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This specification specifies 1" & 2" SHOCKWAVE DRAINAGE / INSULATION BOARDS. This product is manufactured by Mar-flex Waterproofing & Building Products. Revise section number and title below to suit project requirements, specification practices and section content. Refer to CSI MasterFormat 2004 for other section numbers and titles.

This specification utilizes the Construction Specifications Institute (CSI) Manual of Practice, including MasterFormat™ 2004, SectionFormat™ and PageFormat™. This is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

SECTION 072113.13 FOAM BOARD INSULATION

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Thermal Board Installation.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

- B. Related Sections:
1. Section 033000 – Cast in Place Concrete
 2. Section 071000 – Dampproofing and Waterproofing
 3. Section 312310 – Building Excavation and Fill
 4. Section 334616 – Subdrainage Piping
 5. Section 334619 – Underslab Drainage
 6. Section 042200 – Masonry
 7. Section 076000 – Flashing & Sheet Metal

1.02 REFERENCES

- A. Standards of the following as referenced
1. American Society for Testing and Materials (ASTM):

1.03 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Quality Assurance/Control Submittals: Submit the following:
1. Certificates: Submit certificate that applicator complies with requirements of this section.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.04 QUALITY ASSURANCE

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

- A. Preinstallation conference: Coordinate with conference scheduled for waterproofing materials. Follow requirements indicated in waterproofing materials section.

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 1 Product Requirements Section.

1.05 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

1.06 SEQUENCING AND SCHEDULING

- A. Schedule installation after waterproofing installation but prior to backfill.

1.07 WARRANTY

- A. Manufacturer's 5 Year Material Warranty available.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 Foundation Drainage / Thermal Insulation

Specifier Note: Paragraph below is an addition to CSI SectionFormat. Retain or delete paragraph below per project requirements and specifier's practice.

- A. Manufacturer: Mar-flex Waterproofing & Building Products
 - 1. Contact: 500 Business Pkwy Carlisle, OH 45005; Telephone: (800) 498-1411, (513) 422-7285; Fax: (513) 422-7282
 - 2. E-mail: info@mar-flex.com; Website: www.Mar-flex.com
- B. ShockWave 1" or 2" Foundation Insulation/Drainage Boards:
 - 1. Material: Closed Cell Foam Board
 - 2. Thermal Resistance: (for 3 Layer Earth-Foam-Concrete) – ASTM C-518
 - a. 1" - not less than 9,
 - b. 2" - not less than 13.50
 - 3. Transmissivity (Flow Rate) - ASTM D-4716
 - a. 1" - 50 gal/hr/lin.ft.
 - b. 2" - 101.11 gal/hr/lin.ft.
 - 4. Permeability – ASTM D-2434
 - a. 1" & 2" - 36 gal./min. or 2160/hr.
 - 5. Compression – ASTM D-1621
 - a. 1" & 2" - 283.72 psi
 - 6. Foundation Drainage Rate: Up to 101.11 gal/hr/lin ft.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: Substitutions not permitted.

2.03 ACCESSORY MATERIALS

- A. Provide proprietary accessory materials or comparable, including the following:

- 1. Marflex's 362 Mastic:
 - a. Material: Plastic or resin material compatible with the waterproofing membrane.

Specifier Note: Clips ease installation process and distributes weight of board while hanging to prevent damage during backfill.

- 2. Fasteners:
 - a. Product: Geo-Clips
 - b. Material: Pronged clips to distribute weight of board to prevent damage during backfill.

Specifier Note: For horizontal application, specify drainage material to remove drainage water.

3. Marflex's 12" 523 DrainAway
4. Marflex's 12" Connectors

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI SectionFormat. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the most current written installation instructions and recommendations of the manufacturer.

3.02 EXAMINATION

- A. Site Verification of Condition:
 1. Verify that waterproofing is in place.
 2. Verify that site conditions are acceptable for application of the board.
 3. Do not proceed with application until unacceptable conditions are corrected.

3.03 PREPARATION

- A. Surface Preparation:
 1. Application of waterproofing membrane

Specifier Note: Coordinate article below with manufacturer's recommended application requirements.

3.04 APPLICATION

- A. Install ShockWave after waterproofing membrane has been applied. Place and secure to substrate according to manufacturer's current written instructions.
 1. While the membrane is still tacky, starting at a corner with the filter fabric side facing out-ward, install the ShockWave horizontally over the sprayed sections of the wall. The boards should be placed side by side, extending from the top of the footers to finished grade.
 2. Apply uniform pressure to the board throughout the surface area, not just the edges and corners. Note: If boards are stacked, maintain a factory-equivalent edge at all seams to ensure proper fit and drainage channel alignment.
 3. The use of fasteners, such as concrete nails or Mar-flex Geo Clips, to secure the board to the walls to hold in place until backfilled is optional.
 4. If using the Mar-flex Geo Clips secure the ShockWave at the top of the boards, place a Geo Clip at each corner making sure that at least two prongs from the Geo Clip is placed in each board. When securing the ShockWave at the seams, place a Geo Clip in the middle of the boards making sure that there is one prong in each board.
 5. Once the Geo Clips are in place install them using a powder actuated mechanical fastener or concrete nail.
 6. If the board overlaps the membrane once you have reached the grade line, a utility knife or similar tool can be used to cut the boards to the correct height.
- B. Backfill and Drainage
 1. #57 Gravel or equivalent must go no less than 2' high at the base of the foundation and 1' in depth away from the foundation walls.
 2. Adequate interior and exterior foundation drainage at the base of the foundation walls, across any floors or adjacent flower beds must be properly installed and functioning properly.
 3. Backfilling should begin no sooner than 24 hours after the installation of the board, but must be backfilled within 15 days.
- C. 12" 523 DrainAway Vertical Collection System Installation
 1. Unroll material along foundation base; adhere to partially cured waterproofing material; use adhesive acceptable to waterproofing material manufacturer for cured waterproofing or other sheet waterproofing not requiring curing.
 2. Install preformed corner fittings at foundation interior and exterior corners.
 3. Install outlet fittings where indicated; connect to corrugated drainage pipe if present at time of modular system installation; leave ready for connection to corrugated drainage pipe if not present.

Specifier Note: Coordinate article below with Division 1 Execution Requirements (Cleaning) Section.

3.06 CLEAN UP

- A. Dispose of scrap in dumpster.