

DIVISION 07 THERMAL & MOISTURE PROTECTION

Section 07 00 00 Thermal and Moisture Protection - General

- 1 See DC350, Part 1, Section 2, Division 07, 07 00 00 - General.
- 2 Roofing Systems
 - 2.1 Ensure all BUR roof systems and Membrane Roof Systems include exterior grade gypsum board sheathing on the metal deck before installation of the vapour barrier, and a protective coverboard over the roof insulation.
 - 2.2 The roof membrane being the principal air barrier on the roof, ensure all penetrations are carefully detailed and components specified.
 - 2.3 At roof to wall junctions, the roof membrane shall be brought at least 300 mm up the wall. Construction sequence of the wall shall not interfere with the continuous operation of the roofing work.

Section 07 10 00 Damp-proofing and Waterproofing

- 1 Bituminous Membrane Waterproofing
 - 1.1 Materials: See DC350, Part 1, Section 2, Division 07, Section 07 10 00.

Section 07 18 00 Elastomeric Roof Coating

- 1 See DC350, Part 1, Section 2, Division 07, 07 10 00 Damp-proofing, Waterproofing.

Section 07 20 00 Thermal Protection

- 1 See DC350, Part 1, Section 2, Division 07, Section 07 20 00.
- 2 Spray applied insulation and spray applied fireproofing are not to be used in school construction unless noted otherwise in project specific brief or individual specification sections or as otherwise approved by DTIR.
- 3 Perimeter Foundation Insulation:
 - 3.1 To 24" below finish grade on inside face of perimeter foundation walls.
 - 3.2 To 24" in from perimeter foundation wall under slabs on grade.
 - 3.3 2" thick expanded polystyrene type 2 or extruded polystyrene type 4.

- 4 Cavity Wall:
 - 4.1 Extruded or expanded polystyrene to CAN/ULC S770 or CGSB 51.20, min. R value 10.
- 5 Roof
 - 5.1 Extruded/Expanded polystyrene to CAN/ULC S701, or fibrous glass insulation to CAN/ULC S703, or isocyanurate (urethane) insulation to CAN/ULC S704, minimum R value 20.
 - 5.2 Provide design details showing minimum thicknesses of applicable insulation.
- 6 Materials
 - 6.1 Protective Coverboard: The use of asphalt impregnated gypsum board will not be acceptable as a protective coverboard in schools.
- 7 Batt Insulation
 - 7.1 See DC350, Part 1, Section 2, Division 07, 07 20 00.
- 8 Installation
 - 8.1 Batt Insulation
 - 8.1.1 See DC350, Part 1, Section 2, Division 07, 07 20 00.
 - 8.2 Cavity Wall Installation:
 - 8.2.1 See DC350, Part 1, Section 2, Division 07, 07 20 00.
 - 8.3 Adhesive Installation on Foundation Walls:
 - 8.3.1 Secure installation by adhesive if backfilling is not immediately placed to retain panels in place.
 - 8.3.2 Prime surfaces before application of adhesive only where and as recommended by adhesive manufacturer.
 - 8.3.3 Apply 2" diameter pads of adhesive to faces of panels as required to hold board in place on walls.
 - 8.3.4 Position and press boards into full contact with adhesive, and temporarily hold them in place until adhesive has set.
 - 8.3.5 Ensure that backfilling is completed within 24 hours, and that it does not dislodge or damage insulation.
 - 8.4 Insulation over metal decks shall have a single uniform thickness meeting the required insulation values over the general field of the roof.

Section 07 24 00 Exterior Insulation and Finish System (EIFS)

- 1 See DC350, Part 1, Section 2, Division 07, Section 07 24 00.

Section 07 25 00 Weather Barriers / Vapour Retarders / Air Barriers

- 1 See DC350, Part 1, Section 2, Division 07, 07 25 00.
- 2 For Pre-cast Concrete Panels and Tilt-Up Concrete Wall Systems requiring steel stud backup walls, provide a 6 ml polyethylene vapour barrier over the studs.
- 3 Design and locate air/vapour barrier for overhangs and hidden spaces in envelope so that condensation will not occur in these spaces. Consider air/vapour barrier continuity and buildability, insulation location, thermal bridging and air circulation in order to determine if space will perform better as cold exterior or warm interior space.
 - 3.1 Sheet Vapour Barrier
 - 3.1.1 Polyethylene Film
 - 3.1.1.1 to CGSB 51.34-M86, Type CMHC approved, Milrol-2000, 0.15 mm thick.
- 4 Membrane Air Barrier & Flexible Membrane Flashings
 - 4.1 SBS modified bituminous air barrier membrane, minimum 40 mil thick.
 - 4.2 Brick ties and other penetrations should be sealed with mastic.
- 5 Sheet Vapour Barrier Installation
 - 5.1 See DC350, Part 1, Section 2, Division 07, 07 25 00, Item 8 - Sheet Vapour Barrier Installation.
- 6 Air Barrier Installation
 - 6.1 See DC350, Part 1, Section 2, Division 07, Section 07 25 00, Item 9 - Air Barrier Installation.

Section 07 30 00 Steep Slope Roofing (Shingles, Roof Tiles, and Roof Coverings)

- 1 Asphalt shingles with a 30 year warranty is an acceptable roofing material.
- 2 Provide complete details of eaves, valleys, all penetrations and flashed areas.

Section 07 40 00 Roofing and Siding Panels

- 1 Preformed Metal Cladding/Siding
 - 1.1 See DC350, Part 1, Section 2, 07 40 00, Supplemented by the following:
 - 1.1.1 For exterior walls metal siding (minimum 24 gauge) is acceptable for walls higher than 12' above finished grade. Metal siding of any gauge shall not be used as exterior wall cladding within 12'-0" of finished grade.

Section 07 51 00 Built-up Bituminous Roofing

- 1 A 2 ply modified bitumen is an acceptable roofing system.
- 2 See DC350 Part 1, Section 2, Division 07, Section 07 51 00, unless otherwise specified.
- 3 Where roofing is applied over metal deck, Type X or exterior grade drywall is not an acceptable product prior to vapour barrier installation. The design shall include a direct to deck membrane vapour barrier.

Section 07 52 00 Modified Bituminous Membrane Roofing

- 1 See DC350 - Part 1, Section 2, Division 07, Section 07 00 00 and Section 07 52 00 unless otherwise specified.
- 2 Where roofing is applied over metal deck, Type X or exterior grade drywall is not an acceptable product prior to vapour barrier installation. The design shall include a direct to deck membrane vapour barrier.
- 3 Asphalt Primer
 - 3.1 Black bituminous varnish. An asphalt modified bitumen with thermoplastic polymers and volatile solvents.
- 4 Asphalt
 - 4.1 Type II and III in compliance with CSA A123.
- 5 Asphalt Felts
 - 5.1 No. 15 perforated asphalt felts.
- 6 Insulation
 - 6.1 CFC free.
 - 6.2 Extruded polystyrene Type IV or polyisocyanurate or expanded polystyrene, Type 1.
 - 6.3 Average, over entire roof area, R-20. Provide design details indicating thickness of selected insulation to meet thermal resistance requirements.
 - 6.4 Tapered where required to ensure positive drainage, minimum slope 2% to drains.
- 7 Protective Coverboard
 - 7.1 See DC350 - Part 1, Section 2, Division 07, 07 20 00 - Protective Coverboard.

8 Membranes

8.1 Base Sheet

- 8.1.1 Reinforcement: non-woven polyester 180 g/M²
- 8.1.2 Elastomeric asphalt: mix of selected bitumen and thermoplastic polymer.
- 8.1.3 Top face covered with a thermofusible plastic film.
- 8.1.4 Underface lightly sanded.
- 8.1.5 Minimum thickness 2mm.

8.2 Base Flashing:

- 8.2.1 Have a non-woven polyester reinforcement and thermofusible elastomeric asphalt. Both sides shall be protected by a thermofusible plastic film. This membrane is to be applied by torching only.
- 8.2.2 Reinforcement: non-woven polyester, 180 g/M².
- 8.2.3 Thermofusible elastomeric asphalt: mix of selected bitumen and SBS thermoplastic polymer.
- 8.2.4 Minimum thickness 2.8 mm.

8.3 Cap Sheet and Cap Sheet Flashing.

- 8.3.1 Shall have a non-woven polyester reinforcement and thermofusible elastomeric asphalt. The top side shall be self-protected with coloured granules. The underside shall be protected by a thermofusible film. This membrane is to be applied by torching only.
- 8.3.2 Reinforcement: 250 g/M² of non-woven polyester.
- 8.3.3 Elastomeric asphalt: mix of selected bitumen and SBS thermoplastic polymer.
- 8.3.4 Minimum thickness 3.8 mm. Combined thickness of base sheet and cap sheet must be a minimum of 6mm.
- 8.3.5 Top face protection: ceramic granules, colour from Manufacturer's standard selection.

8.4 Expansion joint membrane:

- 8.4.1 Elastomeric modified bitumen waterproofing membrane.
- 8.4.2 Reinforcing: polyester tissue.
- 8.4.3 Surfaced with thermoplastic foil and a protective silicon paper.
- 8.4.4 Minimum thickness 3.8 mm.
- 8.4.5 Minimum width 18".
- 8.4.6 Use tape guard with a minimum of 3" overlap, at roof penetrations and curbs.

8.5 Provide purpose made gussets, etc. as recommended by the manufacturer.

8.6 Provide all other membrane fittings, termination bars, etc. as required to complete

the project.

Section 07 53 00 Elastomeric Membrane Roofing - Ethylene Propylene Diene Monomer Roofing (EPDM)

- 1 A Single-ply EPDM (fully adhered or mechanically fastened; non-ballasted) is an acceptable roofing system.
- 2 See DC350 - Part 1, Section 2, Division 07, 07 53 00, unless otherwise specified.
- 3 Where roofing is applied over metal deck, Type X or exterior grade drywall is not an acceptable product prior to vapour barrier installation. The design shall include a direct to deck membrane vapour barrier.

Section 07 54 00 Thermoplastic Membrane Roofing

- 1 See DC350 - Part 1, Section 2, Division 07, 07 54 00 unless otherwise specified.
- 2 Where roofing is applied over metal deck, Type X or exterior grade drywall is not an acceptable product prior to vapour barrier installation. The design shall include a direct to deck membrane vapour barrier.

Section 07 72 00 Roof Accessories

- 1 Permanent Travel Restraint System is not required. Ensure temporary fall protection systems meet applicable code requirements.

Section 07 80 00 Fire and Smoke Protection

- 1 See DC350, Part 1, Section 2, Division 07, 07 80 00, except as follows.
- 2 Spray on material to achieve fire separation between assemblies is not permitted in school buildings with the exception of a heating plant boiler room.

Section 07 84 00 Fire Stopping

- 1 See DC350, Part 1, Section 2, Division 07, 07 84 00.

Section 07 90 00 Joint Sealants

- 1 See DC350, Part 1, Section 2, Division 07, 07 90 00 Joint Sealants.

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