

## PART 1 - GENERAL

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| <u>1.1 REFERENCES</u>                          | .1 | Canada Green Building Council (CaGBC)<br>.1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.                                                                                                                                              |
|                                                | .2 | South Coast Air Quality Management District (SCAQMD), California State<br>.1 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.                                                                                                                                                                                                                         |
|                                                | .3 | Underwriters' Laboratories of Canada (ULC)<br>.1 CAN/ULC-S704-11, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.                                                                                                                                                                                                            |
| <u>1.2 SYSTEM DESCRIPTION</u>                  | .1 | Design Requirements:<br>.1 Fibreglass Reinforced Plastic (FRP) Doors.<br>.2 Fibreglass Reinforced Plastic (FRP) Frames.<br>.3 Design exterior frame assembly to accommodate expansion and contraction when subjected to minimum and maximum surface temperature of -35 degrees C to 35 degrees C.                                                              |
| <u>1.3 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.                                                                                                                                                                                                                                                                                 |
|                                                | .2 | Provide product data: in accordance with Section 01 33 00 - Submittal Procedures.                                                                                                                                                                                                                                                                              |
|                                                | .3 | Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.<br>.1 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Newfoundland and Labrador, Canada.<br>.2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, |

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| 1.3 ACTION AND<br>INFORMATIONAL<br>SUBMITTALS<br>(Cont'd) | .3 | Provide shop drawings: (Cont'd)<br>.2 (Cont'd)<br>openings, glazing, arrangement of hardware and finishes.<br>.3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and reinforcing and finishes.<br>.4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule. |
|                                                           | .4 | Sustainable Design Submittals:<br>.1 LEED Canada Submittals: in accordance with Section 01 35 21 - LEED Requirements.                                                                                                                                                                                                                                                                                      |
| 1.4 SUSTAINABLE<br>REQUIREMENTS                           | .1 | Materials and products in accordance with Section 01 47 15 - Sustainable Requirements: Construction.                                                                                                                                                                                                                                                                                                       |
| 1.5 DELIVERY,<br>STORAGE AND<br>HANDLING                  | .1 | Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.                                                                                                                                                                                                                                                                                                     |
|                                                           | .2 | Waste Management and Disposal:<br>.1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.                                                                                                                                                                                                                                   |

## PART 2 - PRODUCTS

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| 2.1 MATERIALS | .1 | Door Face Sheets:<br>.1 Door thickness nominal 44 mm.<br>.2 Lock stiles factory beveled.<br>.3 Fabricate 3.2 mm thick Fibreglass Reinforced Plastic face sheets from 50% fibreglass reinforced resin. |
|               | .2 | Reinforcement:<br>.1 38.1 mm square pultruded fibreglass tubes.                                                                                                                                       |
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- 2.1 MATERIALS (Cont'd)
- .2 Reinforcement: (Cont'd)
    - .2 Reinforce and mortise hardware 38.1 mm square solid fibreglass block at all hardware locations and corner intersections.
      - .1 Reinforcement blocking: non-swelling polymer will be used for all lockset, surface mounted hardware and through bolted hardware.
    - .3 Pre-drill pilot holes for full mortise butt hinges.
- 2.2 DOOR CORE MATERIALS
- .1 Polyurethane Foam Core.
    - .1 Laminate a 38.1 mm rigid block of Class A, CFC free, polyurethane to the interior of the fibreglass panels.
  - .2 Stiffened: face sheets laminated to insulated core.
    - .1 Polyurethane: to CAN/ULC-S704 rigid, modified poly/isocyanurate, closed cell board. Density 32 kg/m<sup>3</sup>.
- 2.3 ADHESIVES
- .1 Adhesive: maximum VOC content 50 g/L to SCAQMD Rule 1168.
- 2.4 PAINT
- .1 Field paint Fibreglass Reinforced Plastic doors and frames in accordance with Section 09 91 99 - Painting for Minor Works. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.
    - .1 Maximum VOC emission level 50 g/L to GS-11 to SCAQMD Rule 1113.
- 2.5 ACCESSORIES
- .1 Door silencers: single stud rubber/neoprene type.
  - .2 Fabricate glazing stops, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head stainless steel screws.
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- 2.5 ACCESSORIES  
(Cont'd)
- .3 Door bottom seal: Section 08 71 00 - Door Hardware.
  - .4 Sealant: 07 92 00 - Joing Sealers.
    - .1 Maximum VOC limit 250 g/L to SCAQMD Rule 1168.
  - .5 Glazing:Section 08 80 50 - Glazing.
  - .6 Make provisions for glazing as indicated and provide necessary glazing stops.
    - .1 Provide removable fibreglass glazing beads for use with glazing tapes and compounds and secured with countersunk stainless steel screws.
    - .2 Design exterior glazing stops to be tamperproof.
    - .3 Frame glazing openings according to manufacturer's recommendations.
- 2.6 FRAMES  
FABRICATION GENERAL
- .1 Frames shall be rigid, neat in appearance and free from defects.
  - .2 Fabricate frames from 100% pultruded fibreglass with average 50% glass content by weight with strength equal to 1.9 mm thick hollow metal frame.
  - .3 Head and jamb members shall have standard 45 degree corner connections, fabricated for knocked down field assembly.
  - .4 Fabricate frames to profiles and maximum face sizes as indicated.
  - .5 Blank, reinforce, drill and tap frames for mortised, templated hardware, and electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.
  - .6 Protect mortised cutouts with steel guard boxes.
  - .7 Prepare frame for door silencers, 3 for single door, 2 at head for double door.
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2.6 FRAMES  
FABRICATION GENERAL  
(Cont'd)

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- .8 Manufacturer's nameplates on frames and screens are not permitted.
- .9 Conceal fastenings except where exposed fastenings are indicated.
- .10 Insulate exterior frame components with polyurethane insulation.

2.7 FRAME ANCHORAGE

- .1 Provide appropriate anchorage to floor and wall construction.
- .2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
- .3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.
- .4 Locate anchors for frames in existing openings not more than 150 mm from top and bottom of each jambs and intermediate at 660 mm on centre maximum.
- .5 Provide frame anchorage according to manufacturer's recommendations.

2.8 FRAMES:  
KNOCKED-DOWN TYPE

- .1 Ship knocked-down type frames unassembled.
- .2 Provide frames with mechanical joints which inter-lock securely and provide functionally satisfactory performance when assembled.
- .3 Securely attach floor anchors to inside of each jamb profile.

2.9 FRAMES:  
SLIP-ON TYPE

- .1 Ship slip-on type frames unassembled.
  - .2 Provide frames with mechanical joints which inter-lock securely and provide functionally satisfactory performance when installed in accordance with CSDMA Recommended Installation
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| 2.9 FRAMES:<br>SLIP-ON TYPE<br>(Cont'd)      | .2 (Cont'd)<br>Guide for Steel Doors and Frames and<br>manufacturers' instructions.                                                                                                                                       |
|                                              | .3 Provide slip-on frames with manufacturers'<br>proprietary design of wall anchorage<br>comprising single, adjustable tension type per<br>jamb and provision for secure attachment of<br>each jamb base to stud runners. |
| 2.10 DOOR<br>FABRICATION GENERAL             | .1 Doors: swing type, flush, with provision for<br>glass and/or louvre openings as indicated.                                                                                                                             |
|                                              | .2 Exterior doors: Insulated Fibreglass<br>Reinforced Plastic construction.                                                                                                                                               |
|                                              | .3 Doors: manufacturers' proprietary<br>construction, tested and/or engineered as part<br>of a fully operable assembly, including door,<br>frame, gasketing and hardware in accordance<br>with ASTM E 330                 |
|                                              | .4 Blank, reinforce, drill doors and tap for<br>mortised, templated hardware and electronic<br>hardware.                                                                                                                  |
|                                              | .5 Factory prepare holes 12.7 mm diameter and<br>larger except mounting and through-bolt holes,<br>on site, at time of hardware installation.                                                                             |
|                                              | .6 Reinforce doors where required, for surface<br>mounted hardware.                                                                                                                                                       |
|                                              | .7 Manufacturer's nameplates on doors are not<br>permitted.                                                                                                                                                               |
| 2.11 THERMALLY<br>BROKEN DOORS AND<br>FRAMES | .1 Fabricate thermally broken doors by using<br>insulated core and separating exterior parts<br>from interior parts with continuous<br>interlocking thermal break.                                                        |
|                                              | .2 Thermal break: rigid polyvinylchloride<br>extrusion conforming to CGSB 41-GP-19Ma.                                                                                                                                     |
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| 2.11 THERMALLY<br>BROKEN DOORS AND<br>FRAMES<br>(Cont'd) | .3 | Fabricate thermally broken frames separating exterior parts from interior parts with continuous interlocking thermal break. |
|                                                          | .4 | Apply insulation.                                                                                                           |

### PART 3 - EXECUTION

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| 3.1 MANUFACTURER'S<br>INSTRUCTIONS | .1 | Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.                                                                                                |
| 3.2 FRAME<br>INSTALLATION          | .1 | Set frames plumb, square, level and at correct elevation.                                                                                                                                                                                                                                |
|                                    | .2 | Secure anchorages and connections to adjacent construction.                                                                                                                                                                                                                              |
|                                    | .3 | Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in. |
|                                    | .4 | Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.                                                                                                                                                                                    |
|                                    | .5 | Caulk perimeter of frames between frame and adjacent material.                                                                                                                                                                                                                           |
|                                    | .6 | Maintain continuity of air barrier and vapour retarder.                                                                                                                                                                                                                                  |
| 3.3 DOOR<br>INSTALLATION           | .1 | Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 00 - Door Hardware.                                                                                                                                                   |
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3.3 DOOR .2 Adjust operable parts for correct function.  
INSTALLATION  
(Cont'd)

3.4 GLAZING .1 Install glazing for doors and frames in  
accordance with Section 08 80 50 - Glazing.

3.5 COMMISSIONING .1 Contractor to instruct maintenance personnel  
in operation and maintenance of doors and  
hardware.  
.2 Confirm operation and function for all doors  
and hardware.  
.3 Commissioning will be witnessed by  
Departmental Representative and Certificate  
will be signed by Contractor and Departmental  
Representative.