Mapedrain 10

Moderate-Strength, Intermediate-Flow, Prefabricated Drainage Composite

DESCRIPTION

Mapedrain™ *10* is a moderate-strength, three-dimensional drainage composite. It consists of a nonwoven filter fabric bonded to individual dimples of a molded polypropylene core, minimizing fabric intrusion into the drainage channels caused by overburden pressure. The filter fabric allows water to pass freely into the drainage core, which provides hydrostatic relief while preventing the passage of soil or sand particles that might clog the core.

FEATURES AND BENEFITS

- Lightweight and easy to install, *Mapedrain 10* provides cost savings and eliminates the need for aggregate backfill.
- *Mapedrain 10* also serves as a protection course for MAPEI waterproofing membranes. Contact a MAPEI representative for specific guidelines.
- *Mapedrain 10* intermediate-flow drainage provides up to three times the flow capacity of aggregate or sand.
- The product's moderate compression strength withstands backfill pressure.
- *Mapedrain 10* channels water away from installed waterproofing systems.
- Native soils can be used over *Mapedrain 10*.
- Geotextile filter fabric ensures no-clog drainage by preventing intrusion of soil, concrete or construction grout into the flow channels.
- Unaffected by permanent immersion in water, bacteria, dilute acids and alkalis, *Mapedrain 10* will not deteriorate when exposed to these conditions.
- *Mapedrain 10* offers below-grade relief of hydrostatic pressure against foundation and retaining walls, when connected to a passive-gravity drain or operational sump pump.
- The efficiency-oriented volume packaging of *Mapedrain 10* allows 7 rolls per pallet.
- The drain core is 40% post-industrial recycled polypropylene material.

WHERE TO USE

- *Mapedrain 10* is designed for use in vertical applications requiring single-sided subsurface drainage from an intermediate-flow composite with moderate compressive strength.
- For depths not exceeding 10 feet (3.05 m)
- For residential and light commercial construction
- Use with *Mapedrain TD* drainage composites and related accessories.
- For below-grade vertical foundation structures and retaining wall applications

LIMITATIONS

- *Mapedrain 10* is not designed or intended to be used as a waterproofing membrane. Rather, it is an accessory for waterproofing systems.
- Do not leave *Mapedrain 10* permanently exposed to ultraviolet (UV) light.
- Backfill must be uniformly compacted in lifts 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 *Mapedrain 10*, the substrate must be properly prepared or the waterproofing membrane completely installed, except in blindside waterproofing applications.
- **Vertical (general):** Substrates may be concrete, shotcrete, masonry, wood lagging, soil, 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 non-shrinking cement-based construction grout. Grind all form fins, ridges and sharp corners, and remove excess concrete.
- **Wall lagging:** *Mapedrain 10* can be installed over wood lagging gaps up to 2-1/2" (6.3 cm) to provide a uniform surface for waterproofing membranes. Gaps larger than 2-1/2" (6.3 cm) should be completely filled with construction grout, wood or extruded polystyrene (at a minimum of 40 psi [0.28 MPa]). Do not use plywood or another surface treatment that leaves voids in the lagging gaps.

PRODUCT APPLICATION

Mapedrain 10 prefabricated drainage composite panels can be installed against retaining walls, foundation walls (both waterproofed and non-waterproofed) and lagging. *Mapedrain 10* can be cut to fit the application with a utility knife or scissors. Backfill, gravel, slurries, shotcrete or concrete may be placed directly onto either side of the *Mapedrain 10* panels. The panels can terminate on top of the footing and are flexible enough to form right angles to cover the top of the footing.

For standard installation details, follow the *Mapedrain* detail drawings at www.mapei.com. For non-standard installation instructions, contact a MAPEI representative.

Attachment Methods for Waterproofing Systems

Attaching to walls that have adhered waterproofing membranes

Mapedrain 10 should be attached using a *Mapebond*™ contact adhesive, or an approved sealant or adhesive. Apply a *Mapebond* contact adhesive over the entire surface of the waterproofing membrane and to the back (plastic) side of *Mapedrain 10*. Allow the adhesive to dry and then apply *Mapedrain 10* to the membrane.

Mapedrain 10 will be permanently secured upon installation of backfill. Backfill should be placed as soon as possible and extended to about 4" to 6" (10 to 15 cm) above the termination edge of *Mapedrain 10*.

Attaching to soil retention systems for blindside applications
Mapedrain 10 should be secured with fasteners compatible with the substrate (concrete, masonry, wood or soil) and 1" (2.5 cm) washers. Prevent concrete from flowing behind the *Mapedrain 10* core by sealing the back side of the panel joints with a strip of *Planiseal® Membrane SA* sheet membrane (or duct tape). Sealing the back side of the panel is not necessary if a *Mapeproof* waterproofing membrane is applied over *Mapedrain 10* before pouring concrete or applying shotcrete.

Attaching to walls with no waterproofing membrane
When *Mapedrain 10* should be attached to walls that lack a waterproofing membrane, use a *Mapebond* contact adhesive, approved sealant or adhesive, or fasteners compatible with the substrate and 1" (2.5 cm) washers. *Mapedrain 10* will be permanently secured upon installation of backfill. Backfill should be placed as soon as possible and extend to about 4" to 6" (10 to 15 cm) above the termination edge of *Mapedrain 10*.

Installation Steps

1. Installation in columns or rows
   Mapedrain 10 panels can be installed in columns or rows with the fabric side toward the soil. Each installation method is acceptable and has its advantages depending on the specific project conditions.
   In columns: Start at the end of the wall and align the edge of *Mapedrain 10* with the corner. Install *Mapedrain 10* starting at the low point of the wall and attach the panel to the wall. Adjacent panels should be joined together with the lateral edge of the connecting panel placed over the flanged edge of the previous panel.
   In rows: Place the longitudinal edge of the core against the wall so that it is flush with the wall footing and attach the panel to the wall. Attach subsequent panels in shingle fashion with fabric overlap at the bottom, placing the longitudinal edge of the upper panel over the flanged longitudinal edge of the lower panel and lap fabric from upper panel over lower panel.
2. *Mapedrain 10* laps
   a. Overlap the flange of the plastic core from panel to panel and in shingle fashion to shed water, where water flow is a concern.
   b. The fabric from the adjacent panels should overlap the preceding panel. The fabric can be adhered with a *Mapebond* contact adhesive, *Mapeflex® P1 FT*, *Mapeflex P2 NS* or *Planiseal Mastic*, or duct tape.
3. *Mapedrain 10* termination
   a. Terminate *Mapedrain 10* about 4" to 6" (10 cm to 15 cm) below the finished grade.
   b. The termination edge of *Mapedrain 10* should be sealed by wrapping the filter fabric around to the back side of the panel. If there is insufficient fabric, cut and remove 3 to 4 rows of dimples from the core to provide excess fabric for wrapping behind the core. Wrapping the fabric around to the panel's back side prevents soil or construction debris from clogging the core.
   c. Secure the fabric with a *Mapebond* contact adhesive, *Mapeflex P1 FT*, *Mapeflex P2 NS* or *Planiseal Mastic*, or duct tape.
4. Wall setback or ledge conditions, if present
   a. *Mapedrain 10* panels should be installed beginning at the bottom of the wall and ending at the ledge.
   b. Subsequent courses of *Mapedrain 10* should be installed flat against the upper wall portion and placed so that 4" to 6" (10 to 15 cm) extend down and over the lower edge.
   c. The overlapping *Mapedrain 10* sections will be pushed flush against the wall when the backfill is installed.
5. Foundation drainage collector/discharge system
   a. Place *Mapedrain TD* accessories as required in design details. *Mapedrain TD* should be installed adjacent to *Mapedrain 10*. Care must be taken to ensure a continuous drainage path between *Mapedrain TD* and the *Mapedrain 10* panels.
   b. Determine the locations for *Mapedrain* fittings (end outlet, side outlet, splice and corner). Cut *Mapedrain*

TD accessories to the proper length between fittings, allowing for extra length for insertion into fittings. Insert *Mapedrain TD* completely into fittings. Tape the fittings with duct tape.
c. Secure the fittings and *Mapedrain TD* accessories to the base of the wall with soil, a *Mapebond* contact adhesive, *Mapeflex P1 FT* or *Mapeflex P2 NS*. If no waterproofing was used, secure the fittings and *Mapedrain TD* accessories with 1" (2.5 cm) washers and fasteners that are compatible with the substrate.
d. Connect the base fittings to 4" (10 cm) corrugated plastic drain pipe and run it to a sump pump or daylight. Special care should be taken to properly compact soil under the drain pipe to prevent settling of the drain pipe.
e. Backfill and compact the soil in lifts.

6. Collector pipe
   a. Install *Mapedrain 10* as specified in the installation instructions above.
   b. Place the collector pipe as required in the design details.
   c. Encapsulate the collector pipe in a gravel bed with a supplemental section of a filter fabric as a separator/filter.

Product Performance Properties

Laboratory Tests	Results
Core	
Thickness – ASTM D1777	0.40" (10.16 mm)
Compressive strength – ASTM D1621	11,000 psf (527 kN/m^2)
Flow (hydraulic gradient = 1) – ASTM D4716	18 g/min/ft (223 L/min/m)
Fabric	
Apparent opening size (AOS) – ASTM D4751	70 U.S. sieve (0.212 mm)
Grab tensile – ASTM D4632	100 lbs. (0.45 kN)
CBR puncture – ASTM D6241	250 lbs. (1.113 kN)
Flow – ASTM D4491	140 gal/min/ft^2 (5 704 L/min/m^2)

Storage

Protect product from UV light exposure. Store on a skid or pallet, and cover with polyethylene or tarp. Do not double-stack pallets.

CSI Division Classification

Subdrainage	33 46 00

Packaging and Coverage

Roll: 4 x 50 ft. (1.22 x 15.2 m), covering 200 sq. ft. (18.6 m^2); packaged 7 rolls per pallet

ADDITIONAL INFORMATION

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

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