SECTION 07 27 26

AIR BARRIER – VAPOR PERMEABLE

Fluid Applied Membrane Pro Clima® VISCONN®

**PART 1 GENERAL**

1.1 SECTION INCLUDES

A. Liquid applied air barrier membrane (Pro Clima VISCONN)

B. Airtight tape (CONTEGA SOLIDO SL or CONTEGA SOLIDO EXO)

C. Fibre reinforced brush-on sealant (VISCONN FIBRE)

1.2 RELATED SECTIONS

A. Section 07 20 00 – Thermal Protection.

B. Section 07 27 01 – Interior air and vapor control layer

C. Section 07 27 02 – Airtight tapes

D. Section 07 30 70 – Roof underlayment materials

1.3 REFERENCES

A. ASTM E331; Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

B. ISO 9972:2006 / EN 13829 -– Determination of air permeability of buildings, Fan pressurization method

C. ASTM E779; Standard Test Method for Determining Air Leakage Rate by Fan Pressurization

D. EN 1931 Test Method for Determination of water vapour transmission properties

E. EN 1849 – Flexible sheets for waterproofing

F. ASTM 2178 - Standard Test Method for Air Permeance of Building Materials

G. EN12572 -Hygrothermal performance of building materials and products — Determination of water vapour transmission properties

H. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials

I. AATCC 127 - Water Resistance: Hydrostatic Pressure Test

1.4 SUBMITTALS

A. Submit under provisions of Section 01300 - Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Manufacturer’s Installation instructions and recommendations.

2. Storage and handling requirements and recommendations.

C. Verification Samples: VISCONN: provide a dry sheet sample (at least 2” by 4”).

Tapes: 4” sections.

\*\* NOTE TO SPECIFIER \*\* When project is being submitted for Passive House, PHIUS+, , contact 475 High Performance Building Supply for assistance in how the use Pro Clima® product to obtain certification. ADD submittal requirements as required.

1.5 QUALITY ASSURANCE

A. Performance target: required airtightness level for this project is \_\_\_ air changes per hour (ACH50) or CFM/SF75 envelope leakage. Minimum acceptable air-tightness level is X.X ACH50 or CFM/SF75.

Installation shall be in accordance with manufacturer’s installation guidelines and recommendations.

B. Installer Qualifications: Comply with one of the following requirements:

1. The (sub-) contractor installing the air barrier shall have experience with installation of air barrier assemblies under similar conditions and have achieved blowerdoor tested airtightness of 1.0ACH50 or 0.1CFM/SF75 envelope leakage or better in a previous project.

2. The (sub-) contractor has completed the installation training with 475 High Performance Building Supply and be an experienced airless spray operator (3 years or more of experience).

C. Due to their superior technical performance and durability, only products made by Pro Clima in Germany are acceptable for the construction of the weather, air and moisture barriers.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up might be specified. When defining the extent of the mock-up, consider all corner connections and other complications (sequencing) that disrupts the interior airtight layer.

D. Mock-Up: Provide a mock-up for evaluation of installation techniques and application workmanship.

1. Prior to installation of air barrier, mock up air barrier system as follows to verify details and to demonstrate connections to adjoining construction elements, and other termination conditions.

2. Install mockup of in location designated by Architect.

3. Do not proceed with remaining work until workmanship and application technique are approved by Architect.

4. Construct typical airtight wall, 8 feet wide by 8 feet long, illustrating materials interface and connections (tape, adhesives, and gaskets), incorporating specified options including but not limited to the following:

a. junctions of walls, foundations, ceilings, floors and roof,

b. corner conditions

c. window and doorframe connections

E. Cooperate and coordinate with the owner's inspection. Do not cover any components of the mock up (installed liquid applied air barrier membrane or other airtight elements) until it has been inspected, blowerdoor tested and approved.

1.6 PRECONSTRUCTION MEETING

A. Preconstruction Meeting: Convene a meeting with all subcontractors affected by the Work of this Section a minimum of one week prior to commencing work of this section. Agenda shall include materials, details of construction, compatibility of materials, sequencing of construction/installation of membranes, the vapor barrier, the air barrier and the weather resistive barrier application. Air-tightness goal and emphasize that the success of installation air barrier installed quality and blowerdoor test is dependent on the collaboration of all subcontractors.

B. Coordinate Work with other subcontractors (plumbers, electricians, carpenters, HVAC), operations and installation of finish materials to install correct-sized gaskets on pipes, ducts and cable when these elements pass through the air barrier, the WRB and the vapor barrier and layers, and to avoid damage to installed materials. Before they commence work on site, provide each effected trade with sufficient gaskets.

C. After meeting, post the following warning in a prominent location at all building entrances and top of each stair in red – 1” letter height minimum. (available by request from www.foursevenfive.com)

**AIRTIGHT BUILDING PROJECT**

This is an airtight building; **DO NOT PENETRATE** the insulated envelope and airtight layer without prior permission of the Superintendent

Translate into additional languages if required/as appropriate.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Store materials on pallets. in clean and dry areas, not exposed to direct sunlight and in accordance with manufacturer's instructions. Store at temperatures above 5 degrees Fahrenheit (-25°C) and bellow 77°F (41°C). Maximum 12 months.

C. Protect materials during handling and application to prevent damage or contamination.

1.8 WARRANTY

A. Manufacturer’s Warranty: A 10-year system warranty - and 6-year material warranty in other cases (in accordance with the warranty agreement).

**PART 2 PRODUCTS**

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Pro Clima / Moll bauökologische Produkte GmbH, 68723 Schwetzingen Germany. Imported by 475 High Performance Building Supply, 334 Douglass street, Brooklyn NY, 11217; Tel: +1 800-993-6329; Email; info@foursevenfive.com; Web: www.foursevenfive.com

B. Substitutions: Not permitted.

2.2 AIR BARRIER SYSTEM

A. VISCONN

Description: Liquid-applied air barrier for robust connections, pitched windows sills and other detailing. VISCONN can be brushed, rolled or sprayed on as a liquid film and forms a seamless, elastic, air and vapor variable membrane once dry.

1. Materials: Aqueous acrylic dispersion - Color: Blue (wet) and Navy Blue/ Black (dry) or White (wet and dry states).
2. Coverage 2.46 oz/sf (750 g/m² on smooth substrat) (wet) [dependent on the roughness of the substrate, the thickness and the application method]
3. Surface Weight 0.66 oz/sf (200 g/m²) (EN 1849-2) (dried) [dependent on the roughness of the substrate, the thickness and the application method]
4. Application Thickness 8-39 mils (0.2 – 1.0mm) (wet film) – dependent on substrate
5. Airtight material 0.000000 L/(Pa·m2·s) ASTM E2178
6. WRB per IBC 1403.2/IRC R703 Passed modified ASTM E331 at 299Pa
7. Vapor Permeance Sd-value 0.13 – 10 m (EN 12572)

0.9 perms (dry cup ASTM E96)

1. Weather/UV-exposure: Minimize the exposure to direct sunlight. Maximum exposure 3 months
2. Water column over 6’.7” (2m) under AATCC 127
3. Temperature resistance -40 °C/-40 °F to +80 °C/176 °F
4. Application temperature: 41°F – 95°F (5°C-35°C)
5. Drying approx. 12 - 48 hours (at 20 °C, 65% rel. humidity) depending on subsurface and applied thickness

B. Airtight tape: CONTEGA SOLIDO SL/EXO: Solid Acrylic tape with PP carrying membrane. Minimum application temperature: 14°F (-10°C).

C. Fibre reinforced brush-on sealant (VISCONN FIBRE): Aqueous acrylic dispersion, fibre-reinforced. Covers cracks and joints of up to 20 mm (0.8") width.

2.3 ACCESSORIES

A. Brush (>50 mm width).

B. Airless sprayer: follow the manufacturer's instructions ([www.foursevenfive.com](http://www.foursevenfive.com)). Because of viscosity, recommended airless sprayers: Graco classic-hiboy 390,395, 490,495, GX21ProX and XForce HD with 3/17. 3/19 or 3/25 tips

**PART 3 EXECUTION**

3.1 EXAMINATION

A. Do not begin installation until substrates/surfaces have been properly prepared and cleaned from dust, silicones, oils and grease. Before application, fill any breakages, joints or holes.

B. Acceptance of Conditions: Beginning of installation constitutes acceptance of existing conditions.

C. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean and prepare surfaces to receive air/vapor barrier in accordance with manufacturer's installation guidelines.

B. All surfaces must be clean, smooth and dry and must be clean of oil, dust, and silicone. The application surface porosity, moisture uptake and other factors

3.3 APPLICATION

A. Apply Fluid applied airbarrier and tapes and all accessories in accordance with manufacturer's instructions (www.foursevenfive.com). Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Cover over breakages, joints and holes with a suitable filler, VISCONN FIBRE or CONTEGA SOLIDO SL before VISCONN is applied.

C. Apply VISCONN in at least two layers (each subsequent layer 90 degree rotated relative to the application direction of the first layer). VISCONN can be applied with airless sprayer or using a brush (>50 mm width). Apply VISCONN in an even and overlapping manner. Additional layers may be necessary, depending on the condition of the subsurface. Verify applied thickness with a depth gage.

D. The film is to be protected against moisture (e.g. rain) during drying.

E. Inspection before blowerdoor test. Ensure:

1. The film is dry.

2. The air barrier continuity and connections without gaps and holes.

\*\* NOTE TO SPECIFIER \*\* recommended airtight layer is on interior with INTELLO. Recommended WRB on exterior with Pro Clima Membranes (SOLITEX MENTO or ADHERO). Recommended blowerdoor maximum is 1.0ACH50 or 0.2CFM/SF75 for envelope leakage.

3.4 TESTING

A. Do a blowerdoor test as soon as the airtight layer is completely installed. During the test search for any detectible leaks with hands, IR or smoke pencils.

B. Document any air leaks, and repair with Pro Clima tapes, adhesives and accessories.

C. Repeat test until building complies with project airtightness (ACH50) goal, but at a minimum better than X.x ACH50 or x.x CFM/SF75.

D. Re-do blowerdoor test if more than x holes/penetrations are made following completion of blowerdoor test above, or at the request of the architect.

3.5 PROTECTION

A. Protect installed products until completion of project.

B. Repair scuffs, punctures or other damages (burns e.g. from sweating copper pipe) and/or replace damaged products before covering materials. Re-do blowerdoor test if more than 3 holes are made or by request of architect.

C. To protect air barrier, apply battens and siding as soon as possible, and not later than recommended weather exposure time for used product.

3.6 FINAL TEST

A. Blowerdoor test the envelope when:

1. All penetrations have been made and sealed.

2. Siding and other finishes on exterior walls have been installed.

B. Find and repair leaks.

C. Repeat testing and repairs until the project complies with the project airtightness goal.

END OF SECTION