



# DuROCK PUCCS EIFS

## Exterior Insulation Finish System for Commercial and High Rise Construction

### MANUFACTURER'S SPECIFICATION 07 24 13

#### PART 1 – GENERAL

##### 1.1. RELATED SECTIONS

- 1.1.1. Specification 03 30 00 – Cast-in-Place Concrete
- 1.1.2. Specification 04 20 00 – Unit Masonry
- 1.1.3. Specification 05 40 00 – Cold-Formed Metal Framing
- 1.1.4. Specification 06 10 00 – Rough Carpentry
- 1.1.5. Specification 07 27 00 – Air Barriers
- 1.1.6. Specification 07 60 00 – Flashing & Sheet Metal
- 1.1.7. Specification 07 90 00 – Joint Protection (Sealants)
- 1.1.8. Specification 08 00 00 – Openings
- 1.1.9. Specification 09 28 00 – Backing Boards and Underlayments

##### 1.2. SYSTEM DESCRIPTION

- 1.2.1. PUCCS EIFS is an insulated cladding system that includes first and second planes of protection from precipitation, and a geometrically-defined drainage cavity that is 10 mm deep and 37% open.
- 1.2.2. PUCCS EIFS is in full compliance with CAN/ULC-S716.1 “Standard for Exterior Insulation and Finish Systems (EIFS) – Materials and Systems” and PUCCS EIFS has been evaluated by the Canadian Construction Materials Centre (CCMC) for compliance with the applicable requirements in Section 5.6 and Section 9.27 of the National Building Code of Canada. CCMC Evaluation Report is available at: <http://www.durock.ca/evaluation.pdf> .
- 1.2.3. PUCCS EIFS is combustible cladding that is certified to the test requirements of Article 3.1.5.5 and Article 3.2.3.8 of the National Building Code of Canada. Certification listing is available at: [http://www.qai.org/Listing\\_Pages/QAI\\_Listing\\_B1039\\_DuROCK.htm](http://www.qai.org/Listing_Pages/QAI_Listing_B1039_DuROCK.htm).
- 1.2.4. DuROCK Cement Bear, Polar Bear, and Vapour Block moisture barriers meet the air leakage requirements for Air Barrier Materials in accordance with Sentence 5.4.1.2.1) in the National Building Code of Canada.
- 1.2.5. DuROCK Vapour Block moisture barrier meets the vapour permeance requirements for Vapour Barrier Materials in accordance with Sentence 9.25.4.2.1) in the National Building Code of Canada.

<b>SPEC NOTE</b>	1. <i>Code compliance – the suitability of this system and the incorporation of expanded polystyrene are subject to approval according to Municipal requirements. Check with all authorities having jurisdiction.</i>
<b>SPEC NOTE</b>	2. <i>Fire-resistance ratings are specific to the substrate (supporting walls), not to the EIFS. Fire requirements for wall assemblies incorporating EIFS are addressed in Articles 3.1.4.2, 3.1.5.5, 3.1.5.12, 3.2.3.7, 3.2.3.8, 9.10.14.5, 9.10.15.5, and 9.10.17.10 of the model building code. Ensure the wall assembly complies with the requirements of the applicable article(s). PUCCS EIFS is not intended for use on walls permitted no more than 10% unprotected openings.</i>
<b>SPEC NOTE</b>	3. <i>PUCCS EIFS can be adapted to pressure-moderate. Please contact DuROCK for guidance.</i>
<b>SPEC NOTE</b>	4. <i>PUCCS EIFS can be adapted and designed to be prefabricated or panelized on unitized steel framing that has been engineered for attachment and the anticipated live and dead loads.</i>

**1.3. DESIGN REQUIREMENTS**

**1.3.1 All Supporting Substrates**

- 1.3.1.1. Substrate shall be structurally sound and continuously supported.
- 1.3.1.2. Substrate shall be designed to withstand the anticipated wind loads and deflect no more than L/240.
- 1.3.1.3. Substrate shall be continuous, flat and plumb, with surface variations less than 6 mm over 2400 mm (1/4 inch over 8 ft).
- 1.3.1.4. Substrate shall be clean, dry, and free of any deleterious material such as wax, oil, paint, dust and dirt which could negatively affect bonding.

**1.3.2. Mass Wall Substrates**

- 1.3.2.1. Mass walls shall be cast-in-place concrete, concrete masonry units, prefabricated concrete, or brick.
- 1.3.2.2. Mass walls shall be free of form release agents, efflorescence, and cracks.
- 1.3.2.3. Mass walls shall be at least 28 days old.

**1.3.3. Sheathing Substrates**

- 1.3.3.1. Sheathing shall be glass-fibre-faced gypsum sheathing compliant with ASTM C 1177, or cement board compliant with ASTM C 1325 or ANSI A118.9, and at least 12.7 mm (1/2 inch) thick.
- 1.3.3.2. Sheathing shall be attached to framing in accordance with manufacturer’s instructions, in general conformance to ASTM C 1280, and attached with corrosion resistant screws.
- 1.3.3.3. Sheathing shall be installed horizontally with vertical joints offset by at least one framing member, installed so that no joints align with corners of openings, such as windows or doors, and installed so that boards are spaced no more than 3.2 mm (1/8 inch) apart.

**1.3.4. Substrate Joints, Openings, and Penetrations**

- 1.3.4.1. Expansion and movement joints in the substrate shall be sealed with a self-adhering membrane.
- 1.3.4.2. Openings and through wall penetrations shall be sealed with a self-adhering membrane or coated with DuROCK Polar Bear moisture barrier.
- 1.3.4.3. Self-adhering membranes shall be installed in accordance with manufacturer specifications, including appropriate primers as required.
- 1.3.4.4. Self-adhering membranes shall not extend more than 150 mm (6 inches) behind PUCCS EIFS.

<b>SPEC NOTE</b>	5. <i>DuRock recommends polyester-faced self-adhering EIFS Tape, however polyethylene-faced membranes may be used instead.</i>
<b>SPEC NOTE</b>	6. <i>DuROCK recommends that self-adhering membranes be installed prior to the application of DuROCK moisture barriers, however they may be applied after the DuROCK moisture barrier has dried.</i>
<b>SPEC NOTE</b>	7. <i>DuROCK recommends that self-adhering membranes extend no more than 50 mm (2 inches) behind PUCCS EIFS. Insulation shall be mechanically fastened at locations where polyethylene-faced membranes extend more than 75 mm (3 inches) behind PUCCS EIFS.</i>

**1.3.5. Termination and Drainage**

- 1.3.5.1. PUCCS EIFS shall terminate and drain at least 200 mm (8 inches) above finished grade.
- 1.3.5.2. PUCCS EIFS shall terminate and drain at least 50 mm (2 inches) above roofing systems, balconies, and other similar conditions.
- 1.3.5.3. PUCCS EIFS shall terminate and drain above windows, doors, soffits and other similar conditions.

**1.3.6. Expansion and Termination Joints**

- 1.3.6.1. Expansion and termination joints shall accommodate expansion and contraction of building materials due to thermal changes, moisture, wind, gravity, vibration, and seismic activity.
- 1.3.6.2. Expansion joints are required: where expansion joints in the substrate occur; where significant structural movement occurs; where substrate deflection exceeds L/240; where the substrate structural system changes; at deflection tracks in steel frame construction; at floor lines in wood frame construction; and where PUCCS EIFS abuts other cladding systems.

- 1.3.6.3. Termination joints are required where PUCCS EIFS abuts through wall penetrations such as windows and doors.
- 1.3.6.4. Expansion joints shall be at least 20 mm (3/4 inch) wide and termination joints shall be at least 13 mm (1/2 inch) wide.
- 1.3.6.5. Joints shall be sealed to prevent ingress of precipitation, unless otherwise specified.

<b>SPEC NOTE</b>	8. <i>Location and joint size are the responsibility of the designer. Joint width should be four times the anticipated range of movement.</i>
<b>SPEC NOTE</b>	9. <i>Wood framed construction that incorporates engineered wood joist systems may not necessarily require expansion joints. It is the Designer's prerogative to omit expansion joints at these locations.</i>
<b>SPEC NOTE</b>	10. <i>Drained joints employing DuROCK Drainage Accessories do not require sealant. It is the Designer's prerogative to specify sealant at those locations.</i>

**1.3.7. Joint Sealant**

- 1.3.7.1. Sealant shall be used to seal expansion and termination joints, unless otherwise specified.
- 1.3.7.2. Sealant material shall be low modulus and shall be compatible with PUCCS EIFS.
- 1.3.7.3. Sealant shall be installed with closed-cell foam backer rod or bond breaker tape in accordance with manufacturer instructions and in general conformance with ASTM C 1481.
- 1.3.7.4. Sealant shall be vented to permit drying and drainage of incidental moisture.

<b>SPEC NOTE</b>	11. <i>DuROCK recommends Sikaflex 15LM sealant by Sika, however the following sealants may also be used with DuRock EIFS: Sikasil WS 290 by Sika; 790, 795, and Contractors Concrete by Dow Corning; Spectrem 1, 3, and 4 by Tremco; and Sonolastic 150 by Sonneborn. Designers wishing to specify other sealants should consult DuROCK.</i>
<b>SPEC NOTE</b>	12. <i>Sealant vents should be spaced no more than 3 m (10 ft) apart. Vents should provide a nominal venting area of no less than 1 sq. cm. (0.1550 sq in). Venting may incorporate plastic masonry vents, equivalent pest screens, or vent tubes.</i>

**1.3.8. Flashing**

- 1.3.8.1. Flashing is required at joints where PUCCS EIFS is expected to drain moisture to the exterior and anywhere the exposed top edge of PUCCS EIFS does not have a minimum slope of 1:2.
- 1.3.8.2. Termination of PUCCS EIFS at roof parapets shall be protected by a waterproof membrane and cap flashing.
- 1.3.8.3. Flashing material shall be corrosion-resistant.
- 1.3.8.4. Flashing shall be installed in accordance with the model building code.

**1.3.9. Decorative Elements (mouldings, shapes, trim, window sills, etc.)**

- 1.3.9.1. Unless protected by metal flashing, the upward facing portion of a projection that is exposed to precipitation shall be sloped not less than 1:2 for projections up to 305 mm (12 inches) wide.
- 1.3.9.2. Horizontal projections wider than 305 mm (12 inches) shall be protected by structurally supported metal flashing.
- 1.3.9.3. Horizontal projections shall be designed, consistent with governing codes and standards, such that these will not be configured or construed as roofing or loadbearing (pedestrian or otherwise).
- 1.3.9.4. Pre-manufactured decorative elements shall be applied after the base coat has dried, and before primer or finish is applied.

**1.3.10. Aesthetic Reveals**

- 1.3.10.1. Aesthetic reveals may be incorporated into the system provided the insulation thickness behind the reveal is not less than 19 mm (3/4") over and above the 10 mm (3/8") grooved air space on the backside of the insulation board. Maximum reveal depths are: 6 mm (1/4") for 38 mm (1 1/2") insulation; 19 mm (3/4") for 51 mm (2") insulation; 32 mm (1 1/4") for 64 mm (2 1/2") insulation; etc.
- 1.3.10.2. Horizontal reveals shall have a minimum slope of 1:2 to shed water.

<b>SPEC NOTE</b>	<i>13. Aesthetic reveals should not align with corners of through wall penetrations such as windows and doors.</i>
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#### **1.4. PERFORMANCE REQUIREMENTS**

- 1.4.1. EIFS shall meet the cladding requirements of the model building code.
- 1.4.2. EIFS shall meet the applicable fire test requirements of the model building code.
- 1.4.3. Where required to meet the requirements of Article 3.1.5.5., EIFS shall be tested in conformance with CAN/ULC-S134, "Fire Test of Exterior Wall Assemblies".
- 1.4.4. Where required to meet the requirements of Article 3.2.3.8, EIFS shall be tested in conformance with CAN/ULC-S101, "Fire Endurance Tests of Building Construction and Materials", and base coats shall be tested in conformance with CAN/ULC-S114, "Noncombustible Material".
- 1.4.5. Where the moisture barrier is intended to serve as an air barrier, the moisture barrier shall meet the air leakage characteristic identified in Article 5.4.1.2. of the model building code.
- 1.4.6. Where the moisture barrier is intended to serve as a vapour barrier, the moisture barrier shall have sufficiently low permeance to provide the level of resistance required in Article 5.5.1.2. of the model building code.

#### **1.5. SUBMITTALS**

- 1.5.1. Upon request, DuROCK will supply finish coat samples, approximately 200 x 200 mm (8 x 8 inches), providing representation of the texture and colour.

#### **1.6. QUALITY ASSURANCE**

- 1.6.1. PUCCS EIFS shall be installed by a competent, knowledgeable, experienced contractor.
- 1.6.2. PUCCS EIFS shall be installed in accordance with these specifications and the corresponding details.

#### **1.7. DELIVERY, STORAGE & HANDLING**

- 1.7.1. All materials shall be delivered to the jobsite in the original, unopened packaging with labels clearly identifying each component.
- 1.7.2. All materials shall be inspected upon delivery. Any defective or frozen materials shall not be used.
- 1.7.3. All materials shall be stored off the ground, and protected from precipitation and direct sunlight.
- 1.7.4. All water-based materials supplied in plastic pails shall be delivered and stored at temperatures above 4°C (40°F) and below 40°C (104°F).
- 1.7.5. All dry-bagged materials shall be protected from high humidity.

#### **1.8. SITE CONDITIONS**

- 1.8.1. Surface and ambient conditions for application of wet-state-materials shall be above 4°C (40°F) and shall remain so for a minimum of 24 hours and until all work has dried. Drying may require more than 24 hours under humid conditions or at low temperatures.
- 1.8.2. At temperatures below 10°C (50°F), adhesives shall be allowed to dry for a minimum of 48 hours. Drying may require more than 48 hours under humid conditions.
- 1.8.3. Wet-state-materials shall not be applied in direct sunlight at temperatures exceeding 30°C (86°F), or when the substrate temperature exceeds 40°C (104°F).
- 1.8.4. All work shall be protected from rain, snow, hail, and wind exceeding 25 km/hr. (15 mph) until it has dried.

#### **1.9. WARRANTY**

- 1.9.1. PUCCS EIFS is eligible for a limited manufacturer's warranty starting from the date of substantial completion. A formal warranty request shall be submitted to DuROCK upon completion of the work.
- 1.9.2. DuROCK's warranty is effective only when materials are paid for in full, and the workmanship complies with this specification.
- 1.9.3. Substitution of materials or components shall void the manufacturer's warranty.

## **PART 2 – MATERIALS**

### **2.1. GENERAL**

- 2.1.1. All materials and components of PUCCS EIFS shall be supplied by DuROCK Alfacing International Limited, or it's appointed distributors.

**2.2. MATERIALS**

**2.2.1. Moisture Barriers and Adhesives**

- 2.2.1.1. DuROCK Cement Bear is a vapour permeable moisture barrier, air barrier, and adhesive. It is a wet mix, water-based acrylic dispersion that is field mixed with Type 10, 20, or 30 Portland cement 1:1 by weight, and applied by stainless steel trowel or spray equipment.
- 2.2.1.2. DuROCK Polar Bear is a vapour permeable moisture barrier, air barrier, and adhesive. It is a non-cementitious, water-based, acrylic dispersion that is factory mixed, and applied with stainless steel trowel or spray equipment.
- 2.2.1.3. DuROCK Vapour Block is a moisture barrier, air barrier, and vapour barrier. It is a wet mix, water-based styrene-butadiene dispersion that is factory mixed, and applied by stainless steel trowel or spray equipment.
- 2.2.1.4. DuROCK Roller Bear is a vapour permeable moisture barrier. It is a factory-blended, ready-to-use, non-cementitious, polymeric, wet mix coating that is applied by spray, brush, or roller.

<b>SPEC NOTE</b>	14. <i>DuROCK Cement Bear, Polar Bear, or Vapour Block moisture barriers can be specified as forming part of an air barrier system, however, the Designer must indicate this. Continuity of the air seal is the responsibility of the Designer.</i>
<b>SPEC NOTE</b>	15. <i>The moisture barrier can be specified as the vapour barrier if the Designer selects DuROCK Vapour Block. This is only recommended when PUCCS EIFS is the sole source of thermal insulation in the wall assembly. Vapour Block should not be used if its temperature will fall below the dew point of the heated interior air.</i>

**2.2.2. Drainage Accessories**

- 2.2.2.1. DuROCK Uni-Track – polyvinyl chloride (PVC) extrusion used to facilitate drying and drainage at the base of the wall.
- 2.2.2.2. DuROCK Uni-Flash – polyvinyl chloride (PVC) extrusion used to facilitate drying and drainage above windows and other similar protrusions.

<b>SPEC NOTE</b>	16. <i>DuROCK recommends drainage accessories be employed at all locations where the system is expected to drain, however it is the Designer's responsibility to specify where they shall be used.</i>
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**2.2.3. Insulation**

- 2.2.3.1. DuROCK PUCCS insulation is typically Type I Expanded Polystyrene (EPS) [minimum thermal resistance RSI 0.65/25mm (R 3.75/inch) and average density 16 kg/m<sup>3</sup> (1 lb. /ft<sup>3</sup>)], however it is also available in Type II EPS [minimum thermal resistance RSI 0.70/25mm (R 4.0/inch) and average density 24 kg/m<sup>3</sup> (1.5 lb. /ft<sup>3</sup>)]. Both Types I & II are compliant with CAN/ULC-S701 and are made from 100% virgin materials.
- 2.2.3.2. DuROCK PUCCS insulation is made by a manufacturer approved by DuROCK, and is packaged in bags with DuROCK's logo plainly visible.
- 2.2.3.3. DuROCK PUCCS insulation is aged and cut according to the requirements of ASTM E 2430, nominal size of sheets being height and width of 610 x 1219 mm (24 x 48 inches).
- 2.2.3.4. DuROCK PUCCS insulation is available in 38, 51, 64, 76, 89, 102, 114, 127, 140, & 152 mm (1½, 2, 2½, 3, 3½, 4, 4½, 5, 5½, & 6 inch) thicknesses.

<b>SPEC NOTE</b>	17. <i>It is the Designer's responsibility to specify the insulation thickness, which must be designed to minimize the potential for condensation within the supporting wall.</i>
<b>SPEC NOTE</b>	18. <i>Maximum insulation thickness in accordance with National Building Code of Canada Article 3.1.5.5 is 127 mm (5 inch).</i>
<b>SPEC NOTE</b>	19. <i>Maximum insulation thickness in accordance with National Building Code of Canada Article 3.2.3.8 is 152 mm (6 inch).</i>

- 2.2.3.5. DuROCK PUCCS insulation has router-cut grooves 10 mm (3/8 inch) deep by 16 mm (5/8 inch) wide in 51 mm (2 inch) radii, in such a way that each sheet has seventy-two circles cut equidistantly on 102 mm (4 inches) vertical and horizontal centres, tangentially overlapped.
- 2.2.3.6. Spray-in-Place Polyurethane Foam, compliant with CAN/ULC-S710.1 - single component, moisture cure, low expansion rate foam, used for insulation board joints as a gap filling material.

**2.2.4. Base Coat/Adhesives**

- 2.2.4.1. DuROCK Prep Coat base coat/adhesive - a wet mix, water-based acrylic dispersion that is field mixed with Type 10, 20, or 30 Portland cement 1:1 by weight, applied by stainless steel trowel or spray equipment.
- 2.2.4.2. DuROCK Prep Coat D base coat/adhesive – a dry mix, polymer-modified cementitious material that is field mixed with potable water, applied by stainless steel trowel or spray equipment.

**2.2.5. Mechanical Fasteners**

- 2.2.5.1. Wind-Devil 2 by Wind-Lock Corp. high density plastic washers, 51 mm (2 inches) in diameter, used in combination with corrosion resistant screws that are suitable for the substrate.
- 2.2.5.2. High density one-piece plastic fasteners used for concrete and masonry substrates.

**2.2.6. Alkali-Resistant Glass-Fibre Mesh**

- 2.2.6.1. DuROCK Starter Mesh for Backwrapping– nominal 145 g/m<sup>2</sup> (4.3 oz/yd<sup>2</sup>) weight, supplied in 241 mm (9½ in) wide by 45.7 m (150 ft) long, and 965 mm (38 in) wide by 45.7 m (150 ft) long rolls.
- 2.2.6.2. DuROCK 5 oz Reinforcing Mesh – nominal weight 174 g/m<sup>2</sup> (5.2 oz/yd<sup>2</sup>), supplied in 965 mm (38 in) wide by 45.7 m (150 ft) long rolls. The DuROCK logo appears on the mesh.
- 2.2.6.3. DuROCK 15 oz Impact Mesh – nominal weight 522 g/m<sup>2</sup> (15.4 oz/yd<sup>2</sup>), supplied in 965 mm (38 in) wide by 22.8 m (75 ft) long rolls.
- 2.2.6.4. DuROCK 20 oz Impact Mesh – nominal weight 680 g/m<sup>2</sup> (20.1 oz/yd<sup>2</sup>), supplied in 1 m (39 in) wide by 22.8 m (75 ft) long rolls.

<b>SPEC NOTE</b>	20. Reinforcing mesh weight governs the impact resistance of EIFS and 5 oz. mesh is not designed to withstand all impact caused by human force. DuRock recommends 15 or 20 oz. impact mesh plus 5 oz. reinforcing mesh for areas requiring greater impact resistance. It is the Designer's responsibility to specify where 15 oz. and 20 oz. mesh are to be used.
<b>SPEC NOTE</b>	21. PUCCS EIFS is not designed to withstand vehicular impact. Wherever possible, curbs, bollards, or sidewalks should be employed to create a buffer between PUCCS EIFS and vehicular traffic.

**2.2.7. Primer and Finish Coats**

- 2.2.7.1. DuROCK Base Primer – water-based, colour-pigmented acrylic dispersion used as a primer for DuROCK Finishes, applied by roller, brush, or spray equipment.
- 2.2.7.2. DuROCK Roll-On – water-based, colour-pigmented acrylic coating with a fine sand texture, used as a finish on decorative trim and mouldings, applied by roller, brush, or spray equipment.
- 2.2.7.3. DuROCK Finishes – water-based acrylic finish available in several textures and numerous colours, used as a finish on trim and walls, applied by stainless steel trowel or spray equipment.
- 2.2.7.4. DuROCK Specialty Finishes – water-based, exposed coloured aggregate finishes with integral texture, applied by stainless steel trowel or spray equipment.

<b>SPEC NOTE</b>	22. DuROCK recommends the application of primer to enhance the color consistency of the finish, especially for bright, dark, or deep colours. The Designer must specify if primer is required.
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**2.3. MIXING**

- 2.3.1. DuROCK Cement Bear shall be mixed by a medium duty power-drill (400 – 500 RPM) with stainless steel or corrosion-resistant paddle-mixing-blades. It shall be mixed to a uniform consistency prior to mixing with Portland cement. 13.5 kg (30 lbs) of Type 10, 20, or 30 Portland Cement shall be gradually added to one-

- half pail of Cement Bear, mixing continuously until a workable consistency is attained. The mixture shall be allowed to stand for approximately 5 minutes, and then remixed again to temper and increase pot life.
- 2.3.2. DuROCK Prep Coat shall be mixed by a medium duty power-drill (400 – 500 RPM) with stainless steel or corrosion-resistant paddle-mixing-blades. It shall be mixed to a uniform consistency prior to mixing with Portland cement. 15 kg (33 lbs) of Type 10, 20, or 30 Portland Cement shall be gradually added to one-half pail of Prep Coat, mixing continuously until a workable consistency is attained. The mixture shall be allowed to stand for approximately 5 minutes, then remixed again to temper and increase pot life, adding up to 250 mL (8 oz) of potable water if required to adjust viscosity.
  - 2.3.3. DuROCK Prep Coat D shall be mixed by a medium duty power-drill (400 – 500 RPM) with stainless steel or corrosion-resistant paddle-mixing-blades. One bag of Prep Coat D shall be gradually added to 6 L (1.3 imp gal) of potable water, mixing continuously until a workable consistency is attained. The mixture shall be allowed to stand for approximately 5 minutes, then remixed again to temper and increase pot life, adding up to 250 mL (8 oz) of potable water if required to adjust viscosity.
  - 2.3.4. DuROCK Roller Bear, Polar Bear, Vapour Block, Base Primer, Roll-On, Finishes, and Specialty Finishes shall be mixed to a uniform consistency by a medium duty power-drill (400 – 500 RPM) with stainless steel or corrosion-resistant paddle-mixing-blades prior to application.
  - 2.3.5. Discard any material that has become stiff or hard.

## **PART 3 – EXECUTION**

### **3.1. GENERAL**

- 3.1.1. Deficiencies in the substrate shall be rectified prior to commencing the work of this section.
- 3.1.2. The work of this section shall be co-coordinated with the work of other related sections.
- 3.1.3. PUCCS EIFS shall be installed in accordance with these specifications and the corresponding details.
- 3.1.4. The work of other sections shall be protected to ensure the work of this section does not stain or otherwise damage them.

### **3.2. FIRST COAT MOISTURE BARRIER**

- 3.2.1. Sheathing board joints shall not exceed 3.2 mm (1/8 inch). In areas where Roller Bear will be the first coat moisture barrier, Polar Bear or Cement Bear shall be applied to gaps between sheathing boards and allowed to dry prior to the application of the Roller Bear.
- 3.2.2. A continuous, uniform coat of moisture barrier shall be applied to the substrate and allowed to dry. Minimum dry thickness shall be: 0.28 mm (11 mils) for Roller Bear; 1.0 mm (39 mils) for Cement Bear; 1.2 mm (47 mils) for Polar Bear; and 0.8 mm (32 mils) for Vapour Block.

### **3.3. DRAINAGE ACCESSORIES**

- 3.3.1. Accessories shall be either adhesively or mechanically fastened to the substrate at locations indicated on the architectural drawings. Ends shall be butted tightly together, and sealed at termination points and corners.
- 3.3.2. Moisture barrier shall be applied to the interface of the accessory and the substrate to effectively prevent water from breaching it, and to direct water into its trough.

### **3.4. WRAPPING**

- 3.4.1. Insulation shall be wrapped at all terminations and at all expansion joints.
- 3.4.2. Wrapping shall encapsulate exposed insulation board edges with mesh-reinforced base coat.
- 3.4.3. Wrapping shall extend a minimum of 100 mm (4 inches) behind the insulation and should extend at least 50 mm (2 inches) beyond any self-adhering membrane that is present.
- 3.4.4. Wrapping shall be adhered to the substrate.
- 3.4.5. Wrapping shall not block the drainage path on the backside of the insulation.

### **3.5. INSULATION**

- 3.5.1. There are two methods by which PUCCS insulation may be adhered.
- 3.5.2. Under the One-Step Method, a coat of moisture barrier/adhesive shall be applied in a continuous, uniform coat and the insulation shall be immediately adhered to it. Where the first coat moisture barrier was Cement Bear or Vapour Block, this coat shall be Cement Bear applied at a minimum wet thickness of 1.25 mm (49 mils). Where the first coat moisture barrier was Roller Bear, this coat shall be Cement Bear applied at a minimum wet thickness of 1.25 mm (49 mils) or Polar Bear applied at a minimum wet thickness of 1.5 mm (59 mils). Where the first coat moisture barrier was Polar Bear, this coat shall be Polar Bear applied at a

- minimum wet thickness of 1.5 mm (59 mils). Mechanical fasteners shall be immediately placed through the dimples on the front of the insulation at locations where the insulation is not in contact with the adhesive.
- 3.5.3. Under the Two-Step Method, a second continuous, uniform coat of moisture barrier shall be applied to the substrate and allowed to dry. Minimum dry thickness shall be: 1.0 mm (39 mils) for Cement Bear; 1.2 mm (47 mils) for Polar Bear; 0.8 mm (32 mils) for Vapour Block; and 0.28 mm (11 mils) for Roller Bear. Adhesive shall be applied to the substrate in vertical parallel ribbons that are no less than 9 mm (17/48 inch) deep, 9 mm (17/48 inch) wide and spaced no less than 38 mm (1½ inches) apart. Ribbon spacing shall increase proportional to ribbon size. The insulation shall be immediately adhered to the substrate in such a manner so as to form a clear, unobstructed drainage cavity between the insulation and the substrate.
- 3.5.4. Under both methods, the insulation shall be installed such that boards are butted tightly together, vertical joints are staggered a minimum of 75 mm (3 inches), boards are oriented lengthwise horizontally, and inside and outside corners are interlocked. Insulation board joints shall be offset not less than 150 mm (6 inches) from sheathing board joints. Insulation board joints shall not align with corners of through-wall penetrations such as windows and doors. Adequate space shall be left at termination and expansion joints to allow for wrapping and sealant. Gaps between boards that exceed 1.6 mm (1/16 inch) in width shall be filled with insulation material. Gaps at outside corners shall also be filled with insulation material.
- 3.5.5. Mechanical fasteners shall be used where polyethylene-faced membranes extend more than 75 mm (3 inches) behind the insulation and wherever wrapping does not extend at least 50 mm (2 inches) beyond any self-adhering membrane that is present. Mechanical fasteners shall be placed at the dimples provided on the front of the insulation board. Mechanical fasteners shall be seated flush with the insulation board face (not countersunk), and must be installed such that the fasteners penetrate a minimum of 8 mm (5/16 inch) into steel framing, 25 mm (1 inch) into concrete or masonry, and 25 mm (1 inch) into wood framing.
- 3.5.6. The adhesive shall be allowed to dry prior to rasping. The insulation shall be rasped to ensure the surface is plane, smooth, and free of ultraviolet radiation degradation. The minimum insulation thickness after rasping shall be 19 mm (3/4") over and above the 10 mm (3/8") grooved air space on the backside of the insulation board.
- 3.5.7. Aesthetic reveals shall be cut as indicated on the architectural drawings. The minimum insulation thickness behind reveals shall be 19 mm (3/4") over and above the 10 mm (3/8") grooved air space on the backside of the insulation board. Horizontal reveals shall be sloped to shed water. Reveals shall not align with insulation board joints. Reveals should not align with corners of through wall penetrations such as windows and doors.

### **3.6. BASE COAT & FIBRE MESH**

- 3.6.1. Mechanical fastener heads should be covered with base coat and allowed to dry prior to coating the wall.
- 3.6.2. Where specified, impact mesh shall be embedded in base coat and allowed to dry prior to application of the reinforcing mesh. All areas that are treated with impact mesh shall also receive reinforcing mesh. Impact mesh joints shall be butted together and not overlapped.
- 3.6.3. Base coat shall be applied continuously over the insulation and in areas that have been treated with impact mesh. Reinforcing mesh shall be immediately embedded into the wet base coat and the surface shall be rendered uniform and smooth.
- 3.6.4. Reinforcing mesh joints shall be overlapped a minimum of 100 mm (4 inches) in the field of the wall and at least 200 mm (8 inches) on both sides of outside corners. Minimum overlap increases to 125 mm (5 inch) for insulation thicknesses 114 & 127 mm (4½ & 5 inch) where DuROCK PUCCS is required to comply with National Building Code of Canada Article 3.1.5.5.
- 3.6.5. An additional layer of mesh shall be installed at a 45° angle to corners of through wall penetrations.
- 3.6.6. Minimum base coat thickness shall be 2.0 mm (79 mils). Base coat shall be allowed to dry prior to application of primer and finish.

### **3.7. PRIMER & FINISH COAT**

- 3.7.1. Where specified, primer shall be applied to the reinforced base coat and allowed to dry for a minimum of 4 hours prior to finish coat application.
- 3.7.2. Finish coat shall be applied, and trowel-applied finishes shall be floated, to match the approved texture.
- 3.7.3. Finish coat shall not be applied onto surfaces that are to receive sealant.
- 3.7.4. Temporary protection shall remain in place until sealant and flashing are installed.
- 3.7.5. Leftover materials and debris shall be removed from the jobsite.



End of Specification 07 24 13

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