

Part 1 General

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| 1.1 RELATED
SECTIONS | .1 Section 06 10 00 - Rough Carpentry. |
| | .2 Section 08 11 13 - Metal Doors and Frames:
Foam fill at frames. |
| | .3 Section 09 21 16 - Gypsum Board Assemblies. |
| 1.2 REFERENCES | .1 American Society for Testing and Materials
(ASTM). |
| | .1 ASTM C1320-10, Standard Practice for
Installation of Mineral Fiber Batt and
Blanket Thermal Insulation for Light
Frame Construction. |
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| | .2 Underwriters Laboratories of Canada (ULC) |
| | .1 ULC-701, Thermal Insulation,
Polystyrene, Boards and Pipe Coverings. |
| | .2 ULC-710.1, Standard for Thermal
Insulation - Bead - Applied One
Component Polyurethane Air Seal ant
Foam, Part 1. |
| | .3 ULC-710.2, Standard for Thermal
Insulation - Bead-Applied One Component
Polyurethane Air Sealant Foam, Part 2. |
| 1.3 SUBMITTALS | .1 Submit in accordance with Section 01 33 00. |
| | .2 Submit product data and manufacturer's
installation recommendations for each product
specified. |
| | .3 When requested, provide information
concerning installer experience which is
similar in scope and scale to requirements of
the Project, including location of work and
persons to be contracted as references. |

<u>1.4 QUALITY ASSURANCE</u>	.1	Installer Qualifications: Qualified by manufacturer to install manufacturer's products, and who has completed installations similar in design, scope and scale to those indicated for this Project.
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<u>1.5 DELIVERY, STORAGE AND HANDLING</u>	.1	Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
	.2	Protect from exposure to harmful environmental conditions at temperature and humidity conditions recommended by manufacturer.

Part 2 Products

<u>2.1 SOUND ATTENUATION BATTS</u>	.1	Rock (Mineral) Wool Sound Batts: to ASTM C665, Type 1; mineral wool fibre insulation made from basalt rock and recycled furnace slag: <ul style="list-style-type: none"> .1 Combustibility to CAN4-S114: Non-combustible. .2 Surface Burning Characteristics to CAN/ULC S102: Flame Spread: 0, Smoke Developed: 0. .3 Thickness: as indicated on Drawings.
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<u>2.2 ATTACHMENT DEVICES AND RELATED ACCESSORIES</u>	.1	Adhesive: Polyurethane construction adhesive, resistant to freezing.
	.2	Expanding Foam Insulation and Sealant: CAN-ULC-S710.1, single component, low-expanding polyurethane foam

Part 3 Execution

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| <u>3.1 EXAMINATION</u> | .1 | Examine the areas and conditions where building insulation is to be installed and identify any conditions detrimental to the proper and timely completion of the work. |
| | .2 | Do not proceed with the work until unsatisfactory conditions are corrected. |
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| <u>3.2 PREPARATION</u> | .1 | Clean substrates of substances harmful to insulation or vapour retarders, including removing projections capable of puncturing vapour retarders or interfering with insulation attachment. |
| | .2 | Clean all surfaces free of dirt, grime, grease, oil or other substances which would be detrimental to proper bond of adhesives. |
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| <u>3.3 INSTALLATION</u>
<u>GENERAL</u> | .1 | Install insulation after building substrate materials are dry. |
| | .2 | Comply with insulation manufacturer's written instructions and recommendation applicable to products and application indicated. |
| | .3 | Install insulation in largest possible size to cover areas indicated on Drawings, closely butted together at sides, ends, and against walls, and structural members. |
| | .4 | Extend insulation to the full thickness shown over entire area to be insulated. Neatly cut and fit insulation tightly around obstructions, projections such as pipes, conduits, hangers and other elements, and fill voids with insulation. Remove debris in conflict with insulation installation. |
| | .5 | Fit insulation tight around and behind electrical boxes, plumbing and heating pipes and ducts. |
| | .6 | Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures. |

- .7 Do not install any insulation that becomes damaged during the course of installation or is no longer in a physical condition to function for the use intended and replace with new material.
- .8 Exercise care to avoid damage and soiling of faces on insulation units which will remain exposed to view. Abut joints accurately with adjoining surfaces set flush.
- .9 Attach insulation in a manner to ensure stability and eliminate sagging.
- .10 Apply a single layer of insulation to the required thickness, unless a double layer is required, to make up the total thickness shown.
- .11 Concealed layers of material must not have a vapour retarder facing.
- .12 Offset both vertical and horizontal joints in multiple layer applications.
- .13 Do not enclose insulation until it has been inspected and approved by Departmental Representative.

3.4 INSTALLATION
OF BATT INSULATION

- .1 Install insulation in accordance with ASTM C1320.
- .2 Install batts in cavities formed by framing members as follows:
- .3 Use batt widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
- .4 Place batts in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
- .5 For wood or metal-framed wall cavities where cavity heights exceed 2440 mm, provide mechanical support to batts.

3.5 INSTALLATION
OF EXPANDING FOAM
SEALANT

- .1 Apply expanding foam to fill irregular voids and cracks and to interface with building envelope, and around doors, windows, louvres and other openings in exterior walls.
- .2 Apply expanding foam in accordance with CAN/ULC S710.2 and the manufacturer's written instructions.
- .3 Foam fill shim spaces around perimeter of openings for frames of doors, windows and curtain walls.
- .4 Finished surface of foam to be free of voids and imbedded foreign objects. Maintain cured skin.
- .5 Remove masking materials and over spray from adjacent areas immediately after foam surface has hardened.

END OF SECTION

Part 1 General

1.1 SECTION .1 Preparing substrate surfaces.

INCLUDES

.2 Sealant and joint backing.

1.2 RELATED .1 Section 08 11 13 - Metal Doors and
SECTIONS Frames.

.2 Section 08 50 00 - Windows.

.3 Section 09 21 16 - Gypsum Board Assemblies.

1.3 REFERENCES .1 American Society for Testing of Materials
(ASTM).

.1 ASTM C834-14, Standard Specification
for Latex Sealants.

.2 ASTM C919-12, Standard Practice for Use
of Sealants in Acoustical Applications.

.3 ASTM C920-14a, Standard Specification
for Elastomeric Joint Sealants.

.4 ASTM D2369-10(2015)e1, Standard Test
Method for Volatile Content of
Coatings.

.5 ASTM D5893-10, Standard Specification
for Cold Applied, Single Component,
Chemically Curing Silicone Joint Sealant
for Portland Cement Concrete Pavements.

1.4 SUBMITTALS .1 Submit in accordance with Section 01 33 00.

.2 Product Data: Provide data indicating
sealant chemical characteristics, performance
criteria, substrate preparation, limitations,
and colour availability.

.3 Samples: Submit two sample ribbons of
sealant, illustrating sealant colours for
selection.

.4 Submit laboratory tests or data validating
product compliance with performance criteria
specified. Include SWRI validation
certificate where required.

1.5 QUALITY
ASSURANCE

- .1 Installer Qualifications: Qualified to perform work specified by reason of experience or training provided by product manufacturer. Submit reference list including minimum three projects of similar size and scope.
- .2 Adhesion Pull Tests: the number of adhesion pull tests to be determined by manufacturers weatherseal warranty. Adhesion pull tests to be conducted by or in the presence of manufacturers representative. Manufacturer to supply Consultant with results of adhesion pull tests. Sealant installer responsible for repairing areas where adhesion pull tests are conducted, without change to the Contract price.
- .3 Manufacturer's Representative: Coordinate with manufacturers representative to provide access to completed work areas until adhesion pull tests can be completed.

1.6 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.
- .2 Store products in a location protected from freezing, damage, construction activity, precipitation, and direct sunlight in strict accordance with manufacturer's recommendations.
- .3 Condition products to approximately 16 to 21°C for use in accordance with manufacturer's recommendations.

1.7 ENVIRONMENTAL
AND SAFETY
REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

Part 2 Products

2.1 SEALANT MATERIALS

- .1 Acoustical sealant: to ASTM C920, single component, non-hardening, non-skinning, synthetic rubber.
- .2 Acrylic latex: to ASTM C834, single component general purpose siliconized acrylic latex sealant.
- .3 Polyurethane, two component: to ASTM C920, Type M, Grade P, Class 25, multi component modified polyurethane sealant, plus minus 25% joint movement capability.
- .4 Silicone, mildew resistant: to ASTM C920, single component mildew resistant silicone sealant, +/- 25% movement capability.

2.2 ACCESSORIES

- .1 Primer: Type recommended by the sealant manufacturer and compatible with joint forming materials.
- .2 Joint Cleaner: Non-corrosive and non-staining type recommended by sealant manufacturer and compatible with joint forming materials.
- .3 Soft Backer Rod: to ASTM C 1330, non-gassing, reticulated closed-cell polyethylene rod designed for use with cold-applied joint sealants. Size required for joint design.
- .4 Closed-Cell Backer Rod: to ASTM C 1330, closed-cell polyethylene rod designed for use with cold-applied joint sealants for on-grade or below-grade applications. Size required for joint design.
- .5 Joint Filler: closed-cell polyethylene joint filler designed for use in cold joints, construction joints, or isolation joints wider than 6 mm. Size required for joint design.
- .6 Bond Breaker: Pressure-sensitive tape recommended by sealant manufacturer to suit application.

2.3 COLOURS

- .1 Unless indicated otherwise in respective technical specification sections, colour selection is at the option of the Departmental Representative.

2.4 SEALANT SCHEDULE

- .1 Perimeters of exterior openings where frames meet exterior facade of building. All other exterior applications.
 - .1 Sealant type: Polyurethane, two component.
- .2 Exterior cladding weather joints.
 - .1 Sealant type: Polyurethane, two component.
- .3 Perimeters of interior door/window frames and surfaces, where required.
 - .1 Sealant type: Acrylic latex.
- .4 Perimeter of washroom fixtures, countertop backsplash at wall.
 - .1 Sealant type: Silicone, mildew resistant.
- .5 Building envelope applications (vapour barrier/vapour barrier, vapour barrier/wall opening, etc):
 - .1 Sealant type: Acoustical sealant.
- .6 Interior partitions and acoustic applications:
 - .1 Sealant type: Acoustical sealant.
- .7 For locations not included in this schedule, consult with Departmental Representative for proper selection of sealants.

Part 3 Execution

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| <u>3.1 EXAMINATION</u> | .1 | Verify that substrate surfaces and joint openings are clean, dry, and free of frost and ready to receive work. |
| | .2 | Verify that joint backing and release tapes are compatible with sealant. |
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| <u>3.2 PREPARATION</u> | .1 | Remove loose materials and foreign matter which might impair adhesion of sealant. |
| | .2 | Clean and prime joints in accordance with sealant manufacturer's written instructions |
| | .3 | Perform preparation in accordance with sealant manufacturer's written instructions. |
| | .4 | Protect elements surrounding the work of this section from damage or disfiguration. |
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| <u>3.3 INSTALLATION</u> | .1 | sealant in accordance with sealant manufacturer's written instructions. |
| | .2 | Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint. |
| | .3 | Measure joint dimensions and size materials to achieve required 2:1 width/depth ratios. |
| | .4 | Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width. |
| | .5 | Install bond breaker where joint backing is not used. |
| | .6 | Install sealant free of air pockets, foreign embedded matter, ridges, and sags. |
| | .7 | Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges. |
| | .8 | Tool joints concave. |

3.4 FIELD QUALITY CONTROL

- .1 Joint Sealants: Perform adhesion tests in accordance with manufacturer's written instructions.
- .2 Perform test 21 days after installation at a rate of one test every 300 m of installed sealant.
- .3 Remove sealants failing adhesion test, clean substrates, reinstall sealants and perform retesting.
- .4 Maintain test log and submit report to Departmental Representative indicating tests, locations, dates, results, and remedial actions.

3.5 CLEANING

- .1 Clean adjacent soiled surfaces.

3.6 PROTECTION OF FINISHED WORK

- .1 Remove masking tape and excess sealant.
- .2 Protect sealants until cured.

END OF SECTION