 provides the same high level of performance as *Mapedrain 30*, but can be used in both vertical and horizontal applications. Additionally, the nonwoven filter fabric used in the construction of *Mapedrain 40* is unmatched in its ability to prevent particulates from entering, and potentially clogging, the drainage channel.

Compressive strength	21,000 psf (1 005 kN/m ²)
Maximum flow rate	23 g/min/ft (286 L/min/m)
Geotextile fabric	Nonwoven
Core thickness	0.40" (10,16 mm)



Mapedrain™ 50

Mapedrain 50 provides the ultimate in compressive strength and flow rate. Like Mapedrain 30, Mapedrain 50 is designed for horizontal applications and utilizes a woven filter fabric, so that concrete can be poured directly on top of the drainage composite. It is typically used in applications where the forces of heavy vehicular traffic will be encountered.

Compressive strength	33,000 psf (1 580 kN/m ²)
Maximum flow rate	24 g/min/ft (298 L/min/m)
Geotextile fabric	Woven
Core thickness	0.40" (10,16 mm)

Mapedrain™ TD Drainage Composite

Mapedrain TD Drainage Composite is typically used to replace the traditional "French drain" foundation drainage system. Mapedrain TD Drainage Composite is used to collect high volumes of water, most commonly around footings where wall drainage composites discharge their water. It provides two-sided drainage with a nonwoven filter fabric.

Compressive strength	9,500 psf (455 kN/m ²)
Maximum flow rate	30 g/min/ft (372 L/min/m)
Geotextile fabric	Nonwoven
Core thickness	1" (2,5 mm)

Mapedrain™ TD Fittings

Mapedrain TD Fittings aid in controlling the water discharged from a Mapedrain system, which includes Mapedrain TD Drainage Composite as the "footing drain." MAPEI offers four fittings designed to direct and release the cumulative water being discharged from the system:

- Mapedrain TD splice fitting
- Mapedrain TD corner fitting
- Mapedrain TD side outlet fitting
- Mapedrain TD end outlet fitting

Mapedrain warranties:

MAPEI offers a variety of product and system warranty programs. Contact your local MAPEI representative for warranty information on your project.

For more information on the Mapedrain waterproofing system, including installation instructions and CAD details, please visit www.mapei.com.



BENTONITE WATERPROOFING ACCESSORIES

Waterproofing is a system, not a product. As such, when designing and installing a waterproofing system for a structure, one must consider the performance and quality of the primary waterproofing membrane as well as of the accessory products that support it. Often, these attributes affect the most critical areas, such as penetrations, terminations and transitions.

MAPEI draws on its history of 75+ years of producing concrete system accessories that are not only installer-friendly, thus increasing the likelihood of a successful installation, but that will also stand up to the test of time.

For more information on any of these products, including Technical Data Sheets, CAD details and more, please visit www.mapei.com.

DETAILING ACCESSORIES

Mapectex™ P1

One-Component, Nonsag, Elastomeric Polyurethane Sealant

Mapectex P1 is a high-performance, one-component, elastomeric, moisture-cured, polyurethane sealant and adhesive. *Mapectex P1* offers excellent adhesion to most surfaces, superior gunning/tooling and excellent flexibility for moving joints.

Mapectex™ 810

Extruded Polystyrene Fanfold Protection Board

Mapectex 810 is a rigid, lightweight, extruded polystyrene (XPS), fanfold protection board designed to protect MAPEI waterproofing membranes on vertical below-grade foundations during the placement of backfill. *Mapectex 810* can also be used in planters, as a vertical protection course for MAPEI waterproofing membranes.

Idrostop™ 25

Hydro-Expansive Waterstop

Idrostop 25 is an expandable, flexible waterstop with an acrylic polymer base that is used to create watertight concrete joints. *Idrostop 25* is also used as a detailing accessory in conjunction with all MAPEI waterproofing membrane systems. When *Idrostop 25* comes into contact with moisture, it expands to fill voids and form a positive seal with the concrete. *Idrostop 25* can be used in standard applications and where contaminated or salt groundwater may be encountered.

Mapeproof™ Granules

Sodium Bentonite Granules

Mapeproof Granules are sodium bentonite clay granules used as a detailing accessory in conjunction with *Mapeproof HW* and *Mapeproof SW* waterproofing membranes. When *Mapeproof Granules* come into contact with moisture, they form into a dense, low-permeable gel that, when combined with *Mapeproof HW*

or *Mapeproof SW* waterproofing membrane, produces a seamless waterproofing system.

Mapeproof™ Sealant

Detailing Sealant for Mapeproof HW and Mapeproof SW

Mapeproof Sealant is a trowel-grade sealant, composed of sodium bentonite clay and specially designed polymers, that is used as a detailing accessory in conjunction with *Mapeproof HW* and *Mapeproof SW* waterproofing membranes. When *Mapeproof Sealant* comes into contact with moisture, it swells to seal against water intrusion. *Mapeproof Sealant* is easily applied and bonds to most substrates. When used with *Mapeproof HW* or *Mapeproof SW*, *Mapeproof Sealant* forms a seamless waterproofing system.



Mapeband™ TPE

Flexible Waterproofing Tape for Moving Joints

Mapeband TPE is a professional-grade, highly durable and flexible band tape used to waterproof expansion and other dynamic joints subject to movement of 2" to 4" (5 to 10 cm). TPE, an acronym for "elastomeric thermoplastic polyolefin," represents a group of polyolefins that combine the best properties of thermoplastic polymers and synthetic elastomer technology. Measuring 47.2 mils thick and reinforced sidelong with polyester non-woven fabric, *Mapeband TPE* tape must be bonded in place with *Planibond® AE*. *Mapeband TPE* is offered in two versions: *Mapeband TPE 170* measures 6.7" (17 cm) wide, while *Mapeband TPE 325* measures 12.8" (32,5 cm) wide.

Planibond® AE

High-Strength, Nonsag, Epoxy Anchoring Gel

Planibond AE is a high-strength, two-part, nonsag, epoxy anchoring gel designed for a wide variety of bonding and repair applications. *Planibond AE* is used to bond *Mapeband™ TPE* in place, but can also be used to anchor bolts, dowels and pins in concrete or masonry.

SURFACE-PREPARATION PRODUCTS

For any waterproofing system to function properly, it must be attached to a substrate that is structurally sound, crack-free with a surface profile appropriate for the waterproofing system being employed. While basic surface preparation, such as the removal of laitance and mortar joints being struck flush, remains essential, MAPEI offers the following products for when additional surface preparation is required.

For more information on any of these products, including Technical Data Sheets, CAD Details and more, please visit www.mapei.com.

Planiseal® 88

Cement-Based Dampproofing Coating

Planiseal 88 is a one-component, polymer-modified, cementitious dampproofing coating. It can be used on horizontal, vertical and overhead surfaces such as walls, retaining walls, planters, beams and other applications to provide an appropriate surface to receive a waterproofing membrane. It can be mixed with potable water or, for superior bonding performance, *Planicrete® AC* diluted with water.

Planitop® X

One-Component, Fast-Setting, Fiber-Reinforced, Vertical and Overhead Repair Mortar

Planitop X is a one-component, fiber-reinforced, shrinkage-compensated, high-early-strength, fast-setting, polymer-modified, high-build cementitious repair mortar with a corrosion inhibitor. It is suited for all interior/exterior vertical and overhead concrete repairs, including precast/prestressed, tilt-up, post-tensioned and cast-in-place concrete. *Planitop X* can be applied from featheredge to 4" (10 cm) per lift. *Planitop X* is engineered to provide high early strength with ease of application. *Planitop X* dries to a light gray color, matching most concrete surfaces.

Planitop X is ideal for repairing defects in concrete surfaces, such as the filling of honeycombs, voids and cavities. *Planitop X* is a very fast-setting product, with a working time of 5 to 6 minutes, providing an initial set at 6 minutes and final set in

less than 25 minutes. *Planitop X* can be mixed with potable water or, for superior bonding performance, with *Planicrete® AC* diluted with water.

Planitop® XS

One-Component, Fast-Setting, Extended-Working-Time, Vertical and Overhead Repair Mortar

Planitop XS is an extended-working-time variation of *Planitop X*. Shrinkage-compensated, fiber-reinforced, polymer-modified and containing a proprietary corrosion inhibitor, *Planitop XS* features *Planitop X*'s outstanding workability and versatility. Ideal for a wide variety of vertical and overhead concrete repairs, *Planitop XS* can be applied from featheredge to 4" (10 cm) per lift. *Planitop XS* dries to a light gray color, blending well with most concrete surfaces.

Planitop XS is ideal for repairing defects in concrete surfaces, such as the filling of honeycombs, voids and cavities. With *Planitop XS*, working time is extended to 20 minutes, providing an initial set at 40 minutes and final set in less than 60 minutes. Like *Planitop X*, *Planitop XS* can be mixed with potable water or, for superior bonding performance, with *Planicrete® AC* diluted with water.

Planicrete® AC

Acrylic Latex Admixture for Mortar and Concrete

Planicrete AC is a one-component, concentrated, liquid latex admixture used to enhance the performance of cementitious repair mortars, plasters, stuccos, concrete mixes and toppings for the restoration of horizontal, vertical and overhead concrete; concrete masonry units (CMUs); and masonry surfaces.

Planicrete AC can be used as an accessory with *Planiseal® 88*, *Planitop® X* and *Planitop XS* to enhance the bond strength to existing concrete.





MapeproofTM HW

Bentonite Geotextile Sheet Waterproofing Membrane



DESCRIPTION

Mapeproof HW waterproofing membrane is composed of sodium bentonite encapsulated between two polypropylene geotextile fabrics – a nonwoven and a woven fabric – at a rate of 1.13 lbs. per sq. ft. (5,5 kg per m²). The nonwoven fabric is needle-punched through to the woven fabric, with thousands of fibers mechanically locking the sodium bentonite clay in place. After backfill is placed and confined under pressure, *Mapeproof HW* hydrates and forms a monolithic waterproofing membrane when exposed to moisture. *Mapeproof HW* contains zero VOCs and can be installed in most weather conditions as well as to green concrete.

The swelling characteristics of the sodium bentonite clay in *Mapeproof HW* can seal small concrete cracks caused by ground settlement, concrete shrinkage or seismic action. *Mapeproof HW* also forms a strong mechanical bond to concrete when the concrete is poured onto the nonwoven geotextile fibers.

FEATURES AND BENEFITS

- Ideal waterproofing for new and rehabilitation projects
- Can be installed over damp or green concrete substrates
- Self-healing if punctured
- *Mapeproof HW* is not affected if the level of the water table rises and falls.
- The needle-punch pattern in the geotextile fabrics guarantees that the sodium bentonite is held firm and stable, even when *Mapeproof HW* is applied vertically.

WHERE TO USE

- Below-grade vertical and horizontal foundation structures
- Cast-in-place concrete applications including backfilled concrete walls
- Underground tunnels with earth-covered roofs
- Below concrete slabs and elevator pits
- Blindside applications including soldier piles, lagging, steel sheet piling, secant piles, shotcrete and stabilized soil-retention walls

LIMITATIONS

- Do not install over substrates containing asbestos.
- *Mapeproof HW* is only for below-grade application.
- *Mapeproof HW* is not to be installed over ponding or standing water, snow or ice.
- Not for use over concrete masonry units (CMUs)
- *Mapeproof HW* should only be installed with properly prepared substrates.
- Not designed for above-grade split-slab or plaza deck applications
- *Mapeproof HW* is designed for use under reinforced concrete slabs at least 4" (10 cm) thick over a compacted gravel base. If *Mapeproof HW* is installed over a mud slab, the reinforced concrete slab must be at least 5" (12,5 cm) thick. A structural engineer should be consulted to determine the appropriate thickness of the reinforced concrete slab, based on the hydrostatic conditions that exist at a specific project site.
- Where hydrostatic conditions exist, install *Mapeproof HW* under footings, grade beams and slabs.
- For conditions of contaminated site water, as determined by MAPEI-analyzed water samples, *Mapeproof SW* should be used instead. Where groundwater is present, 0,53 U.S. gal. (2 L) of groundwater will be needed for analysis. Contact MAPEI's Technical Services Department for instructions.
- *IdrostopTM 25* waterstop must be installed in all horizontal and vertical construction joints.
- Backfill must be uniformly compacted to a minimum 85% density per the Modified Proctor Test on each lift and must consist of clean, compactible soil. If angular aggregate is desired, it must be 3/4" (19 mm) or less, and free of debris, sharp objects and stones larger than 3/4" (19 mm).

SUITABLE SUBSTRATES AND SURFACE PREPARATION

- Before installation of *Mapeproof HW*, the substrate must be properly prepared.

- **Underslab:** Substrates may be concrete, earth, sand, pea gravel or crushed stone. Earth and sand substrates should be compacted to a minimum 85% Modified Proctor density and covered with *Mapedrain*[™] panels. Crushed stone should be compacted, smooth and not larger than 3/4" (19 mm). Concrete should be solid and smooth without ridges, sharp corners or honeycombing. Any voids and aggregate pockets exceeding 1" (2,5 cm) in diameter or a depth greater than 3/4" (19 mm) should be filled with a nonshrink cement-based grout. Complete all required work on elevator pits, sump pits, grade beams and pilings before installing *Mapeproof HW* under a main slab area.
- **Vertical (general):** Substrates may be concrete, shotcrete, wood lagging, steel sheet piling or secant piles. Substrates should be smooth and uniform without sharp protrusions or pockets. Fill tie-rod holes, honeycombs and voids with a nonshrinking cement-based grout to provide a smooth surface. Grind form fins, ridges and sharp corners, and remove excess concrete.
- **Wall lagging:** Install *Mapedrain* panels over wood lagging. *Mapedrain* panels can be installed over wood lagging gaps up to 2-1/2" (6,3 cm) to provide a uniform surface for *Mapeproof HW*. Gaps larger than 2-1/2" (6,3 cm) should be completely filled with cement-based grout, wood or extruded polystyrene (at a minimum of 40 psi [0,28 MPa]) even if *Mapedrain* panels are installed before *Mapeproof HW*. Do not use plywood or other surface treatment that leaves voids in the lagging gaps.

PRODUCT APPLICATION

Under Concrete Floor Slabs

1. Place *Mapeproof HW* over properly prepared substrate with the white, nonwoven geotextile side up (facing the concrete pour) and the black, woven geotextile side down (facing the substrate).
2. Overlap all adjoining edges for at least 4" (10 cm) and stagger sheet ends by at least 12" (30 cm).
3. Staple or nail laps together as required to prevent any displacement before and during concrete placement. *Mapeproof Granules* also may be placed in the seams for additional waterproofing performance.
4. When the slab is poured in sections, *Mapeproof HW* should extend for at least 12" (30 cm) beyond the slab edge or rebar. Install *Idrostop 25* in all concrete construction joints.
5. When the installation reaches the outer edge of the slab, continue *Mapeproof HW* up and out of the form for at least 12" (30 cm).
6. At the corner, *Mapeproof HW* should remain in contact with the substrate and inside the surface of the concrete form.
7. After the forms are removed, *Mapeproof HW* on the outside of the form should be positioned and fastened onto the footing or vertical wall.
8. Overlay *Mapeproof HW* for at least 12" (30 cm), with the succeeding vertical waterproofing membrane at the horizontal/vertical transition.
9. At property-line retaining walls, such as soldier piles or lagging, continue the under-slab *Mapeproof HW* application up the retaining wall for at least 12" (30 cm) above the top edge of the slab/footing and secure *Mapeproof HW* to the substrate.
10. Overlap the vertical *Mapeproof HW* waterproofing membrane by at least 6" (15 cm), or at least 12" (30 cm) under hydrostatic head conditions.

Underslab Penetrations and Pile Caps

1. Cut *Mapeproof HW* to closely fit around penetrations and pile caps.
2. Install *Mapeproof Granules* at least 3" (7,5 cm) in width under the cut edge of *Mapeproof HW*.
3. Apply a fillet of *Mapeproof Sealant* at least 3/4" (19 mm) thick to the top cut edge of *Mapeproof HW* at penetrations, pile caps, grade beams and other detailing. Extend at least 3" (7,5 cm) of *Mapeproof Sealant* onto *Mapeproof HW* and at least 1-1/2" (3,8 cm) of *Mapeproof Sealant* onto penetrations.
4. Install target sheets of *Mapeproof HW*, cut tight to the penetrations.
5. Seal all cut edges of *Mapeproof HW* with *Mapeproof Sealant*.
6. Complete detailing by wrapping *Idrostop 25* around the penetrations.
7. For hydrostatic conditions, *Mapeproof HW* should be installed under grade beams and footings using *Mapeproof Sealant* per the previous installation step.
8. Extend *Mapeproof HW* onto footings for at least 6" (15 cm) when required to tie into vertical wall waterproofing.

Backfilled Cast-In-Place Concrete Walls

1. Starting at the base of the foundation wall where it meets the footing, install *Mapeproof HW* horizontally, extending out onto the footing for at least 12" (30 cm).
2. Fasten *Mapeproof HW* in place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
3. Install adjacent rolls of *Mapeproof HW* by overlapping previous rolls by at least 4" (10 cm).
4. After a bottom horizontal course, *Mapeproof HW* sheets can be installed either vertically or horizontally oriented.
5. Stagger all end laps at least 12" (30 cm).
6. Fasten membrane laps 18" (46 cm) on center, or as required to prevent "blousing".
7. Fasten a membrane once every 18" (46 cm) on laps or as required to prevent "blousing".
8. At the grade line, terminate *Mapeproof HW* from 4" to 6" (10 to 15 cm) below the finished grade elevation.
9. Install *Mapeproof Sealant 2"* (5 cm) wide by 1/4" (6 mm) thick on the wall.
10. Install a rigid termination bar with appropriate fasteners a minimum of 12" (30,5 cm) on center.
11. Install backfill. Backfill must be uniformly compacted to a minimum 85% Modified Proctor density on each lift and must consist of clean, compactible soil. If angular aggregate is desired, it must be 3/4" (19 mm) or less, and free of debris, sharp objects and stones larger than 3/4" (19 mm).

Property Line/Lagging Walls

1. *Mapeproof HW* should be installed with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
2. Starting at the base corner, install the first course of *Mapeproof HW* (horizontally oriented) on the lagging wall, tying into underslab waterproofing if present.
3. Secure sheet edges to the shoring wall using fasteners compatible with the substrate and 1" (2,5-cm) washers no more than 24" (61 cm) on center.

Product Performance Properties

Laboratory Tests	Results
Thickness – ASTM D5199	1/4" (6 mm)
Mass per unit area, nonwoven polypropylene cap – ASTM D5261	5.9 U.S. oz. per sq. yd. (200 g per m ²)
Mass per unit area, woven polypropylene carrier – ASTM D5261	3.2 U.S. oz. per sq. yd. (110 g per m ²)
Mass per unit area, bentonite at 12% moisture – ASTM D5993	1.13 lbs. per sq. ft. (5,5 kg per m ²)
Mass per unit area, bentonite at 0% moisture – ASTM D5993	1 lb. per sq. ft. (4,9 kg per m ²)
Hydraulic conductivity – ASTM D5887	2 x 10 ⁻⁹ cm/sec.
Swell index – ASTM D5890	> 27 mL per 2 g
Index flux – ASTM D5887	4 x 10 ⁻⁹ m ³ /m ² /s max
Tensile strength (MD/CMD) – ASTM D6768	63/63 lbf/ft. (11,0/11,0 kN/m)
Grab tensile strength – ASTM D4632	135 lbf (600 N)
Static puncture strength – ASTM D6241	450 lbf (2 kN)
Peel strength (MD ²) – ASTM D6496	3.6 lbf/in. (625 N/m)
Peel adhesion to concrete – ASTM D903	17.7 lbf/in. (3,1 kN/m)
Hydrostatic pressure resistance – ASTM D5385	231 ft. (70,4 m)

Shelf Life

Shelf life	5 years when protected from moisture and stored on a skid/pallet covered with polyethylene or tarp. Do not double-stack pallets. Prevent hydration of bentonite until the sheet is installed and under recommended compaction.
Color	Nonwoven fabric: White Woven fabric: Black

Protect containers from freezing in transit and storage. Keep product dry before and during installation.

CSI Division Classification

Bentonite Waterproofing	07 17 00
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Packaging and Coverage

Roll: 3'7" x 16'5" (1,1 x 5,0 m), covering 59.2 sq. ft. (5,50 m ²); packaged 20 rolls per pallet
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- After a bottom horizontal course, *Mapeproof HW* sheets can be installed either vertically or horizontally oriented.
- Continue *Mapeproof HW* installation up the wall to the finished grade elevation, overlapping adjacent *Mapeproof HW* sheet edges by at least 4" (10 cm) and staggering all sheet roll ends of adjacent panels by at least 12" (30 cm). Do not allow the *Mapeproof HW* overlap joints to run at same elevation as the concrete-pour lift joints; rather, extend *Mapeproof HW* past the concrete pour joints by at least 6" (15 cm).
- At tie-back heads, field-fabricate a metal tie-back cover of the appropriate size to fit over the tie-back plate and allow proper cast-in-place concrete coverage per project requirements.
- The field-fabricated metal tie-back cover should fit over the entire tie-back head without the tie-back plate or cables coming into direct contact with the field-fabricated metal tie-back cover.
- Before installing field-fabricated metal tie-back covers, fill voids in the retention-wall substrate and in the tie-back head assembly with spray foam (at a minimum of 20 psi) or a non-shrink grout.
- Fill field-fabricated metal tie-back covers with a 50/50 mix of *Mapeproof Sealant* and *Mapeproof Granules*, fastening them to the soil-retention wall by using fasteners compatible with the substrate and 1" (2,5 cm) washers.
- Install *Mapeproof HW* over *Mapedrain* panels and the field-fabricated metal tie-back cover.

Detailing

Wall/footing transitions:

- Before installing the first course of *Mapeproof HW*, place *Mapeproof Granules* at the wall/footing transition corner.
- Create a cant at all vertical-to-horizontal transitions by applying a *Mapeproof Granules* or *Mapeproof Sealant* cant measuring 1-1/2" to 2" (3,8 to 5 cm) along that junction.
- Mechanically fasten *Mapeproof HW*, ensuring that the membrane is tight to the corners to prevent bridging.
- Secure *Mapeproof HW* in place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.

Footing corners:

- Before installing the first course of *Mapeproof HW*, place *Mapeproof Granules* at the wall/footing transition corner.
- Create a cant at all vertical-to-horizontal transitions by applying a *Mapeproof Granules* or *Mapeproof Sealant* cant measuring 1-1/2" to 2" (3,8 to 5 cm) along that junction.

3. At the bottom corner of the wall, install *Mapeproof HW* horizontally oriented with 5 ft. (1,52 m) of product on one wall, wrapping the remaining 2 ft. (0,6 m) around the corner on the other wall surface.
4. Cut the bottom edge of *Mapeproof HW* at the corner of the wall a minimum of 12" (30 cm) so that *Mapeproof HW* can be extended on top of the footing.
5. Fasten *Mapeproof HW* into position, a maximum of 24" (61 cm) on center.
6. Cut and install a section of *Mapeproof HW* over the uncovered footing corner area.
7. Apply *Mapeproof Sealant* on top of the *Mapeproof HW* overlap at the corner.

Wall inside corners:

1. Before installing *Mapeproof HW* at inside wall corners, apply a continuous *Mapeproof Sealant* fillet measuring 3/4" (19 mm) thick directly in the corner before installing *Mapeproof HW*.
2. Mechanically fasten *Mapeproof HW*, ensuring that membrane is tight to the corners to prevent bridging.
3. Secure *Mapeproof HW* into place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
4. Detail all *Mapeproof HW* cut edges with *Mapeproof Sealant*.

Wall outside corners:

1. Before installing *Mapeproof HW* at outside wall corners, install a 12" (30 cm) detail strip of *Mapeproof HW* and secure into place using fasteners compatible with the substrate and 1" (2,5 cm) washers.
2. Mechanically fasten *Mapeproof HW*, ensuring that membrane is tight to the corners to prevent bridging.
3. Secure *Mapeproof HW* into place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
4. Detail all *Mapeproof HW* cut edges with *Mapeproof Sealant*.

Penetrations:

1. Install *Mapeproof HW* target sheets, cut tight to the penetrations.
2. Apply a *Mapeproof Sealant* fillet at least 3/4" (1,9 cm) thick around penetrations, extending *Mapeproof Sealant* onto

the penetrations 1-1/2" (3,9 cm) and onto the membrane 3" (7,6 cm).

3. Cut *Mapeproof HW* to closely fit around penetrations and install over penetrations with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
4. Detail all *Mapeproof HW* cut edges with *Mapeproof Sealant*.

Multiple penetrations:

1. In areas where multiple penetrations are close together, it may be impractical to cut *Mapeproof HW* to fit around each penetration. Note that penetrations should have a minimum space of 6" (15 cm) between each penetration.
2. Apply a *Mapeproof Sealant* fillet at least 3/4" (19 mm) thick around penetrations, extending onto penetrations by 1-1/2" (3,8 cm).
3. Apply *Mapeproof Sealant* 1/4" (6 mm) thick onto the substrate between penetrations and extending out away from penetrations by 3" (7,5 cm).
4. Cut *Mapeproof HW* to closely fit around penetrations and install over penetrations with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
5. Detail all *Mapeproof HW* cut edges with *Mapeproof Sealant*.

Detail Requirements

For standard installation details, follow the *Mapeproof* detail drawings. For non-standard installation instructions, contact your local MAPEI representative.

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at

www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use,

and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**



MAPEI Headquarters of the Americas
1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) /
(954) 246-8888

Technical Services
1-800-992-6273 (U.S. and Puerto Rico)
1-800-361-9309 (Canada)

Customer Service
1-800-42-MAPEI (1-800-426-2734)

Services in Mexico
0-1-800-MX-MAPEI (0-1-800-696-2734)

Edition Date: August 22, 2016
PR: 7639 MKT: 16-2001



MapeproofTM SW

Bentonite Geotextile Sheet Waterproofing Membrane for Salt/Contaminated Groundwater



DESCRIPTION

Mapeproof SW waterproofing membrane is composed of a proprietary blend of sodium bentonite and a special polymer encapsulated between two polypropylene geotextile fabrics – a nonwoven and a woven fabric – at a rate of 1.1 lbs. per sq. ft. (5,3 kg per m²). The nonwoven fabric is needle-punched through to the woven fabric, with thousands of fibers mechanically locking the sodium bentonite blend in place. After backfill is placed and confined under pressure, *Mapeproof SW* hydrates and forms a monolithic waterproofing membrane when exposed to moisture. The proprietary blend of sodium bentonite and polymer enables *Mapeproof SW* to form this monolithic waterproofing membrane when exposed to salt and other contaminants.

Mapeproof SW contains zero VOCs and can be installed in most weather conditions as well as to green concrete. The swelling characteristics of the sodium bentonite clay in *Mapeproof SW* can seal small concrete cracks caused by ground settlement, concrete shrinkage or seismic action. *Mapeproof SW* also forms a strong mechanical bond to concrete when the concrete is poured onto the nonwoven geotextile fibers.

FEATURES AND BENEFITS

- *Mapeproof SW* is used where groundwater is contaminated with chemicals, salt or other foreign substances. Before use, a site water analysis and approval by MAPEI's Technical Services Department is required.
- Ideal waterproofing for new and rehabilitation projects
- Can be installed over damp or green concrete substrates
- Self-healing if punctured
- *Mapeproof SW* is not affected if the level of the water table rises and falls.
- The needle-punch pattern in the geotextile fabrics guarantees that the sodium bentonite is held firm and stable, even when *Mapeproof SW* is applied vertically.

WHERE TO USE

- Below-grade vertical and horizontal foundation structures
- Cast-in-place concrete applications including backfilled concrete walls

- Underground tunnels with earth-covered roofs
- Below concrete slabs and elevator pits
- Blindside applications including soldier piles, lagging, steel sheet piling, secant piles, shotcrete and stabilized soil-retention walls

LIMITATIONS

- Do not install over substrates containing asbestos.
- *Mapeproof SW* is only for below-grade application.
- *Mapeproof SW* is not to be installed over ponding or standing water, snow or ice.
- Not for use with concrete masonry units (CMUs)
- *Mapeproof SW* should only be installed over properly prepared substrates.
- Not designed for split-slab plaza deck applications
- *Mapeproof SW* is designed for use under reinforced concrete slabs at least 4" (10 cm) thick over a compacted gravel base. If *Mapeproof SW* is installed over a mud slab, the reinforced concrete slab must be at least 5" (12,5 cm) thick. A structural engineer should be consulted to determine the appropriate thickness of the reinforced concrete slab, based on the hydrostatic conditions that exist at a specific project site.
- Where hydrostatic conditions exist, install *Mapeproof SW* under footings, grade beams and slabs.
- For conditions of contaminated site water, as determined by MAPEI-analyzed water samples, *Mapeproof SW* should be used. Where groundwater is present, 0,53 U.S. gal. (2 L) of groundwater must be analyzed by MAPEI's Technical Services Department before *Mapeproof SW* can be used. Contact Technical Services for instructions and approval.
- *IdrostopTM 25* waterstop must be installed in all horizontal and vertical construction joints.
- Backfill must be uniformly compacted to a minimum 85% density per the Modified Proctor Test on each lift and must consist of clean, compactible

soil. If angular aggregate is desired, it must be 3/4" (19 mm) or less, and free of debris, sharp objects and stones larger than 3/4" (19 mm).

SUITABLE SUBSTRATES AND SURFACE PREPARATION

- Before installation of *Mapeproof SW*, the substrate must be properly prepared.
- **Underslab:** Substrates may be concrete, earth, sand, pea gravel or crushed stone. Earth and sand substrates should be compacted to a minimum 85% Modified Proctor density and covered with *Mapedrain™* panels. Crushed stone should be compacted, smooth and not larger than 3/4" (19 mm). Concrete should be solid and smooth without ridges, sharp corners or honeycombing. Any voids and aggregate pockets exceeding 1" (2,5 cm) in diameter or a depth greater than 3/4" (19 mm) should be filled with a nonshrink cement-based grout. Complete all required work on elevator pits, sump pits, grade beams and pilings before installing *Mapeproof SW* under a main slab area.
- **Vertical (general):** Substrates may be concrete, shotcrete, wood lagging, steel sheet piling or secant piles. Substrates should be smooth and uniform without sharp protrusions or pockets. Fill tie-rod holes, honeycombs and voids with a nonshrinking cement-based grout to provide a smooth surface. Grind form fins, ridges and sharp corners, and remove excess concrete.
- **Wall lagging:** Install *Mapedrain* panels over wood lagging. *Mapedrain* panels can be installed over wood lagging gaps up to 2-1/2" (6,3 cm) to provide a uniform surface for *Mapeproof SW*. Gaps larger than 2-1/2" (6,3 cm) should be completely filled with cement-based grout, wood or extruded polystyrene (at a minimum of 40 psi [0,28 MPa]) even if *Mapedrain* panels are installed before *Mapeproof SW*. Do not use plywood or other surface treatment that leaves voids in the lagging gaps.

PRODUCT APPLICATION

Under Concrete Floor Slabs

1. Place *Mapeproof SW* over properly prepared substrate with the white, nonwoven geotextile side up (facing the concrete pour) and the black, woven geotextile side down (facing the substrate).
2. Overlap all adjoining edges for at least 4" (10 cm) and stagger sheet ends by at least 12" (30 cm).
3. Staple or nail edges together as required to prevent any displacement before and during concrete placement. *Mapeproof Granules* also may be placed in the seams for additional waterproofing performance.
4. When the slab is poured in sections, *Mapeproof SW* should extend for at least 12" (30 cm) beyond the slab edge or rebar. Install *Idrostop 25* in all concrete construction joints.
5. When the installation reaches the outer edge of the slab, continue *Mapeproof SW* up and out of the form for at least 12" (30 cm).
6. At the corner, *Mapeproof SW* should remain in contact with the substrate and inside the surface of the concrete form.
7. After the forms are removed, *Mapeproof SW* on the outside of the form should be positioned and fastened onto the footing or vertical wall.

8. Overlay *Mapeproof SW* for at least 12" (30 cm), with the succeeding vertical waterproofing membrane at the horizontal/vertical transition.
9. At property-line retaining walls, such as soldier piles or lagging, continue the under-slab *Mapeproof SW* application up the retaining wall for at least 12" (30 cm) above the top edge of the slab/footing and secure *Mapeproof SW* to the substrate.
10. Overlap the vertical *Mapeproof SW* waterproofing membrane by at least 6" (15 cm), or at least 12" (30 cm) under hydrostatic head conditions.

Underslab Penetrations and Pile Caps

1. Cut *Mapeproof SW* to closely fit around penetrations and pile caps.
2. Install *Mapeproof Granules* at least 3" (7,5 cm) in width under the cut edge of *Mapeproof SW*.
3. Apply a fillet of *Mapeproof Sealant* at least 3/4" (19 mm) thick to the top cut edge of *Mapeproof SW* at penetrations, pile caps, grade beams and other detailing. Extend at least 3" (7,5 cm) of *Mapeproof Sealant* onto *Mapeproof SW* and at least 1-1/2" (3,8 cm) of *Mapeproof Sealant* onto penetrations.
4. Install target sheets of *Mapeproof SW*, cut tight to the penetrations.
5. Seal all cut edges of *Mapeproof SW* with *Mapeproof Sealant*.
6. Complete detailing by wrapping *Idrostop 25* around the penetrations.
7. For hydrostatic conditions, *Mapeproof SW* should be installed under grade beams and footings using *Mapeproof Sealant* per the previous installation step.
8. Extend *Mapeproof SW* onto footings for at least 6" (15 cm) when required to tie into vertical wall waterproofing.

Backfilled Cast-In-Place Concrete Walls

1. Starting at the base of the foundation wall where it meets the footing, install *Mapeproof SW* horizontally, extending out onto the footing for at least 12" (30 cm).
2. Fasten *Mapeproof SW* in place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
3. Install adjacent rolls of *Mapeproof SW* by overlapping previous rolls by at least 4" (10 cm).
4. After a bottom horizontal course, *Mapeproof SW* sheets can be installed either vertically or horizontally oriented.
5. Stagger all end laps at least 12" (30 cm).
6. Install *Mapeproof SW* sheets in shingle fashion, so that the upper roll overlaps the lower roll.
7. Fasten membrane laps 18" (46 cm) on center, or as required to prevent "blousing."
8. At the grade line, terminate *Mapeproof SW* from 4" to 6" (10 to 15 cm) below the finished grade elevation.
9. Install *Mapeproof Sealant 2"* (5 cm) wide by 1/4" (6 mm) thick on the wall.
10. Install a rigid termination bar with appropriate fasteners a minimum of 12" (30 cm) on center.
11. Install backfill. Backfill must be uniformly compacted to a minimum 85% Modified Proctor density on each lift and must consist of clean, compactible soil. If angular aggregate is desired, it must be 3/4" (19 mm) or less, and free of debris, sharp objects and stones larger than 3/4" (19 mm).

Product Performance Properties

Laboratory Tests	Results
Thickness – ASTM D5199	1/4" (6 mm)
Mass per unit area, nonwoven polypropylene cap – ASTM D5261	5.9 U.S. oz. per sq. yd. (200 g per m ²)
Mass per unit area, woven polypropylene carrier – ASTM D5261	3.2 U.S. oz. per sq. yd. (110 g per m ²)
Mass per unit area, bentonite at 12% moisture – ASTM D5993	1.1 lbs. per sq. ft. (5,3 kg per m ²)
Mass per unit area, bentonite at 0% moisture – ASTM D5993	0.96 lb. per sq. ft. (4,7 kg per m ²)
Hydraulic conductivity – ASTM D5887	1 x 10 ⁻⁹ cm/sec.
Swell index – ASTM D5890	> 27 mL per 2 g
Index flux – ASTM D5887	2 x 10 ⁻⁹ m ³ /m ² /s max
Tensile strength (MD/CMD) – ASTM D6768	80/80 lbf/ft. (14,0/14,0 kN/m)
Grab tensile strength – ASTM D4632	135 lbf (600 N)
Static puncture strength – ASTM D6241	540 lbf (2,4 kN)
Peel strength (MD ²) – ASTM D6496	3.6 lbf/in. (625 N/m)
Peel adhesion to concrete – ASTM D903	17.7 lbf/in. (3,1 kN/m)
Hydrostatic pressure resistance – ASTM D5385	231 ft. (70,4 m)

Shelf Life and Product Characteristics

Shelf life	5 years when protected from moisture and stored on a skid/pallet covered with polyethylene or tarp. Do not double-stack pallets. Prevent hydration of bentonite until the sheet is installed and under recommended compaction.
Color	Nonwoven fabric: White Woven fabric: Black

Protect containers from freezing in transit and storage. Keep product dry before and during installation.

CSI Division Classification

Bentonite Waterproofing	07 17 00
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Packaging and Coverage

Roll: 3'7" x 16'5" (1,1 x 5,0 m), covering 59.2 sq. ft. (5,50 m ²); packaged 20 rolls per pallet
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Property Line/Lagging Walls

- Mapeproof SW* should be installed with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
- Starting at the base corner, install the first course of *Mapeproof SW* (horizontally oriented) on the lagging wall, tying into underslab waterproofing if present.
- Secure sheet edges to the shoring wall with washer-head fasteners no more than 24" (60 cm) on center.
- After a bottom horizontal course, *Mapeproof SW* sheets can be installed either vertically or horizontally oriented.
- Continue *Mapeproof SW* installation up the wall to the finished grade elevation, overlapping adjacent *Mapeproof SW* sheet edges by at least 4" (10 cm) and staggering all sheet roll ends of adjacent panels by at least 12" (30 cm). Do not allow the *Mapeproof SW* overlap joints to run at same elevation as the concrete-pour lift joints; rather, extend *Mapeproof SW* past the concrete pour joints by at least 6" (15 cm).
- At tie-back heads, field-fabricate a metal tie-back cover of the appropriate size to fit over the tie-back plate and allow proper cast-in-place concrete coverage per project requirements.
- The field-fabricated metal tie-back cover should fit over the entire tie-back head without the tie-back plate or cables coming into direct contact with the field-fabricated metal tie-back cover.
- Before installing field-fabricated metal tie-back covers, fill voids in the retention-wall substrate and in the tie-back head assembly with spray foam (at a minimum of 20 psi) or a non-shrink grout.
- Fill field-fabricated metal tie-back covers with a 50/50 mix of *Mapeproof Sealant* and *Mapeproof Granules*, fastening

them to the soil-retention wall by using fasteners compatible with the substrate and 1" (2,5 cm) washers.

10. Install *Mapeproof SW* over *Mapedrain* panels and the field-fabricated metal tie-back cover.

Detailing

Wall/footing transitions:

1. Before installing the first course of *Mapeproof SW*, place *Mapeproof Granules* at the wall/footing transition corner.
2. Create a cant at all vertical-to-horizontal transitions by applying a *Mapeproof Granules* or *Mapeproof Sealant* cant measuring 1-1/2" to 2" (3,8 to 5 cm) along that junction.
3. Mechanically fasten *Mapeproof SW*, ensuring that the membrane is tight to the corners to prevent bridging.
4. Secure *Mapeproof SW* in place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.

Footing corners:

1. Before installing the first course of *Mapeproof SW*, place *Mapeproof Granules* at the wall/footing transition corner.
2. Create a cant at all vertical-to-horizontal transitions by applying a *Mapeproof Granules* or *Mapeproof Sealant* cant measuring 1-1/2" to 2" (3,8 to 5 cm) along that junction.
3. At the bottom corner of the wall, install *Mapeproof SW* horizontally oriented with 5 ft. (1,52 m) of product on one wall, wrapping the remaining 2 ft. (0,6 m) around the corner on the other wall surface.
4. Cut the bottom edge of *Mapeproof SW* at the corner of the wall a minimum of 12" (30 cm) so that *Mapeproof SW* can be extended on top of the footing.
5. Fasten *Mapeproof SW* into position, a maximum of 24" (61 cm) on center.
6. Cut and install a section of *Mapeproof SW* over the uncovered footing corner area.
7. Apply *Mapeproof Sealant* on top of the *Mapeproof SW* overlap at the corner.

Wall inside corners:

1. Before installing *Mapeproof SW* at inside wall corners, apply a continuous *Mapeproof Sealant* fillet measuring 3/4" (19 mm) thick directly in the corner.
2. Mechanically fasten *Mapeproof SW*, ensuring that membrane is tight to the corners to prevent bridging.
3. Secure *Mapeproof SW* into place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
4. Detail all *Mapeproof SW* cut edges with *Mapeproof Sealant*.

Wall outside corners:

1. Before installing *Mapeproof SW* at outside wall corners, install a 12" (30 cm) detail strip of *Mapeproof SW* and

secure into place using fasteners compatible with the substrate and 1" (2,5 cm) washers.

2. Mechanically fasten *Mapeproof SW*, ensuring that membrane is tight to the corners to prevent bridging.
3. Secure *Mapeproof SW* into place with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
4. Detail all *Mapeproof SW* cut edges with *Mapeproof Sealant*.

Penetrations:

1. Install *Mapeproof SW* target sheets, cut tight to the penetrations.
2. Apply a *Mapeproof Sealant* fillet at least 3/4" (1,9 cm) thick around penetrations, extending *Mapeproof Sealant* onto the penetrations 1-1/2" (3,9 cm) and onto the membrane 3" (7,6 cm).
3. Cut *Mapeproof SW* to closely fit around penetrations and install over penetrations with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
4. Detail all *Mapeproof SW* cut edges with *Mapeproof Sealant*.

Multiple penetrations:

1. In areas where multiple penetrations are close together, it may be impractical to cut *Mapeproof SW* to fit around each penetration. Note that penetrations should have a minimum space of 6" (15 cm) between each penetration.
2. Apply a *Mapeproof Sealant* fillet at least 3/4" (19 mm) thick around penetrations, extending onto penetrations by 1-1/2" (3,8 cm).
3. Apply *Mapeproof Sealant* 1/4" (6 mm) thick onto the substrate between penetrations and extending out away from penetrations by 3" (7,5 cm).
4. Cut *Mapeproof SW* to closely fit around penetrations and install over penetrations with the white, nonwoven side facing out, using fasteners compatible with the substrate and 1" (2,5 cm) washers.
5. Detail all *Mapeproof SW* cut edges with *Mapeproof Sealant*.

Detail Requirements

For standard installation details, follow the *Mapeproof* detail drawings. For non-standard installation instructions, contact your local MAPEI representative.

STATEMENT OF RESPONSIBILITY

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**



MAPEI Headquarters of the Americas

1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) /
(954) 246-8888

Technical Services

1-800-992-6273 (U.S. and Puerto Rico)
1-800-361-9309 (Canada)

Customer Service

1-800-42-MAPEI (1-800-426-2734)

Services in Mexico

0-1-800-MX-MAPEI (0-1-800-696-2734)

Edition Date: July 7, 2016

PR: 7647 MKT: 16-1804

NOTES:

1. INSTALL FIRST ROLL OF MAPEPROOF AT BASE OF WALL IN A HORIZONTAL MANNER. AFTER THE BOTTOM HORIZONTAL COURSE, MAPEPROOF ROLLS CAN BE INSTALLED EITHER VERTICALLY OR HORIZONTALLY ORIENTED.
2. FASTEN MAPEPROOF ONTO APPROVED SUBSTRATE WITH THE BLACK WOVEN SIDE FACING THE SUBSTRATE AND THE WHITE NON-WOVEN SIDE FACING OUT/TOWARD INSTALLER USING FASTENERS COMPATIBLE WITH THE SUBSTRATE AND 1" (2,5 CM) WASHERS.
3. LAP SIDE AND END SPLICES A MIN. OF 4" (10 CM).
4. STAGGER END SPLICES A MIN. OF 12" (30 CM).
5. USE ENOUGH FASTENERS IN THE FIELD TO PREVENT BLOUSING OF THE MEMBRANE.

18" (46 CM) MAX.
12" (30 CM) MIN.
4" (10 CM) MIN.

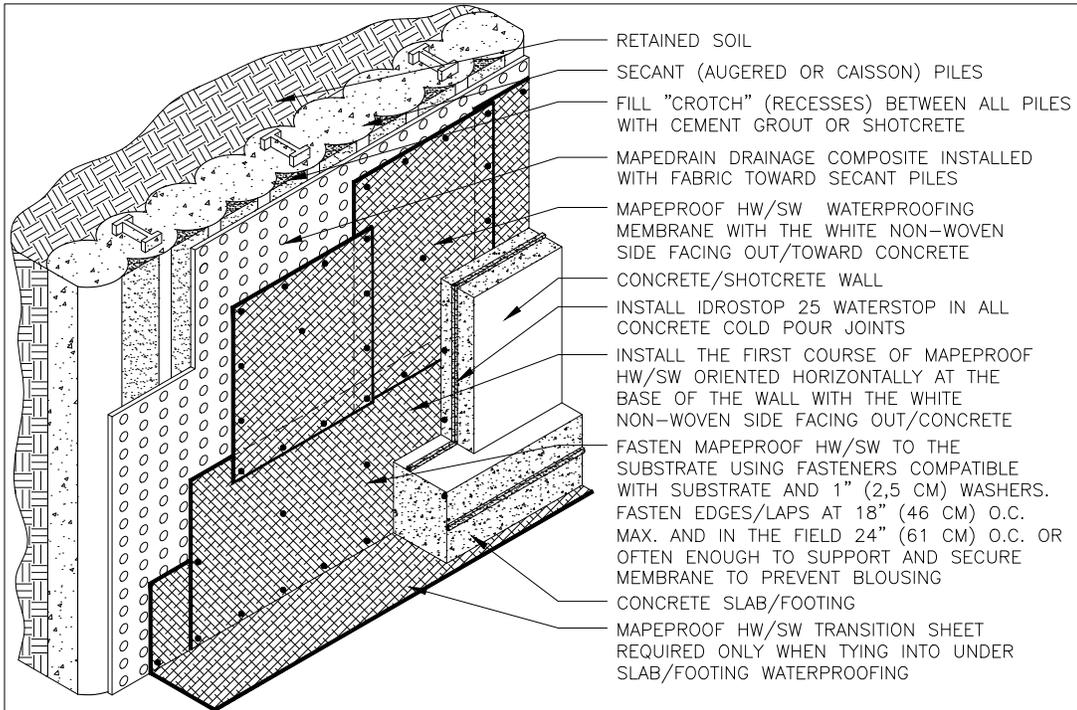
WALL ELEVATION

<p>DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.</p>	<h2>VERTICAL (WALL) INSTALLATION</h2>	SUPERCEEDS: 00/00/0000
		DATE: 02/01/2016
		SCALE: NOT TO SCALE
		DRAWING #: MP-1A

MAPEPROOF SEALANT
TERMINATION BAR
MAPEPROOF HW/SW WATERPROOFING MEMBRANE
MAPE DRAIN DRAINAGE COMPOSITE
MAPE DRAIN TD DRAIN COMPOSITE
CONCRETE WALL
INTERIOR CONCRETE FLOOR SLAB
1-1/2" (3,8 CM) CANT WITH MAPEPROOF GRANULES OR MAPEPROOF SEALANT
IDROSTOP 25 WATERSTOP
CONCRETE FOOTING

12" (30 CM)

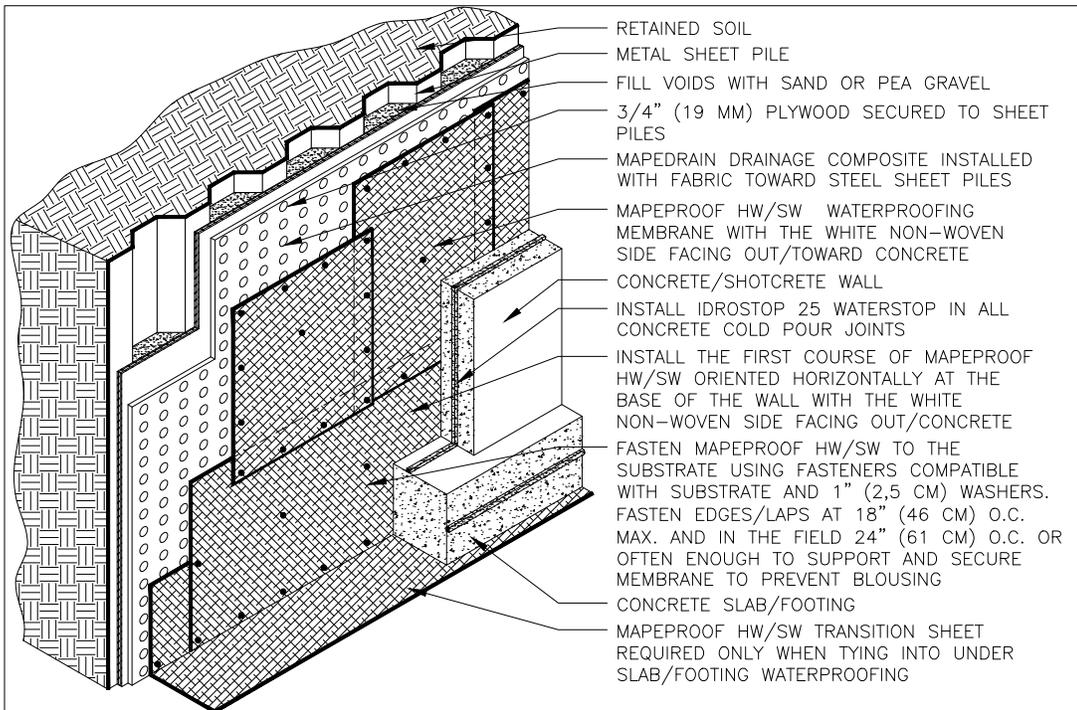
<p>DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.</p>	<h2>FOUNDATION WATERPROOFING CROSS SECTION</h2>	SUPERCEEDS: 00/00/0000
		DATE: 02/01/2016
		SCALE: NOT TO SCALE
		DRAWING #: MP-1B




DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

SECANT PILES (AUGERED OR CAISSON)

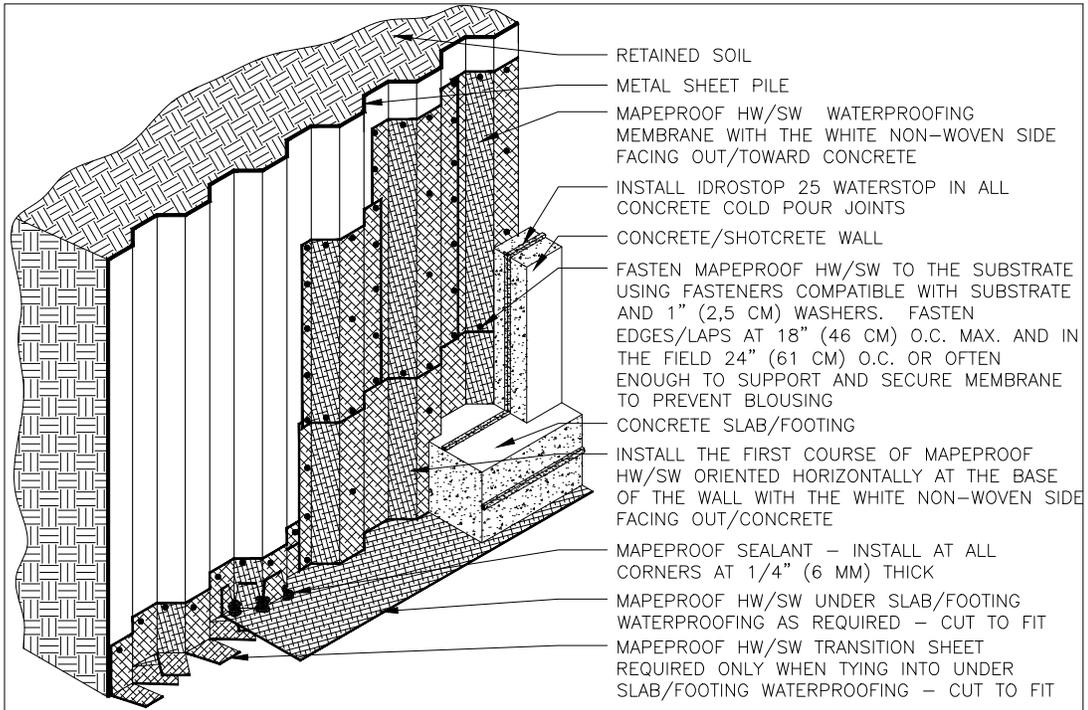
SUPERCEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-1G




DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

STEEL SHEET PILES

SUPERCEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-1H

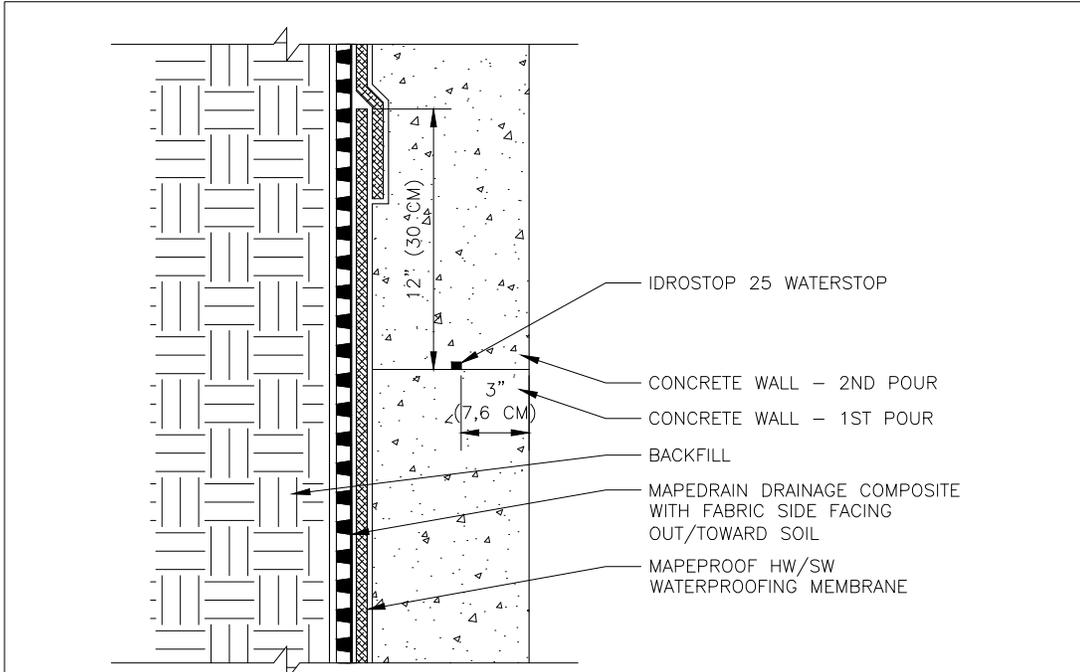


- RETAINED SOIL
- METAL SHEET PILE
- MAPEPROOF HW/SW WATERPROOFING MEMBRANE WITH THE WHITE NON-WOVEN SIDE FACING OUT/TOWARD CONCRETE
- INSTALL IDROSTOP 25 WATERSTOP IN ALL CONCRETE COLD POUR JOINTS
- CONCRETE/SHOTCRETE WALL
- FASTEN MAPEPROOF HW/SW TO THE SUBSTRATE USING FASTENERS COMPATIBLE WITH SUBSTRATE AND 1" (2,5 CM) WASHERS. FASTEN EDGES/LAPS AT 18" (46 CM) O.C. MAX. AND IN THE FIELD 24" (61 CM) O.C. OR OFTEN ENOUGH TO SUPPORT AND SECURE MEMBRANE TO PREVENT BLOWING
- CONCRETE SLAB/FOOTING
- INSTALL THE FIRST COURSE OF MAPEPROOF HW/SW ORIENTED HORIZONTALLY AT THE BASE OF THE WALL WITH THE WHITE NON-WOVEN SIDE FACING OUT/CONCRETE
- MAPEPROOF SEALANT - INSTALL AT ALL CORNERS AT 1/4" (6 MM) THICK
- MAPEPROOF HW/SW UNDER SLAB/FOOTING WATERPROOFING AS REQUIRED - CUT TO FIT
- MAPEPROOF HW/SW TRANSITION SHEET REQUIRED ONLY WHEN TYING INTO UNDER SLAB/FOOTING WATERPROOFING - CUT TO FIT

DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

ALTERNATE INSTALLATION STEEL SHEET PILES

SUPERCEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-1J

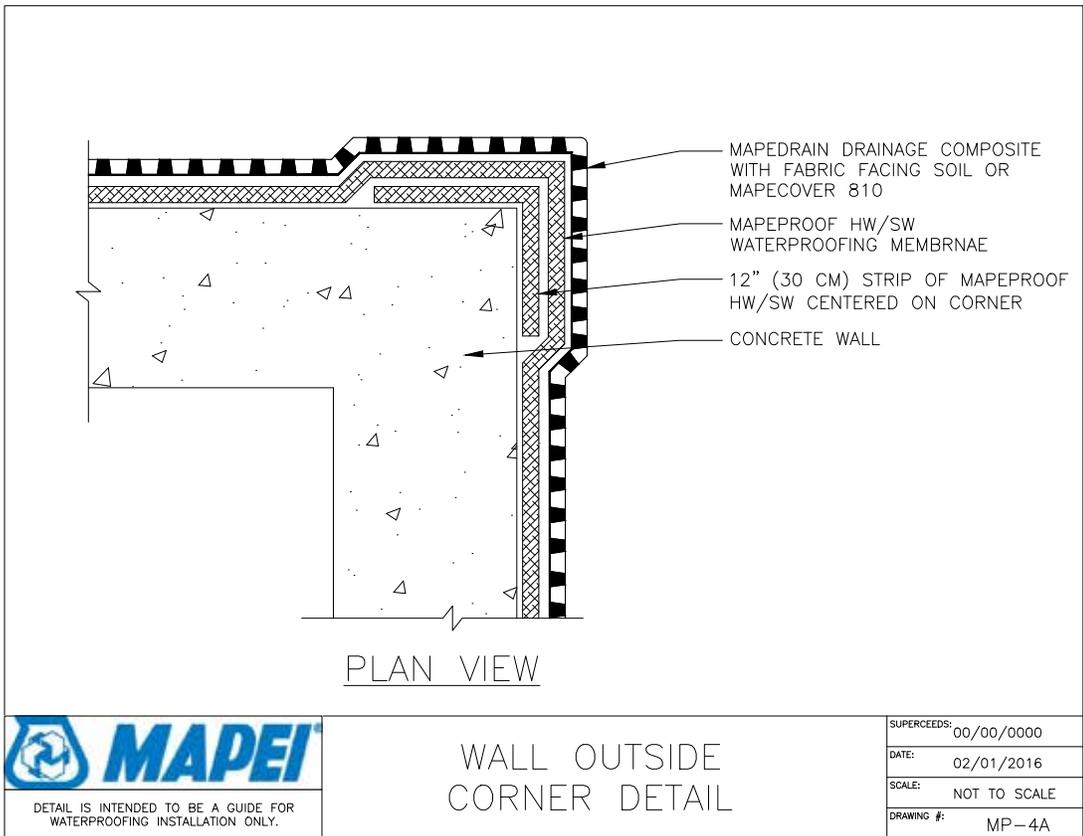
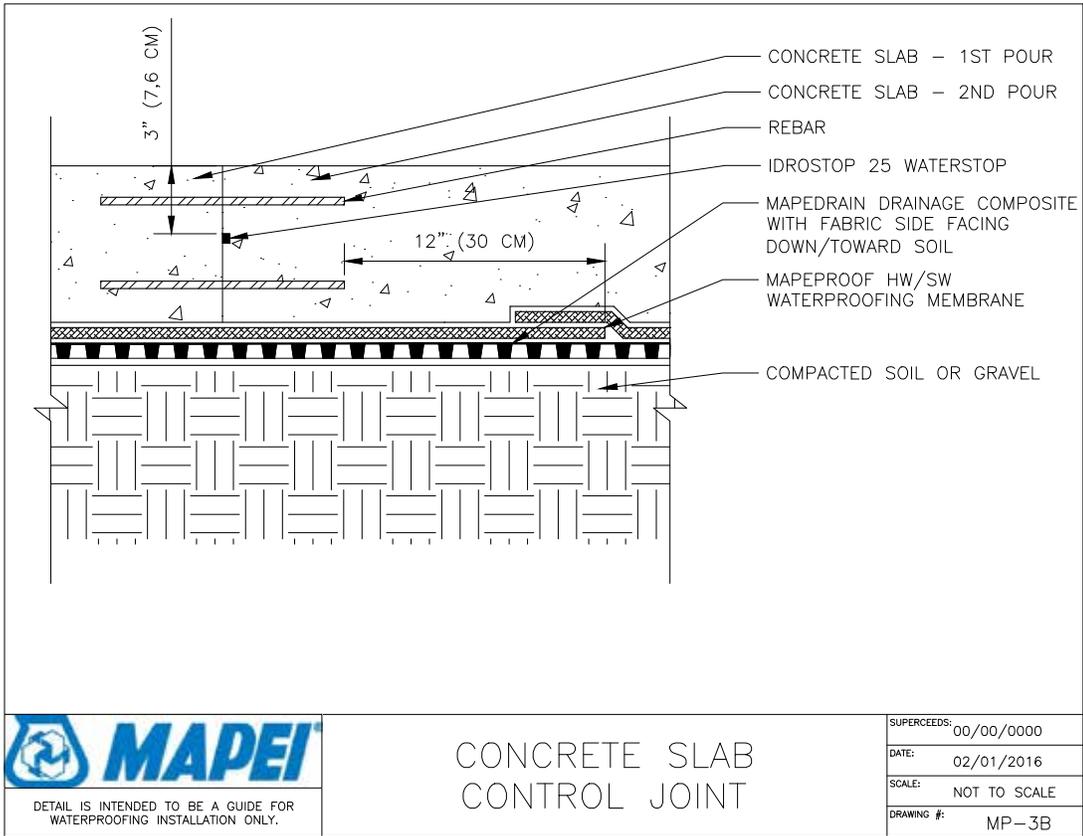


- IDROSTOP 25 WATERSTOP
- CONCRETE WALL - 2ND POUR
- CONCRETE WALL - 1ST POUR
- BACKFILL
- MAPEDRAIN DRAINAGE COMPOSITE WITH FABRIC SIDE FACING OUT/TOWARD SOIL
- MAPEPROOF HW/SW WATERPROOFING MEMBRANE

DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

CONCRETE WALL CONTROL JOINT

SUPERCEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-3A



WRAP EACH PIECE OF MAPEPROOF HW/SW AROUND CORNER TO PROVIDE DOUBLE COVERAGE

MAPEDRAIN DRAINAGE COMPOSITE WITH FABRIC FACING SOIL OR MAPECOVER 810

MAPEPROOF HW/SW WATERPROOFING MEMBRANE

MAPEPROOF SEALANT

CONCRETE WALL

6" (15 CM) MIN.

6" (15 CM) MIN.

PLAN VIEW

<p>DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.</p>	ALTERNATE WALL OUTSIDE CORNER DETAIL	SUPERCEEDS: 00/00/0000
		DATE: 02/01/2016
		SCALE: NOT TO SCALE
		DRAWING #: MP-4B

MAPEDRAIN DRAINAGE COMPOSITE WITH FABRIC FACING SOIL OR MAPECOVER 810

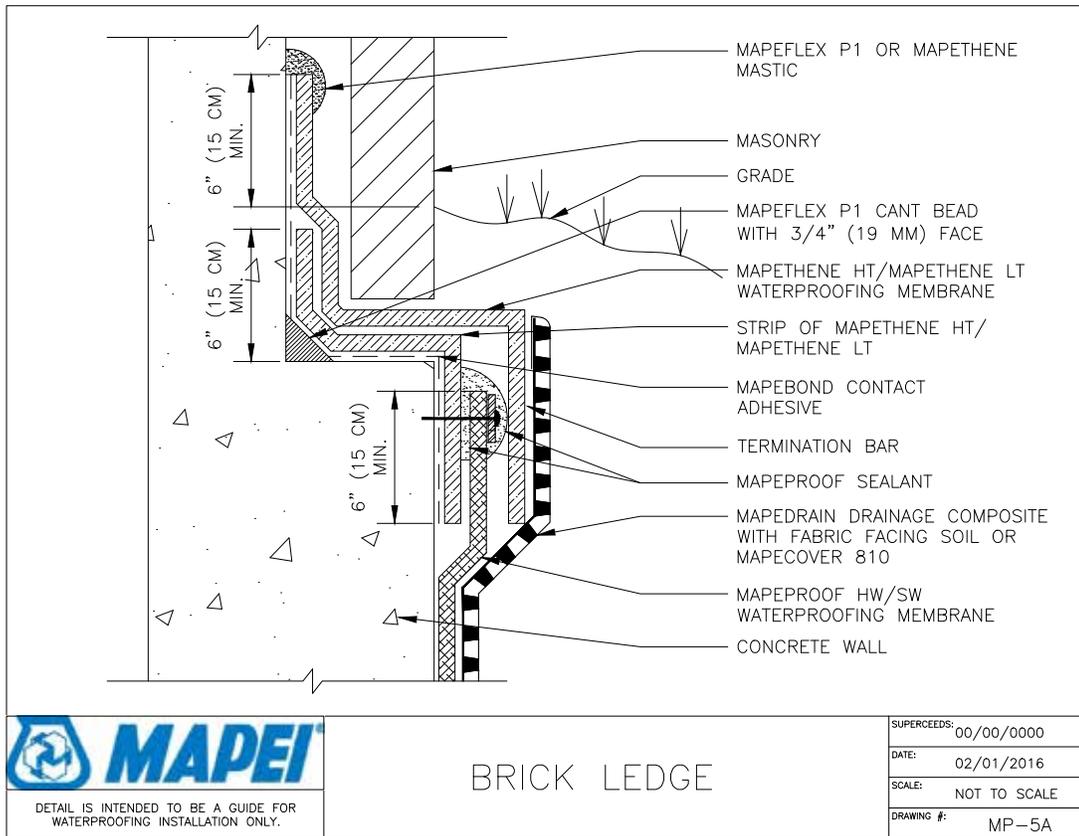
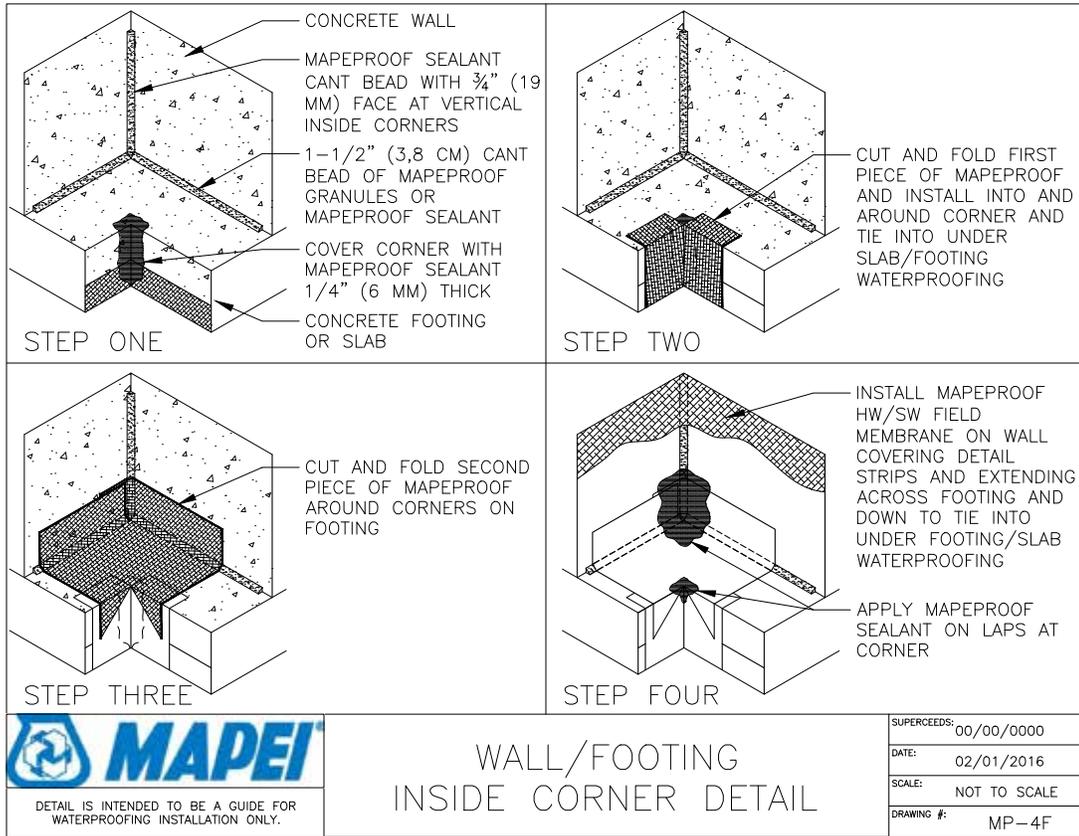
MAPEPROOF HW/SW WATERPROOFING MEMBRANE

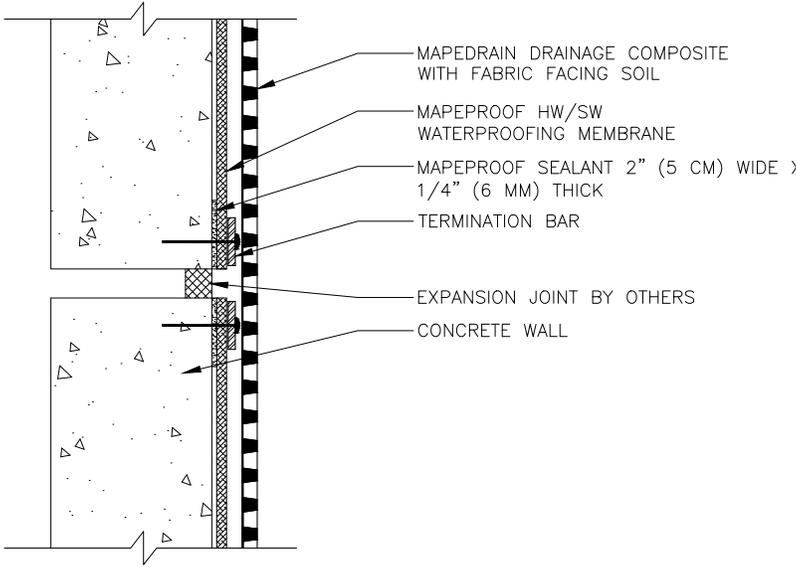
MAPEPROOF SEALANT CANT BEAD WITH 3/4" (19 MM) FACE

CONCRETE WALL

PLAN VIEW

<p>DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.</p>	WALL INSIDE CORNER DETAIL	SUPERCEEDS: 00/00/0000
		DATE: 02/01/2016
		SCALE: NOT TO SCALE
		DRAWING #: MP-4C





MAPEDRAIN DRAINAGE COMPOSITE WITH FABRIC FACING SOIL

MAPEPROOF HW/SW WATERPROOFING MEMBRANE

MAPEPROOF SEALANT 2" (5 CM) WIDE X 1/4" (6 MM) THICK

TERMINATION BAR

EXPANSION JOINT BY OTHERS

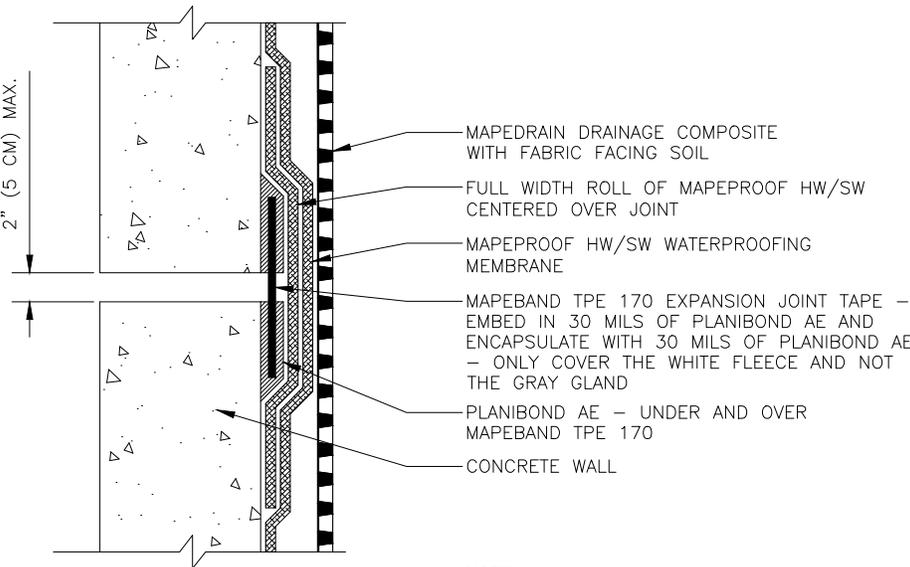
CONCRETE WALL

MAPEI

DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

WALL EXPANSION JOINT

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-6A



2" (5 CM) MAX.

MAPEDRAIN DRAINAGE COMPOSITE WITH FABRIC FACING SOIL

FULL WIDTH ROLL OF MAPEPROOF HW/SW CENTERED OVER JOINT

MAPEPROOF HW/SW WATERPROOFING MEMBRANE

MAPEBAND TPE 170 EXPANSION JOINT TAPE - EMBED IN 30 MILS OF PLANIBOND AE AND ENCAPSULATE WITH 30 MILS OF PLANIBOND AE - ONLY COVER THE WHITE FLEECE AND NOT THE GRAY GLAND

PLANIBOND AE - UNDER AND OVER MAPEBAND TPE 170

CONCRETE WALL

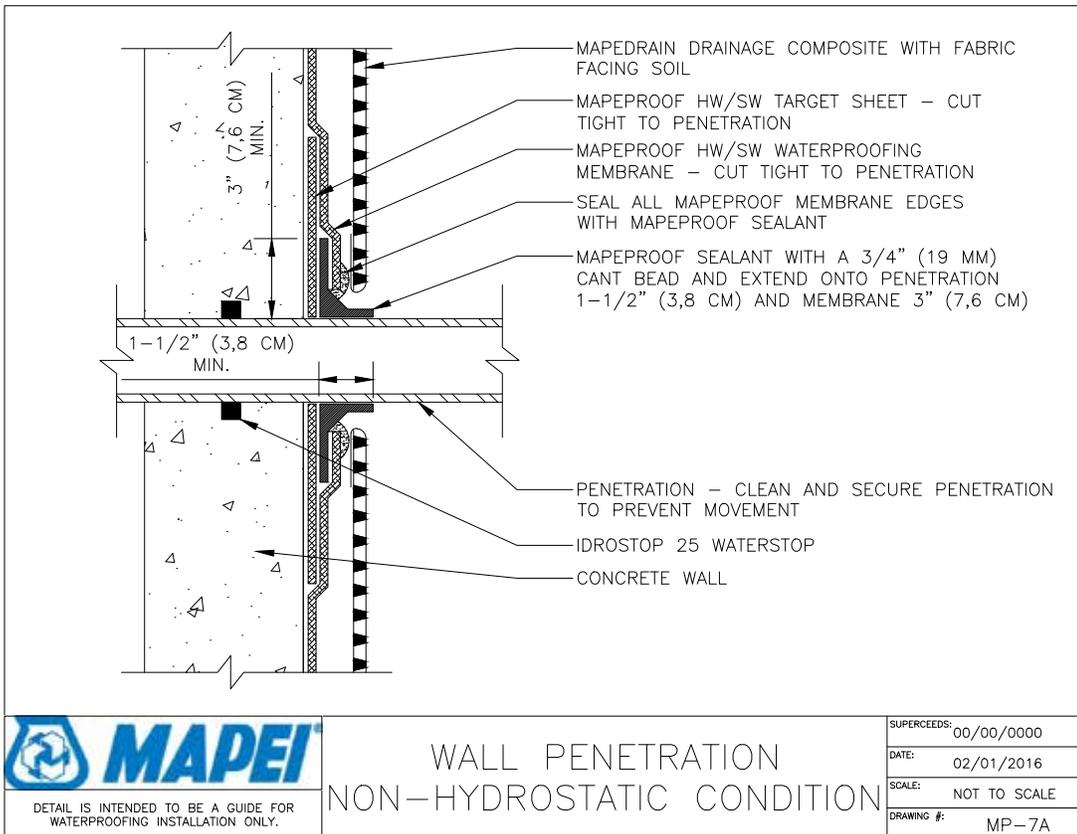
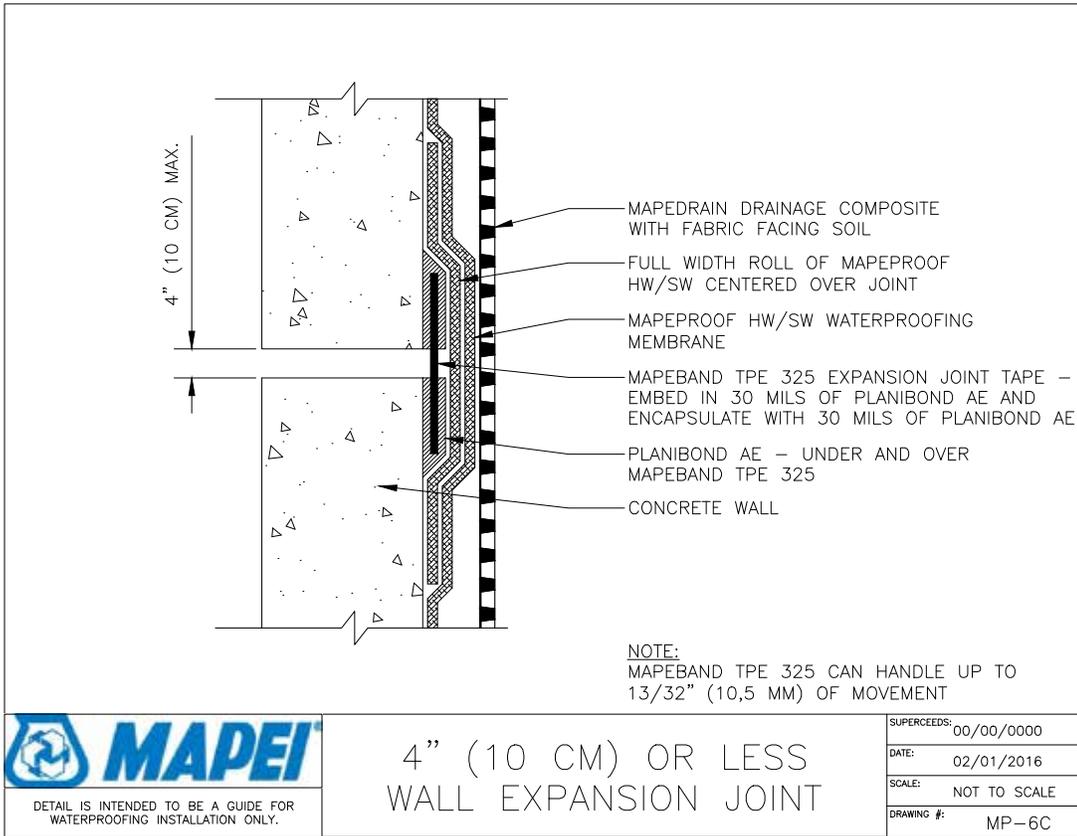
MAPEI

DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

2" (5 CM) OR LESS WALL EXPANSION JOINT

NOTE:
MAPEBAND TPE 170 CAN HANDLE UP TO 7/32" (5,5 MM) OF MOVEMENT

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-6B



MAPEPROOF HW/SW TARGET SHEET – CUT TIGHT TO PENETRATION

MAPEPROOF HW/SW WATERPROOFING MEMBRANE – CUT TIGHT TO PENETRATION

SEAL ALL MAPEPROOF MEMBRANE EDGES WITH MAPEPROOF SEALANT

FLASH PENETRATION WITH A 12" (30 CM) STRIP OF MAPEPROOF HW/SW – NOTE FOR PIPE PENETRATIONS CUT SLITS IN 9" (22,9 CM) STRIP LIKE A HULA SKIRT TO WRAP AROUND PIPES

MAPEPROOF SEALANT WITH A 3/4" (19 MM) CANT BEAD AND EXTEND ONTO PENETRATION 4-1/2" (11,4 CM) AND MEMBRANE 3" (7,6 CM)

PENETRATION – CLEAN AND SECURE PENETRATION TO PREVENT MOVEMENT

TERMINATE PIPE FLASHING WITH STAINLESS PIPE CLAMP AND MAPEPROOF SEALANT

IDROSTOP 25 WATERSTOP

CONCRETE WALL

3" (7,6 CM) 4" (10 CM)

MAPEI

DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

WALL PENETRATION
HYDROSTATIC CONDITION

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-7B

MAPEPROOF HW/SW TARGET SHEET – CUT TIGHT TO PENETRATION

MAPEPROOF HW/SW WATERPROOFING MEMBRANE – CUT TIGHT TO PENETRATION

SEAL ALL MAPEPROOF MEMBRANE EDGES WITH MAPEPROOF SEALANT

TERMINATE PIPE FLASHING WITH STAINLESS PIPE CLAMP AND MAPEPROOF SEALANT

FLASH PENETRATION WITH A 12" (30 CM) STRIP OF MAPEPROOF HW/SW – NOTE FOR PIPE PENETRATIONS CUT SLITS IN 9" (22,9 CM) STRIP LIKE A HULA SKIRT TO WRAP AROUND PIPES

MAPEPROOF SEALANT WITH A 3/4" (19 MM) CANT BEAD AND EXTEND ONTO PENETRATION 4-1/2" (11,4 CM) AND MEMBRANE 3" (7,6 CM)

PENETRATION – CLEAN AND SECURE PENETRATION TO PREVENT MOVEMENT

FILL VOID BETWEEN PIPE PENETRATION WITH NON-SHRINK GROUT

MAPEPROOF SWELL – APPLY 2 BEADS – ONE ON THE PIPE SLEEVE AND ONE ON THE PIPE PENETRATION

IDROSTOP 25 WATERSTOP

PIPE SLEEVE

CONCRETE SUBSTRATE

MAPEI

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WALL PENETRATION WITH
PIPE SLEEVE AND GROUT

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-7C

MAPEADRAIN DRAINAGE COMPOSITE WITH FABRIC FACING SOIL
 MAPEPROOF HW/SW TARGET SHEET – CUT TIGHT TO PENETRATION
 MAPEPROOF HW/SW WATERPROOFING MEMBRANE – CUT TIGHT TO PENETRATION
 SEAL ALL MAPEPROOF MEMBRANE EDGES WITH MAPEPROOF SEALANT
 TERMINATE PIPE FLASHING WITH STAINLESS PIPE CLAMP AND MAPEPROOF SEALANT
 FLASH PENETRATION WITH A 12" (30 CM) STRIP OF MAPEPROOF HW/SW – NOTE FOR PIPE PENETRATIONS CUT SLITS IN 9" (22,9 CM) STRIP LIKE A HULA SKIRT TO WRAP AROUND PIPES
 MAPEPROOF SEALANT WITH A 3/4" (19 CM) CANT BEAD AND EXTEND ONTO PENETRATION 4-1/2" (11,4 CM) AND MEMBRANE 3" (7,6 CM)
 COVER LINK-SEAL WITH MAPEPROOF SEALANT
 PENETRATION – CLEAN AND SECURE PENETRATION TO PREVENT MOVEMENT
 LINK-SEAL – BY OTHERS
 FILL VOID BETWEEN PIPE SLEEVE AND PIPE PENETRATION WITH NON-SHRINK GROUT
 PIPE SLEEVE
 IDROSTOP 25 WATERSTOP
 CONCRETE SUBSTRATE

MAPEI
 DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

WALL PENETRATION WITH PIPE SLEEVE AND LINK-SEAL

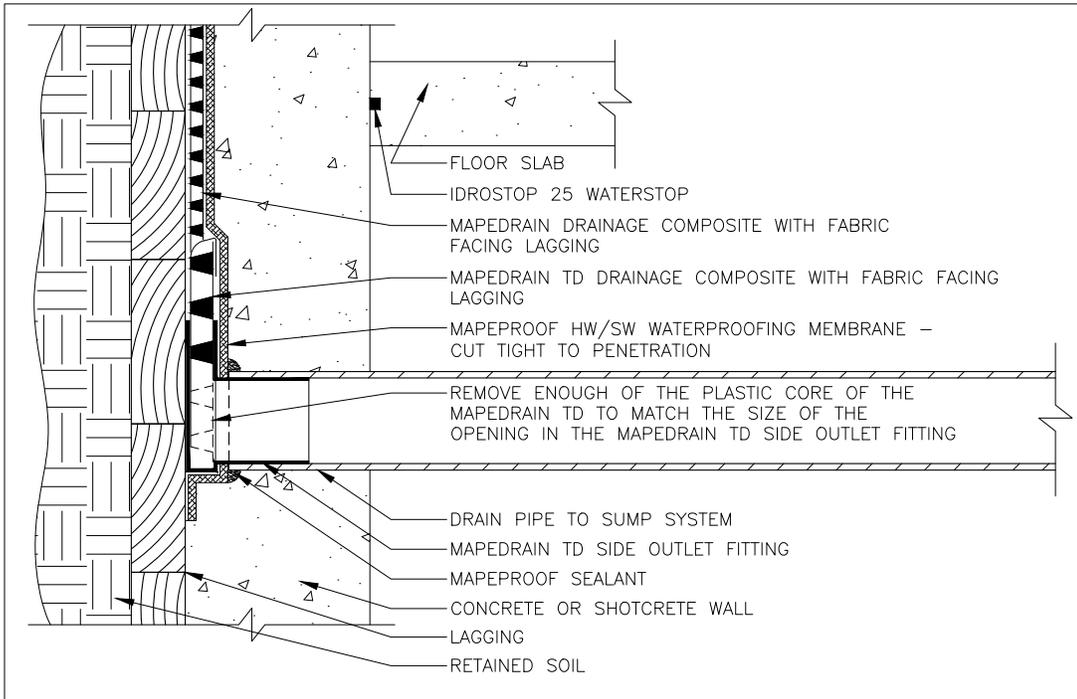
SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-7D

MAPEADRAIN DRAINAGE COMPOSITE WITH FABRIC FACING SOIL
 MAPEPROOF HW/SW TARGET SHEET – CUT TIGHT TO PENETRATION
 MAPEPROOF HW/SW WATERPROOFING MEMBRANE – CUT TIGHT TO PENETRATION
 MAPEPROOF SEALANT WITH A 3/4" (19 MM) CANT BEAD AND EXTEND ONTO PENETRATION 4-1/2" (11,4 CM) AND MEMBRANE 3" (7,6 CM)
 FLASH PENETRATION WITH A 12" (30 CM) STRIP OF MAPEPROOF HW/SW – NOTE FOR PIPE PENETRATIONS CUT SLITS IN 9" (22,9 CM) STRIP LIKE A HULA SKIRT TO WRAP AROUND PIPES
 3" (7,6 CM)
 PENETRATION – CLEAN AND SECURE PENETRATION TO PREVENT MOVEMENT
 IDROSTOP 25 WATERSTOP
 TERMINATE PIPE FLASHING WITH STAINLESS PIPE CLAMP AND MAPEPROOF SEALANT
 SEAL ALL MAPEPROOF MEMBRANE EDGES WITH MAPEPROOF SEALANT
 CONCRETE OR SHOTCRETE WALL
 LAGGING

MAPEI
 DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

LAGGING WALL PENETRATION

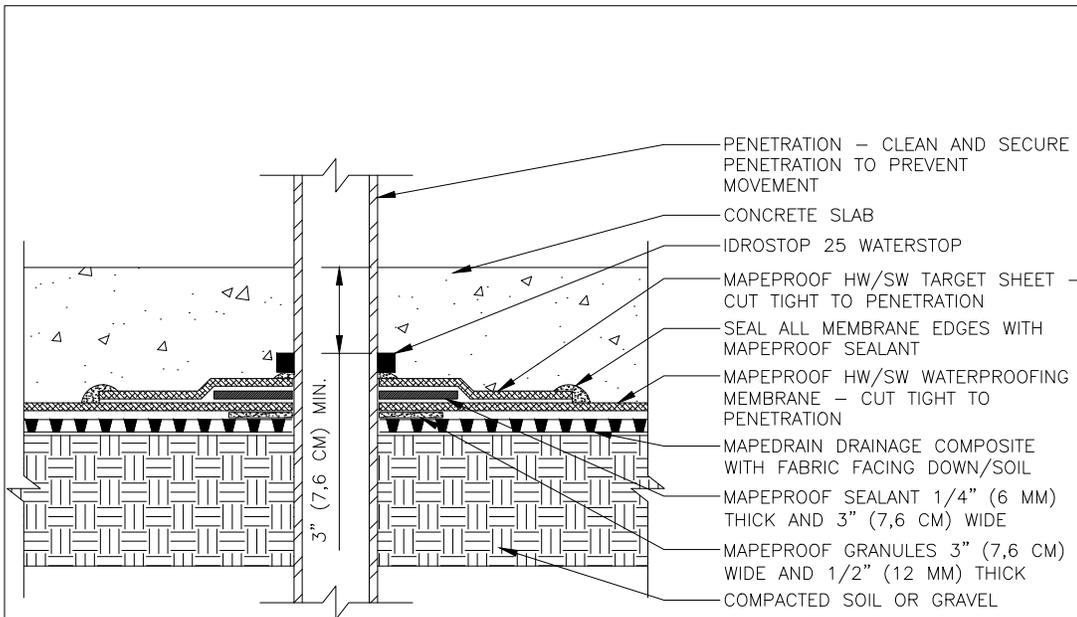
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DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-7E




DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

LAGGING WALL THRU-WALL DRAINAGE

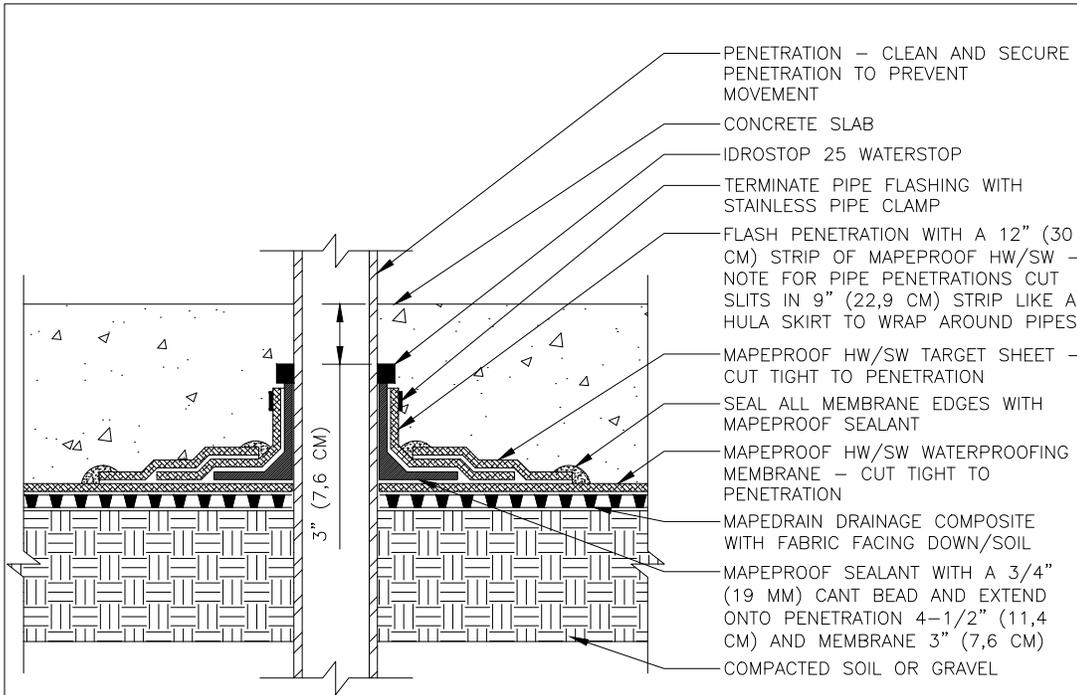
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DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-7F




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SLAB PENETRATION NON-HYDROSTATIC CONDITION

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
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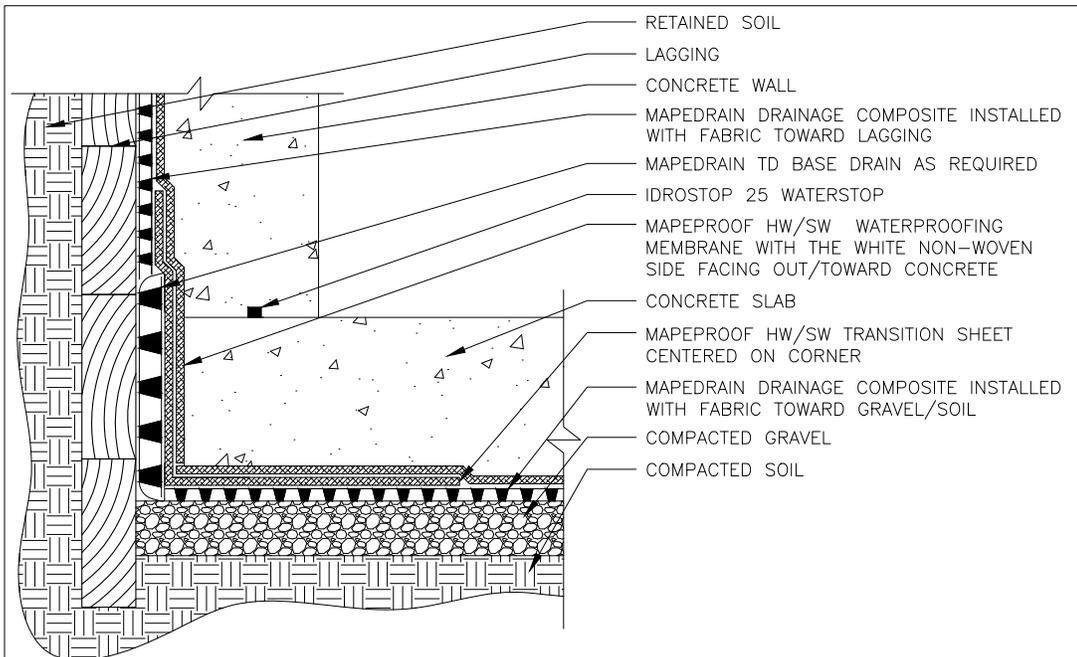
SLAB PENETRATION HYDROSTATIC CONDITION

SUPERCEEDS: 00/00/0000

DATE: 02/01/2016

SCALE: NOT TO SCALE

DRAWING #: MP-7H



DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

LAGGING WALL/SLAB TRANSITION

SUPERCEEDS: 00/00/0000

DATE: 02/01/2016

SCALE: NOT TO SCALE

DRAWING #: MP-8A

MAPEPROOF HW/SW WATERPROOFING MEMBRANE
 MAPEDRAIN DRAINAGE COMPOSITE
 MAPEDRAIN TD DRAINAGE COMPOSITE
 CONCRETE WALL
 INTERIOR CONCRETE FLOOR SLAB
 IDROSTOP 25 WATERSTOP
 1-1/2" (3,8 CM) CANT WITH MAPEPROOF GRANULES OR MAPEPROOF SEALANT
 CONCRETE FOOTING
 2 COATS OF PLANISEAL 88 - OPTIONAL

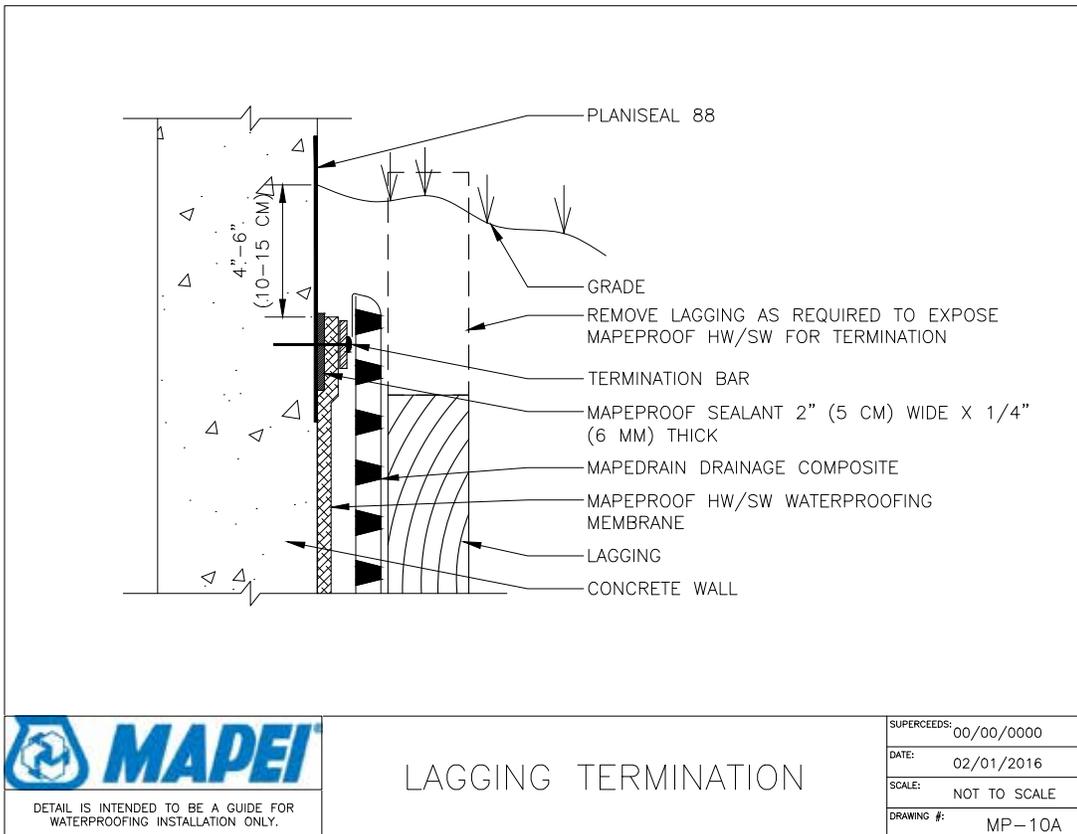
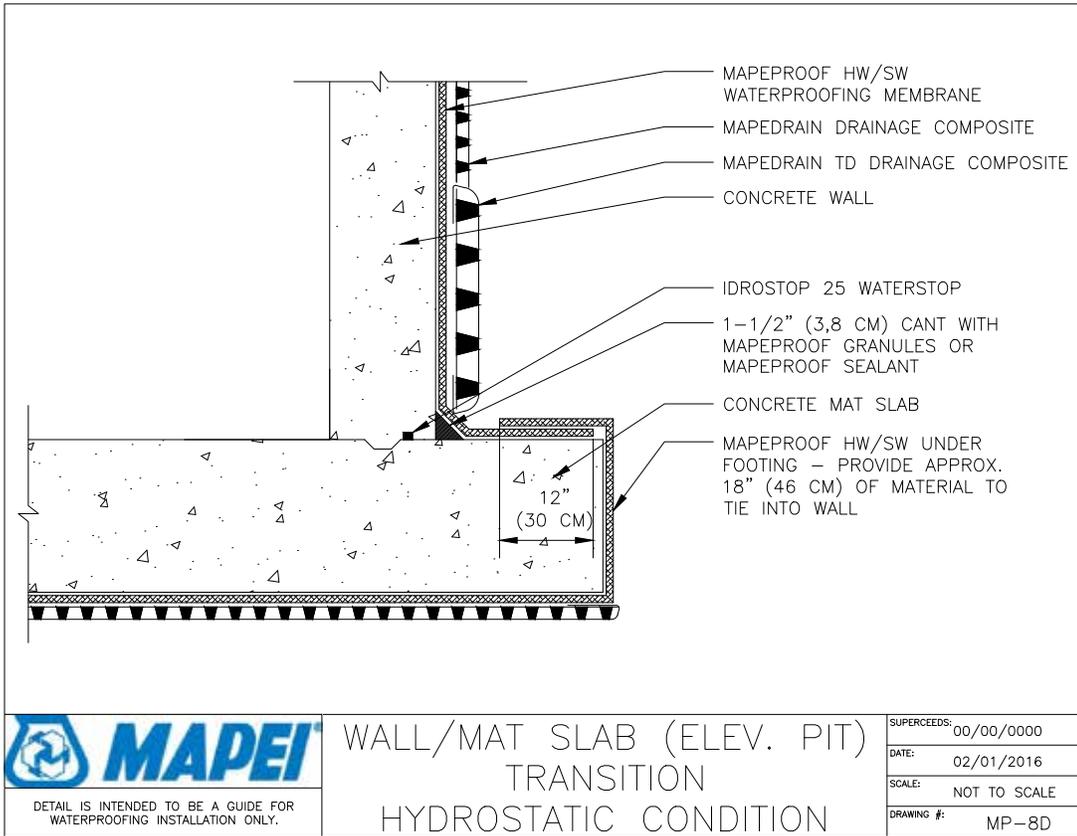
 <p>DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.</p>	WALL/FOOTING/SLAB TRANSITION NON-HYDROSTATIC CONDITION	SUPERCEEDS: 00/00/0000
		DATE: 02/01/2016
		SCALE: NOT TO SCALE
		DRAWING #: MP-8B

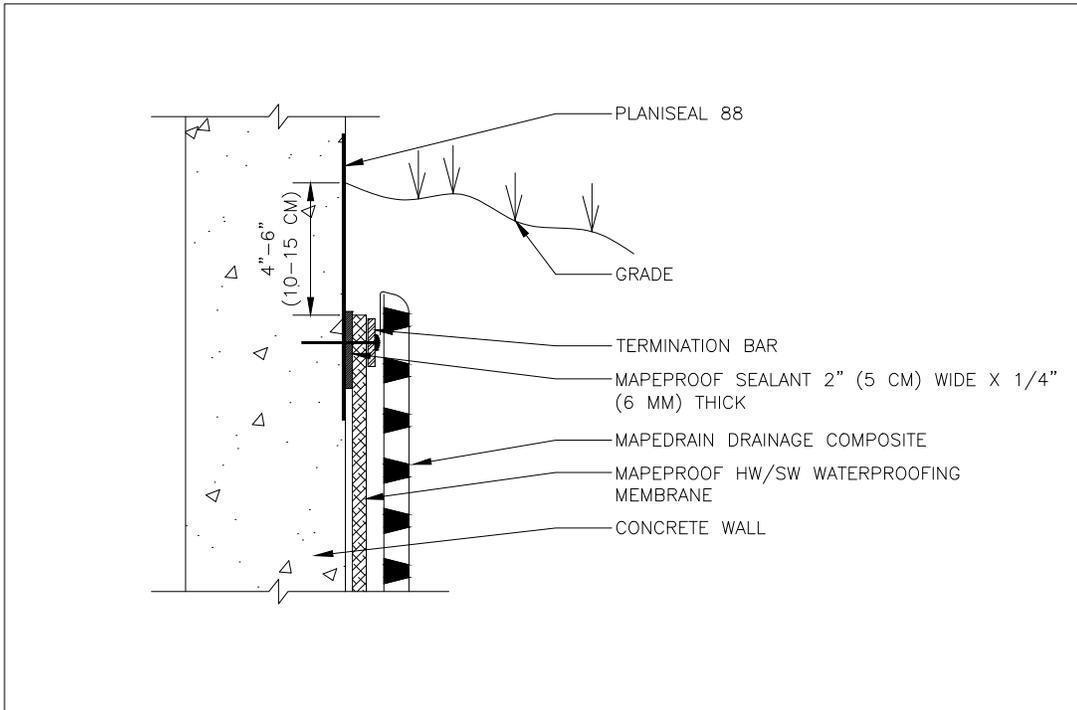
MAPEPROOF HW/SW WATERPROOFING MEMBRANE
 MAPEDRAIN DRAINAGE COMPOSITE
 MAPEDRAIN TD DRAINAGE COMPOSITE
 CONCRETE WALL
 INTERIOR CONCRETE FLOOR SLAB
 SLAB TIE-DOWN REBAR
 IDROSTOP 25 WATERSTOP
 1-1/2" (3,8 CM) CANT WITH MAPEPROOF GRANULES OR MAPEPROOF SEALANT
 CONCRETE FOOTING
 MAPEPROOF HW/SW UNDER FOOTING - PROVIDE APPROX. 18" (46 CM) OF MATERIAL TO TIE INTO WALL AND UNDER SLAB WATERPROOFING

12" (30 CM)

12" (30 CM)

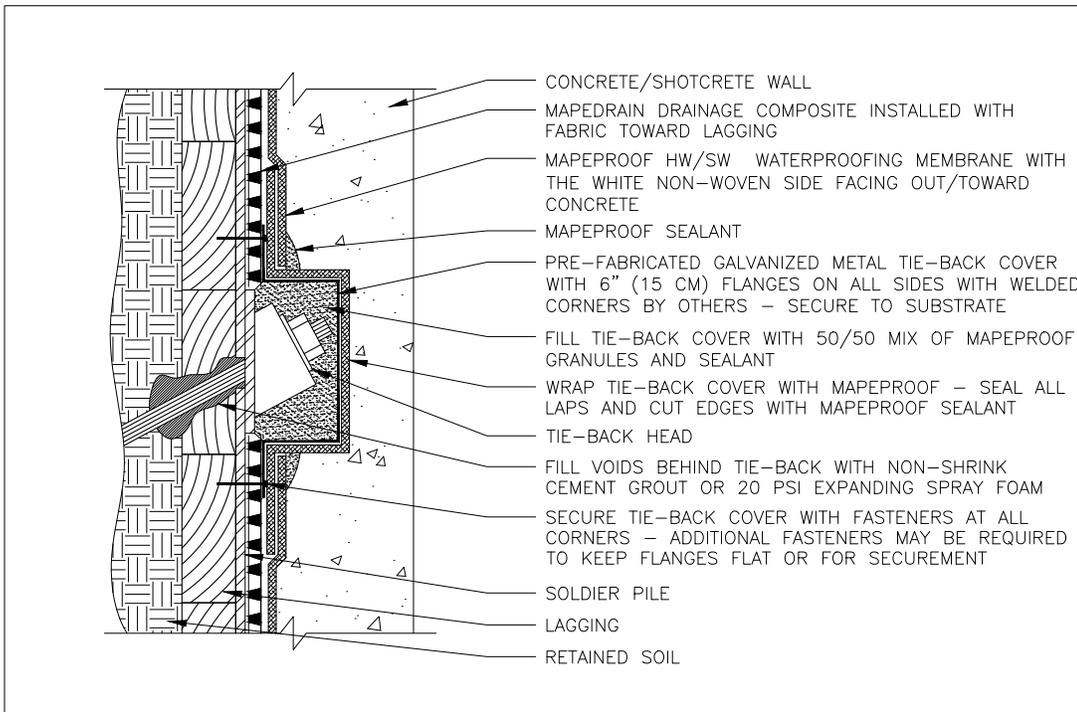
 <p>DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.</p>	WALL/FOOTING/SLAB TRANSITION HYDROSTATIC CONDITION	SUPERCEEDS: 00/00/0000
		DATE: 02/01/2016
		SCALE: NOT TO SCALE
		DRAWING #: MP-8C





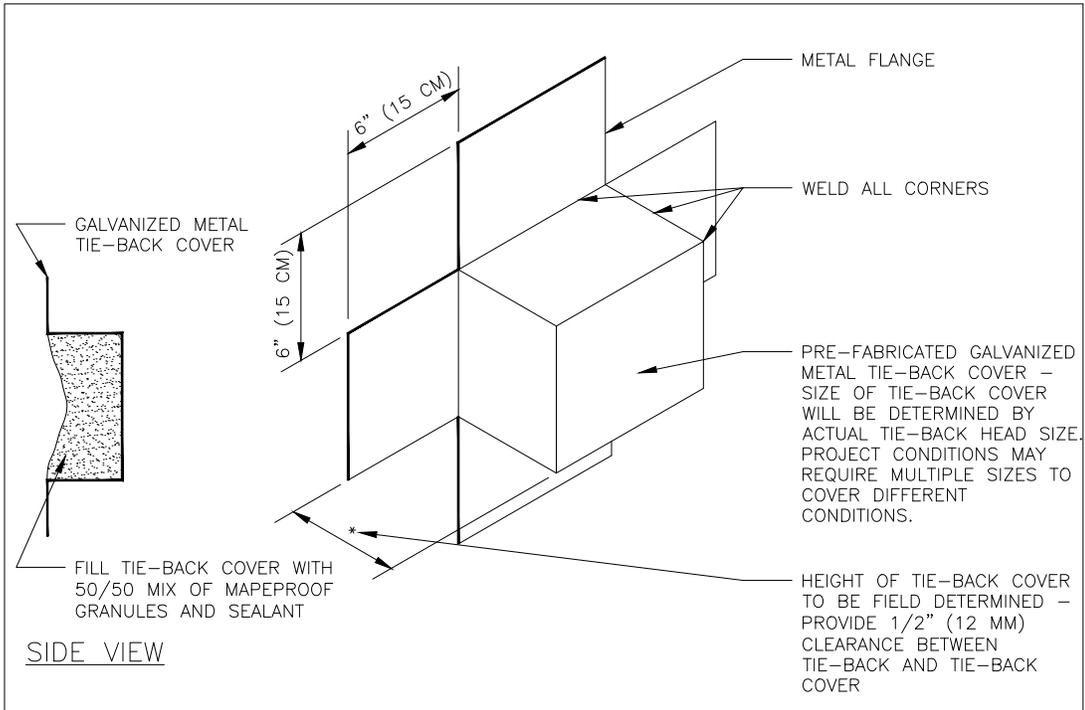
POSITIVE SIDE FOUNDATION WATERPROOFING TERMINATION

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-10B



PRE-FABRICATED METAL TIE-BACK COVER INSTALLATION

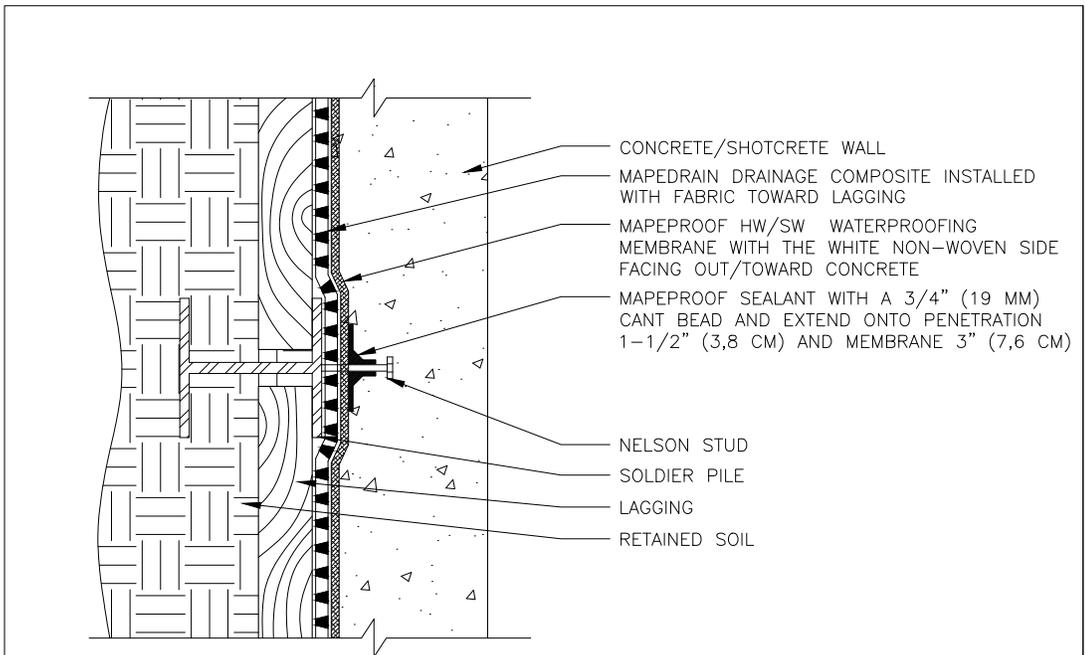
SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-11A




DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

PRE-FABRICATED METAL TIE-BACK COVER

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-11B

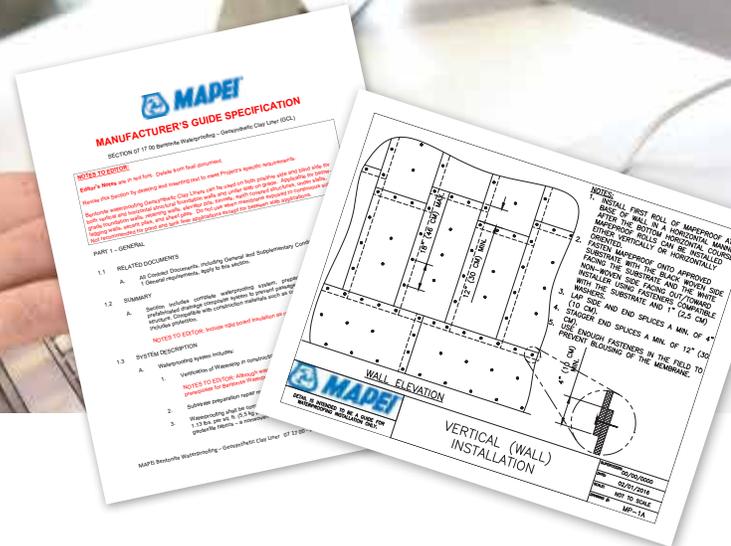



DETAIL IS INTENDED TO BE A GUIDE FOR WATERPROOFING INSTALLATION ONLY.

NELSON STUD DETAIL

SUPERCEEDS:	00/00/0000
DATE:	02/01/2016
SCALE:	NOT TO SCALE
DRAWING #:	MP-11C

MAPEI launches below-grade waterproofing tools for architects



MAPEI recently added Below-Grade Waterproofing Systems to the Architectural CAD/Spec Guide tool. Users now have easy access to Guide Specifications for the waterproofing systems; Technical Data Sheets for waterproofing products; and over 80 CAD details (available in DWG and PDF formats).



Mapeproof™ Bentonite Clay Below-Grade Waterproofing System Specification Manual



Keyword: MAPEI Americas

MAPEI Headquarters of the Americas

1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) /
(954) 246-8888

Technical Services

1-888-365-0614 (U.S. and Puerto Rico)
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