

Keene Building Products Guide Specification

Driwall Fluid Applied AWB

Driwall Fluid Applied AWB - Air/Water Barrier
Section 07 27 00

PART I – GENERAL

1.01 SUMMARY

A. This document is to be used in preparing specifications for projects utilizing the Driwall Fluid Applied AWB a 100% acrylic based liquid or fluid applied air and water barrier designed with low VOC and approved where a water barrier or flashing is required. Related Keene Building Products documents:

1. Keene Building Products Driwall Fluid Applied AWB System Data Sheet
2. Keene Building Products Driwall Fluid Applied AWB System Application Instructions
3. Keene Building Products Driwall Fluid Applied AWB System Installation Details

B. Related Sections

1. Unit Masonry – Section 04200
2. Concrete – Sections 03300 and 03400
3. Light Gauge Cold Formed Steel Framing – Section 05400
4. Wood Framing – Section 06100
5. Sealant – Section 07900
6. Flashing – Section 07600

1.02 SUBMITTALS

- A. Manufacturer's specifications, details, installation instructions and product data
- B. Manufacturer's code compliance report
- C. Manufacturer's standard warranty
- D. Applicator's industry training credentials
- E. Samples for approval as directed by architect or owner
- F. Prepare and submit project-specific details (when required by contract documents)

1.03 REFERENCES

A. ASTM Standards:

- ASTM C297 Tensile Bond
- ASTM C1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
- ASTM C1396 (formerly C 79) Standard Specification for Gypsum Board
- ASTM D1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E72 Racking Resistance
- ASTM E96 Test Methods for Water Vapor Transmission of Materials
- ASTM E330 Test Method for Structural Performance of Exterior Windows, Doors and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM E331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference.
- ASTM E1233 Structural Performance
- ASTM E2134 Test Method for Evaluating the Tensile-Adhesion Performance of an Exterior Insulation and Finish System (EIFS)
- ASTM E2178 Test Method for Air Permeance of Building Materials



- ASTM E2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
- ASTM E2485 Freeze/Thaw Resistance
- ASTM E2568 Standard Specification for Class PB Exterior Insulation and Finish Systems
- ASTM E2570 Test Method for Water-Resistive (WRB) Coatings used Under Exterior Insulation and Finish Systems (EIFS) with Drainage
- B. Building Code Standards
 - AC212 Restrained Environmental Cycling, UV Exposure and Aging
 - AC235 Acceptance Criteria for EIFS Clad Wall Assemblies (November, 2009)
- C. National Fire Protection Association (NFPA) Standards
 - NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source
 - NFPA 285 Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Non-Load Bearing Wall Assemblies containing Combustible Components Using the Intermediate-Scale, Multistory Test Apparatus
- D. Other Referenced Documents
 - American Association of Textile Chemists and Colorists AATCC-127 Water Resistance: Hydrostatic Pressure Test
 - APA Engineered Wood Association E30, Engineered Wood Construction Guide
 - UES Evaluation Report 384, Rollershield Water Barrier

1.04 SYSTEM DESCRIPTION

- A. General: The Keene Driwall Fluid Applied AWB System is a fluid applied air and water barrier application. The product shall be applied over an approved substrate in accordance with the Driwall Fluid Applied AWB application details.
- B. Methods of Installation
 - 1. Field Applied: Driwall Fluid Applied AWB System is applied to the substrate system in place.
 - 2. Panelized: The Driwall Fluid Applied AWB System is shop-applied to the prefabricated wall panels.
- C. Design Requirements
 - 1. Acceptable substrates for the Driwall Fluid Applied AWB System shall be:
 - a. Exterior sheathing having a water-resistant core with fiberglass mat facers meeting ASTM C 1177.
 - b. Exterior fiber reinforced cement or calcium silicate boards.
 - c. APA Exterior or Exposure 1 Rated Plywood, Grade C-D or better, nominal 12.7 mm (1/2 in), minimum 4-ply.
 - d. Unglazed, unpainted brick, cement plaster, concrete, or masonry.
 - e. APA Exposure 1 rated Oriented Strand Board (OSB) or plywood, nominal 12.7 mm (1/2 in).
 - f. Other substrates approved in writing from the manufacturer.
 - 2. Deflection of substrate systems shall not exceed 1/240 times the span.
 - 3. The substrate shall be flat within 6.4 mm (1/4 in) in a 3.05 m (10 ft) radius.
 - 4. The slope of inclined surfaces shall not be less than 6:12, and the length shall not exceed 305 mm (12 in).
 - 5. Expansion Joints
 - a. Design and location of expansion joints in the Driwall Fluid Applied AWB System is the responsibility of the project designer and shall be noted on the project drawings. As a minimum, expansion joints shall be placed at the following locations:
 - 1) Where expansion joints occur in the substrate system.
 - 2) Where building expansion joints occur.
 - 3) At floor lines in wood frame construction (Reference Technical Bulletin #140).
 - 4) At floor lines of non-wood framed buildings where significant movement is expected.
 - 5) Where the Driwall Fluid Applied AWB System abuts dissimilar materials.

- 8) Where significant structural movement occurs such as changes in roofline, building shape or structural system.
- 6. Terminations
 - a. Interior foam expanding foam sealant may be required behind penetration openings.
 - b. Sealants
 - 1) Shall be manufactured and supplied by others.
 - 2) Shall be compatible with Driwall Fluid Applied AWB System materials.
- 7. Vapor Retarders and barriers – The use and location of vapor retarders and/or barriers within a wall assembly is the responsibility of the project designer and shall comply with local building code requirements.
- 8. Flashing: Shall be provided at all roof-wall intersections, windows, doors, chimneys, decks, balconies and other areas as necessary to prevent water from entering behind the Driwall Fluid Applied AWB System.

1.05 PERFORMANCE REQUIREMENTS

A. Driwall Fluid Applied AWB System shall have been tested as follows:

Air/Moisture Barrier Performance

TEST	METHOD	CRITERIA	RESULT
1. Water Penetration Resistance	AATCC 127 (Water Column) ICC ES (AC 212)*	Resist 21.6 in (55 cm) water for 5 hours before and after aging	Pass
2. Water Penetration Resistance after Cyclic Wind Loading	ASTM E1233 / ASTM E331	No water penetration beyond the inner-most plane of the wall after 15 minutes at 137 Pa (2.86 psf)	No water penetration
3. Water Resistance Testing	ASTM D2247 ICC ES (AC 212)*	Absence of deleterious effects after 14 day exposure	Pass: Plywood Cement Board, OSB, Exterior Gypsum (ASTM C79/C1396) and Dens Glass Gold (ASTM C1377) substrates
4. Water Vapor Transmission	ASTM E96 Method B (Water Method)	Measure	30 perms (Rollershield) 12 perms (Trowelshield)
5. Air Leakage (material)	ASTM E2178	≤ 0.004 cfm/ft ² at 1.57 psf (0.02 L/s•m ² at 75 Pa)	0.0002 cfm/ft ²
6. Air Leakage (assembly)	ASTM E2357	≤ 0.04 cfm/ft ² (0.2 L/s•m ²) @ 75 Pa	0.003 L/s.m ² @ 75 Pa 0.02 L/s.m ² @ 300 Pa
7. Racking	ASTM E72 ICC ES (AC 212)*	No cracking in field, at joints or interface with flashing at net deflection of 3.2 mm (1/8 inch)	Pass
8. Freeze-thaw	ASTM E2485/ICC-ES Proc. ICC ES (AC 212)*	No deleterious effects after 10 cycles	Pass: Plywood, Cement Board, OSB, Exterior Gypsum (ASTM C79/C1396) and Dens Glass Gold (ASTM C1377) substrates
9. UV Exposure	ICC ES Proc. ICC ES (AC 212)*	210 hours of exposure	Pass
10. Surface Burning	ASTM E84	Flame Spread 0 – 25 for NFPA Class A, UBC Class I	Flame Spread: 5 Smoke Density: 5

Air/Moisture Barrier Performance Continued

TEST	METHOD	CRITERIA	RESULT
11. Tensile Adhesion	ASTM C297	>15 psi (103 kPa)	Dens Glass Gold 31 (215), Exterior Gypsum 28 (194), OSB 40 (277), Plywood 79 (563), Cement Board 70 (485), Copper 185 (1282), Galvanized steel 180 (1248), PVC 168 (1165), Aluminum 184 (1275), Coated Aluminum 203 (1407), Stainless Steel 183 (1269)

* AC212 – Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers over Exterior Sheathing, also referred to as ASTM E 2570

AWB - LAB Weather Resistance and Durability Performance*

TEST	METHOD	CRITERIA	RESULTS
1. Transverse Wind Load	ASTM E330	Withstand positive and negative wind loads as specified by the building code.	Pass. Assemblies vary from 68-287 psf*

* Ultimate wind loads – contact Keene Building Products for specific assemblies.

Air/Moisture Barrier and AWB - LAB Fire Performance

TEST	METHOD	CRITERIA	RESULT
1. Intermediate Scale Multi-Story Fire Test	NFPA 285 (formerly UBC Standard 26-9)	<ol style="list-style-type: none"> Resistance to vertical spread of flame within the core of the panel from one story to the next Resistance to flame propagation over the exterior surface Resistance to vertical spread of flame over the interior surface from one story to the next Resistance to significant lateral spread of flame from the compartment of fire origin to adjacent spaces 	Pass
2. Surface Burning (individual components)	ASTM E84	Individual components shall each have a flame spread of 25 or less, and smoke developed of 450 or less	Flame Spread: 0 Smoke Developed: 0

1.06 QUALITY ASSURANCE

A. Qualifications

- System Manufacturer: Shall be Keene Building Products®. All materials shall be manufactured or sold by Keene Building Products and shall be purchased from Keene Building Products or its authorized distributors.
- Contractor: Shall be knowledgeable in the proper installation of the Keene Driwall Fluid Applied AWB System.

B. Regulatory Requirements

- Continuous insulation if used shall be separated from the interior of the building by a minimum 15-minute thermal barrier.
- The use and maximum thickness of continuous insulation shall be in accordance with the applicable building codes.

C. Certification

- The Driwall Fluid Applied AWB System shall be recognized for the intended use by the applicable building code(s).

D. Mock-Up

1. The contractor shall, before the project commences, provide the owner/architect with a mock-up for approval.
2. The mock-up shall be of suitable size as required to accurately represent the products being installed, as well as each color and texture to be utilized on the project.
3. The mock-up shall be prepared with the same products, tools, equipment and techniques required for the actual application. The finish used shall be from the same batch that is being used on the project.
4. The approved mock-up shall be available and maintained at the job site.
5. For panelized construction, the mock-up shall be available and maintained at the panel fabrication location.

1.07 DELIVERY, STORAGE AND HANDLING

- A. All Keene Building Product materials shall be delivered to the job site in the original, unopened packages with labels intact.
- B. Upon arrival, materials shall be inspected for physical damage, freezing, or overheating. Questionable materials shall not be used.
- C. Deliver all materials in original unopened packages with labels intact. Verify all quantities, colors, and textures against bill of lading.
- D. Store all materials protected from direct exposure to weather conditions and at temperatures not less than 40°F (4°C) or greater than 110°F (43°C).
- E. Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) shall be supplied for the components of the AWB and be available at the job site.

1.08 PROJECT CONDITIONS

- A. Ambient air temperatures shall be 40°F (4°C) or greater and rising at the time of installation of the Keene Building Products and shall remain at 40°F (4°C) or greater for at least 24 hours after application.
- B. Provide supplemental heat and protection as required when the temperature and conditions are not in accordance with installation requirements. Sufficient ventilation and time shall be provided to ensure that materials have sufficiently dried prior to removing supplemental heat.
- C. Adequate protection shall be provided to prevent weather conditions (humidity, temperature, and precipitation) from having an affect on the curing or drying time of Keene Building Products materials.
- D. Adjacent materials and the Rollershield LAB System shall be protected during installation and while curing from weather and shall be protected from site damage.
- E. Coordinate installation of the Driwall Fluid Applied AWB System with related work specified in other sections to ensure that the wall assembly is protected to prevent water from getting behind the system. The cap flashing shall be installed as soon as possible after the finish coat has been applied. When this is not possible, temporary protection shall be provided immediately in this area.
- F. All sealant work shall be installed in a timely manner. Protect open joints from water intrusion during construction with backer rod, or temporary covering, until permanently sealed.
- G. Sufficient manpower and equipment shall be employed to ensure a continuous operation, free of cold joints, scaffolding lines, and texture variations, etc.
- H. Existing Conditions - The contractor shall have access to electric power, clean water, and a clean work area at the location where the Keene Building Products materials are to be applied.
- I. Exposure Limitations – Driwall Fluid Applied AWB is limited to a maximum of 30 days exposure when EIFS is to be adhered to the product. The surface must be clean and dry prior to application of EIFS. Under all other cladding products the exposure limitation is a maximum of six months.

1.09 SEQUENCING AND SCHEDULING

- A. Installation of the Driwall Fluid Applied AWB shall be coordinated with other construction trades.
- B. Sufficient manpower and equipment shall be employed to ensure a continuous operation.

1.10 LIMITED MATERIALS WARRANTY

- A. Provide a manufacturer's warranty against defective material upon request.

PART II – PRODUCTS

2.01 MANUFACTURER

A. All components of the Driwall Fluid Applied AWB System shall be supplied or obtained from Keene Building Products or its authorized distributors. Substitutions or additions of materials other than specified will void the warranty.

2.02 MATERIALS

- A. Fluid Applied AirWater Barriers (AWB)
 - 1. Driwall AWB-HP: A flexible polymer-based roll or spray applied air barrier and waterproof membrane.
 - 2. Driwall AWB-TG: A trowel grade version of Rollershield-RS.
 - 3. Driwall AWB-VB: A Class I Vapor Retarder with a vapor permeability of 0.07 perms.
- B. Sheathing Joint Treatment/Transition Treatment
 - 1. Fabric Seam Tape, 4" (104 mm) width.
- C. Keene Liquid Flash: Moisture curing gun grade alternate treatment for flashing windows, or joints and seams of the Rollershield LAB application.
- D. Exterior Sealants (Driwall AWB to Penetrating Item): Single part polyurethane conforming to Federal Specification TT-S-00230C, Type II, Class A; ASTM C 920, Type S, Grade NS, Class 25, Use NT, M, A, G and I.
 - 1. BASF Sonolastic® NP1™
 - 2. Sikaflex® One Part Polyurethane
 - 3. Tremco Vulkem Polyurethane Sealant
- E. Interior Sealants: A multi-purpose, professional, low-expansion construction adhesive and gap and crack filler. One component polyurethane foam that cures by absorbing water vapor from the air with no CFC/HCFC.
 - 1. Wind-Lock Foam-2-Foam Adhesive
 - 2. Illbruck FM230 Window Seal Gun Grade Foam

PART III – EXECUTION

3.01 EXAMINATION

- A. Prior to installation of the Driwall Fluid Applied AWB System, the contractor shall verify that the substrate:
 - 1. Is of a type listed.
 - 2. Is flat within 6.4 mm (1/4 in) in a 3 m (10 ft) radius.
 - 3. Is sound, dry, connections are tight, has no surface voids, projections or other conditions that may interfere with the Driwall Fluid Applied AWB System installation or performance.
- B. Prior to the installation of the Driwall Fluid Applied AWB System, the architect or general contractor shall insure that all needed flashings and other waterproofing details have been completed, if such completion is required prior to the Driwall Fluid Applied AWB application. Additionally, the Contractor shall ensure that:
 - 1. Metal roof flashing has been installed in accordance with Asphalt Roofing Manufacturers Association (ARMA) Standards.
 - 2. Openings are flashed in accordance with the Driwall Fluid Applied AWB System Installation Details or as otherwise necessary to prevent water penetration.
 - 3. Chimneys, Balconies, and Decks have been properly flashed.
 - 4. Windows, Doors, etc. are installed and flashed per manufacturer's requirements and the Driwall Fluid Applied AWB System Installation Details.
- C. Prior to the installation of the Driwall Fluid Applied AWB System, the contractor shall notify the general contractor, and/or architect, and/or owner of all discrepancies.

3.02 PREPARATION

- A. Driwall Fluid Applied AWB materials shall be protected by permanent or temporary means from inclement weather and other sources of damage prior to, during, and following application until completely dry.
- B. Protect adjoining work and property during Driwall Fluid Applied AWB installation.
- C. The substrate shall be prepared as to be free of foreign materials, such as, oil, dust, dirt, form release agents, efflorescence, paint, wax, water repellents, moisture, frost and any other condition that inhibit adhesion.

3.03 GENERAL GUIDELINES

- A. The system shall be installed in accordance with the current Keene Driwall Fluid Applied AWB System Application Instructions.

3.04 FIELD QUALITY CONTROL

- A. The contractor shall be responsible for the proper application of the Driwall Fluid Applied AWB materials.
- B. Keene Building Products assumes no responsibility for on-site inspections or application of its products.
- C. If required, the contractor shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures, workmanship and as to the specific products used.

3.05 DRIWALL FLUID APPLIED AWB APPLICATION

- A. Mixing
 - 1. Mix the products following the instructions on the product data sheets.
 - 2. Additives shall not be added to Keene Building Products materials unless written approval has been received from Keene Building Products.
- B. Preparation
 - 1. Protect contiguous work from damage during application of the Driwall Fluid Applied AWB. Temporary covering may be required to prevent over spray or splattering of coatings on other work.
 - 2. Protect substrate from inclement weather during installation. Prevent infiltration of moisture behind the wall.
 - 3. Coatings shall not be installed when ambient air temperature is below 40°F (4°C). The temperature shall remain at or above 40°F (4°C) during mixing, application and until materials have dried.
 - 4. Flashings shall be installed as required by construction documents and Keene Building Products details in a manner to prevent the intrusion of water behind the wall system. All flashing materials should direct the water to the exterior face of the finished wall system.
- C. Installation, General
 - 1. Reference architectural details for full wall system requirements.
 - 2. Comply with the manufacturers' current published instructions, (specifications, details, data sheets and technical bulletins) for the installation of the Driwall Fluid Applied AWB.
 - 3. Comply with local building codes.
 - 4. Verify that all flashings and other items are in place.
- D. Driwall Fluid Applied AWB Application
 - 1. The substrate must be approved by Keene Building Products, clean, dry, structurally sound, and free of efflorescence, oil, grease, form release agents and curing compounds or anything that would affect bond. Painted surfaces are not acceptable and must be removed. Substrates must be flat and free of fins or planar irregularities greater than 1/4" in 10'-0" (6.35 mm in 3.05m).

Concrete – Must have cured a minimum of 28 days prior to the application of Driwall Fluid Applied AWB. If form release agents or curing compounds exist on the surface, they must be removed with a solution of muriatic acid or similar product (with appropriate precautions). Remove any residual acid by flushing with water.

Brick/Masonry – If joints are not struck flush, multiple coats may be required. Contact Keene Building Products for more information.

Sheathing Applications - Sheathing gaps must be less than 1/4" (6.4 mm). Gap wood-based sheathing per manufacturer's recommendations, typically 1/8" (3.2 mm) minimum.

2. Stir the Driwall Fluid Applied AWB to a homogeneous consistency.
 3. Driwall Fluid Applied AWB is applied by first treating the joints and fastener locations, then coating the entire surface using brush, roller, trowel or airless spray equipment techniques.
 4. Apply a thin layer of Driwall Fluid Applied AWB at all joints, corners, openings or transitions. While the Driwall Fluid Applied AWB is still wet, center Fabric Seam Tape and immediately embed it into the wet Driwall Fluid Applied AWB. Recoat as necessary to ensure full embedment. Spot fasteners using a paint brush or trowel and allow to dry. Driwall Fluid Applied AWB may be flashed into window, door and other openings using the same techniques. Reference details for flashing options.
 5. Roll or spray apply Driwall Fluid Applied AWB over the prepared sheathing to a nominal uniform thickness of 15 mils wet, 10 mils dry with no pinholes or voids. When using a foam roller, a maximum ¾" (19 mm) nap is recommended. Apply Driwall Fluid Applied AWB in an even, continuous coat, maintaining a wet edge of approximately 15 mils thickness, 10 mils dry. Oriented Strand Board and other porous substrates require two (2) coats of Driwall Fluid Applied AWB.
 6. Spray Recommendations: Driwall Fluid Applied AWB is compatible with GRACO and Titan airless spray equipment with the following specifications; Minimum 1 gallon per minute output, Minimum hose width of 3/8 inch, Minimum tip size of 0.027–0.031, Minimum pressure requirement to spray of 2,000 psi at the gun with an airless sprayer rated no lower than 3,300 psi. Remove all filters in sprayer and gun before application. Hopper Gun: 3/16"-1/4" (6-6.5 mm) orifice, 23-25 psi.
 7. Driwall Fluid Applied AWB must be applied as a continuous barrier of 10 mils dry thickness with no breaks or skips, although some areas will appear lighter than others due to the application process. The Driwall Fluid Applied AWB application need not look like a painted surface.
 8. Repair any voids or holes with additional coats of Driwall Fluid Applied AWB or spot applications with Driwall Fluid Applied AWB-TG.
 9. Allow to dry completely before proceeding with installation.
- E. Flashings or Terminations
1. Install flashing terminations as recommended. Apply a thin layer of Driwall Fluid Applied AWB at the transitions. While the Driwall Fluid Applied AWB is still wet, center Seam Fabric Tape and immediately embed it into the wet Driwall Fluid Applied AWB Rollershield. Recoat as necessary to ensure full embedment.
- F. Drying and Curing
1. Provide protection from rain and temperatures below 4°F (4°C) for a minimum of 24 hours after application. Longer protection may be necessary during lower temperatures and/or higher humidity conditions.
 2. Once cured, Driwall Fluid Applied AWB may be exposed to the elements as long as 30-days once fully dry but should be covered as soon as practical.

3.06 JOB SITE CLEANUP

- A. Clean work area in accordance with contract documents removing all excess materials, droppings and debris. Clean adjacent surfaces.
- B. Other trades may now install their work – Sheet Metal (Section 07620), Sealants (Section 07900), Mechanical (Section 15000), Electrical (Section 16000).

3.07 PROTECTION

- A. Driwall Fluid Applied AWB System shall be protected from inclement weather and other sources of damage until dry and permanent protection in the form of flashings, sealants, cladding, etc. are installed.

Disclaimer

This Specification is published for general informational purposes only and is not intended to imply that these are the only materials, procedures, or methods, which are available or suitable. Materials, procedures, or methods may vary according to the particular circumstances, local building code requirements, design conditions, or statutory and regulatory requirements. While the information in this specification is believed to be accurate and reliable, it is presented without guarantee or responsibility on the part of Keene Building Products.