



SUBMITTAL REVIEW

H&A JN: 1614.03
Project: MSBA Accelerated Repair Program
Halifax Elementary School – Windows, Doors & Siding Replacement
464 Plymouth Street
Halifax, MA 02338

SUBMITTAL
07 7200-15 Air Barriers

ITEMS:


1. Henry Commercial Air Barrier System Product Information
2. Henry Self Adhered Air Barrier Membrane Spec Information Blueskin SA

COMMENTS:


HABEEB & ASSOCIATES ARCHITECTS INC. 150 LONGWATER DRIVE NORWELL, MA 02061	
NO EXCEPTIONS TAKEN	X
NOTE MARKINGS RESUBMITTAL NOT REQ'D	
NOTE MARKINGS RESUBMITTAL REQ'D	
REJECTED	
This review is given for design concept only and does not relieve the contractor from meeting the provisions of the contract, drawings and specifications. The Contractor is responsible for verifying all dimensions, schedules, quantities and field conditions.	
DATE 03-23-18	BY SB

To: **Habeeb & Associates Architects**
 150 Longwater Drive
 Norwell, MA 02061

Contractor: **Lambrian Construction Corporation**
 384 Washington Street
 Westwood, MA 02090
 Tel: (781) 461-1100 Fax: (781) 461-9885

Submittal No:	15
Date Submitted:	3/21/2018
Manufacturer:	Henry Company
Product Name:	Commercial Air Barrier Systems
Specification Section:	07 2500 - Par. 2.01 6a
Approved By:	
Description:	Weather Barriers

COMMENTS:
 To be used behind the Fiber Cement Siding.

PROJECT: Halifax Elementary School
 LAMBRIAN CONSTRUCTION CORP.
 Approved by: 

WINDOWS, DOORS & SIDING REPLACEMENT
 HALIFAX ELEMENTARY SCHOOL
 464 PLYMOUTH STREET
 HALIFAX, MASSACHUSETTS 02338



Henry® | **Building Envelope Systems®**
Roofing | Air Barrier | Waterproofing

Ask us today about other Henry® solutions that help manage the flow of water, air, vapor and energy.

Commercial Air Barrier Systems

The industry's most complete offering of air barrier systems for commercial construction

One chance to get it right

- ✓ Keeping up with changing building codes
- ✓ Meeting increasingly strict environmental regulations
- ✓ Protecting against mold
- ✓ Designing wall assemblies that offer effective fire protection
- ✓ Satisfying growing demands for energy efficiency
- ✓ Accommodating extreme weather shifts

With challenges like these, designing effective air barrier systems has never been more complex, as the design and construction community bring to life tomorrow's commercial buildings.

In this pressure-filled world, you want a partner you can trust to deliver the expertise and solutions you need to get it right from the start. That is why today's architects, building envelope consultants and contractors are turning to Henry® Company to guide them to trusted, high-performance Building Envelope Systems® solutions.

One company to count on

A complete portfolio

Henry® is one of the only companies in the industry to offer a complete line of Building Envelope Systems® including roofing, air barrier and waterproofing systems. Our complete portfolio provides you with the ultimate in both performance and design flexibility.

An airtight reputation

A pioneer in the building industry with roots dating back to the 1930's, Henry® helped revolutionize commercial construction with the introduction of air barriers. Delivering dependable performance, Henry® commercial air barrier systems help:

- Eliminate uncontrolled air leakage
- Reduce energy consumption
- Mitigate moisture infiltration
- Provide control of air quality in structures, resulting in improved comfort and peace of mind

Let us use our building envelope expertise to help you find the right air barrier system for your needs.

Optimize performance: select the right air barrier

The first step to optimizing air barrier performance is choosing the right system to meet your project needs. In order for your air barrier system – and your building – to meet performance expectations, you will need to factor climate zone and wall assembly design into your decision.

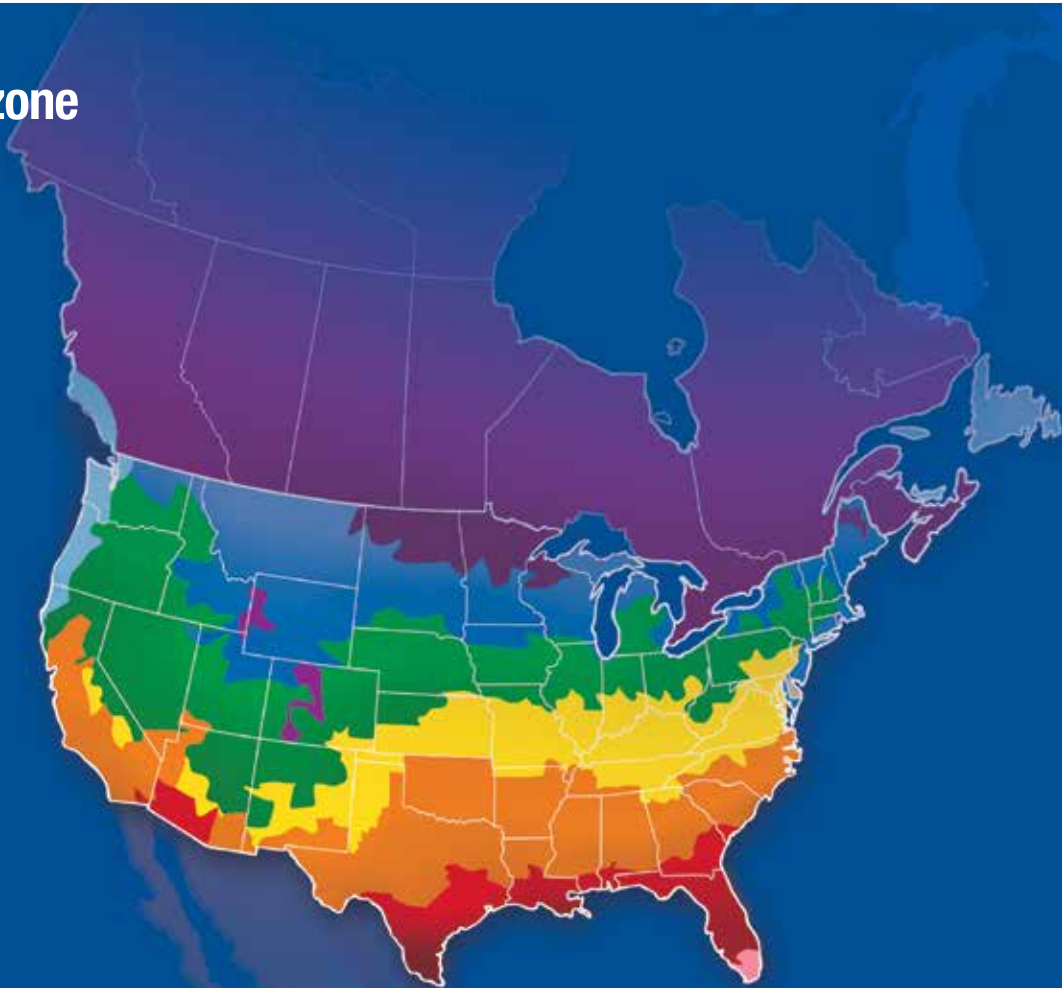
“The architect or building designer is responsible for making judgements about what materials to use and how to use them. However, close collaboration with the WRB manufacturer is extremely important to help the architect select the optimum product and installation details given the specific factors at play in their project.”

John Straube, Ph.D.
Principal for RDH Building Science Inc.

Know your climate zone

You must first determine the climate zone in which the air barrier system will need to function, as each zone poses unique challenges. Climate zones are categorized as:

- Climate zone 1
Very hot/humid
- Climate zone 2
Hot-humid/dry
- Climate zone 3
Warm - humid/dry/marine
- Climate zone 4
Mixed - humid/dry
- Climate zone 4 marine
Mixed - marine
- Climate zone 5
Cool - humid/dry
- Climate zone 6
Cold - humid/dry
- Climate zone 7 & 8
Very cold



This map is meant to serve as a representation of the climate zones outlined by ASHRAE. This map was not created or provided by ASHRAE.

Consider wall assembly design

With a variety of air barrier products designed to enhance indoor comfort in all climates, you will also have to factor wall assembly design into your decision. Important aspects of wall assembly design to consider include:

- Building performance requirements
- Substrate to which the air barrier will be applied
- Location of insulation
- Complex geometries and rough surfaces
- Compliant in various NFPA 285 assemblies
- Avoiding condensation in the wall assembly



Additional considerations

Both climate and wall design will play a role in deciding between a vapor impermeable or vapor permeable air barrier.

Vapor impermeable air barriers act as air, vapor and water barriers. When positioned on the warm side of the insulating layer, they serve as an efficient vapor barrier, preventing moisture condensation through the wall cavity.

Vapor permeable air barriers act as air and water barriers as well, but allow moisture vapor to escape. They typically can be positioned anywhere in the wall assembly for greater design flexibility.

Once you have selected between vapor impermeable and vapor permeable, you will need to determine if a self-adhered sheet or fluid applied system is right for your project.

The experts at Henry® can help you navigate the many decisions involved in selecting the optimal air barrier solution.

Count on Henry® air barrier systems

Air barrier membranes from Henry® are available in two main types: self-adhered sheet and fluid applied. While both may perform the same function equally well, you will need to consider the pros and cons of each type based on your project needs. You will also need to select the appropriate primer, flashing and sealant accessories to create an effective building envelope system that meets your building performance requirements.

Advantages of self-adhered sheet air barriers:

- Manufacturer-controlled thickness of membrane
- No mixing or special installation equipment needed
- Easily bridges gaps

Advantages of fluid applied air barriers:

- Provide a seamless, monolithic, durable membrane
- Excellent for complex geometries and rough surfaces
- Easily seal around penetrations

All Henry® air barrier systems are third-party tested to meet codes and demands for durability and sustainability:

Air permeance: Low air permeance per ASTM E2178, ASTM E2357, CAN/ULC S741 and CAN/ULC S742.

Self-gasketing: Meet ASTM D1970 and AAMA 711 for sealing around fasteners, eliminating water penetration even after the exterior facade is installed.

Wall assembly fire test: One of the industry's broadest lines of commercial air barriers that pass as part of various wall assemblies per NFPA 285.

Sustainable and environmental design benefits: Contribute to sustainable design, energy efficiency and LEED credits by utilizing durable, low-VOC air barriers. Health Product Declarations are available for transparency.

Durability: Meet CAN/ULC S741 and S742 test standards to ensure long-term durability.

Blueskin® self-adhered sheet air barriers: a consistent plane of protection

Introduced by Henry® over 30 years ago – and providing trusted performance ever since – self-adhered Henry® Blueskin® air barriers create a continuous membrane upon installation.

- Vapor impermeable and vapor permeable options available
- Precise manufacturing controls the thickness to help ensure uniform performance
- Available in a variety of roll widths – makes for easy handling on site
- Compliant in various NFPA 285 assemblies
- Installation is quick and easy

Air-Bloc® fluid applied air barriers: seamless protection to keep walls dry

With a range of vapor impermeable and vapor permeable options, Air-Bloc® fluid applied air barriers accommodate every climate and substrate for greater flexibility depending on your project needs.


- Low VOC formulations allow compliance with environmental regulations
- Available as single component, with UV stability for permanent exposure
- Apply with standard industry spray equipment, roller or trowel over a wide temperature range
- Available with antimicrobial agents to defend against mold and mildew
- Compliant in various NFPA 285 assemblies

Henry® commercial air barrier systems selection chart


selection chart

	Primary air barrier membranes										Flashings					Sealants		Primers	
	Fluid applied						Self-adhered sheet				Air-Bloc® LF	Blueskin® Butyl Flash	Blueskin® TWF	212 All Purpose Crystal Clear	925 BES Sealant	Blueskin® Adhesive	Blueskin® LVC Adhesive	Blueskin® Spray Prep Adhesive	Aquatac™ Primer
	Air-Bloc® 16MR	Air-Bloc® 17MR	Air-Bloc® 21	Air-Bloc® 31MR	Air-Bloc® 32MR	Air-Bloc® 33MR	Blueskin® VP160	Blueskin® SA	Blueskin® SA LT	Metal Clad®									
Vapor permeable	•		•		•	•					•		•			•	•	•	•
Vapor impermeable	•		•		•			•	•	•			•	•					
UV stable <i>For permanent exposure</i>						•			•		•			•	•				
Low application temperature <i>Lower than 40 °F (5 °C)</i>	•	•	•				•*		•*		•	•		•	•	•	•	•	
Low VOC** <i>100 g limit</i>	•	•		•	•	•	n/a	n/a	n/a	n/a	•	n/a	n/a		•				•
Self-gasketing	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
Mold resistant	•	•		•	•	•					•			•					
NFPA 285 compliance	All Henry® commercial air barriers are compliant in NFPA 285 wall assemblies.																		


* Primer required
** VOC regulations do not apply to articles such as sheet applied membranes and flashings. VOCs are only measured in certain liquid products.



Air permeance and durability:
Low air permeance per ASTM E2178 and ASTM E2357. Meet CAN/ULC S741 and S742 air permeance and long-term durability standards.



Self-gasketing:
Meet ASTM D1970 and AAMA 711 for sealing around fasteners, eliminating water penetration even after the exterior facade is installed.



Wall assembly fire test:
One of the industry's broadest lines of commercial air barriers that pass as part of various wall assemblies per NFPA 285.



Sustainable and environmental design benefits:
Contribute to sustainable design, energy efficiency and LEED credits, by utilizing durable, low-VOC air barriers. Health Product Declarations are available for transparency.

Consult updated Technical Data Sheet for most recent information

Total protection is our mission

Henry® Building Envelope Systems®

For over 80 years, Henry® products and systems have helped manage the flow of water, air, vapor, and energy through the building envelope. From foundation to roof, our solutions improve the energy efficiency, livability and sustainability of commercial and residential structures, for the benefit of the owner, occupant and the environment.

Most importantly, our experience has confirmed that the building envelope needs to be viewed as a holistic system – from roof to wall to foundation – offering a last line of defense from the elements. Today, our Building Envelope Systems® include an entire portfolio of interrelated solutions to help you meet the challenges you face.

When it comes to making sure you get the **air barrier systems** and **Building Envelope Systems®** solutions and expertise you need, turn to a partner you can trust – **turn to Henry®**.

Waterproofing Systems

Designing a durable waterproofing system from the start is essential to protecting your foundation and various deck applications. Once the building is complete, the opportunity to integrate an optimized waterproofing system into the building envelope is lost. Henry® provides proven, comprehensive waterproofing solutions that keep the structure dry and protect it from damage due to water infiltration.

Air Barrier Systems

Designing air barrier systems for today's structures has never been more challenging. A designer has to balance air leakage, water resistance, vapor management, thermal controls and fire resistance, all while keeping an eye on the budget. Henry® Building Envelope Systems® include an entire portfolio of air barrier solutions to help you meet your goals.

Roofing Systems

From providing durable, watertight performance, to managing storm water run-off and offering outdoor green spaces, Henry® roofing systems are designed to meet the challenges of these evolving trends. Inverted roof membrane assemblies, including vegetative roof assemblies and solutions for plaza decks, along with conventional roofing solutions for low-slope and flat roof applications help provide years of reliable service to building owners and occupants.

All Henry® Building Envelope Systems® are backed by comprehensive warranties.

SECTION 07 27 13

SELF-ADHERED NON PERMEABLE AIR BARRIER MEMBRANE

SPEC NOTE: This specification includes materials and installation procedures for Blueskin® SA or SA LT, a sheet applied self-adhered non permeable air barrier membrane meeting the requirements of the Massachusetts Energy Code for the building envelope. Blueskin® SA and SA LT is used in cavity wall construction to provide an air/vapor and rain barrier membrane. This specification should be adapted to suit the requirements of individual projects. It is prepared in CSI three part format and should be included as a separate section under Division 7 - Thermal and Moisture Protection.

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. General Conditions, Supplementary Conditions, Instructions to Bidders and Division One General Requirements shall be read in conjunction with and govern this section.
- B. This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less than the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work.

1.02 DESCRIPTION

- A. Supply labor, materials and equipment to complete the Work as shown on the Drawings and as specified herein to bridge and seal the following air leakage pathways and gaps:
 - 1. Connections of the walls to the roof air barrier.
 - 2. Connections of the walls to the foundations.
 - 3. Seismic and expansion joints.
 - 4. Openings and penetrations of window and door frames, store front, curtain wall.
 - 5. Piping, conduit, duct and similar penetrations.
 - 6. Masonry ties, screws, bolts and similar penetrations.
 - 7. All other air leakage pathways in the building envelope.
- B. Materials and installation methods of the primary air/vapor barrier membrane system and accessories.
- C. Materials and installation methods of through-wall flashing membranes.

1.03 RELATED SECTIONS

- | | |
|----------------------|--------------------|
| A. Concrete | Section [03 XX XX] |
| B. Masonry | Section [04 XX XX] |
| C. Gypsum Sheathing | Section [06 16 43] |
| D. Plywood Sheathing | Section [06 XX XX] |
| E. Insulation | Section [07 XX XX] |
| F. Roofing | Section [07 XX XX] |
| G. Wall Panels | Section [07 XX XX] |
| H. Flashing | Section [07 XX XX] |
| I. Sealants | Section [07 XX XX] |
| J. Door Frames | Section [08 XX XX] |
| K. Window Frames | Section [08 XX XX] |

1.04 REFERENCES

- A. The following standards are applicable to this section:
 - 1. ASTM E2357: Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
 - 2. ASTM E2178: Standard Test Method for Air Permeance of Building Materials.
 - 3. ASTM E283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
 - 4. E1677 Specification for Air Retarder (AR) Material or System for Low-Rise Framed Building Walls
 - 5. ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - 6. ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
 - 5. ASTM E96: Water Vapor Transmission of Materials.
 - 6. CGSB 37-GP-56M: Membrane, Modified, Bituminous, Prefabricated, and Reinforced.

1.05 SUBMITTALS

- A. Submit documentation from an approved independent testing laboratory certifying the air leakage and vapor permeance rates of the air barrier membranes, including primary membrane and transition sheets, exceed the requirements of the Massachusetts Energy Code and in accordance with ASTM E2178.
 - 1. Test report submittals shall include test results on porous substrate and include sustained wind load and gust load air leakage results.
- B. Submit copies of manufacturers' current ISO certification.
- C. Submit manufacturers' current product data sheets for the air barrier membrane system

1.06 QUALITY ASSURANCE

- A. Submit document stating the applicator of the primary air/vapor barrier membranes specified in this section is qualified by the manufacturer as suitable for the execution of the Work.
- B. Perform Work in accordance with manufacturer's written instructions and this specification.
- C. Maintain one copy of manufacturer's written instructions on site.
- D. Allow access to Work site by the air barrier membrane manufacturer's representative.
- E. Components used shall be sourced from one manufacturer, including sheet membrane, air barrier sealants, primers, mastics, and adhesives.
- F. Single-Source Responsibility:
 - 1. Obtain air barrier materials from a single manufacturer regularly engaged in manufacturing the product.
 - 2. Provide products which comply with all state and local regulations controlling use of volatile organic compounds (VOCs).

1.07 MOCK-UP

- A. Construct mock-up in accordance with Section 01 43 39 – Mock-ups.
- B. Provide mock-up of air/vapor barrier materials under provisions of Section 01 33 23 - Shop Drawings, Product Data and Samples.
- C. Where directed by [engineer] [architect] [consultant], construct typical exterior wall panel, 6 foot long by 6 foot wide, incorporating substrate, window frame, attachment of insulation and showing air barrier membrane application details.
- D. Allow 48 hours for inspection of mock-up by [engineer] [architect] [consultant] before proceeding with air barrier work. Mock-up may remain as part of the Work.
- E. Test mock-up for air and water infiltration to conform with Section 01400 - Quality Control, in accordance with ASTM E 783 and ASTM E1105.

1.08 PRE-INSTALLATION CONFERENCE

- A. Contractor shall convene [one] week prior to commencing Work of this section, under provisions of Section 01 31 19 – Project Meetings.
- B. Ensure all contractors responsible for creating a continuous plane of air tightness are present.

1.09 DELIVERY, STORAGE AND HANDLING

- A. Refer to current Product MSDS for proper storage and handling.
- B. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
- C. Store role materials on end in original packaging. Protect rolls from direct sunlight until ready for use.
- D. Store air barrier membranes, adhesives and primers at temperatures of 40 degrees F and rising.
- E. Keep solvent away from open flame or excessive heat.
- F. Wasted Management and Disposal
 - 1. Separate and recycle waste materials in accordance with Section [01355 - Waste Management and Disposal], and with the Waste Reduction Work Plan

1.10 COORDINATION

- A. Ensure continuity of the air seal throughout the scope of this section.

1.11 ALTERNATES

- A. Submit request for alternates in accordance with Section 01 25 00 – Substitution Procedures.
- B. Submit requests for alternates a minimum of ten (10) working days prior to bid date.
- C. Alternate submission to include:

1. Evidence that alternate materials meet or exceed performance characteristics of Product requirements as well as documentation from an approved independent testing laboratory certifying the air leakage rates and vapor permeance rates of the air barrier membranes, including primary membrane and transition sheets, exceed the requirements of the Massachusetts Energy Code and in accordance with ASTM E2178.
 2. Copies of the manufacturer's current ISO certification
 3. Ten (10) references clearly indicating the membrane manufacturer has successfully completed projects of similar scope and nature for a minimum of ten (10) years
 4. Manufacturer's complete set of details for air barrier membrane system showing a continuous plane of air tightness throughout the building envelope.
- D. Acceptable alternates will be confirmed by addendum. Substitute materials not approved in writing prior to bid date shall not be permitted for use on this project.

1.12 WARRANTY

- A. Provide manufacturer's standard 10-year material warranty.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Air/vapor barrier membrane components and accessories must be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.
1. Acceptable Manufacturer: Henry Company
999 N Sepulveda Blvd, Suite 800
El Segundo, CA 90245
(800) 598-7663
www.Henry.com

SPEC NOTE: For typical applications in cavity wall construction the choice of Blueskin SA or SA LT is solely based on the application temperature of the membrane at time of installation. For application temperature above 40 F use Blueskin SA and for application below 40F choose Blueskin SA LT. Choose Metal Clad for cavity wall construction where high service temperatures or exposure temperatures (level 3) are anticipated such as in un-insulated cavity wall construction in the southern US or when used directly behind un-insulated metal cladding

2.02 MEMBRANES (Basis-of-Design)

- A. Primary sheet air/vapor barrier membrane shall be Blueskin® SA manufactured by Henry; an SBS modified bitumen, self-adhering sheet membrane complete with a blue engineered thermoplastic film. For application temperatures down to 10 degrees F use Blueskin® SA LT. Membrane shall have the following physical properties:
1. ASTM E2357: Standard Test Method for Determining Air Leakage of Air Barrier Assemblies,
 2. Air leakage: <0.0001 CFM/ft² @1.6 lbs/ft² to ASTM E2178 and ASTM E283 and have no increased air leakage when subjected to a sustained wind load of 10.5 lbs/ft² for 1 hour and gust wind load pressure of 62.8 lbs/ft² for 10 seconds when tested at 1.6 lbs/ft² to ASTM E331,
 3. Vapor permeance: 0.03 perms to ASTM E96 (Desiccant Method),
 4. Vapor permeance: 0.08 perms to ASTM E96 (Wet Cup Method),
 5. Membrane Thickness: 0.0394 inches (40 mils),
 6. Low temperature flexibility: -22 degrees F to CGSB 37-GP-56M,
 7. Elongation: 200% to ASTM D412-modified,
 8. Meets CAN/CGSB-51-33 Type I Water Vapor Permeance requirements
- B. Alternate self-adhering membrane for all window and window sill flashings, door openings, inside and outside corners and other transitions shall be HE200 AM Metal Clad manufactured by Henry; a SBS modified bitumen, self-adhering sheet membrane complete with surface layer of metallic aluminum film that many sealants adhere well to. Membrane shall have the following physical:
1. Peel Adhesion to Primed Steel 15.0 to ASTM D 1000,
 2. Vapor Permeance: < 0.014 perms to ASTM E 96,
 3. Membrane Thickness: 0.0443 inches (45 mils),
 4. Low temperature flexibility: -15 degrees F to ASTM D146 min,
 5. Elongation: 40% to ASTM D412-modified min

- C. Liquid-applied flashing alternate to self-adhered flashing membranes for all window, door, MEP penetrations, inside/outside and dissimilar material connections shall be Air-Bloc LF manufactured by Henry; a moisture-curing single component STPe liquid-applied flashing compatible with a variety of substrates and all Henry liquid and self-adhered air barrier membranes. Liquid-flashing shall have the following physical properties:
1. Elongation: minimum 250% minimum to ASTM D412,
 2. Tensile Strength: 132% psi minimum to ASTM D412,
 3. Nail Sealability: Pass to AAMA 711,
 4. VOC Content: 25 g/L max,
 5. Solids Content by Volume: 95%,
 6. Moisture Absorption: .1% to ASTM D570

Spec Note: Masonry Flashings are typically specified in Section 04 05 23.16. Coordinate material selection and application with air barrier membrane systems. Blueskin TWF is specifically designed for flashing details with a stronger film and resistance to flow.

- D. Through-wall flashing membrane (Self-Adhering) shall be Blueskin® TWF manufactured by Henry; an SBS modified bitumen, self-adhering sheet membrane complete with a yellow engineered thermoplastic film. Membrane shall have the following physical properties:
1. Membrane Thickness: 0.0394 inches (40 mils),
 2. Film Thickness: 4.0 mils,
 3. Flow (ASTM D5147): Pass @ 212 degrees F,
 4. Puncture Resistance: 134 lbf to ASTM E 154,
 5. Tensile Strength (film): 5000 psi minimum ASTM D 882,
 6. Tear Resistance: 45lbs.-MD, 17lbs.-CD to ASTM D1004,
 7. Low temperature flexibility: -22 degrees F to CGSB 37-GP-56M

2.05 PRIMER

- A. Primer for self-adhering membranes at temperatures above 25 degrees F shall be Aquatac™ Primer manufactured by Henry; a polymer emulsion based adhesive, quick setting. Primer shall have the following physical properties:
1. Color: Aqua,
 2. Weight: 8.7 lbs/gal,
 3. Solids by weight: 53%,
 4. Water based, no solvent odors,
 5. Drying time (initial set): 30 minutes at 50% RH and 70 degrees F
- B. Adhesive for self-adhering membranes at all temperatures shall be Blueskin® Adhesive manufactured by Henry, a synthetic rubber based adhesive, quick setting, having the following physical properties:
1. Color: Blue,
 2. Weight: 6 lbs/gal,
 3. Solids by weight: 35%,
 4. Drying time (initial set): 30 minutes
- C. Adhesive with low VOC content for self-adhering membranes at all temperatures shall be Blueskin® LVC Adhesive manufactured by Henry, a synthetic rubber based adhesive, quick setting, having the following physical properties:
1. Color: Blue,
 2. VOC: <240 g/L,
 3. Solids by weight: 40%,
 4. Drying time (initial set): 30 minutes

2.06 PENETRATION AND TERMINATION SEALANT

- A. Termination Sealant shall be HE925 BES Sealant manufactured by Henry; a moisture cure, medium modulus polymer modified sealing compound having the following physical properties:
1. Compatible with sheet air barrier, roofing and waterproofing membranes and substrate,
 2. Complies with Fed. Spec. TT-S-00230C, Type II, Class A,
 3. Complies with ASTM C 920, Type S, Grade NS, Class 25,
 4. Elongation: 450 – 550%,
 5. Remains flexible with aging,

6. Seals construction joints up to 1 inch wide

SPEC NOTE: THERMAL SHORT CIRCUITING To reduce heat loss and restrict air convection between the air barrier membrane and insulating materials, secure the insulation in place with an insulation adhesive applied in a serpentine pattern and butter the joints of panels. Coordinate with the Cavity Wall Insulation Section.

2.05 INSULATION ADHESIVE

- A. Insulation adhesive shall be Air-Bloc 21 Insulation Adhesive manufactured by Henry; a synthetic, trowel applied, rubber based adhesive, having the following physical properties:
 1. Compatibility: With air barrier membrane, substrate and insulation,
 2. Air leakage: 0.0026 CFM/ft² @ 2.1 lbs/ft² to ASTM E283,
 3. Water vapor permeance: 0.03 perms to ASTM E96,
 4. Long term flexibility: CGSB 71-GP-24M

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify [engineer] [architect] [consultant] in writing of any discrepancies. Commencement of the work or any parts thereof shall mean acceptance of the prepared substrates.
- B. All surfaces must be sound, dry, clean and free of oil, grease, dirt, excess mortar or other contaminants. Fill spalled areas in substrate to provide an even plane. Strike masonry joints flush.
- C. Where curing compounds are used they must be clear resin based without oil, wax or pigments.
- D. Do not proceed with application of air barrier membrane when rain is expected within 24 hours.
- E. Condition materials to room temperature prior to application to facilitate handling.

3.02 SURFACE PREPARATION

- A. Surfaces must be sound, clean and free of oil, grease, dirt, excess mortar or other contaminants. Fill spalled areas in substrate to provide an even plane.
- B. New concrete should be cured for a minimum of 14 days and must be dry before air/vapor barrier membranes are applied.
- C. Ensure all preparatory Work is complete prior to applying primary air/vapor barrier membrane.
- D. Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards shall be set flush with sheathing and fastened into solid backing.
- E. Apply primer at rate recommended by manufacturer to all areas to receive self-adhering sheet air/vapor barrier membrane and or through-wall flashing membrane as indicated on drawings by roller or spray and allow minimum 30 minute open time. Primed surfaces not covered by self-adhering membrane or self-adhering through-wall flashing membrane during the same working day must be re-primed.

3.03 INSTALLTION OF AIR BARRIER SYSTEM

- A. INSIDE AND OUTSIDE CORNERS
 1. Seal inside and outside corners of sheathing boards with a strip of self-adhering air/vapor barrier membrane extending a minimum of 3 inches on either side of the corner detail.
 - a. Prime surfaces as per manufacturers' instructions and allow to dry.
 - b. Align and position self-adhering transition membrane, remove protective film and press firmly into place. Ensure minimum 2 inches overlap at all end and side laps of membrane.
 - c. Roll all laps and membrane with a counter top roller to ensure seal.
- B. TRANSITION AREAS
 1. Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials as indicated in drawings with self-adhering air/vapor barrier membrane.
 - a. Prime surfaces as per manufacturers' instructions and allow to dry.
 - b. Align and position self-adhering transition membrane, remove protective film and press firmly into place. Provide minimum 3 inch lap to all substrates.
 - c. Ensure minimum 2 inch overlap at all end and side laps of membrane.
 - d. Roll all laps and membrane with a counter top roller to ensure seal.

C. WINDOWS AND ROUGH OPENINGS

1. Wrap rough openings with self-adhered air/vapor barrier membrane as detailed.
 - a. Prime surfaces as per manufacturers' instructions and allow to dry.
 - b. Align and position self-adhering transition membrane, remove protective film and press firmly into place. Ensure minimum 2 inch overlap at all end and side laps of membrane.
 - c. Roll all laps and membrane with a counter top roller to ensure seal.

D. LIQUID-APPLIED FLASHING OPTION

1. Use for door and window openings, MEP penetrations and dissimilar material connections.
 - a. Apply liquid flashing to all material joints and tool smooth.
 - b. Apply liquid flashing in a serpentine fashion to the entire window opening and tool smooth to a minimum 25 mils wet film thickness. Spread material to cover the inside of rough openings and extend 4 inches onto adjacent surfaces. Create a slight positive slope towards the exterior of sill conditions by applying more material to the interior side of sills to create a taper towards the exterior while maintaining a minimum 25 mils wet film thickness.
 - c. Apply liquid flashing to MEP penetrations with a maximum of 1/2 inch annular space. Extend liquid flashing a minimum 4 inches onto penetrating item and surrounding surfaces to a minimum of 25 mils dry film thickness.
 - d. Apply liquid flashing to inside/outside corners and dissimilar material connections. Extend a minimum 4 inches onto adjacent surfaces a minimum of 4 inches and a minimum wet film thickness of 25 mils dry film thickness.
 - e. Apply fluid-applied membrane air barrier onto liquid flashing a minimum of 2 inches.

E. THROUGH-WALL FLASHING MEMBRANE

1. Apply through-wall flashing membrane along the base of masonry veneer walls and over shelf angles as detailed.
 - a. Prime surfaces and allow to dry, press membrane firmly into place, over lap minimum 2 inches at all end and side laps. Promptly roll all laps and membrane to ensure the seal.
 - b. Applications shall form a continuous flashing membrane and shall extend up a minimum of 8 inches up the back-up wall.
 - c. Seal the top edge of the membrane where it meets the substrate using termination sealant. Trowel-apply a feathered edge to seal termination to shed water.
 - d. Install through-wall flashing membrane and extend 1/2 inch from outside edge of veneer. Provide end dam flashing as detailed.

F. PRIMARY AIR BARRIER

1. Apply self-adhering air/vapor barrier membrane complete and continuous to prepared and primed substrate in an overlapping shingle fashion and in accordance with manufacturer's recommendations and written instructions. Stagger all vertical joints.
 - a. Prime surfaces as per manufacturers' instructions and allow to dry.
 - b. Align and position self-adhering air/vapor barrier membrane, remove protective film and press firmly into place. Ensure minimum 2 inch overlap at all end and side laps of membrane.
 - c. Roll all laps and membrane with a counter top roller to ensure seal.
 - d. At the end of each days work seal the top edge of the membrane where it meets the substrate with termination sealant. Trowel apply a feathered edge to seal termination and shed water.

3.04 FIELD QUALITY CONTROL

- A. Make notification when sections of Work are complete to allow review prior to covering air/vapor barrier system.

3.05 INSTALLATION OF INSULATION

- A. Coordinate with Cavity Wall Insulation Section [XXXXX] for insulating materials.
- B. Apply insulation adhesive in a serpentine pattern over the air barrier membrane.

1. Dab Method: Apply walnut-sized dabs of insulation adhesive spaced 6 inches on center to substrate. Apply insulation using sufficient hand pressure to compress dabs up to 2 inches in diameter.
 2. Bead Method: Apply ¼ inch beads 6 inches on center in a serpentine pattern.
- C. Immediately embed insulation into the adhesive and press firmly into place to ensure full contact. Apply additional adhesive if allowed to skin over.

Spec Note: Insulation ends and edges are recommended to be buttered with insulation adhesive to prevent thermal bridging and air and circulation behind insulation boards.
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3.06 PROTECTION

- A. Damp substrates must not be inhibited from drying out. Do not expose the backside of the substrate to moisture or rain.
- B. Cap and protect exposed back-up walls against wet weather conditions during and after application of membrane.
- C. Air/vapor barrier membrane is not designed for permanent exposure. Good practice calls for covering as soon as possible.

END OF SECTION