



HYDROSTAR PRODUCTS

HYDROSTAR AG Series HDPE Dampproofing and Drainage Membrane
07 00 00 – Thermal and Moisture Protection
07 10 00 – Dampproofing 07 13 00 – Sheet Waterproofing
07 13 54 – Thermoplastic Sheet Waterproofing

NOTE TO SPECIFIER: These specifications were current at the time of publication but are subject to change at any time without notice. Please confirm the accuracy of these specifications with the manufacturer and/or distributor prior to installation.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Below grade waterproofing and dampproofing
- B. Thermal & Moisture Protection – Sub Grade Drainage

1.2 RELATED SECTIONS

- A. Section 07 11 13 – Bituminous Dampproofing
- B. Section 07 12 00 – Build-Up Bituminous Waterproofing
- C. Section 07 13 00 – Sheet Waterproofing
- D. Section 07 14 00 – Fluid Applied Waterproofing
- E. Section 07 16 13 – Polymer Modified Cement Waterproofing
- F. Section 07 16 16 – Crystalline Waterproofing
- G. Section 07 16 19 – Metal Oxide Waterproofing
- H. Section 07 17 13 – Bentonite Panel Waterproofing
- I. Section 31 23 16 – Excavation
- J. Section 31 23 23 – Fill and Backfilling
- K. Section 33 46 00 – Sub drainage (Foundation drainage)

1.3 REFERENCES

- A. ASTM C 1311 – Standard Specification for Solvent Release Sealants 2002
- B. ASTM D 1621 – Standard Test Method for Solvent Release Sealants 2002



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- C. ASTM E 96/E96M – Standard Test Methods for Water Vapor Transmission of Materials 2005
- D. CCMC Technical Guide for Foundation Wall Drainage Systems – Dimpled Membranes Master Format Section 02622.1 (2015)
- E. CCMC Technical Guide for Rigid Polyethylene or Polystyrene Dampproofing Membrane: Master Format Section 07111 (2015)
- F. CGSB 19-GP-14M – Sealing Compound, One Component Butyl Polyisobutylene Polymer Base, Solvent Curing (1984)
- G. CAN/CGSB-51.34M – Vapor Barrier, Polyethylene Sheet used in Building Construction
- H. ASTM D 7492/7492-M11 – Standard Guide for Use of Drainage System Media with Waterproofing Systems
- I. ASTM D1621 – Standard Test Method for Compression of Rigid Cellular Plastics

1.4 SUBMITTALS

- A. See Section 01 30 00, – Administrative Requirements for submittal procedures
- B. Product Data: Manufacturer’s data sheets on selected product(s) to be used, including:
 - 1. Preparation instruction, recommendations and site prep meeting
 - 2. Storage and handling requirements and recommendation by Mfr.
 - 3. Installation manual and application methods, including equipment used
 - 4. Accessories used as part of the installation for the product
 - 5. Product warranty and performance data
 - 6. Special considerations after installation (backfilling requirements, local soil conditions, clearances)
 - 7. General Installation Guidelines, Installation requirements
 - 8. General guidelines for other trades that interface with product
- C. Samples: 12”x 12” (300 mm x 300 mm) sample piece of sheet material, with 12” (300 mm) length of molding strip, 1 fastener of each type, and 1 data sheet of sealant being used, one nail type being used (screw for ICF foundations, Stainless Steel or EG Steel Nails for PWF)



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- D. Test Reports: Product Evaluation Reports from authorities of jurisdiction, or third-party testing reports showing compliance with specified project and Building Code requirements
- E. Installer Qualifications: Installers must show certification of qualification for installation of the product(s) and a resume of 5 project references performed for similar project types
- F. Copy of Warranty Certificate issued for completed projects, and an executed warranty upon project completion

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Certification that Company performing the work of this type has experience and is approved and certified by the membrane manufacturer
- B. Manufacturer's Field Services: Provide the services of a field representative accredited by the sheet manufacturer to examine substrates and general site conditions before starting installation of the product(s). Periodically review installation procedures applied in field and review final installed system(s) for conformity to the manufacturer's guidelines and approved material evaluations (at a rate of 25% and 60% complete)

1.6 DELIVERY, STORAGE AND PROTECTION

- A. Deliver products to project site in its original packaging with all labels in tact
- B. Store products in a manner acceptable to the membrane manufacturer and meeting product evaluation requirements
- C. When products must be stored for extended periods of time during construction, keep out of direct sunlight and at temperatures above -22°F (-30°C)
- D. Store and dispose of waste materials in a manner that conforms to local recycling programs, and in conformance with general construction site requirements. Ensure all waste material is properly disposed of and site is left clean of all refuse materials upon completion of membrane installation



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- E. Ensure that end users are aware that the membrane must be kept protected from direct sunlight exposure once the installation is complete by following the guidelines set out in the CCMC Product Evaluation (13673-R/13674-R)
- F. Store and dispose of any solvent based materials, and materials used with solvent based materials in accordance with the requirements of local authorities of jurisdiction

1.7 WARRANTY

- A. 20-year Limited Product Warranty

PART 2

2.1 MANUFACTURERS

- A. All Products of this Section:
 - 1. Alexwill Distribution Inc. – www.hydrostarag.com
 - 2. Substitutions – (01 06 00)
 - a) Membrane Requirements (Non Allowed)
 - b) Membrane Fasteners (Non Allowed)
 - c) Sealants (See Section 07 92 00 – Joint Sealants) Fibrated Mastic, Butyl Rubber, Elastomeric (CGSB 19-GP-14M)

2.2 APPLICATIONS

- A. Foundation Wall Dampproofing and Drainage Layer
 - 1. Install membrane to all walls of below grade structures from the top of the footings to the final elevation of the exterior grade
 - 2. Ensure all overlaps of membrane are installed in accordance with the manufacturer's installation guideline and manual
 - 3. Ensure all fasteners are installed in accordance with the manufacturer's recommended installation guideline and manual
 - 4. Ensure that the installation of all accessories is installed in accordance with the manufacturer's Installation Manual
 - 5. The membrane is compatible with the use of a water or solvent based liquid applied dampproofing or waterproofing membranes



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2.3 MATERIALS

A. Dampproofing/Drainage Membrane: High Density Polyethylene (HDPE) sheet, thermally formed dimples throughout the field of the sheet with a manufactured flat flange at the top of the membrane edge for sealing (hard/mechanically or soft/sealant) to the foundation wall.

1. Product: Hydrostar AG Dimple Membrane
2. Color: Black
3. Working Temperatures: -22°F (-30°C) to +176°F (80°C)
4. Dimple Thickness: 7 mm
5. Compressive Strength: 7,414 lbs/ft² (355 kN/m²)
6. Top Flange Thickness: 3" (76.2 mm)
7. UV Stability: 30 days maximum UV exposure, material must be covered within 30 days of installation
8. Material Quality: Meets the requirements of the CCMC Technical Guide for Rigid Polyethylene or Polystyrene Dampproofing and Drainage membrane
9. Sheet Width: As required to reduce the total seams necessary for a continuous installation and substrate coverage
10. Sheet Length: 65.6 ft (20 m)
11. Recycled Content: ≥ 87% (Post Consumer)
12. Sustainable Design: Mono-extruded utilizing top grade post consumer recycled polyethylene with performance additives to enhance the membranes long term performance

B. ACCESSORIES

1. Hydrostar Mold Strip™ for end detailing, and window or cut outs
2. Round HDPE fasteners (Hydrostar Washers™) for attaching the membrane to the substrate c/w 1.25" concrete nail
3. 6 Point star shaped single fasteners for an additional anchorage solution



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PART 3 EXECUTION

3.1 EXECUTION

- A. Ensure that substrates are sound and sufficient to retain fasteners once seated and adequately dry to allow bonding of any sealants applied as part of the system. All form tie holes are to be sealed.
- B. Verify that there are no active leaks within the area to be waterproofed, if so have them remedied prior to installation of the membrane
- C. Ensure that the sub drainage system (foundation drainage) has been properly installed per local building regulations
- D. Ensure that the final grade lines have been properly marked on the foundation for the installer to know where to properly terminate the membrane at the surface elevation
- E. Do not install the membrane until all substrates have been properly prepared in accordance with good construction practice and the Hydrostar AG installation guide. CMU should be parged prior to membrane installation, reference local Code for parging specification requirements.
- F. If the preparation is the responsibility of a third party or trade, notify the architect, engineer or the owners representative of the unsatisfactory conditions, and ensure they are remedied before proceeding with the installation

3.2 PREPARATION

- A. Clean to top of all footings of debris (broom clean), ensure top of footing is clear of excess construction materials (granular, formwork, reinforcing bars) before installation.
- B. Prepare surfaces using the methods recommended by the membrane manufacturer for achieving the best result for the substrate under the project conditions.



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1. Remove projections larger than 0.25" (6 mm), remove all sharp edges or protrusions
 2. In concrete and masonry, have cracks and form tie holes patched to provide a suitable substrate as recommended by the membrane manufacturer
 3. Power washing of the footings is "optional" for severe site conditions to properly expose the footing and allow for the installation and drainage of the membrane
 4. Ensure that all honey-combing, excessive voids or cracks are remedied prior to the installation of the membrane
- C. Mark installation locations (by the builder/owner) on walls prior to beginning the installation

3.3 INSTALLATION

- A. Install the membrane in accordance with the membrane manufacturers recommended procedure (Installation Manual)
- B. Do Not Install if:
1. Ambient temperature is below -22°F (-30°C)
 2. Concrete has not been cured for at least 3 days
 3. Standing water and mud is present in the excavation around the foundation
- C. General Sheet Installation:
1. Install sheets without gaps, wrinkles, creases, or tears
 2. Align and interlock overlapping layers, follow manufacturers install instructions for sealing requirements of overlaps
 3. Secure to substrate at edges and in field of the membrane using fasteners and methods recommended by the sheet manufacturer. Staggered fasteners in alternate rows works best to reduce stress in the body of the sheet
 4. Fasten top edge using methods and accessories recommended by the manufacturer



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5. Fasten and terminate around all opening and penetrations, and at other locations as recommended manufacturer, using method as recommended by the manufacturer
- D. Dampproofing or Waterproofing (Pending): Additional installation information
1. Install membrane with protruding dimples side facing the substrate
 2. Unless indicated otherwise, fasten membrane using specified fasteners at specified spacings as recommended and shown in the manufacturer's installation instructions
 3. At top fasten the flat edge (tab) securely to the substrate with recommended fasteners (washers) at the recommended intervals shown in the manufacturer's installation guide being 6" to 8" o/c (150 mm to 200 mm) with the recommended concrete nails for concrete and CMU (concrete masonry unit walls), screws for ICF or stainless steel or electrogalvanized nails for PWF (preserved wood foundations). An *alternate* method is to secure the top tab with a Hydrostar AG™ Molding strip and nails spaced not more than 8" o/c. Do not exceed recommended spacing of fasteners
 4. NOTE: For applications in heavy clay or limited free draining type soils a third row of fasteners is to be installed 12" below the 2nd row of fasteners in the body of the membrane spaced at the recommended intervals as outlined in the manufacturer's installation instructions for fastener installation.
 5. All overlap joints shall be overlapped at least 6" with a continuous bead of sealant placed from top to bottom of the joint, with dimples interlocked, and fastened with the recommended fasteners by the manufacturer placed not more than 6" o/c (staggered) over the overlap seam. The seam shall be flat and have the membrane fully embedded with the sealant bead (as necessary). A 12" seam overlap w/o sealant is allowed (see manual)
 6. For cut outs of membrane to accommodate windows and other interruptions of the membrane, cut back membrane 3" from rough opening and install Hydrostar molding strip around opening ensuring to fully cover the membrane cut edge and fasten in place using appropriate nails/screws at not more than 8" o/c. Miter cut all corners of the mold strip to ensure a tight fit. Seal any large gaps around mold strip where and if it overlaps.



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7. At inside and outside corners install the membrane as close to the substrate as possible by pre-bending the membrane without breaking or tearing the sheet and fasten at recommended intervals to ensure a tight fit to corner. Nails in all corners shall not be installed closer than 5" (125 mm) to avoid damage to the substrate corners.
 8. Ensure that the membrane covers the substrate (wall) from the top of the footing to the final grade line. It is optional, to extend the membrane at the bottom out over the footing and to the drainage tile.
- E. Repairs to the Dimple Sheet Membrane - At tears due to construction activities and penetrations, apply continuous bead of sealant between the sheet membrane and patch material as shown in the manufacturer's installation instructions. Attach patch material to the membrane with fasteners at the recommended intervals shown in the manufacturer's installation guide
- F. After installation of any reinforcing steel or other construction which takes place prior to final cover of the dimple sheet membrane, inspect the membrane for damage and repair damaged sheet using methods as described in the manufacturer's installation guide. Contact the manufacturer for instructions for further information on repairs as required.

3.4 FIELD QUALITY CONTROL

- A. Provide the services of the manufacturer's technical representative or agent to inspect substrates for suitability of the membrane installation, review procedures during construction, and review the finished work
- B. Ensure that a complete and functioning perimeter drainage system is installed, or other means to control the collection of ground water
- C. Ensure that all trades involved in the construction project that have a direct impact on the membrane are made aware of the backfilling and handling requirements to mitigate damage to the membrane



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3.5 PROTECTION

- A. Do not leave installed membrane exposed to sunlight for more than 30 days after installation. Ensure to cover any rolls left in the field during construction, complete backfill operations soon after installation, or cover exposed membrane with a protection board or other acceptable cover
- B. Prior to backfilling, inspect the membrane for tears and other damage and remediate any damage
- C. Take care when backfilling to avoid damage to membrane, ensure the fill does not include any large rocks or foreign matter that could damage the membrane when backfilling. Repair any damage to the membrane noted during backfilling
- D. Protect installed products until completion of the project
- E. Touch up, repair or replace damaged membrane or accessory products before substantial completion of the installation
- F. Obtain certificate of completion from owner or the owner's representative indicating that the installation was completed successfully and in general conformance with the provided manufacturer's installation manual and instructions prior to backfill operations (where project procedures require or allow for such certificates)

END OF SECTION