SECTION 07 08 00

BUILDING ENVELOPE INTEGRATED WEATHER BARRIER

[Note to specifier: Text is blue for spec notes or where this specification requires additions or deletions relevant to the Project.]

1. GENERAL
   * + 1. SYSTEM DESCRIPTION
          1. This Section contains materials, installation, quality assurance and performance requirements for a building envelope Integrated Weather Barrier (IWB) on the Project.
          2. The IWB shall incorporate [select Sections used on Project]

Rough Carpentry Section 06 16 13: Fire-treated plywood insulating nail base for commercial wall construction: CCW R2+ BASE

Waterproofing

Section 07 13 26 Self Adhering Sheet Waterproofing

MiraPLY-H (blindside horizontal)

MiraPLY-V (blindside vertical)

CCW MiraDRI 860/861

CCW 860P

CCW-711 Pre-Pave

Section 07 13 26 Elastomeric Sheet Waterproofing: SURE-SEAL EPDM 60 mil Waterproofing

Section 07 14 13 Hot Fluid-Applied Rubberized Asphalt Waterproofing

CCW 500-R

CCW Vapor-Seal

Section 07 14 16 Cold Fluid-Applied Waterproofing

CCW MiraSEAL

CCW 525 V/ 525 H

CCW LiquiSEAL/ LiquiDeck

Section 07 17 16 Bentonite Composite Sheet Waterproofing: CCW MiraCLAY/ EF/ EEF/ GM

Thermal Insulation, Walls (Waterproofing and Roof insulations are included in systems of respective Sections): Section 07 21 13 Foam Board Insulation:

Class A Polyiso Insulating Sheathing: CCW R2+ SHEATHE

Coated-Glass-Faced Polyiso Insulation: CCW R2+ MATTE

Foil-Faced Polyiso Insulation: CCW R2+ SILVER

EPS insulation:

Insulfoam EPS

Insulfoam R-Tech

Wall Membrane Air & Water Resistive Barriers

Section 07 25 00 Weather Barriers (Breathable Sheet): Fire Resist 705 VP

Section 07 27 13 Self-Adhering Sheet Air & Vapor Barriers

Fire Resist 705 FR-A

CCW-705/ 705 LT/ 705 HT

Section 07 27 26 Fluid-Applied Membrane Air Barriers

Fire-Resist Barritech VP/ VP LT

Fire Resist Barritech NP

Barriseal-S/R

Section 07 53 23 Ethylene-Propylene-Diene-Monomer (EPDM) Membrane Roofing (these systems shall include insulation, edging, and accessories as required in Carlisle Spec)

Carlisle Sure-Seal EPDM

Carlisle Sure-Tough EPDM

Carlisle Sure-White EPDM

Carlisle Fleeceback EPDM

Section 07 54 19 Polyvinyl Chloride (PVC) Membrane Roofing

Carlisle SURE-FLEX PVC

Carlisle Fleeceback PVC

Section 07 54 23 Thermoplastic Olefin (TPO) Membrane Roofing

Carlisle SURE-WELD TPO

Carlisle Fleeceback TPO

Section 07 55 63 Vegetated Protected Membrane Roofing

CCW Hot Rubber Green Roof system

CCW MiraSEAL Green Roof System

Carlisle Single-Ply Roof Garden system

* + - * 1. The systems in 1.1 B shall be joined or integrated in such a way that they

Deflect and drain moisture from exterior sources such as rain or ground water

Perform as a continuous air barrier over the building thermal envelope

Do not trap or accumulate moisture from interior sources such as humidification and occupancy

Provide continuous insulation over the building thermal envelope.

* + - * 1. The systems in 1.1 B shall be provided by a single manufacturer, with a single warranty covering systems, insulation and their respective tie-ins.
      1. RELATED SECTIONS
         1. Division 01 General Requirements [Sections]
         2. Division 02 Existing Conditions [Sections]
         3. Division 03 Concrete [Sections]
         4. Division 04 Masonry [Sections]
         5. Division 05 Metals [Sections]
         6. Division 06 Wood, Plastics and Composites [Sections]
         7. Division 07 Thermal & Moisture Protection [Sections]
         8. Division 08 Openings [Sections]
         9. Division 09 Finishes [Sections]
         10. Division 23 Heating, Ventilating and Air Conditioning [Sections]
         11. Division 31 Earthwork [Sections]
      2. QUALITY ASSURANCE PROGRAM AND RESPONSIBILITIES
         1. Owner shall retain the services of a qualified Building Envelope Commissioning Provider (BECxP), according to ASTM E2813 to verify that the IWB is installed properly on the Project.
         2. BECxP:

Perform a design review of building envelope conditions as they relate to functionality of IWB.

Provide qualified personnel to perform required inspections and tests.

Review the Contractor’s IWB submittal package

Perform water leak testing on IWB mock-up(s).

Perform air leakage testing on IWB mock-up(s)

Perform visual inspections of IWB installation on the Project with sufficient frequency that all Work is inspected before it is covered up. For each inspection, issue a written report, with digital photographs addressing:

Appearance and coverage of membranes

Membrane [and insulation] continuity

Proper assembly of components

Proper installation of details and tie-ins

Any presence of incompatible materials

Any damage to membranes [and insulation], including prolonged exposure

Conformity or non-conformity of Work with requirements.

Notify the Design Professional and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

Perform a whole building envelope air leakage test according to ASTM E 779

Perform infrared scanning of the building’s exterior according to ASTM E 1186

Issue a report with findings on IWB performance, including design review, mockup construction, mockup testing, installation inspection reports, building air leakage testing and infrared scan.

* + - * 1. Contractor:

Provide the Work in the Sections comprising the IWB

Organize preconstruction meetings between the trades involved in the IWB system installation and related construction. Establish each trade’s responsibility and installation sequence to maintain continuity of the IWB at these conditions:

Roof-to-wall

Wall-to-fenestration

Wall-to-foundation

Foundation to under-slab

Inter-storey connections – example shelf angle

Projections – examples: decks, signs, overhangs, architectural features

Structural steel or concrete beams

Mechanical and electrical penetrations

Exterior cladding attachment

Expansion and seismic joints

Dissimilar materials

Other conditions potentially interrupting IWB continuity

Build a mock-up(s) before proceeding with the Work, satisfactory to the Design Professional. Mock-up(s) shall incorporate each joint type, juncture and transition between products, materials and assemblies. Mock-up(s) shall also incorporate all penetrations through the IWB, including those which will be installed before and after IWB such as brick ties, mechanical/electrical, and fenestration.

Be present during water intrusion testing and air leakage testing of mock-up. Address and remedy all causes of water leaks and all causes of failed air leakage test.

Coordinate the Work in the Sections comprising the IWB to provide air and water tight tie-ins as indicated in the mockup and on drawings.

Monitor IWB installation throughout the Project, taking digital photographs and recording notes. Furnish this information to the BECxP to assist with inspections.

Cooperate with the BECxP and provide reasonable services as requested by the BECxP such as access to the Work, incidental labor and facilities.

Pay fees and submit the application for warranty to the IWB manufacturer.

* + - * 1. IWB manufacturer:

Attend the pre-construction meeting(s)

Attend the mockup construction and testing

Attend the building air leakage and infrared scan testing

Visit the site to provide field support, as required

Promptly inform the Contractor of any irregularities or deficiencies observed in the Work.

Review IWB Inspection Reports and issue written correspondence to the Contractor to approve conforming Work or to relay instructions for correcting non-conforming Work.

* + - 1. SUBMITTALS
         1. Drawings showing tie-ins of IWB materials
         2. Letter from IWB manufacturer addressing chemical compatibility of IWB materials with one another.
         3. Hygro-thermal analysis of wall and roof assemblies, applicable to the building type, use and location
         4. Manufacturer’s minimum [5] year labor and material warranty for tie-ins of IWB systems
      2. PERFORMANCE REQUIREMENTS
         1. IWB mock-up(s) air leakage test to ASTM E 783. Air leakage shall not exceed 0.04 cfm/ft2 under a pressure differential of 0.3 in. water (1.57 lbf/ft2) (0.2 L/s\*m2 @ 75 Pa).
         2. IWB mock-up(s) water leak testing to ASTM E 1105. Acceptance criteria: no visible water leaks to the interior after 15 minutes at -6.24 lbf/ft2.
         3. Whole building air leakage shall not exceed 0.4 cfm/ft2 under a pressure differential of 0.3 in. water (1.57 lbf/ft2) (2.0 L/s\*m2 @ 75 Pa) when tested in accordance with ASTM E 779.

1. PRODUCTS
   1. MANUFACTURERS & SYSTEMS
      1. Single-source warranted, building envelope thermal and moisture protection: NVELOPlus by Carlisle Construction Materials
      2. [Equivalent system by others]

IF OWNER IDENTIFIES SPECIFIC TESTING AGENCIES TO PERFORM DESIGNATED TESTS AND INSPECTIONS, DELETE "(NOT USED)" ABOVE AND INSERT PARAS IDENTIFYING THE INDEPENDENT AGENCIES HERE.

1. EXECUTION
   * + 1. PRE-INSTALLATION
          1. Ambient and substrate conditions shall be acceptable according to manufacturer’s recommendations.
          2. Installers shall have full, safe access to the job and shall follow safety measures indicated on product MSDSs and federal, state and local regulations.
          3. Establish appropriate storage and handling procedures for hazardous, freeze-sensitive or fragile materials.
       2. INSTALLATION
          1. Install products according to manufacturer’s instructions.
          2. Provide continuity of membranes and insulation as shown in Project drawings and mock-up(s).
          3. Provide continuous system tie-ins, using materials, sequence and technique shown in Project drawings and mock-up(s).

IN THE CASE OF MULTIPLE PRIME CONTRACTS, CONSIDER ASSIGNING RESPONSIBILITY FOR PROTECTION TO CONTRACTOR FOR GENERAL CONSTRUCTION. SEE EVALUATIONS FOR FURTHER DISCUSSION.

* + - * 1. Do not cover Work until it has been inspected and approved by the BECxP.
      1. REPAIR AND PROTECTION
         1. Protect work from damage by other trades
         2. Verify that penetrations made through IWB by other trades are sealed
         3. Do not allow products to be exposed for longer than manufacturer’s recommendations
         4. Repair or replace all damaged materials according to manufacturer’s instructions

THE OWNER SHOULD HIRE A COMPETENT THIRD PARTY TESTING AND INSPECTION AGENCY TO PERFORM QUALITY ASSURANCE ON THE AIR BARRIER SYSTEM. THE SCOPE OF SERVICES SHOULD BE SELECTED AND EDITED FROM THE LIST BELOW BASED ON APPLICABILITY AND IMPORTANCE OF THE PROJECT.

END OF SECTION