



Safety Codes Council

PART 9

CODE UPDATE INFORMATION

August 2019

Safety Codes Council

500 10405 Jasper Ave. NW Edmonton, AB T5J-3N4

780-413-0099 | 1-888-413-0099

www.safetycodes.ab.ca

Red strikethrough = deleted text

Blue underline = New text

Review this document in conjunction with the National Building Code-2019 Alberta Edition.

PART 9- CODE UPDATE INFORMATION		
ABC 2014	NBC(AE) 2019	Comments
<p>9.3.1.9. Cold Weather Requirements 3) Concrete shall not be placed</p> <ul style="list-style-type: none"> a) into mud, standing water or snow, or b) on, against or above any frozen material. 	<p>9.3.1.9. Cold Weather Requirements 3) Concrete shall not be placed</p> <ul style="list-style-type: none"> a) into mud, standing water or snow, or b) on, against or above any frozen material. 	Deleted Sentence (3). Requirement are already in referenced standards.
<p>9.4.2.1. Application 1) This Subsection applies to light-frame constructions whose wall, floor and roof planes are generally comprised of frames of small repetitive structural members, and where</p> <p>...</p> <ul style="list-style-type: none"> f) for flat roofs, there are no significant obstructions on the roof, such as parapet walls, spaced closer than the distance calculated by $D_o = 10(H_o - 0.8S_s / \gamma)$ <p>where D_o = minimum distance between obstructions, m, H_o = height of the obstruction above the roof, m, S_s = ground snow load, kPa, and γ = unit weight of snow, kN/m³.</p>	<p>9.4.2.1. Application 1) This Subsection applies to light-frame constructions whose wall, floor and roof planes are generally comprised of frames of small repetitive structural members, and where</p> <p>...</p> <ul style="list-style-type: none"> f) for flat roofs, there are no significant obstructions on the roof, such as parapet walls, spaced closer than the distance calculated by $D_o = 10(H_o - 0.8S_s / \gamma)$ <p>where D_o = minimum distance between obstructions, m, H_o = height of the obstruction above the roof, m, S_s = ground snow load, kPa, and γ = <u>unitspecific</u> weight of snow, kN/m³.</p>	
<p>9.4.2.5. Roofs at Different Levels 1) If roofs are at different levels, or there are projections above the roof level, the design roof snow load may need to include allowance for the effects of drifting snow in accordance with Part 4. (See A-9.4.2.2. in Appendix A.)</p>	<p>9.4.2.5. Roofs at Different Levels 1) If roofs are at different levels, or there are projections above the roof level, the design roof snow load may need to include allowance for the effects of drifting snow in accordance with Part 4. (See A-9.4.2.2. in Appendix A.)</p>	Deleted entire Article as this content is already covered in Note A-9.4.2.2.
<p>9.5.4.1. Hallway Width 2) The unobstructed width of a hallway within a common space of a house with a <i>secondary suite</i> shall be not less than 860 mm.</p>	<p>9.5.4.1. Hallway Width 2) The unobstructed width of a hallway within a common space of a house with a <i>secondary suite</i> shall be not less than 860 mm.</p>	Deleted Sentence (2).
<p>9.6.1.3. Structural Sufficiency of Glass 1) Glass shall be designed in conformance with CAN/CGSB-12.20-M, "Structural Design of Glass for Buildings." (See Appendix A.) 2) The maximum area of individual panes of glass for doors shall conform to Table 9.6.1.3.</p>	<p>9.6.1.3. Structural Sufficiency of Glass 1) <u>Glass</u> <u>Except as provided in Sentence (2), glass</u> shall be designed in conformance with</p> <ul style="list-style-type: none"> a) CAN/CGSB-12.20-M, "Structural Design of Glass for Buildings-(See Appendix A.)" <u>or</u> 	Moved notes from Appendix Note A-9.6.1.3.(1) into the code.

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Table 9.6.1.3.
Glass Area for Doors
Forming Part of Sentence 9.6.1.3.(2)

Glass Thickness, mm	Maximum Glass Area, m ²⁽¹⁾						
	Type of Glass						
	Annealed	Annealed, Multiple-Glazed, Factory-Sealed Units	Laminated	Wired	Heat-Strengthened	Fully Tempered	Fully Tempered, Multiple-Glazed, Factory-Sealed
3	0.50	0.70	(2)	(2)	1.00	1.00	2.00
4	1.00	1.50	(2)	(2)	1.50	4.00	4.00
5	1.50	1.50	(2)	(2)	1.50	No limit	No limit
6	1.50	1.50	1.20	1.00	1.50	No limit	No limit

Notes to Table 9.6.1.3.:

(1) See Appendix A.

(2) Not generally available.

NBC(AE) 2019

b) ASTM E 1300, "Determining Load Resistance of Glass in Buildings." (See also Article 4.3.6.1.).

2) Where the building has an essentially uniform distribution of paths for air leakage, including operable openings, but no large openings that would permit wind gusts to rapidly enter the building and the building is not in an exceptionally exposed location such as a hilltop, the maximum area of individual panes of glass for windows shall conform to

a) Tables 9.6.1.3.-A to 9.6.1.3.-C, where the building has a height from grade to the uppermost roof of 12 m or less, and is located in a built-up area, no less than 120 m away from the boundary between this area and open terrain, or

b) Tables 9.6.1.3.-D to 9.6.1.3.-F.

(See Note A-9.6.1.3.(2).)

Table 9.6.1.3.-A

Maximum Glass Area for Windows in Areas for which the 1-in-50 Hourly Wind Pressure (HWP) is less than 0.55 kPa⁽¹⁾

Forming Part of Clause 9.6.1.3.(2)(a)

Type of Glass	Maximum Glass Area, m ²							
	Glass Thickness, mm							
	2.5	3	4	5	6	8	10	12
Annealed	0.58	0.96	1.47	2.04	2.84	4.74	6.65	9.74
Factory-sealed insulated glass (IG) units ⁽²⁾	1.02	1.71	2.68	3.74	5.24	7.93	9.92	13.92
Heat-strengthened or tempered	1.24	1.93	2.60	3.18	3.99	5.55	6.99	9.74
Wired	0.27	0.45	0.68	0.93	1.31	2.15	3.07	5.03

Notes to Table 9.6.1.3.-A:

(1) The maximum hourly wind pressure with one chance in fifty of being exceeded in any one year, as provided in Appendix C.

(2) Maximum glass area values apply to IG units of two identical lites (annealed, heat-strengthened or tempered) spaced at 12.7 mm.

Table 9.6.1.3.-B

Maximum Glass Area for Windows in Areas for which the 1-in-50 Hourly Wind Pressure (HWP) is less than 0.75 kPa⁽¹⁾

Forming Part of Clause 9.6.1.3.(2)(a)

Comments

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ABC 2014	NBC(AE) 2019	Comments																																																																																																																																												
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insulated glass (IG) units ⁽²⁾	0.72	1.19	1.85	2.56	3.64	6.01	8.35	11.83	Heat-strengthened	0.88	1.46	2.21	2.71	3.39	4.73	5.92	8.29	Tempered	1.18	1.64	2.21	2.71	3.39	4.73	5.92	8.29	Wired	0.20	0.32	0.50	0.68	0.94	1.55	2.19	3.60	Type of Glass	Maximum Glass Area, m ²								Glass Thickness, mm								2.5	3	4	5	6	8	10	12	Annealed	0.30	0.50	0.77	1.05	1.45	2.40	3.40	5.62	Factory-sealed insulated glass (IG) units ⁽²⁾	0.52	0.86	1.31	1.86	2.57	4.30	6.10	9.89	Heat-strengthened	0.65	1.04	1.63	2.26	2.92	4.07	5.10	7.14	Tempered	1.01	1.42	1.90	2.33	2.92	4.07	5.10	7.14	Wired	0.16	0.26	0.38	0.52	0.71	1.15	1.63	2.69	
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	<u>Maximum Glass Area for Windows in Areas for which the 1-in-50 Hourly Wind Pressure (HWP) is less than 0.55 kPa – OPEN TERRAIN⁽¹⁾</u> Forming Part of Clause 9.6.1.3.(2)(b)									
	<u>Type of Glass</u>		<u>Maximum Glass Area, m²</u>							
			<u>Glass Thickness, mm</u>							
			<u>2.5</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>8</u>	<u>10</u>	<u>12</u>
	<u>Annealed</u>		<u>0.46</u>	<u>0.75</u>	<u>1.16</u>	<u>1.60</u>	<u>2.25</u>	<u>3.76</u>	<u>5.32</u>	<u>8.70</u>
	<u>Factory-sealed insulated glass (IG) units⁽²⁾</u>		<u>0.80</u>	<u>1.34</u>	<u>2.11</u>	<u>2.93</u>	<u>4.10</u>	<u>6.90</u>	<u>9.66</u>	<u>12.53</u>
	<u>Heat-strengthened</u>		<u>0.98</u>	<u>1.74</u>	<u>2.33</u>	<u>2.86</u>	<u>3.59</u>	<u>5.00</u>	<u>6.26</u>	<u>8.78</u>
	<u>Tempered</u>		<u>1.25</u>	<u>1.74</u>	<u>2.33</u>	<u>2.86</u>	<u>3.59</u>	<u>5.00</u>	<u>6.26</u>	<u>8.78</u>
	<u>Wired</u>		<u>0.22</u>	<u>0.36</u>	<u>0.55</u>	<u>0.76</u>	<u>1.05</u>	<u>1.75</u>	<u>2.47</u>	<u>4.09</u>
	<u>Notes to Table 9.6.1.3.-D:</u> (1) <u>The maximum hourly wind pressure with one chance in fifty of being exceeded in any one year, as provided in Appendix C.</u> (2) <u>Maximum glass area values apply to IG units of two identical lites (annealed, heat-strengthened or tempered) spaced at 12.7 mm.</u>									
	<u>Table 9.6.1.3.-E</u> <u>Maximum Glass Area for Windows in Areas for which the 1-in-50 Hourly Wind Pressure (HWP) is less than 0.75 kPa – OPEN TERRAIN⁽¹⁾</u> Forming Part of Clause 9.6.1.3.(2)(b)									
	<u>Type of Glass</u>		<u>Maximum Glass Area, m²</u>							
			<u>Glass Thickness, mm</u>							
			<u>2.5</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>8</u>	<u>10</u>	<u>12</u>
	<u>Annealed</u>		<u>0.33</u>	<u>0.54</u>	<u>0.83</u>	<u>1.14</u>	<u>1.61</u>	<u>2.67</u>	<u>3.75</u>	<u>6.14</u>
	<u>Factory-sealed insulated glass (IG) units⁽²⁾</u>		<u>0.57</u>	<u>0.94</u>	<u>1.47</u>	<u>2.04</u>	<u>2.85</u>	<u>4.75</u>	<u>6.72</u>	<u>10.97</u>
	<u>Heat-strengthened</u>		<u>0.70</u>	<u>1.15</u>	<u>1.79</u>	<u>2.44</u>	<u>3.06</u>	<u>4.36</u>	<u>5.34</u>	<u>7.47</u>
	<u>Tempered</u>		<u>1.06</u>	<u>1.48</u>	<u>1.99</u>	<u>2.44</u>	<u>3.06</u>	<u>4.36</u>	<u>5.34</u>	<u>7.47</u>
	<u>Wired</u>		<u>0.16</u>	<u>0.26</u>	<u>0.40</u>	<u>0.55</u>	<u>0.76</u>	<u>1.24</u>	<u>1.77</u>	<u>2.93</u>
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	<p>(2) Maximum glass area values apply to IG units of two identical lites (annealed, heat-strengthened or tempered) spaced at 12.7 mm.</p> <p style="text-align: center;">Table 9.6.1.3.-F Maximum Glass Area for Windows in Areas for which the 1-in-50 Hourly Wind Pressure (HWP) is less than 1.00 kPa – OPEN TERRAIN⁽¹⁾ Forming Part of Clause 9.6.1.3.(2)(b)</p> <table border="1"> <thead> <tr> <th rowspan="3">Type of Glass</th> <th colspan="8">Maximum Glass Area, m²</th> </tr> <tr> <th colspan="8">Glass Thickness, mm</th> </tr> <tr> <th>2.5</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>8</th> <th>10</th> <th>12</th> </tr> </thead> <tbody> <tr> <td>Annealed</td> <td>0.25</td> <td>0.40</td> <td>0.62</td> <td>0.84</td> <td>1.17</td> <td>1.94</td> <td>2.75</td> <td>4.50</td> </tr> <tr> <td>Factory-sealed insulated glass (IG) units⁽²⁾</td> <td>0.42</td> <td>0.68</td> <td>1.04</td> <td>1.46</td> <td>2.05</td> <td>3.41</td> <td>4.87</td> <td>7.92</td> </tr> <tr> <td>Heat-strengthened</td> <td>0.51</td> <td>0.84</td> <td>1.30</td> <td>1.79</td> <td>2.52</td> <td>3.69</td> <td>4.60</td> <td>6.44</td> </tr> <tr> <td>Tempered</td> <td>0.92</td> <td>1.28</td> <td>1.72</td> <td>2.10</td> <td>2.63</td> <td>3.69</td> <td>4.60</td> <td>6.44</td> </tr> <tr> <td>Wired</td> <td>0.12</td> <td>0.20</td> <td>0.30</td> <td>0.41</td> <td>0.57</td> <td>0.94</td> <td>1.31</td> <td>2.18</td> </tr> </tbody> </table> <p>Notes to Table 9.6.1.3.-F: (1) The maximum hourly wind pressure with one chance in fifty of being exceeded in any one year, as provided in Appendix C. (2) Maximum glass area values apply to IG units of two identical lites (annealed, heat-strengthened or tempered) spaced at 12.7 mm.</p> <p>3) 2) The maximum area of individual panes of glass for doors shall conform to Table 9.6.1.3.9.6.1.3.-G.</p> <p style="text-align: center;">Table 9.6.1.3.9.6.1.3.-G Glass Area for Doors Forming Part of Sentence 9.6.1.3.(2)9.6.1.3.(3)</p> <table border="1"> <thead> <tr> <th rowspan="3">Glass Thickness, mm</th> <th colspan="7">Maximum Glass Area, m²⁽¹⁾</th> </tr> <tr> <th colspan="7">Type of Glass</th> </tr> <tr> <th>Annealed</th> <th>Annealed, Multiple-Glazed,</th> <th>Laminated</th> <th>Wired</th> <th>Heat-Strengthened</th> <th>Fully Tempered</th> <th>Fully Tempered, Multiple-Glazed,</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							Type of Glass	Maximum Glass Area, m ²								Glass Thickness, mm								2.5	3	4	5	6	8	10	12	Annealed	0.25	0.40	0.62	0.84	1.17	1.94	2.75	4.50	Factory-sealed insulated glass (IG) units ⁽²⁾	0.42	0.68	1.04	1.46	2.05	3.41	4.87	7.92	Heat-strengthened	0.51	0.84	1.30	1.79	2.52	3.69	4.60	6.44	Tempered	0.92	1.28	1.72	2.10	2.63	3.69	4.60	6.44	Wired	0.12	0.20	0.30	0.41	0.57	0.94	1.31	2.18	Glass Thickness, mm	Maximum Glass Area, m ²⁽¹⁾							Type of Glass							Annealed	Annealed, Multiple-Glazed,	Laminated	Wired	Heat-Strengthened	Fully Tempered	Fully Tempered, Multiple-Glazed,									
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		Factory-Sealed Units					Factory-Sealed	
	3	0.50	0.70	(2)	(2)	1.00	1.00	2.00
	4	1.00	1.50	(2)	(2)	1.50	4.00	4.00
	5	1.50	1.50	(2)	(2)	1.50	No limit	No limit
	6	1.50	1.50	1.20	1.00	1.50	No limit	No limit
	Notes to Table 9.6.1.3-9.6.1.3.-G: (1) See Appendix A-Note A-Table 9.6.1.3. (2) Not generally available.							
9.6.1.4. Types of Glass and Protection of Glass 6) Glass other than safety glass shall not be used for a shower or bathtub enclosure.	9.6.1.4. Types of Glass and Protection of Glass 6) Glass other than laminated or tempered safety glass shall not be used for a shower or bathtub enclosure.							Wired glass no longer allowed.
9.7.1.1. Application 1) This Section applies to a) windows, doors and skylights separating <i>conditioned space</i> from unconditioned space or the exterior, and b) main entrance doors.	1) This Section applies to a) —windows, doors and skylights separating conditioned space from unconditioned space or the exterior, and b) — main entrance doors in buildings .							
9.7.2.3. Doors for Dwelling Units 1) In a <i>building</i> containing more than one <i>dwelling unit</i> , doors shall be provided at exterior entrances and <i>exits</i> , common laundry and drying rooms, common garbage rooms, public water closet rooms and at other locations where they are needed to satisfy the requirements of Section 9.10. 2) A door shall be provided to each room containing a <i>boiler</i> or <i>furnace</i> within a <i>dwelling unit</i> .	9.7.2.3. Doors for Dwelling Units 1) In a <i>building</i> containing more than one <i>dwelling unit</i>, doors shall be provided at exterior entrances and <i>exits</i>, common laundry and drying rooms, common garbage rooms, public water closet rooms and at other locations where they are needed to satisfy the requirements of Section 9.10. 2) A door shall be provided to each room containing a <i>boiler</i> or <i>furnace</i> within a <i>dwelling unit</i>.							Deleted entire Article.
9.7.2.4. Doors for Storage Garages 1) Notwithstanding the installation of overhead doors for vehicular access, at least one egress door not less than 1 980 mm high and 760 mm wide, swinging on a vertical axis shall be installed to serve a <i>storage garage</i> .	9.7.2.4. Doors for Storage Garages 1) Notwithstanding the installation of overhead doors for vehicular access, at least one egress door not less than 1 980 mm high and 760 mm wide, swinging on a vertical axis shall be installed to serve a <i>storage garage</i> . (See Note A-9.7.2.3.(1).)							Added new appendix note.
9.7.2.5. Doors to Balconies	9.7.2.5. Doors to Balconies							Deleted entire Article.

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<p>1) Except for a <i>suite</i> designed in accordance with Section 3.8. and except for balconies provided to satisfy Subsection 9.5.2. and Article 3.3.1.5., the door height required by Table 9.5.5.1. from a <i>dwelling unit</i> to the exterior balcony shall be measured from the finished floor surface to the top of the door.</p> <p>2) A sill not more than 300 mm in height above the finished floor surface is permitted to be included within the doorway opening in Sentence (1).</p>	<p>1) Except for a <i>suite</i> designed in accordance with Section 3.8. and except for balconies provided to satisfy Subsection 9.5.2. and Article 3.3.1.5., the door height required by Table 9.5.5.1. from a <i>dwelling unit</i> to the exterior balcony shall be measured from the finished floor surface to the top of the door.</p> <p>2) A sill not more than 300 mm in height above the finished floor surface is permitted to be included within the doorway opening in Sentence (1).</p>	
<p>9.7.5.2. Resistance to Forced Entry for Doors</p> <p>10) Solid blocking may be omitted for doors described in Sentence (9), where the interior wall finish adjacent to the door is in place prior to the construction of a <i>secondary suite</i>.</p>	<p>9.7.5.2. Resistance to Forced Entry for Doors</p> <p>10) Solid blocking may be omitted for doors described in Sentence (9), where the interior wall finish adjacent to the door is in place prior to the construction of a <i>secondary suite</i>.</p>	Deleted Sentence (10).
<p>9.7.7. Windows into a Garage or Carport</p> <p>9.7.7.1. Openable Windows</p> <p>1) An openable window shall not be located in that part of a wall separating a <i>dwelling unit</i> or a house with a <i>secondary suite</i> from an attached garage.</p> <p>2) An openable window is permitted to be located in that part of a wall separating a <i>dwelling unit</i> or a house with a <i>secondary suite</i> from a carport, provided</p> <ol style="list-style-type: none"> at least 40% of the surface of the perimeter of the carport, including the wall separating the <i>dwelling unit</i> from the carport, is open, openings in the perimeter of the carport are located to provide adequate cross ventilation, and the bottom sill of any openable window is not less than 1.2 m above the floor of the carport. <p>9.7.7.2. Non-Openable Windows</p> <p>1) A non-openable window between an attached garage or carport and a <i>dwelling unit</i> or a house with a <i>secondary suite</i> shall be built to prevent any air infiltration and shall provide an effective barrier to gas and exhaust fumes.</p>	<p>9.7.7. Windows into a Garage or Carport</p> <p>9.7.7.1. Openable Windows</p> <p>1) An openable window shall not be located in that part of a wall separating a <i>dwelling unit</i> or a house with a <i>secondary suite</i> from an attached garage.</p> <p>2) An openable window is permitted to be located in that part of a wall separating a <i>dwelling unit</i> or a house with a <i>secondary suite</i> from a carport, provided</p> <ol style="list-style-type: none"> at least 40% of the surface of the perimeter of the carport, including the wall separating the <i>dwelling unit</i> from the carport, is open, openings in the perimeter of the carport are located to provide adequate cross ventilation, and the bottom sill of any openable window is not less than 1.2 m above the floor of the carport. <p>9.7.7.2. Non-Openable Windows</p> <p>1) A non-openable window between an attached garage or carport and a <i>dwelling unit</i> or a house with a <i>secondary suite</i> shall be built to prevent any air infiltration and shall provide an effective barrier to gas and exhaust fumes.</p>	Deleted entire Subsection.
<p>9.8.3.1. Straight and Curved Runs in Stairs</p> <p>1) Except as provided in Sentence (2), stairs shall consist of</p> <ol style="list-style-type: none"> straight-run flights, or curved flights. <p>2) Stairs within <i>dwelling units</i> shall consist of</p> <ol style="list-style-type: none"> straight-run flights, curved flights, or straight runs with winders. 	<p>9.8.3.1. Straight and Curved Runs in Stairs Permitted Configurations</p> <p>(See Notes A-9.8.3.1. and A-9.8.4.)</p> <p>1) Except as provided in Sentence (2) Stairs in buildings other than <i>dwelling units</i> and houses with a <i>secondary suite</i>, including their common spaces, stairs shall consist of</p> <ol style="list-style-type: none"> straight-run flights, or except as provided in Sentence (4), curved flights, or except as provided in Sentence 9.8.4.7.(2), spiral stairs. 	

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<p>3) Only one set of winders described in Sentence (2) shall be permitted between floor levels.</p>	<p>2) Stairs within <i>dwelling units</i> <u>and houses with a secondary suite, including their common spaces</u>, shall consist of</p> <p>a) straight-run flights,</p> <p>b) <u>except as provided in Sentence (4)</u>, curved flights, or</p> <p>c) <u>except as provided in Sentence 9.8.4.7.(2)</u>, spiral stairs.</p> <p>e)d) straight runs with <u>except as provided in Sentence (3)</u>, flights with rectangular treads and winders, or</p> <p>e) <u>flights with a mix of rectangular and tapered treads</u>.</p> <p>3) Only one set of winders described in Sentence (2) <u>Article 9.8.4.6</u>, shall be permitted between floor levels.</p> <p>4) <u>Curved flights in exits shall comply with Sentence 3.4.6.9.(2)</u>.</p> <p>5) <u>All tapered treads within a flight shall turn in the same direction</u>.</p>																													
<p>9.8.3.2. Minimum Number of Risers</p> <p>1) Except for stairs within a <i>dwelling unit</i>, at least 3 risers shall be provided in interior flights.</p>	<p>9.8.3.2. Minimum Number of Risers</p> <p>1) Except for stairs within a <i>dwelling unit</i>, at least 3 risers shall be provided in interior flights <u>flights</u>.</p>	<p>“Flight” is now a defined term.</p>																												
<p>9.8.3.3. Maximum Height of Stairs</p> <p>1) The vertical height of any flight of stairs shall not exceed 3.7 m.</p>	<p>9.8.3.3. Maximum Height of Stairs</p> <p>1) The vertical height of any flight <u>flight</u> of stairs shall not exceed 3.7 m.</p>	<p>“Flight” is now a defined term.</p>																												
<p>9.8.4.1. Dimensions for Risers (See A-9.8.4. in Appendix A.)</p> <p>1) Except for stairs serving areas only used as <i>service rooms</i> or <i>service spaces</i>, the rise, which is measured as the vertical nosing-to-nosing distance, shall comply with Table 9.8.4.1.</p> <p style="text-align: center;">Table 9.8.4.1. Rise for Rectangular Treads Forming Part of Sentence 9.8.4.1.(1)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Stair Type</th> <th colspan="2">All Steps</th> </tr> <tr> <th colspan="2">Rise, mm</th> </tr> <tr> <th></th> <th>Max.</th> <th>Min.</th> </tr> </thead> <tbody> <tr> <td>Private⁽¹⁾</td> <td>200</td> <td>125</td> </tr> <tr> <td>Public⁽²⁾</td> <td>180</td> <td>125</td> </tr> </tbody> </table>	Stair Type	All Steps		Rise, mm			Max.	Min.	Private ⁽¹⁾	200	125	Public ⁽²⁾	180	125	<p>9.8.4.1. Dimensions for Risers (See <u>Note A-9.8.4. in Appendix A.</u>)</p> <p>1) Except <u>as provided in Article 9.8.4.7. and except</u> for stairs serving areas only used as <i>service rooms</i> or <i>service spaces</i>, the rise, which is measured as the vertical nosing-to-nosing distance, shall comply with Table 9.8.4.1.</p> <p style="text-align: center;">Table 9.8.4.1. Rise for Rectangular Treads, <u>Tapered Treads and Winders</u> Forming Part of Sentence 9.8.4.1.(1)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Stair Type</th> <th colspan="2">All Steps <u>Rectangular Treads, Tapered Treads and</u></th> </tr> <tr> <th colspan="2">Rise, mm</th> </tr> <tr> <th></th> <th>Max.</th> <th>Min.</th> </tr> </thead> <tbody> <tr> <td>Private⁽¹⁾</td> <td>200</td> <td>125</td> </tr> <tr> <td>Public⁽²⁾</td> <td>180</td> <td>125</td> </tr> </tbody> </table>	Stair Type	All Steps <u>Rectangular Treads, Tapered Treads and</u>		Rise, mm			Max.	Min.	Private ⁽¹⁾	200	125	Public ⁽²⁾	180	125	
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<p>9.8.4.2 Dimensions for Rectangular Treads</p>	<p>9.8.4.2 Dimensions for Rectangular Treads</p>	<p>“Run” is now a defined term.</p>																												

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(See A-9.8.4. in Appendix A.) 1) Except for stairs serving areas only used as <i>service rooms</i> or <i>service spaces</i> , the <i>run</i> , which is measured as the horizontal nosing-to-nosing distance, and the tread depth of rectangular treads shall comply with Table 9.8.4.2. <p style="text-align: center;">Table 9.8.4.2. Run and Tread Depth for Rectangular Treads Forming Part of Sentence 9.8.4.2.(1)</p> <table border="1"> <thead> <tr> <th rowspan="3">Stair Type</th> <th colspan="4">Rectangular Treads</th> </tr> <tr> <th colspan="2">Run, mm</th> <th colspan="2">Tread Depth, mm</th> </tr> <tr> <th>Max.</th> <th>Min.</th> <th>Max.</th> <th>Min.</th> </tr> </thead> <tbody> <tr> <td>Private⁽¹⁾</td> <td>355</td> <td>210</td> <td>355</td> <td>235</td> </tr> <tr> <td>Public⁽²⁾</td> <td>No limit</td> <td>280</td> <td>No limit</td> <td>280</td> </tr> </tbody> </table>		Stair Type	Rectangular Treads				Run, mm		Tread Depth, mm		Max.	Min.	Max.	Min.	Private ⁽¹⁾	355	210	355	235	Public ⁽²⁾	No limit	280	No limit	280	(See Note A-9.8.4. in Appendix A.) 1) Except for stairs serving areas only used as <i>service rooms</i> or <i>service spaces</i> , the <i>run</i> , which is measured as the horizontal nosing-to-nosing distance, and the tread depth of rectangular treads shall comply with Table 9.8.4.2. <p style="text-align: center;">Table 9.8.4.2. Run and Tread Depth for Rectangular Treads Forming Part of Sentence 9.8.4.2.(1)</p> <table border="1"> <thead> <tr> <th rowspan="3">Stair Type</th> <th colspan="4">Rectangular Treads</th> </tr> <tr> <th colspan="2">Run<i>Run</i>, mm</th> <th colspan="2">Tread Depth, mm</th> </tr> <tr> <th>Max.</th> <th>Min.</th> <th>Max.</th> <th>Min.</th> </tr> </thead> <tbody> <tr> <td>Private⁽¹⁾</td> <td>355</td> <td>210<i>255</i></td> <td>355</td> <td>235</td> </tr> <tr> <td>Public⁽²⁾</td> <td>No limit</td> <td>280</td> <td>No limit</td> <td>280</td> </tr> </tbody> </table>			Stair Type	Rectangular Treads				Run <i>Run</i> , mm		Tread Depth , mm		Max.	Min.	Max.	Min.	Private ⁽¹⁾	355	210 <i>255</i>	355	235	Public ⁽²⁾	No limit	280	No limit	280	
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9.8.4.3. Dimensions for Angled Treads (See A-9.8.4. in Appendix A.) 1) Angled treads in required <i>exit</i> stairs shall conform to the requirements in Article 3.4.6.9. 2) Except as provided in Article 9.8.4.5., angled treads in other than required <i>exit</i> stairs shall have an average run, which is measured as the horizontal nosing-to-nosing distance, of not less than 200 mm and a minimum run of 150 mm. 3) The depth of an angled tread shall be not less than its run, measured as the horizontal nosing-to-nosing distance, at any point and not more than its run at any point plus 25 mm.		9.8.4.3. Dimensions for Angled of Tapered Treads (See Note A-9.8.4. in Appendix A.) <u>1) Except as provided in Sentence (2) and Articles 9.8.4.6. and 9.8.4.7., tapered treads shall have a run that</u> <u>a) is not less than 150 mm at the narrow end of the tread, and</u> <u>b) complies with the dimensions stated in Table 9.8.4.2. when measured at a point 300 mm from the centre line of the handrail at the narrow end of the tread.</u> 1)2) Angled <u>Tapered treads</u> in required <i>exit</i> stairs shall conform to the requirements in Article 3.4.6.9. 2) Except as provided in Article 9.8.4.5., angled treads in other than required exit stairs shall have an average run, which is measured as the horizontal nosing-to-nosing distance, of not less than 200 mm and a minimum run of 150 mm. 3) The depth of an angled <u>tapered tread</u> shall be not less than its run <u>run</u> , measured as the horizontal nosing-to-nosing distance, at any point and not more than its run <u>run</u> at any point plus 25 mm.			“Run” is now a defined term.																																														
9.8.4.4. Uniformity and Tolerances for Risers and Treads 1) Except as provided in Sentence (2), risers shall be of uniform height in any one flight, with a maximum tolerance of		9.8.4.4. Uniformity and Tolerances for Risers, <u>Runs</u> and Treads 1) Except as provided in Sentence (2), risers shall be of uniform height in any one flight <u>flight</u> , with a maximum tolerance of			“Flight” and “run” are now defined terms.																																														

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a) 5 mm between adjacent treads or landings, and b) 10 mm between the tallest and shortest risers in a flight. 2) ... 3) Treads shall have a uniform run with a maximum tolerance of a) 5 mm between adjacent treads, and b) 10 mm between the deepest and shallowest treads in a flight. 4) Where angled treads or winders are incorporated into a stair, the treads in all sets of angled treads or winders within a flight shall turn in the same direction.	a) 5 mm between adjacent treads or landings, and b) 10 mm between the tallest and shortest risers in a flight <u>flight</u> . 2) ... 3) Treads <u>Rectangular treads</u> shall have a uniform run <u>run</u> with a maximum tolerance of of a) 5 mm between adjacent treads, and b) 10 mm between the deepest and shallowest treads in a flight <u>flight</u> . 4) Where angled treads or winders are incorporated into a stair, the treads in all sets of angled treads or winders within a flight shall turn in the same direction. <u>Tapered treads in a flight shall have a uniform run in accordance with the construction tolerances stipulated in Sentence (3) when measured at a point 300 mm from the centre line of the handrail as described in Sentence 9.8.7.1.(5).</u>	
N/A	<u>9.8.4.5. Uniformity of Runs in Flights with Mixed Treads within Dwelling Units</u> <u>1) Except as provided in Sentence (2) and Article 9.8.4.6., where a flight of stairs consists of both tapered treads and rectangular treads, all the treads shall have a uniform run when measured at a point 300 mm from the centre line of the inside handrail.</u> <u>2) Where tapered treads are located at the bottom of a mixed-tread flight, the run of the tapered treads when measured at a point 300 mm from the centre line of the inside handrail is permitted to exceed the run of the rectangular treads.</u>	Insert new Article.
9.8.4.5. Winders	9.8.4.5. <u>9.8.4.6. Winders</u>	Renumber Article.
9.8.4.7. Spiral Stairs 1) A spiral stair not required as part of a means of egress may be used in a dwelling unit or a house with a secondary suite if a) the maximum rise is 230 mm, b) the average run is not less than 140mm, c) the length of each tread is at least 660 mm, and d) a handrail is provided on the outside edge of the stair.	9.8.4.7. Spiral Stairs <u>(See Note A-9.8.4.7.)</u> <u>1) Spiral stairs shall have</u> <u>a) handrails on both sides, the outer handrail being not less than 1 070 mm high,</u> <u>b) a clear width not less than 660 mm between the handrails,</u> <u>c) risers that are not more than 240 mm high,</u> <u>d) treads that</u> <u>i) are a minimum of 190 mm deep at a point 300 mm from the centre line of the handrails at the narrower edge,</u> <u>ii) have a consistent angle and uniform dimension, and</u> <u>iii) turn in the same direction, and</u> <u>e) not less than 1 980 mm clear height.</u>	

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	<p>2) Spiral stairs conforming to Sentence (1) are permitted to be used as the only means of egress where they serve not more than 3 persons.</p> <p>3) Spiral stairs shall not serve as an exit.</p>	
9.8.4.6. Tread Nosings	9.8.4.6. 9.8.4.8. Tread Nosings	Renumber Article.
<p>9.8.5.2. Ramp Width (See also Article 9.9.3.2.)</p> <p>1) Except as provided in Sentence (2), <i>exit ramps and public ramps serving buildings of residential occupancy</i> shall have a clear width of not less than 870 mm.</p> <p>2) All ramps serving a single <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces shall have a width of not less than 860 mm.</p> <p>3) <i>Exit ramps and public ramps serving buildings of other than residential occupancy</i> shall have a clear width of not less than the greater of</p> <ol style="list-style-type: none"> 870 mm, or 8 mm per person based on the <i>occupant load</i> limits specified in Table 3.1.17.1. 	<p>9.8.5.2. Ramp Width (See also Article 9.9.3.2.)</p> <p>1) Except as provided in Sentence (2), exit ramps and public ramps serving ramps shall be not less than 1 100 mm wide. <i>buildings of residential occupancy shall have a clear width of not less than 870 mm.</i></p> <p>2) All rampsRamps serving a single <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces shall be not less than 860 mm wide. have a width of not less than 860 mm.</p> <p>3) Exit ramps and public ramps serving buildings of other than residential occupancy shall have a clear width of not less than the greater of</p> <ol style="list-style-type: none"> 870 mm, or 8 mm per person based on the occupant load limits specified in Table 3.1.17.1. 	
<p>9.8.5.4. Slope</p> <p>1) The slope of ramps shall be not more than</p> <ol style="list-style-type: none"> 1 in 10 for exterior ramps, 1 in 10 for interior ramps serving <i>residential occupancies</i>, 1 in 6 for <i>mercantile or industrial occupancies</i>, and 1 in 8 for all other <i>occupancies</i>. 	<p>9.8.5.2. Ramp Slope</p> <p>1) The slope of ramps shall be not more than</p> <ol style="list-style-type: none"> 1 in 10 for exterior ramps, 1 in 10 for interior ramps serving residential occupancies, 1 in 6 for mercantile or industrial occupancies, and 1 in 8 for all other occupancies. 	
<p>9.8.6.2. Required Landings</p> <p>1) Except as provided in Sentences (2) to (4) and Sentence 9.9.6.6.(2), a landing shall be provided</p> <ol style="list-style-type: none"> at the top and bottom of each flight of interior and exterior stairs, including stairs in garages, ... <p>2) ...</p> <p>3) A landing may be omitted at the top of an exterior flight serving a secondary entrance to a single <i>dwelling unit</i> or a house with a <i>secondary suite</i>, provided</p> <ol style="list-style-type: none"> the stair does not contain more than 3 risers, the principal door is a sliding door or swings away from the stair, and only a storm or screen door, if any, swings over the stair and is equipped with hardware to hold it open. 	<p>9.8.6.2. Required Landings</p> <p>1) Except as provided in Sentences (2) to (4) and Sentence 9.9.6.6.(2), a landing shall be provided</p> <ol style="list-style-type: none"> at the top and bottom of each flightflight of interior and exterior stairs, including stairs in garages, ... <p>2) ...</p> <p>3) A landing may be omitted at the top of an exterior flightflight serving a secondary entrance to a single <i>dwelling unit</i> or a house with a <i>secondary suite</i>, provided</p> <ol style="list-style-type: none"> the stair does not contain more than 3 risers, the principal door is a sliding door or swings away from the stair, and only a storm or screen door, if any, swings over the stair and is equipped with hardware to hold it open. 	"Flight" is now a defined term.

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<p>9.8.6.3. Dimensions of Landings (See Articles 9.9.6.1. and 9.9.6.6. regarding landings in <i>exits</i>.)</p> <p>1) Except as provided in Sentences (2) to (6), the width and length of landings shall comply with Table 9.8.6.3. (See Appendix A.)</p> <p>2) Widths and lengths of landings serving a house with a <i>secondary suite</i> including their common spaces shall comply with the requirements in Table 9.8.6.3. that apply to <i>dwelling units</i>.</p> <p style="text-align: center;">Table 9.8.6.3. Dimensions of Landings Forming Part of Sentence 9.8.6.3.(1)</p> <table border="1"> <thead> <tr> <th></th> <th>Landing Configuration</th> <th>Minimum Width, mm</th> <th>Length, mm</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Stairs and ramps serving a single <i>dwelling unit</i></td> <td>In straight-run stair or ramp, or landing turning through less than 30°, within a <i>dwelling unit</i></td> <td>Width of stair or ramp</td> <td>Not less than 860</td> </tr> <tr> <td>In straight-run exterior stair or ramp, or exterior landing turning through less than 30°</td> <td>Width of stair or ramp</td> <td>Not less than 900</td> </tr> <tr> <td>Landing turning through an angle of 30° or more, but less than 90°</td> <td>Width of stair or ramp measured at right angle to path of travel</td> <td>(a) Not less than 230 measured at the inside edge of the landing, and (b) Not less than 370 measured 230 mm from inside edge of landing or handrail</td> </tr> <tr> <td>Landing turning through not less than 90°</td> <td>Width of stair or ramp measured at right angle to path of travel</td> <td>Not less than width of stair or ramp landing</td> </tr> </tbody> </table>			Landing Configuration	Minimum Width, mm	Length, mm	Stairs and ramps serving a single <i>dwelling unit</i>	In straight-run stair or ramp, or landing turning through less than 30°, within a <i>dwelling unit</i>	Width of stair or ramp	Not less than 860	In straight-run exterior stair or ramp, or exterior landing turning through less than 30°	Width of stair or ramp	Not less than 900	Landing turning through an angle of 30° or more, but less than 90°	Width of stair or ramp measured at right angle to path of travel	(a) Not less than 230 measured at the inside edge of the landing, and (b) Not less than 370 measured 230 mm from inside edge of landing or handrail	Landing turning through not less than 90°	Width of stair or ramp measured at right angle to path of travel	Not less than width of stair or ramp landing	<p>9.8.6.3. Dimensions of Landings (See Note A-3.4.6.4.) (See also Articles 9.9.6.1. and 9.9.6.6. regarding landings in <i>exits</i>.)</p> <p>1) Except as provided in Sentences (2) to (6), the width and length of landings shall comply with Table 9.8.6.3. (See Appendix A.) landings shall be at least as wide and as long as the width of the stair or ramp in which they occur.</p> <p>2) Widths and lengths of landings serving a house with a secondary suite including their common spaces shall comply with the requirements in Table 9.8.6.3. that apply to dwelling units. Where the landing in a stairway or ramp does not turn or turns less than 90°, the length of the landing need not be more than the lesser of</p> <p style="text-align: center;">Table 9.8.6.3. Dimensions of Landings Forming Part of Sentence 9.8.6.3.(1)</p> <table border="1"> <thead> <tr> <th></th> <th>Landing Configuration</th> <th>Minimum Width, mm</th> <th>Length, mm</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Stairs and ramps serving a single dwelling unit</td> <td>In straight-run stair or ramp, or landing turning through less than 30°, within a dwelling unit</td> <td>Width of stair or ramp</td> <td>Not less than 860</td> </tr> <tr> <td>In straight-run exterior stair or ramp, or exterior landing turning through less than 30°</td> <td>Width of stair or ramp</td> <td>Not less than 900</td> </tr> <tr> <td>Landing turning through an angle of 30° or more, but less than 90°</td> <td>Width of stair or ramp measured at right angle to path of travel</td> <td>(a) Not less than 230 measured at the inside edge of the landing, and (b) Not less than 370 measured 230 mm from inside edge of landing or handrail</td> </tr> <tr> <td>Landing turning through not less than 90°</td> <td>Width of stair or ramp measured at right angle to path of travel</td> <td>Not less than width of stair or ramp landing</td> </tr> </tbody> </table>			Landing Configuration	Minimum Width, mm	Length, mm	Stairs and ramps serving a single dwelling unit	In straight-run stair or ramp, or landing turning through less than 30°, within a dwelling unit	Width of stair or ramp	Not less than 860	In straight-run exterior stair or ramp, or exterior landing turning through less than 30°	Width of stair or ramp	Not less than 900	Landing turning through an angle of 30° or more, but less than 90°	Width of stair or ramp measured at right angle to path of travel	(a) Not less than 230 measured at the inside edge of the landing, and (b) Not less than 370 measured 230 mm from inside edge of landing or handrail	Landing turning through not less than 90°	Width of stair or ramp measured at right angle to path of travel	Not less than width of stair or ramp landing	<p>“Flight” is now a defined term.</p>
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Stairs and ramps serving other than single dwelling units	In straight-run stair or ramp, or landing turning through less than 30°	Width of stair or clear width of ramp	Lesser of required width of stair or clear width of ramp, or 1 100		Landing turning through not less than 90°	Width of stair or ramp measured at right angle to path of travel	Not less than width of stair or ramp landing	
	Landing turning through 30° or more	Width of stair or clear width of ramp measured at right angle to path of travel	Not less than width of stair or clear width of ramp	Stairs and ramps serving other than single dwelling units	In straight run stair or ramp, or landing turning through less than 30°	Width of stair or clear width of ramp	Lesser of required width of stair or clear width of ramp, or 1 100	
					Landing turning through 30° or more	Width of stair or clear width of ramp measured at right angle to path of travel	Not less than width of stair or clear width of ramp	
3) Where stair flights or ramps of different widths adjoin a single landing, the minimum width of the landing shall be ...				3) Where stair flight <u>3) The length of a landing shall be measured perpendicular to the nosings of adjacent steps or to the end of the ramp, at a distance equal to half the length required in Sentence (2) from the narrow edge of the landing.</u> flight or ramps of different widths adjoin a single landing, the minimum width of the landing shall be ... ***EXISTING SENTENCES RENUMBERED***				
9.8.7.1. Required Handrails 2) Where a stair or a ramp is required to be at least 2 200 mm wide due to the occupant load, a handrail shall be installed such that no position on the stair or ramp is more than 825mm from a handrail. 3) Handrails are not required for stairs and ramps serving a single dwelling unit or a house with a secondary suite, where a) stairs have not more than 3 risers, or b) ramps rise not more than 400 mm. 4) Only one handrail is required on exterior stairs having more than 3 risers provided such stairs serve not more than one dwelling unit or a house with a secondary suite.				9.8.7.1. Required Handrails 2) Where-Except where a stair or a ramp is required to be at least 2 200 mm wide due to the occupant load, a handrail shall be installed such that no position ramp serves not more than two dwelling units, at least one handrail shall be located not more than 750 mm from the natural path of travel on the stair or ramp is more than 825 mm from a handrail. (See Note A-9.8.7.1.(2).) 3) Handrails are not required for stairs and ramps serving a single dwelling unit or a house with a secondary suite, where a) interior stairs have not more than 2 risers, a) b) exterior stairs have not more than 3 risers, or b) c) ramps rise not more than 400 mm. 4) ... 5) <u>Except for stairs with winders, where a flight of stairs within a dwelling unit consists of tapered treads, or a mix of tapered treads and rectangular treads, one handrail shall be installed along the narrow end of the treads.</u>				
9.8.7.2. Continuity of Handrails				9.8.7.2. Continuity of Handrails				

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<p>(See Appendix A.)</p> <p>1) Except as provided in Sentence (2), at least one required handrail shall be continuous throughout the length of the stair or ramp, including landings, except where interrupted by</p> <ol style="list-style-type: none"> doorways, or newel posts at changes in direction. <p>2) For stairs or ramps serving a single <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces, at least one required handrail shall be continuous throughout the length of the stair or ramp, except where interrupted by</p> <ol style="list-style-type: none"> doorways, landings, or newel posts at changes in direction. 	<p>(See AppendixNote A.-9.8.7.2.)</p> <p><u>1) Except as provided in Sentence (3), required handrails shall be continuously graspable throughout the length of</u></p> <ol style="list-style-type: none"> ramps, and flights of stairs, from the bottom riser to the top riser. <p>1)2) Except as provided in Sentence (2) Except for stairs or ramps serving a single dwelling unit or a house with a secondary suite including their common spaces, at least one required handrail shall be continuous throughout the length of the stair or ramp, including at the landings, except where interrupted by doorways. (See Note A-3.4.6.5.(10).)</p> <ol style="list-style-type: none"> doorways, or newel posts at changes in direction. <p>2)3) For stairs or ramps serving a single dwelling unit or a house with a secondary suite including their common spaces, at least one required handrail shall be continuous throughout the length of the stair or ramp, except where interrupted by a handrail is permitted to start from a newel post or volute installed on the bottom tread.</p> <ol style="list-style-type: none"> doorways, landings, or newel posts at changes in direction. 	
<p>9.8.7.3. Termination of Handrails</p> <p>2) Except for stairs and ramps serving only one <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces, at least one handrail at the sides of a stair or ramp shall extend horizontally not less than 300 mm beyond the top and bottom of each flight or ramp. (See Appendix A.)</p>	<p>9.8.7.3. Termination of Handrails</p> <p>2) Except for stairs and ramps serving only one <i>dwelling unit</i> or a house with a <i>secondary suite</i> including their common spaces, at least one handrail at the sides of a stair or ramp shall extend horizontally not less than 300 mm beyond the top and bottom of each flight<i>flight</i> or ramp. (See Appendix A.)</p>	<p>“Flight” is now a defined term.</p>
<p>9.8.7.4. Height of Handrails</p> <p>2) Except as provided in Sentences (3) and (4), the height of handrails on stairs and ramps shall be</p> <ol style="list-style-type: none"> not less than 865 mm, and not more than 965 mm. <p>3) Where <i>guards</i> are required, handrails required on landings shall be not more than 1 070 mm in height.</p> <p>4) Handrails installed in addition to required handrails need not comply with Sentence (2).</p>	<p>9.8.7.4. Height of Handrails</p> <p>2) Except as provided in Sentences (3) and (4), the height ofClause 3.8.3.5.(1)(e), <u>required</u> handrails on stairs and ramps shall be <u>865 mm to 1 070 mm high.</u></p> <ol style="list-style-type: none"> not less than 865 mm, and not more than 965 mm. <p>3) Where guards are required, handrails required on landings shall be not more than 1 070 mm in height.</p> <p>4) Handrails installed in addition to required handrails need not comply with Sentence (2).</p>	
<p>9.8.7.5. Ergonomic Design</p>	<p>9.8.7.5. Ergonomic Design</p>	

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<p>1) A clearance of not less than 50 mm shall be provided between a handrail and any surface behind it.</p> <p>2) All handrails shall be constructed so as to be continually graspable along their entire length with no obstruction on or above them to break a handhold, except where the handrail is interrupted by newels at changes in direction. (See Appendix A.)</p>	<p>1) AThe clearance of not less than 50 mm shall be provided between a handrail and anythe surface behind it <u>shall be not less than</u></p> <p>a) <u>50 mm, or</u></p> <p>b) <u>where said surface is rough or abrasive, 60 mm.</u></p> <p>2) All handrails shall be constructed so as to be continually graspable along their entire length with no obstruction on or above them to break a handhold, except where the handrail is interrupted by newels at changes in direction. (See Appendix A. <u>(See Note A-9.8.7.5.(2).)</u></p>	
<p>9.8.7.7. Design and Attachment of Handrails (See Appendix A.)</p> <p>1) Handrails and any <i>building</i> element that could be used as a handrail shall be designed and attached in such a manner as to resist</p> <p>a) a concentrated load at any point of not less than 0.9 kN, and</p> <p>b) for handrails other than those serving a single <i>dwelling unit</i>, a uniformly distributed load of 0.7 kN/m.</p> <p>2) Where a handrail serving a single <i>dwelling unit</i> is attached to wood studs or blocking, the attachment shall be deemed to comply with Sentence (1) where</p> <p>a) the attachment points are spaced not more than 1.2 m apart,</p> <p>b) the first attachment point at either end is located no more than 300 mm from the end of the handrail, and</p> <p>c) the fasteners consist of not less than 2 wood screws at each point, penetrating not less than 32 mm into solid wood.</p>	<p>9.8.7.7. Design and Attachment of Handrails (See AppendixNote <u>A-9.8.7.7.</u>)</p> <p>1) Handrails and any building element that could be used as a handrailtheir supports shall be designed and attached in such a manner as to resistconstructed to withstand the following loads, which need not be considered to act simultaneously:</p> <p>a) a concentrated load at any pointof not less than 0.9 kN <u>applied at any point and in any direction for all handrails</u>, and</p> <p>b) for handrails other than those serving a single <i>dwelling unit</i>, a uniformly distributeduniform load of 0.7 kN/m. of not less than 0.7 kN/m.</p> <p>2) Where a handrailexterior or interior handrails serving a single <i>dwelling unit</i> is or a house with a secondary suite including their common spaces are attached to wood studs or blocking, the attachment shall be deemed to comply with Sentence (1), where</p> <p>a) the attachment points are spaced not more than 1.2 m apart <u>measured on the horizontal plane</u>,</p> <p>b) the first attachment point at either end is located no more than 300 mm from the end of the handrail, and</p> <p>c) the fasteners consist of not less than 2 <u>No. 8</u> wood screws at each point, penetrating not less than 32 mm into solid wood.</p>	
<p>9.8.8.1. Required Guards (See Appendix A.)</p> <p>1) Except as provided in Sentences (2) and (3), every surface to which access is provided for other than maintenance purposes, including but not limited to flights of steps and ramps, exterior landings, porches, balconies, <i>mezzanines</i>, galleries and raised <i>walkways</i>, shall be protected by a <i>guard</i> on each side that is not protected by a wall for the length where</p>	<p>9.8.8.1. Required Guards (See AppendixNote <u>A-9.8.8.1.</u>)</p> <p>1) Except as provided in Sentences (2) and (3), every surface to which access is provided for other than maintenance purposes, including but not limited to flightsflights of steps and ramps, exterior landings, porches, balconies, <i>mezzanines</i>, galleries and raised <i>walkways</i>, shall be protected by a <i>guard</i> on each side that is not protected by a wall for the length where</p> <p>a) there is a difference in elevation of more than 600 mm between the walking</p>	<p>“Flight” is now a defined term.</p>

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<p>a) there is a difference in elevation of more than 600 mm between the walking surface and the adjacent surface, or</p> <p>b) the adjacent surface within 1.2 m of the walking surface has a slope of more than 1 in 2.</p> <p>2) ...</p> <p>3) Where an interior stair has more than 2 risers or an interior ramp rises more than 400 mm, the sides of the stair or ramp and the landing or floor level around the stairwell or ramp shall be protected by a <i>guard</i> on each side that is not protected by a wall.</p>	<p>surface and the adjacent surface, or</p> <p>b) the adjacent surface within 1.2 m of the walking surface has a slope of more than 1 in 2.</p> <p>2) <i>Guards</i> are not required</p> <p>a) at loading docks,</p> <p>b) at floor pits in <i>repair garages</i>, or</p> <p>c) where access is provided for maintenance purposes only.</p> <p>3) Where an interior stair has more than 2 risers or an interior ramp rises more than 400 mm, the sides of the stair or ramp and the landing or floor level around the stairwell or ramp shall be protected by a <i>guard</i> on each side that is not protected by a wall.</p> <p>4) 3) ...</p> <p>***EXISTING SENTENCES RENUMBERED***</p>																																	
<p>9.8.8.2. Loads on Guards (See Appendix A.)</p> <p>1) <i>Guards</i> shall be designed to resist the specified loads prescribed in Table 9.8.8.2.</p> <p style="text-align: center;">Table 9.8.8.2. Specified Loads for Guards Forming Part of Sentence 9.8.8.2.(1)</p> <table border="1"> <thead> <tr> <th rowspan="2">Location of <i>Guard</i></th> <th colspan="3">Minimum Design Loads</th> </tr> <tr> <th>Horizontal Load Applied Inward or Outward at any Point at the Minimum Required Height of the <i>Guard</i></th> <th>Horizontal Load Applied Inward or Outward on Elements Within the <i>Guard</i>, Including Solid Panels and Pickets</th> <th>Evenly Distributed Vertical Load Applied at the Top of the <i>Guard</i></th> </tr> </thead> <tbody> <tr> <td><i>Guards</i> within <i>dwelling units</i> and exterior <i>guards</i> serving not more than 2 <i>dwelling units</i></td> <td>0.5 kN/m OR concentrated load of 1.00 kN applied at any point⁽¹⁾</td> <td>0.5 kN applied over a maximum width of 300 mm and a height of 300 mm⁽²⁾</td> <td>1.5 kN/m</td> </tr> <tr> <td><i>Guards</i> serving access walkways to</td> <td>Concentrated load of 1.0 kN applied at</td> <td>Concentrated load of 0.5 kN applied at any</td> <td>1.5 kN/m</td> </tr> </tbody> </table>	Location of <i>Guard</i>	Minimum Design Loads			Horizontal Load Applied Inward or Outward at any Point at the Minimum Required Height of the <i>Guard</i>	Horizontal Load Applied Inward or Outward on Elements Within the <i>Guard</i> , Including Solid Panels and Pickets	Evenly Distributed Vertical Load Applied at the Top of the <i>Guard</i>	<i>Guards</i> within <i>dwelling units</i> and exterior <i>guards</i> serving not more than 2 <i>dwelling units</i>	0.5 kN/m OR concentrated load of 1.00 kN applied at any point ⁽¹⁾	0.5 kN applied over a maximum width of 300 mm and a height of 300 mm ⁽²⁾	1.5 kN/m	<i>Guards</i> serving access walkways to	Concentrated load of 1.0 kN applied at	Concentrated load of 0.5 kN applied at any	1.5 kN/m	<p>9.8.8.2. Loads on Guards (See Appendix Note A-9.8.8.2.)</p> <p>1) <i>Guards</i> <u>Except as provided in Sentences (2) and (4), <i>guards</i></u> shall be designed to resist the specified loads prescribed in Table 9.8.8.2.</p> <p style="text-align: center;">Table 9.8.8.2. Specified Loads for Guards Forming Part of Sentence 9.8.8.2.(1)</p> <table border="1"> <thead> <tr> <th rowspan="2">Location of <i>Guard</i></th> <th colspan="3">Minimum Design <u>Specified</u> Loads</th> </tr> <tr> <th>Horizontal Load Applied Inward or Outward at any Point at the Minimum Required Height of the <i>Guard</i></th> <th>Horizontal Load Applied Inward or Outward on Elements Within the <i>Guard</i>, Including Solid Panels and Pickets <u>Balusters</u></th> <th>Evenly Distributed Vertical Load Applied at the Top of the <i>Guard</i></th> </tr> </thead> <tbody> <tr> <td><i>Guards</i> within <i>dwelling units</i> and exterior <i>guards</i> serving not more than 2 <i>dwelling units</i></td> <td>0.5 kN/m OR concentrated load of 1.00 kN applied at any point⁽¹⁾</td> <td>0.5 kN applied over a maximum width of 300 mm and a height of 300 mm⁽²⁾</td> <td>1.5 kN/m</td> </tr> <tr> <td><i>Guards</i> serving</td> <td>Concentrated load</td> <td>Concentrated load of</td> <td>1.5 kN/m</td> </tr> </tbody> </table>			Location of <i>Guard</i>	Minimum Design <u>Specified</u> Loads			Horizontal Load Applied Inward or Outward at any Point at the Minimum Required Height of the <i>Guard</i>	Horizontal Load Applied Inward or Outward on Elements Within the <i>Guard</i> , Including Solid Panels and Pickets <u>Balusters</u>	Evenly Distributed Vertical Load Applied at the Top of the <i>Guard</i>	<i>Guards</i> within <i>dwelling units</i> and exterior <i>guards</i> serving not more than 2 <i>dwelling units</i>	0.5 kN/m OR concentrated load of 1.00 kN applied at any point ⁽¹⁾	0.5 kN applied over a maximum width of 300 mm and a height of 300 mm ⁽²⁾	1.5 kN/m	<i>Guards</i> serving	Concentrated load	Concentrated load of	1.5 kN/m	
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equipment platforms, contiguous stairs and similar areas	any point	point on individual elements		access walkways to equipment platforms, contiguous stairs and similar areas where the gathering of many people is improbable	of 1.0 kN applied at any point	0.5 kN applied <u>over an area of 100 mm by 100 mm located</u> at any point on individual <u>the element</u> or elements <u>so as to produce the most critical effect</u>	
All other <i>guards</i>	0.75 kN/m OR concentrated load of 1.0 kN applied at any point ⁽¹⁾	Concentrated load of 0.5 kN applied at any point on individual elements	1.5 kN/m	All other <i>guards</i>	0.75 kN/m OR concentrated load of 1.0 kN applied at any point ⁽¹⁾	Concentrated load of 0.5 kN <u>applied over an area of 100 mm by 100 mm located</u> at any point on individual <u>the element</u> or elements <u>so as to produce the most critical effect</u>	
<p>Notes to Table 9.8.8.2.:</p> <p>(1) The load that creates the most critical condition shall apply.</p> <p>(2) See Sentence (2).</p> <p>2) Where the width and spacing of balusters in <i>guards</i> within <i>dwelling units</i> and in exterior <i>guards</i> serving not more than 2 <i>dwelling units</i> is such that 3 balusters can be engaged by a load imposed over a 300 mm width, the load shall be imposed so as to engage 3 balusters.</p> <p>3) ...</p> <p>4) For <i>guards</i> within <i>dwelling units</i> and for exterior <i>guards</i> serving not more than 2 <i>dwelling units</i>, Table 9.8.8.2. need not apply where the <i>guard</i> construction used has been demonstrated to provide effective performance.</p>				<p>Notes to Table 9.8.8.2.:</p> <p>(1) The load that creates the most critical condition shall apply.</p> <p>(2) See Sentence (2).</p> <p>2) Where the width and spacing of balusters in <u>For</u> <i>guards</i> within <i>dwelling units</i> and in <u>within houses with a secondary suite including their common spaces and for</u> exterior <i>guards</i> serving not more than 2 <i>dwelling units</i> is, where the width and spacing of balusters are such that 3 balusters can be engaged by a load imposed over a 300 mm width, the load shall be imposed so as to engage 3 balusters.</p> <p>3) ...</p> <p>4) For <i>guards</i> within <i>dwelling units</i> and <u>within houses with a secondary suite including their common spaces and</u> for exterior <i>guards</i> serving not more than 2 <i>dwelling units</i>, Table 9.8.8.2. need not apply where the <i>guard</i> construction used has been demonstrated to provide effective performance.</p>			
<p>9.8.8.3. Height of Guards (See Appendix A.)</p> <p>4) <i>Guards</i> for flights of steps, except in required <i>exit</i> stairs, shall be not less than 900 mm high.</p>				<p>9.8.8.3. Height of Guards (See Appendix <u>Note A-9.8.8.3.</u>)</p> <p>4) <i>Guards</i> for flights <u>flights</u> of steps, except in required <i>exit</i> stairs, shall be not less than 900 mm high.</p> <p>5) The height of <i>guards</i> for flights <u>flights</u> of steps shall be measured vertically from the</p>			<p>“Flight” is now a defined term.</p>

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5) The height of <i>guards</i> for flights of steps shall be measured vertically from the top of the <i>guard</i> to a line drawn through the leading edge of the treads served by the <i>guard</i> .	top of the <i>guard</i> to a line drawn through the leading edge of the treads <u>nosing</u> served by the <i>guard</i> .	
9.8.8.4. Guards for Floors and Ramps in Garages 1) Except for floors of garages referred to in Section 9.35., where garage floors or ramps are 600 mm or more above the adjacent ground or floor level, every opening through a garage floor and the perimeter of floors and ramps that have no exterior walls shall be provided with <ol style="list-style-type: none"> a continuous curb not less than 150 mm in height, and a <i>guard</i> not less than 1 070 mm above the floor level. 2) Vehicle guardrails shall be designed for a concentrated horizontal load of 22 kN applied outward at any point 500 mm above the floor surface. (See A-4.1.5.14. and 4.1.5.15.(1) in Appendix A.)	9.8.8.4. Guards for Floors and Ramps in Garages 1) Except for floors of garages referred to in Section 9.35., where garage floors or ramps are 600 mm or more above the adjacent ground or floor level, every opening through a garage floor and the perimeter of floors and ramps that have no exterior walls shall be provided with <ol style="list-style-type: none"> a continuous curb not less than 150<u>140</u> mm in height, and a <i>guard</i> not less than 1 070 mm above the floor level. 2) Vehicle guardrails shall be designed for a concentrated horizontal load of and <u>constructed to withstand the loading values stipulated in Sentence 4.1.5.15.(1). (See Note A-4.1.5.14. and 4.1.5.15.(1).)</u> 22 kN applied outward at any point 500 mm above the floor surface. (See A-4.1.5.14. and 4.1.5.15.(1) in Appendix A.)	
9.8.8.5. Openings in Guards 1) Except as provided in Sentence (2), openings through any <i>guard</i> that is required by Article 9.8.8.1. shall be of a size that will prevent the passage of a spherical object having a diameter of 100mm unless it can be shown that the location and size of openings that exceed this limit do not represent a hazard. (See A-9.8.8.5.(1) and (2) in Appendix A.) 2) Openings through any <i>guard</i> that is required by Article 9.8.8.1. and that is installed in a <i>building of industrial occupancy</i> shall be of a size that will prevent the passage of a spherical object having a diameter of 200 mm unless it can be shown that the location and size of openings that exceed this limit do not represent a hazard. (See A-9.8.8.5.(1) and (2) in Appendix A.) 3) Unless it can be shown that the location and size of openings that do not comply with the following limits do not represent a hazard, openings through any <i>guard</i> that is not required by Article 9.8.8.1. and that serves a <i>building of other than industrial occupancy</i> , shall be of a size that: <ol style="list-style-type: none"> will prevent the passage of a spherical object having a diameter of 100 mm, or will permit the passage of a spherical object having a diameter of 200 mm. (See Appendix A.) 	9.8.8.5. Openings in Guards 1) Except as provided <u>permitted</u> in Sentences (2) <u>and (3)</u> , openings through any <u>guards</u> that is required by Article 9.8.8.1. shall be of a size that will prevent <u>s</u> the passage of a spherical object having a diameter of 100 mm unless it can be shown that the location and size of openings that exceed this limit do not represent a hazard. (See <u>Note A-9.8.8.5.(1) and (2) in Appendix A.</u>) 2) Openings through any guard that is required by Article 9.8.8.1. and that is installed in a building of industrial occupancy shall be of a size that will prevent <u>Except where they serve storage garages, guards in industrial occupancies are permitted to consist of</u> <ol style="list-style-type: none"> <u>a top railing, and</u> <u>one or more horizontal intermediate rails spaced such that the size of the openings through the guard prevents</u> the passage of a spherical object having a diameter of 200 mm unless it can be shown that the location and size of openings that exceed this limit do not represent a hazard. <u>535 mm.</u> (See <u>Note A-9.8.8.5.(1) and (2) in Appendix A.</u>) 3) Unless it can be shown that the location and size of openings that do not comply with the following limits do not represent a hazard, openings <u>Openings</u> through any guard that is not required by Article 9.8.8.1. and that serves a building of an <u>occupancy</u> other than <u>an</u> industrial occupancy, shall be of a size that: <ol style="list-style-type: none"> will prevent<u>s</u> the passage of a spherical object having a diameter of 100 mm, or 	

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	b) will permits the passage of a spherical object having a diameter of 200 mm. (See Appendix A Note A-9.8.8.5.(3).)	
9.8.8.6. Design of Guards to Not Facilitate Climbing 1) <i>Guards</i> required by Article 9.8.8.1., except those in <i>industrial occupancies</i> and where it can be shown that the location and size of openings do not present a hazard, shall be designed so that no member, attachment or opening facilitates climbing. 2) <i>Guards</i> shall be deemed to comply with Sentence (1) where all elements protruding from the vertical and located within the area between 140 mm and 900 mm above the floor or walking surface protected by the <i>guard</i> conform to at least one of the following Clauses: a) they are located more than 450 mm horizontally and vertically from each other, b) they provide not more than 15 mm horizontal offset, c) they do not provide a toe-space more than 45 mm horizontally and 20 mm vertically, or d) they present more than a 2-in-1 slope on the offset. (See Appendix A.)	9.8.8.6. Design of Guards to Not Facilitate Climbing 1) Guards required by Article 9.8.8.1., except those <u>Except for guards</u> in <i>industrial occupancies</i> and where it can be shown that the location and size of openings do not present a hazard, <u>guards required by Article 9.8.8.1. that protect a level located more than 4.2 m above the adjacent level</u> shall be designed so that no member, attachment or opening <u>located between 140 mm and 900 mm above the level protected by the guard</u> facilitates climbing. <u>(See Note A-9.8.8.6.(1).)</u> 2) Guards shall be deemed to comply with Sentence (1) where all elements protruding from the vertical and located within the area between 140 mm and 900 mm above the floor or walking surface protected by the guard conform to at least one of the following Clauses: a) they are located more than 450 mm horizontally and vertically from each other, b) they provide not more than 15 mm horizontal offset, c) they do not provide a toe-space more than 45 mm horizontally and 20 mm vertically, or d) they present more than a 2-in-1 slope on the offset. (See Appendix A.)	
9.9.6.7. Door Latching, Locking and Opening Mechanisms 1) Principal entrance doors, <i>exit</i> doors and doors to <i>suites</i> , including exterior doors of <i>dwelling units</i> , and other doors in an <i>access to exit</i> shall a) be openable from the inside or in travelling to an <i>exit</i> without requiring keys, special devices or specialized knowledge of the door-opening mechanism, or b) in the case of <i>exit</i> doors, be controlled by electromagnetic locking mechanisms in accordance with Sentence 3.4.6.16.(4).	9.9.6.7. Door Latching, Locking and Opening Mechanisms 1) Principal entrance doors, <i>exit</i> doors and doors to <i>suites</i> , including exterior doors of <i>dwelling units</i> , and other doors in an <i>access to exit</i> shall a) be openable from the inside or in travelling to an <i>exit</i> without requiring keys, special devices or specialized knowledge of the door-opening mechanism, or b) in the case of exit doors, be controlled by electromagnetic locking mechanisms in accordance with Sentence 3.4.6.16.(4).	
9.9.7.3. Dead-End Corridors 1) Except for a dead-end corridor that is entirely within a <i>suite</i> and except as permitted in Sentence 9.9.9.2.(1), a dead-end corridor is permitted provided it is not more than 3 m long.	9.9.7.3. Dead-End Corridors 1) Except for a dead-end corridor that is entirely within a <i>suite</i> and except as permitted in Sentence 9.9.9.2.(1), a dead-end corridor is permitted provided it is not more than <u>3.6</u> m long.	
9.9.9.1. Travel Limit to Exits or Egress Doors 2) Except as provided in Sentence (4), where a <i>dwelling unit</i> is not located above or below another <i>suite</i> , the travel limit from a floor level in the <i>dwelling unit</i> to an <i>exit</i>	9.9.9.1. Travel Limit to Exits or Egress Doors 2) Except as provided in Sentence (4), where <u>Where</u> a <i>dwelling unit</i> is not located above or below another <i>suite</i> , the travel limit from a floor level in the <i>dwelling unit</i> to	

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<p>or egress door may exceed 1 storey where that floor level is served by an openable window</p> <ul style="list-style-type: none"> a) providing an unobstructed opening of not less than 1 m in height and 0.55 m in width, and b) located so that the sill is not more than <ul style="list-style-type: none"> i) 1 m above the floor, and ii) 7 m above adjacent ground level. <p>3) ...</p> <p>4) The travel limit from a floor level in a house with a <i>secondary suite</i> to an <i>exit</i> or egress door may exceed 1 storey where that floor level is served by an openable window conforming to Sentence (2).</p>	<p>an <i>exit</i> or egress door may exceed 1 storey where that floor level is served by an openable window</p> <ul style="list-style-type: none"> a) providing an unobstructed opening of not less than 1 m in height and 0.55 m in width, and b) located so that the sill is not more than <ul style="list-style-type: none"> i) 1 m above the floor, and ii) 7 m above adjacent ground level. <p>3) ...</p> <p>4) The travel limit from a floor level in a house with a <i>secondary suite</i> to an <i>exit</i> or egress door may exceed 1 storey where that floor level is served by an openable window conforming to Sentence (2).</p>	
<p>9.9.9.4. Egress from Manufactured Homes</p> <p>1) Where the <i>flame-spread ratings</i> exceed 75 on the walls and ceilings, a <i>manufactured home</i> shall have not less than 2 exterior doors located remotely from each other.</p>	<p>9.9.9.4. Egress from Manufactured Homes</p> <p>1) Where the <i>flame-spread ratings</i> exceed 75 on the walls and ceilings, a <i>manufactured home</i> shall have not less than 2 exterior doors located remotely from each other.</p>	Deleted entire Article.
<p>9.9.11.2. Visibility of Exits</p>	<p>9.9.11.2. Visibility of Exits</p> <p><u>2) Where an exit door leading directly to the outside is subject to being obstructed by parked vehicles or storage because of its location, a visible sign or a physical barrier prohibiting such obstructions shall be installed on the exterior side of the door.</u></p>	Inserted new Sentence (2).
<p>9.9.11.5. Reserved</p>	<p>9.9.11.5. Reserved Floor Numbering</p> <p><u>1) Arabic numerals indicating the assigned floor number shall be</u></p> <ul style="list-style-type: none"> <u>a) mounted permanently on the stair side of the wall at the latch side of doors to exit stair shafts,</u> <u>b) not less than 60 mm high, raised approximately 0.8 mm above the surface,</u> <u>c) located 1 500 mm from the finished floor and not more than 300 mm from the door, and</u> <u>d) contrasting in colour with the surface on which they are applied. (See Note A-3.4.6.19.(1)(d).</u> 	
<p>9.9.12.3. Emergency Lighting</p> <p>1) Unless it can be shown to be unnecessary, emergency lighting shall be provided in</p> <ul style="list-style-type: none"> a) <i>exits</i>, b) principal routes providing <i>access to exit</i> in an open <i>floor area</i>, c) corridors used by the public, d) underground <i>walkways</i>, and e) <i>public corridors</i>. 	<p>9.9.12.3. Emergency Lighting</p> <p>1) Unless it can be shown to be unnecessary, eEmergency lighting shall be provided in</p> <ul style="list-style-type: none"> a) <i>exits</i>, b) principal routes providing <i>access to exit</i> in an open <i>floor area</i>, c) corridors used by the public, d) underground <i>walkways</i>, and e) <i>public corridors</i>. 	

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(See Appendix A.)	(See Appendix A.)	
9.10.1.2. Commissioning of Life Safety and Fire Protection Systems 1) Where life safety and fire protection systems are installed to comply with the provisions of this Code or the Alberta Fire Code 2014, the commissioning of these integrated systems must be performed as a whole to ensure the proper operation and inter-relationship of the systems. (See A-3.2.4.6.(1) in Appendix A.)	9.10.1.2 Commissioning Testing of Life Safety and Integrated Fire Protection and Life Safety Systems 1) Where life safety and fire protection systems and systems with fire protection and life safety functions are installed to comply with the provisions of this Code or the NFC, the commissioning of these integrated systems must be performed as a whole to ensure the proper operation and inter-relationship of the systems. (See A-3.2.4.6.(1) in Appendix A.) integrated with each other, they shall be tested as a whole in accordance with CAN/ULC-S1001, "Integrated Systems Testing of Fire Protection and Life Safety Systems," to verify that they have been properly integrated. (See Note A-3.2.9.1.(1).)	
9.10.3.1. Fire-Resistance and Fire-Protection Ratings 1) Where a <i>fire-resistance rating</i> or a <i>fire-protection rating</i> is required in this Section for an element of a <i>building</i> , such rating shall be determined in conformance with the test methods described in Part 3, A-9.10.3.1. in Appendix A, or Appendix D.	9.10.3.1. Fire-Resistance and Fire-Protection Ratings 1) Where a <i>fire-resistance rating</i> or a <i>fire-protection rating</i> is required in this Section for an element of a <i>building</i> , such rating shall be determined in conformance with a) the test methods described in Part 3, A-9.10.3.1. in Appendix A, or b) the calculation method presented in Appendix D, or c) the construction specifications presented in Tables 9.10.3.1.-A and 9.10.3.1.-B.	
9.10.8.2. Fire-Resistance Ratings in Sprinklered Buildings 2) The requirements in Table 9.10.8.1. for <i>mezzanine</i> floor assemblies to have a <i>fire-resistance rating</i> are permitted to be waived in <i>sprinklered buildings</i> .	9.10.8.2. Fire-Resistance Ratings in Sprinklered Buildings 2) The requirements in Table 9.10.8.1. for <i>mezzanine</i> floor assemblies to have a <i>fire-resistance rating</i> are permitted to be waived in <i>sprinklered buildings</i>.	Deleted Sentence (2).
9.10.9.20. Janitorial Storage Rooms 1) Except as permitted by Sentence (2), a room or space for the storage of janitorial supplies shall be separated from the remainder of the <i>building</i> by a <i>fire separation</i> having a <i>fire-resistance rating</i> not less than 45 min. 2) The <i>fire separation</i> required by Sentence (1) is not required to have a <i>fire-resistance rating</i> if the <i>building</i> is <i>sprinklered</i> .	9.10.9.20. Janitorial Storage Rooms 1) Except as permitted by Sentence (2), a room or space for the storage of janitorial supplies shall be separated from the remainder of the <i>building</i> by a <i>fire separation</i> having a <i>fire-resistance rating</i> not less than 45 min. 2) The <i>fire separation</i> required by Sentence (1) is not required to have a <i>fire-resistance rating</i> if the <i>building</i> is <i>sprinklered</i>.	Deleted entire Article.
9.10.12.3. Exterior Walls Meeting at an Angle 1) Except as provided in Articles 9.9.4.5. and 9.10.14.5., and in <i>sprinklered buildings</i> , where exterior walls of a <i>building</i> meet at an external angle of 135° or less, the horizontal distance from an <i>unprotected opening</i> in one exterior wall to an <i>unprotected opening</i> in the other exterior wall shall be not less than 1.2 m, where these openings are a) in different <i>fire compartments</i> , or	9.10.12.3. Exterior Walls Meeting at an Angle 1) Except as provided in Articles 9.9.4.5. and 9.10.14.5., and in <i>sprinklered buildings</i>, where exterior walls of a <i>building</i> meet at an external angle of 135° or less, the horizontal distance from an <i>unprotected opening</i> in one exterior wall to an <i>unprotected opening</i> in the other exterior wall shall be not less than 1.2 m, where these openings are a) in different <i>fire compartments</i> , or	

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b) in different <i>dwelling units</i> , ancillary spaces or common spaces in a house with a <i>secondary suite</i> .	b) in different <i>dwelling units</i> , ancillary spaces or common spaces in a house with a <i>secondary suite</i> .																					
9.10.13.11. Hold-Open Devices 2) Doors located in <i>firewalls</i> in <i>residential occupancies</i> shall be equipped with acceptable hold-open devices installed in accordance with Sentence (1).	9.10.13.11. Hold-Open Devices 2) Doors located in <i>firewalls</i> in <i>residential occupancies</i> shall be equipped with acceptable hold-open devices installed in accordance with Sentence (1).	Deleted Sentence (2).																				
9.10.13.14. Fire Stop Flaps 1) <i>Fire stop flaps</i> in ceiling membranes required in Sentence 9.10.5.1.(4) shall be constructed in conformance with Appendix D, Fire-Performance Ratings.	9.10.13.14. Fire Stop Flaps 1) <i>Fire stop flaps</i> in ceiling membranes required <u>referred to</u> in Sentence 9.10.5.1.(4) shall be constructed in conformance with Appendix D, Fire-Performance Ratings. <u>a) conform to CAN/ULC-S112.2, "Fire Test of Ceiling Firestop Flap Assemblies,"</u> <u>and</u> <u>b) activate at a temperature approximately 30°C above the normal maximum temperature that occurs in the ducts, whether the air duct system is operating or shut down.</u>																					
9.10.14.4. Openings in Exposing Building Face <p style="text-align: center;">Table 9.10.14.4.B. Maximum Concentrated Area of Unprotected Openings Forming Part of Sentence 9.10.14.4.(3)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><i>Limiting Distance, m</i></th> <th><i>Maximum Area of Individual Unprotected Openings, m²</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Less than 1.2</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">1.2</td> <td style="text-align: center;">0.35</td> </tr> <tr> <td style="text-align: center;">1.5</td> <td style="text-align: center;">0.78</td> </tr> <tr> <td style="text-align: center;">2.0</td> <td style="text-align: center;">1.88</td> </tr> </tbody> </table>	<i>Limiting Distance, m</i>	<i>Maximum Area of Individual Unprotected Openings, m²</i>	Less than 1.2	0	1.2	0.35	1.5	0.78	2.0	1.88	9.10.14.4. Openings in Exposing Building Face <p style="text-align: center;">Table 9.10.14.4.-B- Maximum Concentrated Area of Unprotected Openings Forming Part of Sentence 9.10.14.4.(3)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><i>Limiting Distance, m</i></th> <th><i>Maximum Area of Individual Unprotected Openings, m²</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Less than 1.2</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">1.2</td> <td style="text-align: center;">0.35</td> </tr> <tr> <td style="text-align: center;">1.5</td> <td style="text-align: center;">0.78</td> </tr> <tr> <td style="text-align: center;">2.0</td> <td style="text-align: center;">1.88</td> </tr> </tbody> </table>	<i>Limiting Distance, m</i>	<i>Maximum Area of Individual Unprotected Openings, m²</i>	Less than 1.2	0	1.2	0.35	1.5	0.78	2.0	1.88	
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5) For the purpose of Sentence (4), a) "single room or space" shall mean i) two or more adjacent spaces having a full-height separating wall extending less than 1.5 m from the interior face of the exterior wall, or ii) two or more stacked spaces that are on the same <i>storey</i> , and b) two adjacent rooms or spaces are permitted to be considered as separate spaces where there is a full-height wall extending not less than 1.5 m from the interior face of the exterior wall, finished in accordance with Subsections 9.29.4. or 9.29.5.	5) For the purpose of Sentence (4), a) "single room or space" shall mean i) <u>a) two or more adjacent spaces having a full-height separating wall extending less than 1.5 m from the interior face of the exterior wall, or</u> ii) <u>b) two or more stacked spaces that are on the same <i>storey</i>, and</u> b) two adjacent rooms or spaces are permitted to be considered as separate spaces where there is a full height wall extending not less than 1.5 m from the interior face of the exterior wall, finished in accordance with Subsections 9.29.4. or 9.29.5.																					

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9.10.14.5. Construction of Exposing Building Face and Walls above Exposing Building Face N/A	9.10.14.5. Construction of Exposing Building Face and Walls above Exposing Building Face <u>11) The face of a roof soffit is permitted to project to the property line, where it faces a street, lane or public thoroughfare. (See Note A-9.10.14.5.(11) and 9.10.15.5.(10).)</u> 112) ... ***EXISTING SENTENCES RENUMBERED***	Inserted new Sentence (11).
9.10.15.1. Application 2) This Subsection does not apply to hotels or motels.	9.10.15.1. Application 2) This Subsection does not apply to hotels or motels.	Deleted Sentence (2).
9.10.15.4. Glazed Openings in Exposing Building Face 5) For the purpose of Sentence (4), a) “single room or space” shall mean i) two or more adjacent spaces having a full-height separating wall extending less than 1.5 m from the interior face of the exterior wall, or ii) two or more stacked spaces that are on the same storey, and b) two adjacent rooms or spaces are permitted to be considered as separate spaces where there is a full-height wall extending not less than 1.5m from the interior face of the exterior wall, finished in accordance with Subsections 9.29.4. or 9.29.5.	9.10.15.4. Glazed Openings in Exposing Building Face 5) For the purpose of Sentence (4), a) “single room or space” shall mean a) two or more adjacent spaces having a full-height separating wall extending less than 1.5 m from the interior face of the exterior wall, or b) two or more stacked spaces that are on the same storey, and b) two adjacent rooms or spaces are permitted to be considered as separate spaces where there is a full height wall extending not less than 1.5 m from the interior face of the exterior wall, finished in accordance with Subsections 9.29.4. or 9.29.5.	
9.10.15.5. Construction of Exposing Building Face of Houses N/A	9.10.15.5. Construction of Exposing Building Face of Houses <u>10) The face of a roof soffit is permitted to project to the property line, where it faces a street, lane or public thoroughfare. (See Note A-9.10.14.5.(11) and 9.10.15.5.(10).)</u> 1011) ... ***EXISTING SENTENCES RENUMBERED***	Inserted new Sentence (10).
9.10.17.10. Protection of Foamed Plastics 1) Except as provided in Sentence (2), <i>foamed plastics</i> that form part of a wall or ceiling assembly in <i>combustible construction</i> shall be protected from adjacent space in the <i>building</i> , other than adjacent concealed spaces within <i>attic or roof spaces</i> , crawl spaces, and wall assemblies, by a) one of the interior finishes described in Subsections 9.29.4. to 9.29.9., b) sheet metal mechanically fastened to the supporting assembly independent of the insulation and having a thickness of not less than 0.38 mm and a melting point not below 650°C, provided the <i>building</i> does not contain a Group C major occupancy, or c) any <i>thermal barrier</i> that meets the requirements of Clause 3.1.5.12.(2)(e).	9.10.17.10. Protection of Foamed Plastics <u>(See Note A-3.1.4.2.)</u> 1) Except as provided in Sentences (2) and (3), foamed plastics <u>foamed plastics</u> that form part of a wall or ceiling assembly in combustible construction shall be protected from adjacent space in the <i>building</i> , other than adjacent concealed spaces within <i>attic or roof spaces</i> , crawl spaces, and wall assemblies, by <u>and ceiling assemblies</u> a) <u>by</u> one of the interior finishes described in Subsections 9.29.4. to 9.29.9., b) sheet metal mechanically fastened to the supporting assembly independent of the insulation and having a thickness of not less than 0.38 mm and a melting point not below 650°C, provided the building does not contain a	“Foamed plastic” and “thermal barrier” are no longer defined terms. Inserted new Sentence (2)

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<p>2) Thermosetting <i>foamed plastic</i> insulation having a <i>flame-spread rating</i> of not more than 200 is permitted to be used in factory-assembled doors in <i>storage garages</i> serving single <i>dwelling units</i> provided that</p> <ol style="list-style-type: none"> the insulation is covered on the interior with a metallic foil, the assembly has a <i>flame-spread rating</i> of not more than 200, and the assembly incorporates no air spaces. 	<p>Group C major occupancy, or provided the <i>building</i> does not contain a <i>Group C major occupancy</i>, by sheet metal that</p> <ol style="list-style-type: none"> is mechanically fastened to the supporting assembly independent of the insulation, is not less than 0.38 mm thick, and iii) has a melting point not less than 650°C, or <p>c) by any thermal barrier thermal barrier that meets the requirements of Clause 3.1.5.12.(2)(e) Sentence 3.1.5.15.(2). (See Note A-3.1.4.2.(1)(c).)</p> <p>2) A walk-in cooler or freezer consisting of factory-assembled wall, floor or ceiling panels containing foamed plastics is permitted to be used, provided the panels</p> <ol style="list-style-type: none"> are protected on both sides by sheet metal not less than 0.38 mm thick having a melting point not less than 650°C, do not contain an air space, and have a <i>flame-spread rating</i>, determined by subjecting a sample panel with an assembled joint typical of field installation to the applicable test described in Subsection 3.1.12., that is not more than that permitted for the room or space in which they are located or that they bound. <p>2)3) Thermosetting foamed plastics foamed plastics insulation having a <i>flame-spread rating</i> of not more than 200 is permitted to be used in factory-assembled doors in <i>storage garages</i> serving single <i>dwelling units</i> provided that</p> <ol style="list-style-type: none"> the insulation is covered on the interior with a metallic foil, the assembly has a <i>flame-spread rating</i> of not more than 200, and the assembly incorporates no air spaces. 	
<p>9.10.19.5. Interconnection of Smoke Alarms</p> <ol style="list-style-type: none"> Except as permitted in Sentence (3), where more than one <i>smoke alarm</i> is required in a <i>dwelling unit</i>, the <i>smoke alarms</i> shall be wired so that the activation of one alarm will cause all alarms within the <i>dwelling unit</i> to sound. <i>Smoke alarms</i> in a house with a <i>secondary suite</i> shall be wired so that the activation of any one <i>smoke alarm</i> causes all <i>smoke alarms</i> within the house with a <i>secondary suite</i> to sound. A <i>smoke alarm</i> required to be installed in an existing <i>dwelling unit</i> as a result of developing space for sleeping use need not be interconnected with existing <i>smoke alarms</i> in the <i>dwelling unit</i>, but if more than one new <i>smoke alarm</i> is required, all new <i>smoke alarms</i> shall be interconnected. 	<p>9.10.19.5. Interconnection of Smoke Alarms</p> <ol style="list-style-type: none"> Except as permitted in Sentence (3), wWhere more than one <i>smoke alarm</i> is required in a <i>dwelling unit</i>, the <i>smoke alarms</i> shall be wiredinterconnected so that the activation of one alarm will cause all alarms within the <i>dwelling unit</i> to sound. <i>Smoke alarms</i> in a house with a <i>secondary suite</i> shall be wiredinterconnected so that the activation of any one <i>smoke alarm</i> causes all <i>smoke alarms</i> within the house with a <i>secondary suite</i> to sound. (See Note A-9.10.19.5.(2).) A smoke alarm required to be installed in an existing dwelling unit as a result of developing space for sleeping use need not be interconnected with existing smoke alarms in the dwelling unit, but if more than one new smoke alarm is required, all new smoke alarms shall be interconnected. 	Deleted Sentence (3).
N/A	<u>9.10.19.8. Residential Fire Warning Systems</u>	Inserted new Article.

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	<p>1) Except where a fire alarm system is installed or required in a <i>building, smoke detectors</i> forming part of a residential fire warning system installed in conformance with CAN/ULC-S540, “Residential Fire and Life Safety Warning Systems: Installation, Inspection, Testing and Maintenance,” are permitted to be installed in lieu of all <i>smoke alarms</i> required by Articles 9.10.19.1. and 9.10.19.3., provided that the fire warning system</p> <ul style="list-style-type: none"> a) <u>is capable of sounding audible signals as stated in Articles 9.10.19.2. and 9.10.19.5.,</u> b) <u>is powered as stated in Article 9.10.19.4., and</u> c) <u>is equipped with a silencing device as stated in Article 9.10.19.6.</u> 	
<p>9.10.20.2. Access to Basements 1) Except for basements in houses with a secondary suite or basements serving not more than one dwelling unit, each unsprinklered basement shall be provided with direct access to the outdoors. (See Article 9.9.7.3.)</p>	<p>9.10.20.2. Access to Basements 1) Except for <i>basements</i> in houses with a <i>secondary suite</i> or <i>basements</i> serving not more than one <i>dwelling unit</i>, each unsprinklered <i>basement</i> <u>exceeding 25 m in length or width</u> shall be provided with direct access to the <u>outdoors to at least one street.</u> (See Article 9.9.7.3.)</p>	
<p>9.10.22.2. Vertical Clearances above Cooktops 2) The vertical clearance described in Sentence (1) for framing, finishes and cabinets located directly above the location of the cooktop may be reduced to 600 mm above the level of the elements or burners, provided the framing, finishes and cabinets</p> <ul style="list-style-type: none"> a) are noncombustible, or b) are protected by <ul style="list-style-type: none"> i) asbestos millboard not less than 6 mm thick, covered with sheet metal not less than 0.33 mm thick, or ii) a metal hood with a 125 mm projection beyond the framing, finishes and cabinets. 	<p>9.10.22.2. Vertical Clearances above Cooktops 2) The vertical clearance described in Sentence (1) for framing, finishes and cabinets located directly above the location of the cooktop may be reduced to 600 mm above the level of the elements or burners, provided the framing, finishes and cabinets</p> <ul style="list-style-type: none"> a) are noncombustible, or b) are protected by <ul style="list-style-type: none"> i) asbestos millboard not less than 6 mm thick, covered with sheet metal not less than 0.33 mm thick, or ii) a metal hood with a that projects 125 mm projection beyond the framing, finishes and cabinets. 	Removed asbestos.
Section 9.11. Sound Control	Section 9.11. Sound ControlTransmission	
9.11.1. Sound Transmission Class Rating (Airborne Sound)	9.11.1. Sound Transmission Class Rating (Protection from Airborne Sound)Noise	
<p>9.11.1.1. Determination of Sound Transmission Class Ratings 1) Sound transmission class ratings shall be determined in accordance with ASTM E 413, “Classification for Rating Sound Insulation,” using results from measurements in accordance with</p>	<p>9.11.1.1.9.11.1.2. Determination of Sound Transmission ClassRatings 1) Sound transmission classThe <i>STC</i> ratings shall be determined in accordance with ASTM E 413, “Classification for Rating Sound Insulation,” using <u>the</u> results from measurements <u>carried out</u> in accordance with a) ASTM E 90, “Laboratory</p>	Renumbered Article.

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a) ASTM E 90, "Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements," or b) ASTM E 336, "Measurement of Airborne Sound Attenuation between Rooms in Buildings." (See Appendix A.)	Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements. ," or <u>2) The ASTC ratings shall be</u> <u>ba) determined in accordance with ASTM E 413, "Classification for Rating Sound Insulation," using the results from measurements carried out in accordance with ASTM E 336, "Measurement of Airborne Sound Attenuation between Rooms in Buildings," or</u> <u>b) calculated in accordance with Article 5.8.1.4. or 5.8.1.5.</u> (See Appendix A.)	
9.11.2. Required Sound Control Locations (Airborne Sound)	9.11.2. Required Sound Control Locations (Airborne Sound)	Deleted Subsection
9.11.2.1. Minimum Sound Transmission Class Ratings 1) Except as provided in Sentences (2) and (3), every <i>dwelling unit</i> shall be separated from every other space in a <i>building</i> in which noise may be generated by a construction providing a sound transmission class rating of at least 50, measured in accordance with Subsection 9.11.1. or as listed in A-9.10.3.1. in Appendix A. 2) This Section does not apply to the construction separating <i>dwelling units</i> within a house with a <i>secondary suite</i> . 3) Where a <i>dwelling unit</i> is adjacent to an elevator shaft or a refuse chute, the separating construction shall have a sound transmission class rating of at least 55, measured in accordance with Subsection 9.11.1. or as listed in A-9.10.3.1. in Appendix A.	9.11.2.1.9.11.1.1. Minimum Sound Transmission Class Ratings <u>Required Protection</u> 1) Except as provided in Sentences (2) and (3), every <u>a</u> <i>dwelling unit</i> shall be separated from every other space in a <i>building</i> in which noise may be generated by a construction providing a sound transmission class rating of at least 50, measured in accordance with Subsection 9.11.1. or as listed in A-9.10.3.1. in Appendix A. <u>a) a separating assembly and adjoining constructions, which together provide an apparent sound transmission class (ASTC) rating of not less than 47, or</u> <u>b) a separating assembly providing a sound transmission class (STC) rating of not less than 50 and adjoining constructions that conform to Article 9.11.1.4.</u> (See Note A-9.11.1.4.) 2) This Section does not apply to the construction separating dwelling units within a house with a secondary suite. <u>Where a house contains a secondary suite, each dwelling unit shall be separated from every other space in the house in which noise may be transmitted by</u> <u>a) construction</u> <u>i) whose joist spaces are filled with sound-absorbing material of not less than 150 mm nominal thickness,</u> <u>ii) whose stud spaces are filled with sound-absorbing material,</u> <u>iii) having a resilient channel on one side of the separation spaced 400 or 600 mm o.c., and</u> <u>iv) having not less than 12.7 mm thick gypsum board on ceilings and on both sides of walls,</u> <u>b) construction providing an STC rating of not less than 43, or</u> <u>c) a separating assembly and adjoining constructions, which together provide an ASTC rating of not less than 40.</u> (See Note A-9.11.1.1.(2).)	Renumbered Article.

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	<p>3) Where Construction separating a dwelling unit is adjacent tofrom an elevator shaft or a refuse chute, the separating construction shall have an an sound transmission class(STC) rating of at leastnot less than 55, measured in accordance with Subsection 9.11.1. or as listed in A-9.10.3.1. in Appendix A.</p>	
N/A	<p>9.11.1.3. Compliance with Required Ratings</p> <p><u>1) Compliance with the required STC ratings shall be demonstrated through</u></p> <p style="padding-left: 20px;">a) <u>measurements carried out in accordance with Sentence 9.11.1.2.(1), or</u></p> <p style="padding-left: 20px;">b) <u>the construction of separating assemblies conforming to Table 9.10.3.1.-A or 9.10.3.1.-B, as applicable.</u></p> <p><u>2) Compliance with the required ASTC ratings shall be demonstrated through</u></p> <p style="padding-left: 20px;">a) <u>measurements or calculations carried out in accordance with Sentence 9.11.1.2.(2), or</u></p> <p style="padding-left: 20px;">b) <u>the construction of separating assemblies conforming to Table 9.10.3.1.-A or 9.10.3.1.-B, as applicable, that have an STC rating of not less than 50 in conjunction with flanking assemblies constructed in accordance with Article 9.11.1.4. (see Note A-9.11.1.3.(2)(b)).</u></p>	Inserted new Article.
N/A	<p>9.11.1.4. Adjoining Constructions</p> <p><u>(See Note A-9.11.1.4.)</u></p> <p><u>1) This Article applies where the required protection is provided in accordance with Clause 9.11.1.1.(1)(b) and compliance is demonstrated in accordance with Clause 9.11.1.3.(2)(b).</u></p> <p><u>2) Flanking wall assemblies connected to a separating floor or ceiling assembly shall be constructed with</u></p> <p style="padding-left: 20px;">a) <u>concrete or concrete block having a mass per area greater than 200 kg/m²,</u></p> <p style="padding-left: 40px;">or</p> <p style="padding-left: 20px;">b) <u>gypsum board finish that</u></p> <p style="padding-left: 40px;">i) <u>is supported on wood or steel framing, and</u></p> <p style="padding-left: 40px;">ii) <u>ends or is interrupted where it meets the structure of the separating floor or ceiling assembly.</u></p> <p><u>3) Flanking wall and ceiling assemblies connected to a separating wall assembly shall be constructed with</u></p> <p style="padding-left: 20px;">a) <u>concrete or concrete block having a mass per area greater than 300 kg/m²,</u></p> <p style="padding-left: 40px;">or</p> <p style="padding-left: 20px;">b) <u>gypsum board finish that</u></p> <p style="padding-left: 40px;">i) <u>is supported on wood or steel framing, and</u></p> <p style="padding-left: 40px;">ii) <u>ends or is interrupted where it meets the structure of the separating wall assembly or, for double-stud walls, where it meets the space</u></p>	Inserted new Article.

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	<p>between the two lines of studs.</p> <p>4) Flanking floor assemblies connected to a separating wall assembly shall be</p> <p>a) <u>constructed</u></p> <p>i) <u>with concrete having a mass per area greater than 300 kg/m², or</u></p> <p>ii) <u>in accordance with Section 9.16., or</u></p> <p>b) <u>supported on joists or trusses that are not continuous across the junction and are covered with floor treatments in accordance with Table 9.11.1.4. for the applicable wall construction.</u></p> <p style="text-align: center;"><u>Table 9.11.1.4.</u> <u>Floor Treatments for Flanking Wood-Framed Floor Assemblies in Horizontally Adjoining Spaces</u> <u>Forming Part of Sentence 9.11.1.4.(4)</u></p> <table border="1"> <thead> <tr> <th><u>Type of Separating Wall Assembly with</u> <u>STC ≥ 50 from</u> <u>Table 9.10.3.1.-A</u></th> <th><u>Minimum Requirements for Floor Treatments Applied Over</u> <u>Subfloor of Wood-Framed Flanking Floor Assemblies on</u> <u>Both Sides of Floor/Wall Junction</u></th> </tr> </thead> <tbody> <tr> <td><u>W5, W6, W10, W12</u> <u>(staggered studs)</u></td> <td> <ul style="list-style-type: none"> • <u>wood strip flooring not less than 16 mm thick aligned parallel to separating wall, or</u> • <u>one layer of OSB or plywood not less than 15.5 mm thick plus finished flooring, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 8 kg/m²⁽¹⁾</u> </td> </tr> <tr> <td><u>W4, W11</u> <u>(staggered studs)</u></td> <td> <ul style="list-style-type: none"> • <u>one layer of OSB or plywood not less than 12.5 mm thick plus hardwood strip flooring not less than 19 mm thick aligned parallel to separating wall, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 16 kg/m²⁽¹⁾</u> </td> </tr> <tr> <td><u>W8, W9 (staggered studs)</u></td> <td> <ul style="list-style-type: none"> • <u>concrete or gypsum concrete topping not less than 19 mm thick bonded to the subfloor plus finished flooring, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 32 kg/m²⁽¹⁾</u> </td> </tr> <tr> <td><u>W13, W14, W15</u> <u>(double stud walls)</u></td> <td> <ul style="list-style-type: none"> • <u>where a continuous subfloor or other rigid materials at</u> </td> </tr> </tbody> </table>	<u>Type of Separating Wall Assembly with</u> <u>STC ≥ 50 from</u> <u>Table 9.10.3.1.-A</u>	<u>Minimum Requirements for Floor Treatments Applied Over</u> <u>Subfloor of Wood-Framed Flanking Floor Assemblies on</u> <u>Both Sides of Floor/Wall Junction</u>	<u>W5, W6, W10, W12</u> <u>(staggered studs)</u>	<ul style="list-style-type: none"> • <u>wood strip flooring not less than 16 mm thick aligned parallel to separating wall, or</u> • <u>one layer of OSB or plywood not less than 15.5 mm thick plus finished flooring, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 8 kg/m²⁽¹⁾</u> 	<u>W4, W11</u> <u>(staggered studs)</u>	<ul style="list-style-type: none"> • <u>one layer of OSB or plywood not less than 12.5 mm thick plus hardwood strip flooring not less than 19 mm thick aligned parallel to separating wall, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 16 kg/m²⁽¹⁾</u> 	<u>W8, W9 (staggered studs)</u>	<ul style="list-style-type: none"> • <u>concrete or gypsum concrete topping not less than 19 mm thick bonded to the subfloor plus finished flooring, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 32 kg/m²⁽¹⁾</u> 	<u>W13, W14, W15</u> <u>(double stud walls)</u>	<ul style="list-style-type: none"> • <u>where a continuous subfloor or other rigid materials at</u> 	
<u>Type of Separating Wall Assembly with</u> <u>STC ≥ 50 from</u> <u>Table 9.10.3.1.-A</u>	<u>Minimum Requirements for Floor Treatments Applied Over</u> <u>Subfloor of Wood-Framed Flanking Floor Assemblies on</u> <u>Both Sides of Floor/Wall Junction</u>											
<u>W5, W6, W10, W12</u> <u>(staggered studs)</u>	<ul style="list-style-type: none"> • <u>wood strip flooring not less than 16 mm thick aligned parallel to separating wall, or</u> • <u>one layer of OSB or plywood not less than 15.5 mm thick plus finished flooring, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 8 kg/m²⁽¹⁾</u> 											
<u>W4, W11</u> <u>(staggered studs)</u>	<ul style="list-style-type: none"> • <u>one layer of OSB or plywood not less than 12.5 mm thick plus hardwood strip flooring not less than 19 mm thick aligned parallel to separating wall, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 16 kg/m²⁽¹⁾</u> 											
<u>W8, W9 (staggered studs)</u>	<ul style="list-style-type: none"> • <u>concrete or gypsum concrete topping not less than 19 mm thick bonded to the subfloor plus finished flooring, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 32 kg/m²⁽¹⁾</u> 											
<u>W13, W14, W15</u> <u>(double stud walls)</u>	<ul style="list-style-type: none"> • <u>where a continuous subfloor or other rigid materials at</u> 											

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		<p><u>the floor/wall junction provide structural connection between the two rows of studs in the separating wall:</u></p> <ul style="list-style-type: none"> • <u>hardwood strip flooring not less than 16 mm thick aligned parallel to separating wall, or</u> • <u>one layer OSB or plywood not less than 15.5. mm thick plus finished flooring, or</u> • <u>one additional material layer plus finished flooring having a combined mass per area not less than 8 kg/m²⁽¹⁾</u> • <u>any finished flooring where the subfloor and other rigid materials are not connected at the floor/wall junction and where there are no structural connections between the two rows of studs in the separating wall</u> 	
	<u>B1 to B10</u>	<ul style="list-style-type: none"> • <u>any finished flooring</u> 	
	<p><u>Notes to Table 9.11.1.4.:</u> <u>(1) See Note A-Table 9.11.1.4.</u></p>		
<p>9.12.3.3. Deleterious Debris and Boulders 3) Backfill with material of any concentration that is susceptible to ice lensing is permitted where <i>foundation</i> walls are cast-in-place concrete, concrete block insulated on the exterior or concrete block protected from the backfill by a material that serves as a slip plane. (See A-9.4.4.4.(1) in Appendix A.)</p>	<p>9.12.3.3. Deleterious Debris and Boulders 3) Backfill with material of any concentration that is susceptible to ice lensing is permitted where <i>foundation</i> walls are</p> <ul style="list-style-type: none"> a) cast-in-place concrete, b) concrete block insulated on the exterior, or c) concrete block protected from the backfill by a material that serves as a slip plane. <p>(See <u>Note</u> A-9.4.4.4.(1) in Appendix A.)</p>		
<p>9.13.1.1. Application 1) This Section applies to walls, floors, and roofs in contact with the ground, and presents measures to control moisture and soil gas ingress.</p>	<p>9.13.1.1. <u>Scope and Application</u> 1) This Section applies to walls, floors, and roofs in contact with the ground, and presents measures to control <u>the ingress of water,</u> moisture and soil gas ingress. 2) <u>Subsection 9.13.2. applies to below-ground walls and floors-on-ground where drainage is provided in accordance with Section 9.14. over and along the entire below-ground portion of the <i>foundation</i> wall.</u> 3) <u>Subsection 9.13.3. applies to below-ground walls, floors-on-ground and roofs of underground structures that are subject to hydrostatic pressure.</u> 4) <u>Subsection 9.13.4. applies to walls, roofs and floors that are in contact with the ground.</u></p>		

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<p>9.13.2.2. Material Standards</p> <p>1) Except as otherwise specified in this Section, materials used for exterior dampproofing shall conform to</p> <ul style="list-style-type: none"> a) CAN/CGSB-37.1-M, “Chemical Emulsifier Type, Emulsified Asphalt for Dampproofing,” b) CAN/CGSB-37.2-M, “Emulsified Asphalt, Mineral-Colloid Type, Unfilled, for Dampproofing and Waterproofing and for Roof Coatings,” c) CGSB 37-GP-6Ma, “Asphalt, Cutback, Unfilled, for Dampproofing,” d) CAN/CGSB-37.16-M, “Filled, Cutback Asphalt for Dampproofing and Waterproofing,” e) CGSB 37-GP-18Ma, “Tar, Cutback, Unfilled, for Dampproofing,” f) CAN/CGSB-51.34-M, “Vapour Barrier, Polyethylene Sheet for Use in Building Construction,” or g) CAN/CSA-A123.4, “Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.” <p>9.13.2.3. Standards for Application</p> <p>1) The method of application of all bituminous dampproofing materials shall conform to</p> <ul style="list-style-type: none"> a) CAN/CGSB-37.3-M, “Application of Emulsified Asphalts for Dampproofing or Waterproofing,” b) CGSB 37-GP-12Ma, “Application of Unfilled Cutback Asphalt for Dampproofing,” or c) CAN/CGSB-37.22-M, “Application of Unfilled, Cutback Tar Foundation Coating for Dampproofing.” 	<p>9.13.2.2. Dampproofing Materials Standards</p> <p><u>1) Materials installed to provide required dampproofing shall be</u></p> <ul style="list-style-type: none"> <u>a) capable of protecting assemblies against moisture transfer from the ground,</u> <u>b) compatible with adjoining materials, and</u> <u>c) resistant to mechanisms of deterioration that may reasonably be expected, given the nature, function and exposure of the materials.</u> <p>12) Except as otherwise specified in this Section, materials used for exterior dampproofing shall conform to</p> <p><u>a) conform to one of the following standards:</u></p> <ul style="list-style-type: none"> i) CAN/CGSB-37.1-M, “Chemical Emulsifier Type, ASTM D 1227, “Emulsified Asphalt Used as a Protective Coating for Roofing,” Type III, Class I, for Dampproofing,” ii) ASTM D 4479/D 4479M, “Asphalt Roof Coatings – Asbestos-Free,” Type III, CAN/CGSB-37.2-M, “Emulsified Asphalt, Mineral-Colloid Type, Unfilled, for Dampproofing and Waterproofing and for Roof Coatings,” c) CGSB 37-GP-6Ma, “Asphalt, Cutback, Unfilled, for Dampproofing,” d) CAN/CGSB-37.16-M, “Filled, Cutback Asphalt for Dampproofing and Waterproofing,” e) CGSB 37-GP-18Ma, “Tar, Cutback, Unfilled, for Dampproofing,” <u>fiii) CAN/CGSB-51.34-M, “Vapour Barrier, Polyethylene Sheet for Use in Building Construction,” or</u> <u>giv) CAN/CSA-A123.4, “Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.”</u> <p>9.13.2.3. Standards for Application</p> <p>1b) The method of application of all bituminous dampproofing materials shall conform to have a water vapour permeance of not more than 43 ng/Pa·s·m² when tested in accordance with Procedure A (wet cup) of ASTM E 96/E 96M, “Water Vapor Transmission of Materials,” and consist of one of the following material types:</p> <ul style="list-style-type: none"> a) CAN/CGSB-37.3-M, “Application of Emulsified Asphalts for Dampproofing or Waterproofing,” a vapour-resistant coating b) CGSB 37-GP-12Ma, “Application of Unfilled Cutback Asphalt for Dampproofing,” or a cold-fluid-applied or hot-rubberized bituminous dampproofing membrane, c) CAN/CGSB-37.22-M, “Application of Unfilled, Cutback Tar Foundation Coating for Dampproofing,” a liquid-applied or spray-applied asphalt-based emulsion dampproofing, or 	<p>Combined Articles 9.13.2.2. and 9.13.2.3. into one article.</p>

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	iv) a type III hot-applied asphalt	
9.13.2.4. Preparation of Surface 1) Unit masonry walls that are to be dampproofed shall be <ol style="list-style-type: none"> a) parged on the exterior face below ground level with not less than 6 mm of mortar conforming to Section 9.20., and b) covered over the footing when the first course of block is laid. 2) Concrete walls to be dampproofed shall have holes and recesses resulting from the removal of form ties sealed with cement mortar or dampproofing material. 3) The surface of insulating concrete form walls that are to be dampproofed shall be repaired and free of projections and depressions that could be detrimental to the performance of the membrane to be applied.	9.13.2.4.9.13.2.3. Preparation of Surface 1) The area in which dampproofing is to be carried out shall be kept free of water during the application and curing of the dampproofing system. 2) The surface to be dampproofed shall be prepared in accordance with the instructions of the dampproofing material manufacturer. 3) Where the dampproofing material is to be applied on insulating concrete form (ICF) walls, the instructions of the ICF wall manufacturer shall be followed. 14) Unit masonry walls that are to be dampproofed shall be a) parged on the exterior face below ground level with not less than 6 mm of mortar conforming to Section 9.20., and b) covered over the footing when the first course of block is laid. 25) Concrete walls to be dampproofed shall have holes and recesses resulting from the removal of form ties sealed with cement mortar or a mastic or sealant that is suitable for vertical applications and compatible with the dampproofing material. 36) The surface of insulating concrete form walls that are required to be dampproofed shall be repaired clean and dry and free of ice, snow, frost, dust, dirt, oil, grease, cracks, projections and depressions, loose particles and debris that could be detrimental to the performance of the membrane material to be applied.	Renumbered Article.
9.13.2.5. Application of Dampproofing Material 1) Dampproofing material shall be applied over the parging or concrete below ground level.	9.13.2.5.9.13.2.4. Application of Dampproofing Material 1) Dampproofing material Exterior dampproofing shall be applied over the parging or concrete below from finished ground level to the top of the exterior of the footing. 2) Unless otherwise stated in this Subsection, dampproofing shall be installed in accordance with the manufacturer's instructions with regard to <ol style="list-style-type: none"> a) surface priming, b) conditions during application, c) application quantity and rate, and d) curing times. 3) Joints, cracks and penetrations shall be sealed to maintain the continuity of the dampproofing, where the dampproofing material is not capable of bridging such discontinuities.	Renumbered Article.
9.13.2.6. Moisture Protection for Interior Finishes	9.13.2.6.9.13.2.5. Moisture Protection for Interior Finishes	Renumbered Article.
9.13.2.7. Dampproofing of Floors-on-Ground 1) Where floors are dampproofed, the dampproofing shall be installed below the floor, except that where a separate floor is provided over a slab, the dampproofing is permitted to be applied to the top of the slab.	9.13.2.7.9.13.2.6. Dampproofing of Floors-on-Ground 1) Where floors are dampproofed, the dampproofing shall be is installed below the floor, except that where a separate floor is provided over a slab, the dampproofing is permitted to be applied to the top of the slab.	Renumbered Article.

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<p>2) Where installed below the floor, dampproofing membranes shall consist of polyethylene not less than 0.15 mm thick, or type S roll roofing.</p> <p>3) Joints in dampproofing membranes described in Sentence (2) shall be lapped not less than 100 mm.</p> <p>4) Where installed above the slab, dampproofing shall consist of not less than</p> <ol style="list-style-type: none"> 2 mopped-on coats of bitumen, 0.05 mm polyethylene, or other material providing equivalent performance. 	<p>2) Where installed below the floor, dampproofing membranes <u>it</u> shall consist of</p> <ol style="list-style-type: none"> polyethylene not less than 0.15 mm thick, or <u>with joints lapped not less than 100 mm,</u> type S roll roofing. with joints <u>3) Joints in dampproofing membranes described in Sentence (2) shall be</u> lapped not less than 100 mm, or <u></u> <u>rigid extruded/expanded polystyrene with sealed or ship-lapped joints that has</u> <ol style="list-style-type: none"> <u>sufficient compressive strength to support the floor assembly, and</u> <u>a water vapour permeance complying with Clause 9.13.2.2.(2)(a).</u> <p>4) Where installed above the slab, dampproofing <u>is installed between a floor-on-ground and a finished floor, it</u> shall consist of not less than</p> <ol style="list-style-type: none"> 2 mopped-on coats of bitumen, <u>rigid extruded/expanded polystyrene with sealed or ship-lapped joints that has</u> <ol style="list-style-type: none"> <u>sufficient compressive strength to support the floor assembly, and</u> <u>a water vapour permeance complying with Clause 9.13.2.2.(2)(b), or</u> 0.05 mm polyethylene, or c) other material providing equivalent performance, <u>not less than 0.05 mm thick with joints lapped not less than 100 mm.</u> 	
<p>9.13.3.1. Required Waterproofing</p> <p>1) Where hydrostatic pressure occurs, waterproofing is required for the exterior surfaces of</p> <ol style="list-style-type: none"> floors-on-ground, and below ground walls, where the exterior finished ground level is at a higher elevation than the ground level inside the <i>foundation</i> walls. <p>2) Roofs of underground structures shall be waterproofed to prevent the entry of water into the structure.</p>	<p>9.13.3.1. Required Waterproofing</p> <p>1) Where hydrostatic pressure occurs, waterproofing is required for <u>assemblies separating interior space from the exterior surfaces of a) floors-on-ground to prevent the ingress of water into building assemblies and interior spaces,</u> and b) below ground walls, where the exterior finished ground level is at a higher elevation than the ground level inside the foundation walls.</p> <p>2) Roofs of underground structures shall be waterproofed to prevent the entry of water into the structure. <u>Waterproofing is required for roofs of underground structures to prevent the ingress of water into building assemblies and interior spaces</u></p>	
<p>9.13.3.2. Material Standards</p> <p>1) Except as otherwise specified in this Section, materials used for exterior waterproofing shall conform to</p> <ol style="list-style-type: none"> CAN/CGSB-37.2-M, “Emulsified Asphalt, Mineral-Colloid Type, Unfilled, for Dampproofing and Waterproofing and for Roof Coatings,” CAN/CGSB-37.16-M, “Filled, Cutback Asphalt for Dampproofing and Waterproofing,” or CAN/CSA-A123.4, “Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.” 	<p>9.13.3.2. Material Standards Waterproofing Materials</p> <p><u>1) Materials installed to provide required waterproofing shall be</u></p> <ol style="list-style-type: none"> <u>compatible with adjoining materials, and</u> <u>resistant to mechanisms of deterioration that may reasonably be expected, given the nature, function and exposure of the materials.</u> <p>1) Except as otherwise specified in this Section, materials used for exterior waterproofing shall conform to</p> <ol style="list-style-type: none"> CAN/CGSB-37.2-M, “Emulsified Asphalt, Mineral Colloid Type, Unfilled, for Dampproofing and Waterproofing and for Roof Coatings,” <u>ASTM D 1227,</u> 	

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	<p>“Emulsified Asphalt Used as a Protective Coating for Roofing,” in which case, they shall be installed in accordance with Sentence 9.13.3.3.(3),</p> <p>b) CAN/CGSB-37.16-M, “Filled, Cutback Asphalt for Dampproofing and Waterproofing,” or ASTM D 3019, “Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered,” where non-fibered and non-asbestos-fibered (Types I and III) asphalt roll roofing are permitted,</p> <p>c) ASTM D 4479/D 4479M, “Asphalt Roof Coatings – Asbestos-Free,” in which case, they shall be installed in accordance with Sentence 9.13.3.3.(3) and with reinforcing material,</p> <p>d) ASTM D 4637/D 4637M, “EPDM Sheet Used In Single-Ply Roof Membrane,”</p> <p>e) ASTM D 4811/D 4811M, “Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing,”</p> <p>f) ASTM D 6878/D 6878M, “Thermoplastic Polyolefin Based Sheet Roofing,”</p> <p>g) CGSB 37-GP-9Ma, “Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing,” where a primer is required,</p> <p>h) CAN/CGSB-37.50-M, “Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing,”</p> <p>i) CAN/CGSB-37.54, “Polyvinyl Chloride Roofing and Waterproofing Membrane,”</p> <p>j) CGSB 37-GP-56M, “Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing,”</p> <p>k) CAN/CGSB-37.58-M, “Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing,”</p> <p>l) CAN/CSA-A123.2, “Asphalt-Coated Roofing Sheets,”</p> <p>em) CAN/CSA-A123.4, “Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.” In which case, they shall be installed with reinforcing material, or</p> <p>n) CSA A123.17, “Asphalt Glass Felt Used in Roofing and Waterproofing.”</p>	
<p>9.13.3.3. Standards for Application</p> <p>1) The method of application of all bituminous waterproofing materials shall conform to CAN/CGSB-37.3-M, “Application of Emulsified Asphalts for Dampproofing or Waterproofing.”</p>	<p>9.13.3.3. Standards for Application</p> <p>1) The method of application of all bituminous waterproofing materials shall conform to CAN/CGSB-37.3-M, “Application of Emulsified Asphalts for Dampproofing or Waterproofing.”</p>	Deleted Article.
<p>9.13.3.4. Preparation of Surface</p> <p>1) Unit masonry walls that are to be waterproofed shall be parged on exterior surfaces below ground level with not less than 6 mm of mortar conforming to Section 9.20.</p>	<p>9.13.3.4.9.13.3.3. Preparation of Surface</p> <p>1) Surfaces to be waterproofed shall be prepared in accordance with the instructions of the waterproofing material manufacturer.</p> <p>2) Where the waterproofing material is to be applied on ICF walls, the instructions</p>	Renumbered Article.

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<p>2) Concrete walls that are to be waterproofed shall have all holes and recesses resulting from the removal of form ties sealed with mortar or waterproofing material.</p> <p>3) The surface of insulating concrete form walls that are to be waterproofed shall be repaired and free of projections and depressions that could be detrimental to the performance of the membrane to be applied.</p>	<p>of the ICF wall manufacturer shall be followed.</p> <p>43) Unit masonry walls that are to be waterproofed shall be parged on exterior surfaces below ground level with not less than 6 mm of mortar conforming to Section 9.20. coved over the footing.</p> <p>24) Concrete walls that are to be waterproofed shall have all holes and recesses resulting from the removal of form ties sealed with mortar or waterproofing material.</p> <p>35) The surface of insulating concrete form walls that are Surfaces required to be waterproofed shall be repairedclean and dry and free of ice, snow, frost, dust, dirt, oil, grease, cracks, projections and depressions, loose particles and debris that could be detrimental to the performance of the membrane to be appliedwaterproofing material.</p>	
<p>9.13.3.5. Application of Waterproofing Membranes</p> <p>1) Concrete or unit masonry walls that are to be waterproofed shall be covered with not less than 2 layers of bitumen-saturated membrane, with each layer cemented in place with bitumen and coated overall with a heavy coating of bitumen.</p>	<p>9.13.3.5.9.13.3.4. Application of Waterproofing Membranes</p> <p>1) Concrete or unit masonry walls that are to be waterproofed shall be covered with not less than 2 layers of bitumen-saturated membrane, with each layer cemented in place with bitumen and coated overall with a heavy coating of bitumen.Unless otherwise stated in this Subsection, waterproofing shall be installed in accordance with the manufacturer’s instructions with regard to</p> <ul style="list-style-type: none"> a) surface priming, b) conditions during application, c) the required number of layers of reinforcing fabric on foundation, footings, floors, walls and structural slabs, d) application quantity and rate, and e) curing times. <p>2) Waterproofing shall be continuous across joints and at junctions between different building elements.</p> <p>3) The waterproofed surface shall be protected with a suitable material to minimize mechanical damage during backfilling.</p> <p>4) The area in which the waterproofing is to be carried out shall be kept free of water during the application and curing of the waterproofing system.</p>	Renumbered Article.
<p>9.13.3.6. Floor Waterproofing System</p> <p>1) <i>Basement</i> floors-on-ground to be waterproofed shall have a system of membrane waterproofing provided between 2 layers of concrete, each of which shall be not less than 75 mm thick, with the floor membrane mopped to the wall membrane to form a complete seal.</p>	<p>9.13.3.6.9.13.3.5. Floor Waterproofing System</p> <p>1) <i>Basement</i> floors-on-ground to be waterproofed shall have a system of membrane waterproofing provided between 2 layers of concrete, each of which shall be not less than 75 mm thick, with the floor membrane mopped tomade continuous with the wall membrane to form a complete seal.</p>	Renumbered Article.
<p>9.14.3.1. Material Standards</p> <p>1) Drain tile and drain pipe for <i>foundation</i> drainage shall conform to</p>	<p>9.14.3.1. Material Standards</p> <p>1) Drain tile and drain pipe for <i>foundation</i> drainage shall conform to</p>	

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a) ASTM C 4, "Clay Drain Tile and Perforated Clay Drain Tile," b) ASTM C 412M, "Concrete Drain Tile (Metric)," c) ASTM C 444M, "Perforated Concrete Pipe (Metric)," d) ASTM C 700, "Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated," e) CAN/CGSB-34.22, "Asbestos-Cement Drain Pipe," f) CAN/CSA-B182.1, "Plastic Drain and Sewer Pipe and Pipe Fittings," g) CAN/CSA-G401, "Corrugated Steel Pipe Products," or h) BNQ 3624-115, "Polyethylene (PE) Pipe and Fittings – Flexible Pipes for Drainage – Characteristics and Test Methods."	a) ASTM C 4, "Clay Drain Tile and Perforated Clay Drain Tile," b) ASTM C 412M, "Concrete Drain Tile (Metric)," c) ASTM C 444M, "Perforated Concrete Pipe (Metric)," d) ASTM C 700, "Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated," e) CAN/CGSB-34.22, "Asbestos-Cement Drain Pipe," BNQ 3624-115, "Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage," f) CAN/CSA-B182.1, "Plastic Drain and Sewer Pipe and Pipe Fittings," or g) CAN/CSA-G401, "Corrugated Steel Pipe Products," or h) BNQ 3624-115, "Polyethylene (PE) Pipe and Fittings – Flexible Pipes for Drainage – Characteristics and Test Methods."	
9.15.1.1. General 1) Except as provided in Articles 9.15.1.2. and 9.15.1.3., this Section applies to ... c) flat insulating concrete form <i>foundation</i> walls and concrete footings not subject to surcharge (see A-9.15.1.1.(1)(c) and 9.20.1.1.(1)(b) in Appendix A) i) on stable <i>soils</i> with an allowable bearing pressure of 100 kPa or greater, and ...	9.15.1.1. General 1) Except as provided in Articles 9.15.1.2. and 9.15.1.3., this Section applies to ... c) flat insulating concrete form <i>foundation</i> walls and concrete footings not subject to surcharge (see A-9.15.1.1.(1)(c) and 9.20.1.1.(1)(b) in Appendix A) i) on stable <i>soils</i> with an allowable bearing pressure of 100 75 kPa or greater, and ...	Allowable bearing pressure of soil for ICF foundations has been reduced to coincide with that of other foundation systems
9.15.1.3. Foundations for Deformation-Resistant Buildings 1) Where the superstructure of a detached <i>building</i> conforms to the requirements of the deformation resistance test in CSA Z240.2.1, "Structural Requirements for Manufactured Homes," the <i>foundation</i> shall be constructed in conformance with a) the remainder of this Section, or b) CSA Z240.10.1, "Site Preparation, Foundation, and Anchorage of Manufactured Homes."	9.15.1.3. Foundations for Deformation-Resistant Buildings 1) Where the superstructure of a detached <i>building</i> conforms to the requirements of the deformation resistance test in CSA Z240.2.1, "Structural Requirements for Manufactured Homes," the <i>foundation</i> shall be constructed in conformance with a) the remainder of this Section, or b) CSA Z240.10.1, "Site Preparation, Foundation, and Anchorage Installation of Manufactured Homes Buildings. "	
9.15.2.4. Wood-Frame Foundations 1) Except as required by Sentence 2.4.2.1.(9) of Division C, <i>foundations</i> of wood-frame construction shall conform to a) CAN/CSA-S406, "Construction of Preserved Wood Foundations," or b) Part 4.	9.15.2.4. Wood-Frame Foundations 1) Except as required by Sentence 2.4.2.1.(9) of Division C, foundations Foundations of wood-frame construction shall conform to a) CAN/CSA-S406, "Construction of Preserved Permanent Wood Foundations for Housing and Small Buildings, " or b) Part 4.	
9.15.4.1. Permanent Form Material	9.15.4.1. Permanent Form Material	

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1) Insulating concrete form units shall be manufactured of polystyrene conforming to the performance requirements of CAN/ULC-S701, “Thermal Insulation, Polystyrene, Boards and Pipe Covering,” for Type 2, 3 or 4 polystyrene.	1) Insulating concrete form units shall be manufactured of polystyrene conforming to the performance requirements of CAN/ULC-S701.1, “Thermal Insulation, Polystyrene, Boards and Pipe Covering ,” for Type 2, 3 or 4 polystyrene.	
9.15.4.3. Foundation Walls Considered to be Laterally Supported at the Top 2) <i>Foundation</i> walls shall be considered to be laterally supported at the top if a) such walls support a solid masonry superstructure, ...	9.15.4.3. Foundation Walls Considered to be Laterally Supported at the Top 2) <i>Foundation</i> walls shall be considered to be laterally supported at the top if a) such walls support a solid masonry <u>solid masonry</u> superstructure, ...	“Solid masonry” is now a defined term.
9.15.5.1. Support of Floor Joists 1) Except as permitted in Sentence (2), <i>foundation</i> walls of hollow masonry units supporting floor joists shall be capped with not less than 50 mm of solid masonry or concrete, or have the top course filled with mortar or concrete.	9.15.5.1. Support of Floor Joists 1) Except as permitted in Sentence (2), <i>foundation</i> walls of hollow masonry units supporting floor joists shall be capped a) with not less than 50 mm of <u>concrete</u> , b) solid masonry <u>solid masonry units or concrete</u> that are 100% solid and not less than 50 mm high, or c) <u>semi-solid or hollow solid masonry units</u> that have the top course <u>completely</u> filled with mortar, <u>grout</u> or concrete.	“Solid masonry” is now a defined term.
9.15.5.2. Support of Beams 1) Not less than 190 mm depth of solid masonry shall be provided beneath beams supported on masonry.	9.15.5.2. Support of Beams 1) Not less than 190 mm depth of solid masonry <u>solid masonry</u> shall be provided beneath beams supported on masonry.	“Solid masonry” is now a defined term.
9.15.5.3. Pilasters 3) The top 200 mm of pilasters required in Sentence (1) shall be solid.	9.15.5.3. Pilasters 3) The top 200 mm of pilasters required in Sentence (1) shall be solid <u>solid masonry with the cells of hollow or semi-solid units filled with mortar, grout or concrete</u> .	
9.17.1.1. Application 1) This Section applies to columns used to support ... b) beams or header joists carrying loads from not more than 2 levels of wood-frame balconies, decks or other accessible exterior platforms, or 1 level plus the roof, where i) the supported length of joists bearing on such beams or joists does not exceed 5 m, ii) the sum of the specified snow and <i>occupancy</i> loads does not exceed 4.8 kPa (see Sentence 9.4.2.3.(1) for the determination of load on platform-type constructions), iii) the platform serves only a single <i>suite of residential occupancy</i> , and iv) the platform does not serve as a required <i>exit</i> , or	9.17.1.1. Application 1) This Section applies to columns used to support ... b) beams or header joists carrying loads from not more than 2 levels of wood-frame balconies, decks or other accessible exterior platforms, or 1 level plus the roof, where i) the supported length of joists bearing on such beams or joists does not exceed 5 m, ii) the sum of the specified snow and <i>occupancy</i> loads does not exceed 4.8 kPa (see Sentence 9.4.2.3.(1) for the determination of load on platform-type constructions), <u>and</u> iii) the platform serves only a single <i>suite of residential occupancy</i> , and iv) the platform does not serve as a required exit, or	

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9.18.1.3. Heated and Unheated Crawl Spaces 4) A crawl space beneath a <i>manufactured home</i> need not be heated if the floor assembly of the <i>manufactured home</i> has been designed and insulated for the outside winter design temperature and if the <i>building services</i> and <i>foundation</i> are protected against frost damage.	9.18.1.3. Heated and Unheated Crawl Spaces 4) A crawl space beneath a <i>manufactured home</i> need not be heated if the floor assembly of the <i>manufactured home</i> has been designed and insulated for the outside winter design temperature and if the <i>building services</i> and <i>foundation</i> are protected against frost damage.	
9.18.3.2. Ventilation of Heated Crawl Spaces 2) Ventilation to the outside air is not required if the crawl space is vented to an adjacent <i>basement</i> with an opening conforming to Sentence 9.18.3.1.(2).	9.18.3.2. Ventilation of Heated Crawl Spaces 2) Ventilation to the outside air is not required if the crawl space is vented to an adjacent <i>basement</i> with an opening conforming to Sentence 9.18.3.1.(2).	
9.18.7. Reserved	9.18.7. <u>Fire Protection</u> <u>9.18.7.1. Crawl Spaces as Warm Air Plenums</u> <u>1) Only crawl spaces under 1-storey portions of <i>dwelling units</i> shall be used as warm-air plenums.</u> <u>2) Enclosing material in crawl spaces described in Sentence (1), including insulation, shall have a surface <i>flame-spread rating</i> not greater than 150.</u> <u>3) <i>Combustible</i> ground cover in crawl spaces described in Sentence (1) shall be protected beneath each register opening with <i>noncombustible</i> material.</u> <u>4) The <i>noncombustible</i> register protection described in Sentence (3) shall</u> <u>a) extend not less than 300 mm beyond the projection of the register opening,</u> <u>and</u> <u>b) have up-turned edges.</u> <u>(See Note A-9.18.7.1.(4).)</u>	
9.20.2.1. Masonry Unit Standards 1) Masonry units shall comply with <ul style="list-style-type: none"> a) ASTM C 73, "Calcium Silicate Brick (Sand-Lime Brick)," b) ASTM C 126, "Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units," c) ASTM C 212, "Structural Clay Facing Tile," d) CAN/CSA-A82.1-M, "Burned Clay Brick (Solid Masonry Units Made from Clay or Shale)," e) CSA A82.4-M, "Structural Clay Load-Bearing Wall Tile," f) CSA A82.5-M, "Structural Clay Non-Load-Bearing Tile," g) CAN3-A82.8-M, "Hollow Clay Brick," h) CAN/CSA-A165.1, "Concrete Block Masonry Units," i) CAN/CSA-A165.2, "Concrete Brick Masonry Units," 	9.20.2.1. Masonry Unit Standards 1) Masonry units shall comply with <ul style="list-style-type: none"> a) ASTM C 73, "Calcium Silicate Brick (Sand-Lime Brick)," b) ASTM C 126, "Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units," c) ASTM C 212, "Structural Clay Facing Tile," d) CAN/CSA-A82.1-M, "Burned Clay Brick (Solid <u>82</u>, "Fired Masonry Units Brick Made from Clay or Shale)," e) CSA A82.4-M, "Structural Clay Load-Bearing Wall Tile," f) SA A82.5-M, "Structural Clay Non-Load-Bearing Tile," g) CAN3-A82.8-M, "Hollow Clay Brick," h) CAN/CSA-A165.1, "Concrete Block Masonry Units," i) CAN/<u>f</u> CSA-A165.2, "Concrete Brick Masonry Units," <u>or</u> 	

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j) CAN/CSA-A165.3, "Prefaced Concrete Masonry Units," or k) CAN3-A165.4-M, "Autoclaved Cellular Units."	j) CAN/g) CSA-A165.3, "Prefaced Concrete Masonry Units," or k) CAN3-A165.4-M, "Autoclaved Cellular Units."	
9.20.4.2. Solid Masonry Units 1) Solid masonry units shall be laid with full head and bed joints.	9.20.4.2. Solid Masonry Units 1) Solid masonry units shall be laid with full head and bed joints.	Deleted Article.
9.20.4.3. Laying of Masonry Units 1) Hollow masonry units shall be laid with mortar applied to head and bed joints of both inner and outer face shells. 2) Vertically aligned webs of hollow masonry units shall be laid in a full bed of mortar <ol style="list-style-type: none"> under the starting course, in all courses of columns, and where adjacent to cells or cavities that are to be filled with grout. 3) Except for head joints left open for weep holes and ventilation, solid masonry units shall be laid with full head and bed joints.	9.20.4.3. 9.20.4.2. Laying of Masonry Units 1) Hollow masonry units shall be laid with mortar applied to head and bed joints of both inner and outer face shells. 2) Vertically aligned webs of hollow masonry units shall be laid in a full bed of mortar <ol style="list-style-type: none"> under the starting course, in all courses of columns, and where adjacent to cells or cavities that are to be filled with grout. 3) Except for head joints left open for weep holes and ventilation, solid masonry units <u>solid masonry units</u> shall be laid with full head and bed joints.	Renumbered Article, and "solid masonry units" is now a defined term.
9.20.6.4. Masonry Veneer 1) Except for masonry veneer where each masonry unit is supported individually by the structural backing, masonry veneer shall be of solid units not less than 75 mm thick.	9.20.6.4. Masonry Veneer 1) Except for masonry veneer where each masonry unit is supported individually by the structural backing, masonry veneer shall be consist of solid units <u>solid masonry units</u> not less than 75 mm thick.	
9.20.6.5. Parapet Walls 2) Parapet walls shall be solid from the top of the parapet to not less than 300 mm below the adjacent roof level.	9.20.6.5. Parapet Walls 2) Parapet walls shall be solid <u>solid masonry</u> <ol style="list-style-type: none"> <u>with the cells of hollow or semi-solid units filled with mortar, grout, or concrete, and</u> <u>that extends</u> from the top of the parapet to not less than 300 mm below the adjacent roof level. 	
9.20.8.2. Cavity Walls Supporting Framing Members 1) Floor joists supported on <i>cavity walls</i> shall be supported on solid units not less than 57 mm high. 2) Floor joists described in Sentence (1) shall not project into the cavity. 3) Roof and ceiling framing members bearing on <i>cavity walls</i> shall be supported on <ol style="list-style-type: none"> not less than 57 mm of solid masonry, bridging the full thickness of the wall, or a wood plate not less than 38 mm thick, bearing not less than 50 mm on each wythe. 	9.20.8.2. Cavity Walls Supporting Framing Members 1) Floor joists supported on <i>cavity walls</i> shall be supported on solid units <u>solid masonry units</u> not less than 57 mm high. 2) Floor joists described in Sentence (1) shall not project into the cavity. 3) Roof and ceiling framing members bearing on <i>cavity walls</i> shall be supported on <ol style="list-style-type: none"> <u>solid masonry units</u> not less than 57 mm of solid masonry, bridging high that bridge the full thickness of the wall, or a wood plate not less than 38 mm thick, bearing not less than 50 mm on each wythe. 	
9.20.8.4. Support of Beams and Columns	9.20.8.4. Support of Beams and Columns	"Solid masonry" is now a defined term.

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2) Not less than 190 mm depth of solid masonry or concrete shall be provided under the beam or column referred to in Sentence (1).	2) Not less than 190 mm depth of solid masonry <u>solid masonry</u> or concrete shall be provided under the beam or column referred to in Sentence (1).	
9.20.8.5. Distance to Edge of Supporting Members (See Appendix A.) 1) Masonry veneer of hollow units resting on a bearing support shall not project more than <ol style="list-style-type: none"> a) 30 mm beyond the supporting base where the veneer is not less than 90 mm thick, and b) 12 mm beyond the supporting base where the veneer is less than 90 mm thick. 2) Masonry veneer of solid units resting on bearing support shall not project more than one third of the width of the veneer. 3) Where the masonry veneer described in Sentence (2) is rough stone masonry, <ol style="list-style-type: none"> a) the projection shall be measured as the average projection of the units, and b) the width of the veneer shall be measured as the average width of the veneer. 	9.20.8.5. Distance to Edge of <u>Projection of Masonry Veneer Beyond</u> Supporting Members (See Appendix A.) 1) Masonry veneer of hollow units <u>solid masonry units</u> resting on a bearing support shall not project more than <ol style="list-style-type: none"> a) 30 mm beyond the supporting base where the veneer is not less than 90 mm thick, and b) 12 mm beyond the supporting base where the veneer is less than 90 mm thick. 2) Masonry veneer of solid units resting on bearing support shall not project more than one third of the width thickness of the veneer. (See Note A-9.20.8.5.(1).) 3) Where the masonry veneer described in Sentence (2) is rough stone masonry, <ol style="list-style-type: none"> a) the projection shall be measured as the average projection of the units, and b) the <u>width thickness</u> of the veneer shall be measured as the average <u>width thickness</u> of the veneer. 	
9.20.12.1. Corbelling 1) All corbelling shall consist of solid units	9.20.12.1. Corbelling 1) All corbelling shall consist of solid units <u>solid masonry units</u> .	
9.20.12.2. Corbelling for Cavity Walls 2) Where the <i>foundation</i> wall referred to in Sentence (1) is unit masonry, it is permitted to be corbelled to meet flush with the inner face of a <i>cavity wall</i> provided <ol style="list-style-type: none"> a) the projection of each course does not exceed half the height or one third the width of the corbelled unit, and ...	9.20.12.2. Corbelling for Cavity Walls 2) Where the <i>foundation</i> wall referred to in Sentence (1) is unit masonry, it is permitted to be corbelled to meet flush with the inner face of a <i>cavity wall</i> provided <ol style="list-style-type: none"> a) the projection of each course does not exceed half the height or one third the <u>width thickness</u> of the corbelled unit, and ...	
9.20.17.4. Openings in Loadbearing Flat Insulating Concrete Form Walls 3) Lintels described in Sentence (2) shall be constructed in accordance with Tables A-17, A-18 or A-19.	9.20.17.4. Openings in Loadbearing Flat Insulating Concrete Form Walls 3) Lintels described in Sentence (2) shall be constructed in accordance with Tables A-17, A-18 <u>Span Table 9.20.17.4.-A, 9.20.17.4.-B or 9.20.17.4.-C A-19.</u>	
9.21.4.8. Wall Thickness 1) The walls of a masonry <i>chimney</i> shall be built of solid units not less than 75 mm thick.	9.21.4.8. Wall Thickness 1) The walls of a masonry <i>chimney</i> shall be built of solid units <u>solid masonry units</u> not less than 75 mm thick.	New defined term "solid masonry unit."
9.21.5.3. Support of Joists or Beams	9.21.5.3. Support of Joists or Beams	New defined term "solid masonry."

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1) Joists or beams may be supported on masonry walls which enclose <i>chimney flues</i> provided the <i>combustible</i> members are separated from the <i>flue</i> by not less than 290 mm of solid masonry.	1) Joists or beams may be supported on masonry walls which enclose <i>chimney flues</i> provided the <i>combustible</i> members are separated from the <i>flue</i> by not less than 290 mm of solid masonry <i>solid masonry</i> .	
9.22.1.4. Combustion Air 1) Combustion air for a fireplace shall be provided and shall be introduced by an air intake other than a door or window. (See Appendix A.)	9.22.1.4. Combustion Air 1) Combustion air for a fireplace shall be provided and shall be introduced by an air intake other than a door or window. (See Appendix A.) <u>Where a supply of combustion air is provided directly to the fire chamber of a fireplace, including a factory-built fireplace, the installation shall comply with the “Outdoor Air Supply” requirements provided in CAN/CSA-A405-M, “Design and Construction of Masonry Chimneys and Fireplaces.”</u>	Rewrite Sentence (1).
9.22.3.1. Thickness of Walls 2) When a steel fireplace liner is used with an air circulating chamber surrounding the firebox, the back and sides of the fireplace shall consist of a) solid masonry units not less than 90 mm thick, or b) hollow masonry units not less than 190 mm thick.	9.22.3.1. Thickness of Walls 2) When a steel fireplace liner is used with an air circulating chamber surrounding the firebox, the back and sides of the fireplace shall consist of a) solid masonry units <i>solid masonry units</i> not less than 90 mm thick, or b) hollow masonry units not less than 190 mm thick.	New defined term “solid masonry unit.”
9.23.3.5. Fasteners for Sheathing or Subflooring 2) Fastening of roof sheathing and sheathing in required <i>braced wall panels</i> shall conform to Table 9.23.3.5.B., where a) the 1-in-50 hourly wind pressure (HWP) is equal to or greater than 0.8 kPa and less than 1.2 kPa, or b) the seismic spectral response acceleration, $S_a(0.2)$, is greater than 0.70 and not more than 1.2. Table 9.23.3.5.B. Fasteners for Sheathing where HWP is Equal to or Greater Than 0.8 kPa and Less Than 1.2 kPa or where $S_a(0.2)$ is Greater Than 0.70 and Not More Than 1.2 Forming Part of Sentence 9.23.3.5.(2) ... 3) ...	9.23.3.5. Fasteners for Sheathing or Subflooring 2) Fastening of roof sheathing and sheathing in required <i>braced wall panels</i> shall conform to Table 9.23.3.5.B. <u>9.23.3.5.-B</u> , where a) the 1-in-50 hourly wind pressure (HWP) is equal to or greater than 0.8 kPa and less than 1.2 kPa, <u>and the seismic spectral response acceleration, $S_a(0.2)$, is not more than 0.90,</u> or b) the seismic spectral response acceleration, $S_a(0.2)$, is greater than 0.70 and not more than 1.2 <u>0.90</u> . Table 9.23.3.5.B9.23.3.5.-B Fasteners for Sheathing where HWP is Equal to or Greater Than 0.8 kPa and Less Than $S_a(0.2) \leq 0.90$ or where 0.70 < $S_a(0.2)$ is Greater Than 0.70 and Not More Than 1.2 ≤ 0.90 Forming Part of Sentence 9.23.3.5.(2) ... <u>3) Fastening of roof sheathing and sheathing in required <i>braced wall panels</i> shall conform to Table 9.23.3.5.-C, where</u> <u>a) the 1-in-50 hourly wind pressure (HWP) is equal to or greater than 0.8 kPa and less than 1.2 kPa and the spectral response acceleration, $S_a(0.2)$, is not more than 1.8, or</u>	Inserted new Sentences (3) and (8).

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	<p><u>b) the seismic spectral response acceleration, $S_a(0.2)$, is greater than 0.90 and not more than 1.8.</u></p> <p>Table 9.23.3.5.-C <u>Fasteners for Sheathing where $0.8 \text{ kPa} \leq 1\text{-in-}50 \text{ HWP} < 1.2 \text{ kPa}$ and $S_a(0.2) \leq 1.8$ or where $0.90 < S_a(0.2) \leq 1.8$</u> Forming Part of Sentence 9.23.3.5.(3)</p> <table border="1"> <thead> <tr> <th rowspan="2">Element</th> <th colspan="2">Minimum Length of Fasteners, mm</th> <th rowspan="2">Minimum Number or Maximum Spacing of Fasteners</th> </tr> <tr> <th>Common, Spiral or Ring Thread Nails</th> <th>Screws</th> </tr> </thead> <tbody> <tr> <td><u>Plywood, OSB or waferboard up to 20 mm thick⁽¹⁾</u></td> <td><u>63</u></td> <td><u>51</u></td> <td><u>75 mm o.c. along edges and 300 mm o.c. along intermediate supports; and for roof sheathing where 1-in-50 HWP is equal to or greater than 0.8 kPa and less than 1.2 kPa, 50 mm o.c. within 1 m of the edges of the roof</u></td> </tr> <tr> <td><u>Plywood, OSB or waferboard over 20 mm and up to 25 mm thick</u></td> <td><u>63</u></td> <td><u>57</u></td> <td></td> </tr> </tbody> </table> <p>Notes to Table 9.23.3.5.-C: <u>(1) See Note A-Table 9.23.3.5.-B.</u></p> <p>3)4) ... ***EXISTING SENTENCES RENUMBERED***</p> <p><u>8) The edges of sheathing in a braced wall panel shall be supported and fastened to wood blocking where</u> <u>a) the seismic spectral response acceleration, $S_a(0.2)$, is greater than 1.2, or</u> <u>b) the braced wall panel supports more than a roof of lightweight construction.</u></p>	Element	Minimum Length of Fasteners, mm		Minimum Number or Maximum Spacing of Fasteners	Common, Spiral or Ring Thread Nails	Screws	<u>Plywood, OSB or waferboard up to 20 mm thick⁽¹⁾</u>	<u>63</u>	<u>51</u>	<u>75 mm o.c. along edges and 300 mm o.c. along intermediate supports; and for roof sheathing where 1-in-50 HWP is equal to or greater than 0.8 kPa and less than 1.2 kPa, 50 mm o.c. within 1 m of the edges of the roof</u>	<u>Plywood, OSB or waferboard over 20 mm and up to 25 mm thick</u>	<u>63</u>	<u>57</u>		
Element	Minimum Length of Fasteners, mm		Minimum Number or Maximum Spacing of Fasteners													
	Common, Spiral or Ring Thread Nails	Screws														
<u>Plywood, OSB or waferboard up to 20 mm thick⁽¹⁾</u>	<u>63</u>	<u>51</u>	<u>75 mm o.c. along edges and 300 mm o.c. along intermediate supports; and for roof sheathing where 1-in-50 HWP is equal to or greater than 0.8 kPa and less than 1.2 kPa, 50 mm o.c. within 1 m of the edges of the roof</u>													
<u>Plywood, OSB or waferboard over 20 mm and up to 25 mm thick</u>	<u>63</u>	<u>57</u>														
<p>9.23.4.2. Spans for Joists, Rafters and Beams 5) A structural glued-laminated timber beam shall be fabricated in a plant certified in accordance with CSA O177, "Qualification Code for Manufacturers of Structural Glued-Laminated Timber."</p>	<p>9.23.4.2. Spans for Joists, Rafters and Beams 5) A structural glued-laminated timber beam shall be fabricated in a plant certified in accordance with CSA O177, "Qualification Code for Manufacturers of Structural Glued-Laminated Timber."</p>	Deleted Sentence (5).														
<p>9.23.6.1. Anchorage of Building Frames 3) For <i>buildings</i> with 2 or more floors supported by frame walls that are in areas where the seismic spectral response acceleration, $S_a(0.2)$, is equal to or greater than 0.70 but not greater than 1.2 or the 1-in-50 hourly wind pressure is equal to or greater than 0.80 kPa but not greater than 1.20 kPa, anchorage shall be provided by</p>	<p>9.23.6.1. Anchorage of Building Frames 3) For <i>buildings</i> with 2 or more floors supported by frame walls that are in areas where the seismic spectral response acceleration, $S_a(0.2)$, is equal to or not greater than 0.70 but not greater than 1.2 or the 1-in-50 hourly wind pressure (<u>HWP</u>) is equal to or greater than 0.80 kPa but not greater than 1.20 kPa, anchorage shall be</p>	Inserted new Sentence (4).														

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<p>fastening the sill plate to the <i>foundation</i> with not less than two anchor bolts per <i>braced wall panel</i>, where all anchor bolts used are</p> <p>a) not less than 15.9 mm in diameter, located within 0.5 m of the end of the <i>foundation</i>, and spaced not more than 2.4 m o.c, or</p> <p>b) not less than 12.7 mm in diameter, located within 0.5 m of the end of the <i>foundation</i>, and spaced not more than 1.7 m o.c.</p> <p>4) ...</p> <p>5) Where the seismic spectral response acceleration, $S_a(0.2)$, is greater than 1.2 or the 1-in-50 hourly wind pressure is equal to or greater than 1.2 kPa, anchorage shall be designed according to Part 4.</p>	<p>provided by fastening the sill plate to the <i>foundation</i> with not less than two anchor bolts per <i>braced wall panel</i>, where all anchor bolts used are</p> <p>a) not less than 15.9 mm in diameter, located within 0.5 m of the end of the <i>foundation</i>, and spaced not more than 2.4 m o.c, or</p> <p>b) not less than 12.7 mm in diameter, located within 0.5 m of the end of the <i>foundation</i>, and spaced not more than 1.7 m o.c.</p> <p><u>4) For buildings supported by frame walls that are in areas where the seismic spectral response acceleration, $S_a(0.2)$, is greater than 0.70 but not greater than 1.8 and the 1-in-50 hourly wind pressure (HWP) is not greater than 1.20 kPa, anchorage shall be provided by fastening the sill plate to the <i>foundation</i> with not less than two anchor bolts per <i>braced wall panel</i> located within 0.5 m of the end of the <i>foundation</i> and spaced in accordance with Table 9.23.6.1.</u></p> <p style="text-align: center;">Table 9.23.6.1. Anchor Bolt Spacing where the 1-in-50 HWP \leq 1.20 kPa and $0.70 < S_a(0.2) \leq 1.8$ Forming Part of Sentence 9.23.6.1.(4)</p> <table border="1" data-bbox="1077 768 1991 1312"> <thead> <tr> <th rowspan="3">Anchor Bolt Diameter, mm</th> <th rowspan="3">$S_a(0.2)$</th> <th colspan="5">Maximum Spacing of Anchor Bolts Along <i>Braced Wall Band</i>, m</th> </tr> <tr> <th colspan="3">Light Construction</th> <th colspan="2">Heavy Construction⁽¹⁾</th> </tr> <tr> <th colspan="5">Number of Floors Supported⁽²⁾</th> </tr> <tr> <th></th> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td rowspan="8">12.7</td> <td>$0.70 < S_a(0.2) \leq 0.80$</td> <td>2.4</td> <td>2.3</td> <td>1.8</td> <td>2.4</td> <td>2.0</td> </tr> <tr> <td>$0.80 < S_a(0.2) \leq 0.90$</td> <td>2.4</td> <td>2.3</td> <td>1.8</td> <td>2.4</td> <td>2.0</td> </tr> <tr> <td>$0.90 < S_a(0.2) \leq 1.0$</td> <td>2.4</td> <td>2.2</td> <td>1.5</td> <td>2.4</td> <td>1.8</td> </tr> <tr> <td>$1.0 < S_a(0.2) \leq 1.1$</td> <td>2.4</td> <td>2.1</td> <td>1.4</td> <td>2.4</td> <td>1.6</td> </tr> <tr> <td>$1.1 < S_a(0.2) \leq 1.2$</td> <td>2.4</td> <td>2.0</td> <td>1.3</td> <td>2.4</td> <td>1.5</td> </tr> <tr> <td>$1.2 < S_a(0.2) \leq 1.3$</td> <td>2.4</td> <td>1.9</td> <td>1.3</td> <td>2.4</td> <td>1.5</td> </tr> <tr> <td>$1.3 < S_a(0.2) \leq 1.35$</td> <td>2.4</td> <td>1.8</td> <td>1.2</td> <td>2.3</td> <td>1.4</td> </tr> <tr> <td>$1.35 < S_a(0.2) \leq 1.8$</td> <td>2.4</td> <td>1.8</td> <td>1.1</td> <td>2.3</td> <td>1.4</td> </tr> <tr> <td rowspan="8">15.9</td> <td>$0.70 < S_a(0.2) \leq 0.80$</td> <td>2.4</td> <td>2.4</td> <td>2.2</td> <td>2.4</td> <td>2.4</td> </tr> <tr> <td>$0.80 < S_a(0.2) \leq 0.90$</td> <td>2.4</td> <td>2.4</td> <td>2.2</td> <td>2.4</td> <td>2.4</td> </tr> <tr> <td>$0.90 < S_a(0.2) \leq 1.0$</td> <td>2.4</td> <td>2.4</td> <td>2.1</td> <td>2.4</td> <td>2.3</td> </tr> <tr> <td>$1.0 < S_a(0.2) \leq 1.1$</td> <td>2.4</td> <td>2.4</td> <td>1.9</td> <td>2.4</td> <td>2.3</td> </tr> <tr> <td>$1.1 < S_a(0.2) \leq 1.2$</td> <td>2.4</td> <td>2.4</td> <td>1.9</td> <td>2.4</td> <td>2.2</td> </tr> <tr> <td>$1.2 < S_a(0.2) \leq 1.3$</td> <td>2.4</td> <td>2.4</td> <td>1.8</td> <td>2.4</td> <td>2.1</td> </tr> <tr> <td>$1.3 < S_a(0.2) \leq 1.35$</td> <td>2.4</td> <td>2.3</td> <td>1.7</td> <td>2.4</td> <td>2.0</td> </tr> <tr> <td>$1.35 < S_a(0.2) \leq 1.8$</td> <td>2.4</td> <td>2.2</td> <td>1.6</td> <td>2.4</td> <td>1.9</td> </tr> </tbody> </table> <p>Notes to Table 9.23.6.1.: (1) See Note A-9.23.13.2.(1)(a)(i). (2) All constructions include support of a roof load in addition to the indicated number of floors.</p>	Anchor Bolt Diameter, mm	$S_a(0.2)$	Maximum Spacing of Anchor Bolts Along <i>Braced Wall Band</i> , m					Light Construction			Heavy Construction ⁽¹⁾		Number of Floors Supported ⁽²⁾							1	2	3	1	2	12.7	$0.70 < S_a(0.2) \leq 0.80$	2.4	2.3	1.8	2.4	2.0	$0.80 < S_a(0.2) \leq 0.90$	2.4	2.3	1.8	2.4	2.0	$0.90 < S_a(0.2) \leq 1.0$	2.4	2.2	1.5	2.4	1.8	$1.0 < S_a(0.2) \leq 1.1$	2.4	2.1	1.4	2.4	1.6	$1.1 < S_a(0.2) \leq 1.2$	2.4	2.0	1.3	2.4	1.5	$1.2 < S_a(0.2) \leq 1.3$	2.4	1.9	1.3	2.4	1.5	$1.3 < S_a(0.2) \leq 1.35$	2.4	1.8	1.2	2.3	1.4	$1.35 < S_a(0.2) \leq 1.8$	2.4	1.8	1.1	2.3	1.4	15.9	$0.70 < S_a(0.2) \leq 0.80$	2.4	2.4	2.2	2.4	2.4	$0.80 < S_a(0.2) \leq 0.90$	2.4	2.4	2.2	2.4	2.4	$0.90 < S_a(0.2) \leq 1.0$	2.4	2.4	2.1	2.4	2.3	$1.0 < S_a(0.2) \leq 1.1$	2.4	2.4	1.9	2.4	2.3	$1.1 < S_a(0.2) \leq 1.2$	2.4	2.4	1.9	2.4	2.2	$1.2 < S_a(0.2) \leq 1.3$	2.4	2.4	1.8	2.4	2.1	$1.3 < S_a(0.2) \leq 1.35$	2.4	2.3	1.7	2.4	2.0	$1.35 < S_a(0.2) \leq 1.8$	2.4	2.2	1.6	2.4	1.9	
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<p>9.23.6.3. Anchorage of Smaller Buildings</p> <p>1) <i>Buildings</i> not more than 4.9 m wide and not more than 1 <i>storey</i> in <i>building height</i> that are not anchored in accordance with Sentence 9.23.6.1.(1) shall be anchored in conformance with the requirements of CSA Z240.10.1, "Site Preparation, Foundation, and Anchorage of Manufactured Homes."</p>	<p>9.23.6.3. Anchorage of Smaller Buildings</p> <p>1) <i>Buildings</i> not more than 4.94.3 m wide and not more than 1 <i>storey</i> in <i>building height</i> that are not anchored in accordance with Sentence 9.23.6.1.(1) shall be anchored in conformance with the requirements of CSA Z240.10.1, "Site Preparation, Foundation, and Anchorage of Manufactured Homes<u>Installation of Buildings.</u>"</p>																																																																				
<p>9.23.11.4. Joints in Top Plates</p> <p>N/A</p>	<p>9.23.11.4. Joints in Top Plates</p> <p><u>5) Where the seismic spectral response acceleration, $S_a(0.2)$, is greater than 0.70 but not more than 1.8, doubled top plates in braced wall bands shall be fastened on each side of a splice with 76 mm long common steel wire nails or spiral nails in accordance with Table 9.23.11.4.</u></p> <p style="text-align: center;"><u>Table 9.23.11.4.</u> <u>Fasteners in Doubled Top Plate Splice Connections in Braced Wall Bands where $0.70 < S_a(0.2) \leq 1.8$</u> <u>Forming Part of Sentence 9.23.11.4.(5)</u></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="3"><u>$S_a(0.2)$</u></th> <th colspan="5"><u>Minimum Number of Nails on Each Side of Doubled Top Plate Splice</u></th> </tr> <tr> <th colspan="3"><u>Light Construction</u></th> <th colspan="2"><u>Heavy Construction⁽¹⁾</u></th> </tr> <tr> <th><u>0</u></th> <th><u>1</u></th> <th><u>2</u></th> <th><u>0</u></th> <th><u>1</u></th> </tr> </thead> <tbody> <tr> <td><u>$0.70 < S_a(0.2) \leq 0.80$</u></td> <td><u>2</u></td> <td><u>5</u></td> <td><u>8</u></td> <td><u>3</u></td> <td><u>8</u></td> </tr> <tr> <td><u>$0.80 < S_a(0.2) \leq 0.90$</u></td> <td><u>2</u></td> <td><u>5</u></td> <td><u>8</u></td> <td><u>4</u></td> <td><u>8</u></td> </tr> <tr> <td><u>$0.90 < S_a(0.2) \leq 1.0$</u></td> <td><u>3</u></td> <td><u>3</u></td> <td><u>10</u></td> <td><u>4</u></td> <td><u>10</u></td> </tr> <tr> <td><u>$1.0 < S_a(0.2) \leq 1.1$</u></td> <td><u>3</u></td> <td><u>7</u></td> <td><u>11</u></td> <td><u>5</u></td> <td><u>11</u></td> </tr> <tr> <td><u>$1.1 < S_a(0.2) \leq 1.2$</u></td> <td><u>3</u></td> <td><u>7</u></td> <td><u>11</u></td> <td><u>5</u></td> <td><u>12</u></td> </tr> <tr> <td><u>$1.2 < S_a(0.2) \leq 1.3$</u></td> <td><u>3</u></td> <td><u>8</u></td> <td><u>12</u></td> <td><u>5</u></td> <td><u>12</u></td> </tr> <tr> <td><u>$1.3 < S_a(0.2) \leq 1.35$</u></td> <td><u>4</u></td> <td><u>8</u></td> <td><u>12</u></td> <td><u>5</u></td> <td><u>13</u></td> </tr> <tr> <td><u>$1.35 < S_a(0.2) \leq 1.8$</u></td> <td><u>4</u></td> <td><u>8</u></td> <td><u>13</u></td> <td><u>5</u></td> <td><u>13</u></td> </tr> </tbody> </table> <p>Notes to Table 9.23.11.4.: <u>(1) See Note A-9.23.13.2.(1)(a)(i).</u></p>				<u>$S_a(0.2)$</u>	<u>Minimum Number of Nails on Each Side of Doubled Top Plate Splice</u>					<u>Light Construction</u>			<u>Heavy Construction⁽¹⁾</u>		<u>0</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>1</u>	<u>$0.70 < S_a(0.2) \leq 0.80$</u>	<u>2</u>	<u>5</u>	<u>8</u>	<u>3</u>	<u>8</u>	<u>$0.80 < S_a(0.2) \leq 0.90$</u>	<u>2</u>	<u>5</u>	<u>8</u>	<u>4</u>	<u>8</u>	<u>$0.90 < S_a(0.2) \leq 1.0$</u>	<u>3</u>	<u>3</u>	<u>10</u>	<u>4</u>	<u>10</u>	<u>$1.0 < S_a(0.2) \leq 1.1$</u>	<u>3</u>	<u>7</u>	<u>11</u>	<u>5</u>	<u>11</u>	<u>$1.1 < S_a(0.2) \leq 1.2$</u>	<u>3</u>	<u>7</u>	<u>11</u>	<u>5</u>	<u>12</u>	<u>$1.2 < S_a(0.2) \leq 1.3$</u>	<u>3</u>	<u>8</u>	<u>12</u>	<u>5</u>	<u>12</u>	<u>$1.3 < S_a(0.2) \leq 1.35$</u>	<u>4</u>	<u>8</u>	<u>12</u>	<u>5</u>	<u>13</u>	<u>$1.35 < S_a(0.2) \leq 1.8$</u>	<u>4</u>	<u>8</u>	<u>13</u>	<u>5</u>	<u>13</u>	Inserted new Sentence (5).
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9.23.13.2. Requirements for High Wind and Seismic Forces 1) Except as provided in Article 9.23.13.1., this Article applies in locations where <ol style="list-style-type: none"> a) the seismic spectral response acceleration, $S_a(0.2)$, is <ol style="list-style-type: none"> i) not more than 1.10 and the lowest exterior frame wall supports not more than 1 floor in <i>buildings</i> of heavy construction which are defined as having tile roofs or concrete topping on floors, or ii) not more than 1.20 and the lowest exterior frame wall supports not more than 2 floors in other types of construction, and b) the 1-in-50 hourly wind pressure is less than 1.20 kPa. 		9.23.13.2. Requirements for High Wind and Seismic Forces 1) Except as provided in Article 9.23.13.1., this Article applies in locations where <ol style="list-style-type: none"> a) the seismic spectral response acceleration, $S_a(0.2)$, is greater than 0.70 but not more than 1.8 and <ol style="list-style-type: none"> i) not more than 1.10 and the lowest exterior frame wall supports not more than 1 floor in <i>buildings</i> of heavy construction which are defined as having tile roofs or concrete topping on floors (see Note A- 9.23.13.2.(1)(a)(i)), or ii) not more than 1.20 and the lowest exterior frame wall supports not more than 2 floors in other types of construction, and b) the 1-in-50 hourly wind pressure is less than 1.20 kPa. 																		
9.23.13.3. Requirements for Extreme Wind and Seismic Forces 1) Except as provided in Articles 9.23.13.1. and 9.23.13.2., this Article applies in locations where <ol style="list-style-type: none"> a) the seismic spectral response acceleration, $S_a(0.2)$, is <ol style="list-style-type: none"> i) greater than 1.10 for <i>buildings</i> with tile roofs or concrete topping on floors, ii) greater than 1.20 for other types of construction, iii) greater than 0.70 and the lowest exterior frame wall supports more than 2 floors in <i>buildings</i> of light construction, or iv) greater than 0.70 and the lowest exterior frame wall supports more than 1 floor in <i>buildings</i> of heavy construction, or b) the 1-in-50 hourly wind pressure is equal to or greater than 1.20 kPa. 		9.23.13.3. Requirements for Extreme Wind and Seismic Forces 1) Except as provided in Articles 9.23.13.1. and 9.23.13.2., this Article applies in locations where <ol style="list-style-type: none"> a) the seismic spectral response acceleration, $S_a(0.2)$, is <ol style="list-style-type: none"> i) greater than 1.10 for buildings with tile roofs or concrete topping on floors 1.8, ii) greater than 1.20 for other types of construction, iii) ii) greater than 0.70 and the lowest exterior frame wall supports more than 2 floors in <i>buildings</i> of light construction, or iv) iii) greater than 0.70 and the lowest exterior frame wall supports more than 1 floor in <i>buildings</i> of heavy construction, or b) the 1-in-50 hourly wind pressure is equal to or greater than 1.20 kPa. 																		
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Floor assembly	Perimeter	2.1																																											
	Exposed cantilevers	3.5																																											
Roof-ceiling assembly	<i>Building</i> – general <u>Separating attached garage from exterior or unconditioned space</u>	6.0																																											
	Separating H heated <u>detached garage from exterior or unconditioned space</u>	6.0																																											
<p>9.25.2.2. Insulation Materials 1) Except as required in Sentence (2), thermal insulation shall conform to the requirements of a) CAN/CGSB-51.25-M, “Thermal Insulation, Phenolic, Faced,” ...</p>	<p>9.25.2.2. Insulation Materials 1) Except as required in Sentence (2), thermal insulation shall conform to the requirements of a) <u>ASTM C 726, “Mineral Wool Roof Insulation Board,”</u> a)b) CAN/CGSB-51.25-M, “Thermal Insulation, Phenolic, Faced,” ... ***EXISTING CLAUSES RENUMBERED***</p>																																												
<p>9.25.2.3. Installation of Thermal Insulation 6) Where insulation is exposed to the weather and subject to mechanical damage, it shall be protected with not less than a) 6 mm asbestos-cement board,</p>	<p>9.25.2.3. Installation of Thermal Insulation 6) Where insulation is exposed to the weather and subject to mechanical damage, it shall be protected with not less than a) 6 mm asbestos-cement board,</p>	Removed asbestos.																																											

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b) 6 mm preservative-treated plywood, or c) 12 mm cement parging on wire lath applied to the exposed face and edge.	b) 6 mm preservative-treated plywood, or c) 12 mm cement parging on wire lath applied to the exposed face and edge.	
9.25.2.4. Installation of Loose-Fill Insulation 2) Except where there is no attic space above the insulation, where loose-fill insulation is installed in an unconfined sloped space, such as an attic space over a sloped ceiling, the supporting slope shall not be more than a) 4.5 in 12 for mineral fibre or cellulose fibre insulation, and b) 2.5 in 12 for other types of insulation.	9.25.2.4. Installation of Loose-Fill Insulation 2) Except where there is no attic space above the insulation, w here loose-fill insulation is installed in an unconfined sloped space, such as an attic space over a sloped ceiling, the supporting slope shall not be more than a) 4.5 in 12 for mineral fibre or cellulose fibre insulation, and b) 2.5 in 12 for other types of insulation.	
9.25.3.1. Required Barrier to Air Leakage 2) Where the air barrier protection consists of a material with a water vapour permeance less than the maximum permitted for Type 2 <i>vapour barriers</i> in Sentence 9.25.4.2.(3), it shall be installed in a location where the temperature will not be below the dew point of the interior air when the exterior temperature is 10°C above the 1% January design temperature.	9.25.3.1. Required Barrier to Air Leakage 2) Where the air barrier protection consists of a material with a water vapour permeance less than the maximum permitted for Type 2 vapour barriers in Sentence 9.25.4.2.(3), it shall be installed in a location where the temperature will not be below the dew point of the interior air when the exterior temperature is 10°C above the 1% January design temperature.	Deleted Sentence (2).
9.25.4.2. Vapour Barrier Materials 6) Where <i>foamed plastic</i> insulation functions as the <i>vapour barrier</i> , it shall be sufficiently thick so as to meet the requirement of Sentence (1).	9.25.4.2. Vapour Barrier Materials 6) Where foamed plastic <u>foamed plastic</u> insulation functions as the <i>vapour barrier</i> , it shall be sufficiently thick so as to meet the requirement of Sentence (1).	“Foamed plastic” is no longer a defined term.
9.25.5.1. General N/A	9.25.5.1. General 4) Where a material has a water vapour permeance not less than 30 ng/(Pa·s·m²) and a thermal resistance not less than 0.7 (m²·K)/W and the heating degree days of the building location are less than 6000, the assembly need not comply with Sentence (1).	
N/A	9.26.1.1. Definitions <u>1) For the purpose of this Section, the term “roof” shall mean sloped or near-horizontal assemblies that protect the spaces beneath them, including platforms that effectively serve as roofs with respect to the accumulation or drainage of precipitation. (See Note A-9.26.1.1.(1).)</u> <u>2) For the purpose of this Section, the term “roofing” shall mean the primary covering for roofs.</u>	Inserted new Article 9.26.1.1.
9.26.1.1. Purpose of Roofing 1) Roofs shall be protected with roofing, including flashing, installed to shed rain effectively and prevent water due to ice damming from entering the roof.	9.26.1.1. Purpose of Roofing 9.26.1.2. Purpose of Roofing Required Protection 1) Roofs shall be protected with roofing, including flashing, installed <u>so as to shed rain effectively and prevent water due to ice damming from entering the roof.</u> <u>a) effectively shed water.</u>	Renumbered Article.

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<p>2) For the purpose of Sentence (1), roofs shall include platforms that effectively serve as roofs with respect to the accumulation or drainage of precipitation. (See Appendix A.)</p>	<p><u>b) prevent the ingress of water and moisture into <i>building assemblies and occupied space, and</i></u> <u>c) minimize the ingress of water due to ice damming into <i>building assemblies.</i></u> 2) For the purpose of Sentence (1), roofs shall include platforms that effectively serve as roofs with respect to the accumulation or drainage of precipitation. (See Appendix A.) <u>Compliance with Sentence (1) shall be demonstrated by conforming to</u> <u>a) the remainder of this Section, or</u> <u>b) Part 5.</u></p>	
<p>9.26.1.2. Alternate Installation Methods</p>	<p>9.26.1.2. 9.26.1.3. Alternative Installation Methods</p>	Renumbered Article.
<p>9.26.2.1. Material Standards</p> <p>1) Roofing materials shall conform to</p> <ul style="list-style-type: none"> a) CAN/CGSB-37.4-M, “Fibrated, Cutback Asphalt, Lap Cement for Asphalt Roofing,” b) CAN/CGSB-37.5-M, “Cutback Asphalt Plastic, Cement,” c) CAN/CGSB-37.8-M, “Asphalt, Cutback, Filled, for Roof Coating,” d) CGSB 37-GP-9Ma, “Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing,” e) CGSB 37-GP-21M, “Tar, Cutback, Fibrated, for Roof Coating,” f) CAN/CGSB-37.50-M, “Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing,” g) CGSB 37-GP-52M, “Roofing and Waterproofing Membrane, Sheet Applied, Elastomeric,” h) CAN/CGSB-37.54, “Polyvinyl Chloride Roofing and Waterproofing Membrane,” i) CGSB 37-GP-56M, “Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing,” j) CGSB 41-GP-6M, “Sheets, Thermosetting Polyester Plastics, Glass Fiber Reinforced,” k) CAN/CGSB-51.32-M, “Sheathing, Membrane, Breather Type,” l) CSA A123.1/A123.5, “Asphalt Shingles Made From Organic Felt and Surfaced with Mineral Granules/Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules,” m) CAN/CSA-A123.2, “Asphalt-Coated Roofing Sheets,” n) CSA A123.3, “Asphalt Saturated Organic Roofing Felt,” o) CAN/CSA-A123.4, “Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems,” p) CSA A123.17, “Asphalt Glass Felt Used in Roofing and Waterproofing,” 	<p>9.26.2.1. Material Standards</p> <p>1) Roofing materials shall conform to</p> <ul style="list-style-type: none"> a) CAN/CGSB-37.4-M, “Fibrated, Cutback Asphalt, Lap Cement for Asphalt Roofing,” b) CAN/CGSB-37.5-M, “Cutback Asphalt Plastic, Cement,” c) CAN/CGSB-37.8-M, “Asphalt, Cutback, Filled, for Roof Coating,” d) CGSB 37-GP-9Ma, “Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing,” e) CGSB 37-GP-21M, “Tar, Cutback, Fibrated, for Roof Coating,” f) CAN/CGSB-37.50-M, “Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing,” g) CGSB 37-GP-52M, “Roofing and Waterproofing Membrane, Sheet Applied, Elastomeric,” h) CAN/CGSB-37.54, “Polyvinyl Chloride Roofing and Waterproofing Membrane,” i) CGSB 37-GP-56M, “Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing,” j) CGSB 41-GP-6M, “Sheets, Thermosetting Polyester Plastics, Glass Fiber Reinforced,” k) CAN/CGSB-51.32-M, “Sheathing, Membrane, Breather Type,” l) CSA A123.1/A123.5, “Asphalt Shingles Made From Organic Felt and Surfaced with Mineral Granules/Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules,” m) CAN/CSA-A123.2, “Asphalt-Coated Roofing Sheets,” n) CSA A123.3, “Asphalt Saturated Organic Roofing Felt,” o) CAN/CSA-A123.4, “Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems,” p) CSA A123.17, “Asphalt Glass Felt Used in Roofing and Waterproofing,” 	

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q) CAN/CSA-A220 Series, "Concrete Roof Tiles," r) CSA O118.1, "Western Red Cedar Shakes and Shingles," s) CSA O118.2, "Eastern White Cedar Shingles," or t) CSA O118.3, "Northern Pine Tapersawn Shakes."	<p> q) CAN/CSA-A220 Series, "Concrete Roof Tiles," r) CSA O118.1, "Western Red Cedar Shakes and Shingles," s) CSA O118.2, "Eastern White Cedar Shingles," or t) CSA O118.3, "Northern Pine Tapersawn Shakes." </p> <p> 1) Where materials used for the preparation of the substrate for roofing are covered in the scope of a standard listed in Table 9.26.2.1.-A, they shall conform to that standard. </p> <p style="text-align: center;"> Table 9.26.2.1.-A Materials for Preparation of the Substrate for Roofing Forming Part of Sentence 9.26.2.1.(1) </p> <table border="1"> <thead> <tr> <th>Type of Material</th> <th>Standards</th> </tr> </thead> <tbody> <tr> <td>Sheathing membranes</td> <td>CAN/CGSB-51.32-M, "Sheathing, Membrane, Breather Type"</td> </tr> <tr> <td>Primers</td> <td>CGSB 37-GP-9Ma, "Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing"</td> </tr> </tbody> </table> <p> 2) Where roofing materials are covered in the scope of a standard listed in Table 9.26.2.1.-B, they shall conform to that standard. </p> <p style="text-align: center;"> Table 9.26.2.1.-B Roofing Materials Forming Part of Sentence 9.26.2.1.(2) </p> <table border="1"> <thead> <tr> <th>Types of Roof Covering</th> <th>Standards</th> </tr> </thead> <tbody> <tr> <td rowspan="7">Built-up roofing (BUR)</td> <td>ASTM D 3019, "Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered"⁽¹⁾</td> </tr> <tr> <td>ASTM D 4479/D 4479M, "Asphalt Roof Coatings – Asbestos-Free"</td> </tr> <tr> <td>CGSB 37-GP-56M, "Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing"</td> </tr> <tr> <td>CAN/CGSB-37.50-M, "Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing"</td> </tr> <tr> <td>CAN/CSA-A123.2, "Asphalt-Coated Roofing Sheets"</td> </tr> <tr> <td>CSA A123.3, "Asphalt Saturated Organic Roofing Felt"</td> </tr> <tr> <td>CAN/CSA-A123.4, "Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems"</td> </tr> <tr> <td>CSA A123.17, "Asphalt Glass Felt Used in Roofing and Waterproofing"</td> </tr> </tbody> </table>	Type of Material	Standards	Sheathing membranes	CAN/CGSB-51.32-M, "Sheathing, Membrane, Breather Type"	Primers	CGSB 37-GP-9Ma, "Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing"	Types of Roof Covering	Standards	Built-up roofing (BUR)	ASTM D 3019, "Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered"⁽¹⁾	ASTM D 4479/D 4479M, "Asphalt Roof Coatings – Asbestos-Free"	CGSB 37-GP-56M, "Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing"	CAN/CGSB-37.50-M, "Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing"	CAN/CSA-A123.2, "Asphalt-Coated Roofing Sheets"	CSA A123.3, "Asphalt Saturated Organic Roofing Felt"	CAN/CSA-A123.4, "Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems"	CSA A123.17, "Asphalt Glass Felt Used in Roofing and Waterproofing"	
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	<p><u>Single-ply membranes</u></p> <p><u>Shingles, shakes, tiles, panels</u></p> <p><u>Eave protection</u></p> <p><u>Flashing</u></p>	<p>CAN/CGSB-37.54, "Polyvinyl Chloride Roofing and Waterproofing Membrane"</p> <p>CAN/CGSB-37.58-M, "Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing"</p> <p>ASTM D 4637/D 4637M, "EPDM Sheet Used In Single-Ply Roof Membrane"</p> <p>ASTM D 4811/D 4811M, "Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing"</p> <p>ASTM D 6878/D 6878M, "Thermoplastic Polyolefin Based Sheet Roofing"</p> <p>CSA A123.1/A123.5, "Asphalt Shingles Made From Organic Felt and Surfaced with Mineral Granules/Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules"</p> <p>CAN/CSA-A220 Series, "Concrete Roof Tiles"</p> <p>CSA O118.1, "Western Red Cedar Shakes and Shingles"</p> <p>CSA O118.2, "Eastern White Cedar Shingles"</p> <p>CSA O118.3, "Northern Pine Tapersawn Shakes"</p> <p>CSA A123.22, "Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection"</p> <p>ASTM D 4811/D 4811M, "Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing"</p> <p>Notes to Table 9.26.2.1.-B: (1) For the purpose of this Subsection, ASTM D 3019 shall only apply to the non-fibered and non-asbestos-fibered types (I and III) of asphalt roll roofing.</p>	
N/A	9.26.2.2. Installation of Materials	<p>1) Materials listed in Tables 9.26.2.1.-A and 9.26.2.1.-B shall be installed in conformance with the manufacturer's written instructions. (See Sentence 1.5.1.2.(1) of Division A.)</p>	Inserted new Article 9.26.2.2.
9.26.2.2. Nails	9.26.2.2. 9.26.2.3. Nails		Renumbered Article.
9.26.2.3. Staples	9.26.2.3. 9.26.2.4. Staples		Renumbered Article.
9.26.3.1. Slope	9.26.3.1. Slope		Removed asbestos.

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Table 9.26.3.1. Roofing Types and Slope Limits Forming Part of Sentence 9.26.3.1.(1)			Table 9.26.3.1. Roofing Types and Slope Limits Forming Part of Sentence 9.26.3.1.(1)			
Type of Roofing	Minimum Slope	Maximum Slope	Type of Roofing	Minimum Slope	Maximum Slope	
Asbestos-Cement Corrugated Sheets	1 in 4	no limit	Asbestos-Cement Corrugated Sheets	1 in 4	no limit	
...	
9.26.4.9. Roof Penetrations 4) Flashing for a pipe or duct penetrating a roof shall be <ul style="list-style-type: none"> a) lead sheet with a mass of not less than 25 kg/m², b) copper sheet with a mass of not less than 3 kg/m², c) aluminum sheet with a mass of not less than 1.5 kg/m², d) alloyed zinc sheet with a mass of not less than 2.5 kg/m², or e) other flashing acceptable to the <i>authority having jurisdiction</i>. 5) ...			9.26.4.9. Roof Penetrations 4) Flashing for a pipe or duct penetrating a roof shall be <ul style="list-style-type: none"> a) lead sheet with a mass of not less than 25 kg/m², b) copper sheet with a mass of not less than 3 kg/m², c) aluminum sheet with a mass of not less than 1.5 kg/m², d) alloyed zinc sheet with a mass of not less than 2.5 kg/m², or e) other flashing acceptable to the authority having jurisdiction. 5) ...			Deleted Sentence (4).
9.27.1.1. General N/A			9.27.1.1. General 5) Where an exterior insulation finish system is installed as cladding on wood-frame, masonry, cold-formed steel stud or cast-in-place concrete walls exposed to precipitation, the cladding assembly shall comply with <ul style="list-style-type: none"> a) Subsections 9.25.5., 9.27.2. to 9.27.4., and 9.27.13., or b) Part 5. (See Note A-9.27.1.1.(5).) 56) ...			Inserted new Sentence (5).
9.27.2.2. Minimum Protection from Precipitation Ingress (See Appendix A.) 1) Except as provided in Sentence (2), a cladding assembly is deemed to have a capillary break between the cladding and the backing assembly, where <ul style="list-style-type: none"> a) there is a drained and vented air space not less than 10 mm deep behind the cladding, over the full height and width of the wall (see also Article 9.27.5.3.), b) an open drainage material, not less than 10 mm thick and with a cross-sectional area that is not less than 80% open, is installed between the cladding and the backing, over the full height and width of the wall, 			9.27.2.2. Minimum Protection from Precipitation Ingress (See Appendix A.) 1) Except as provided in Sentence (2), a cladding assembly is deemed to have a capillary break between the cladding and the backing assembly, where <ul style="list-style-type: none"> a) there is a drained and vented air space not less than 10 mm deep behind the cladding, over the full height and width of the wall (see also Article 9.27.5.3.), b) an open drainage material, not less than 10 mm thick and with a cross-sectional area that is not less than 80% open, is installed between the cladding and the backing, over the full height and width of the wall, 			

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<p>c) the cladding is loosely fastened to the backing and behind each cladding component there is a clear air space that is</p> <ul style="list-style-type: none"> i) continuous for the full width of the component, ii) not less than 10 mm deep at the bottom of the component, and iii) not less than 6 mm deep over not less than 90 mm for every 230 mm of exposed height of the component, or <p>d) the wall is a masonry <i>cavity wall</i> or the cladding is masonry veneer constructed according to Section 9.20.</p>	<p>c) the cladding is loosely fastened to the backing and behind each cladding component there is a clear air space that is</p> <ul style="list-style-type: none"> i) continuous for the full width of the component, ii) not less than 10 mm deep at the bottom of the component, and iii) not less than 6 mm deep over not less than 90 mm for every 230 mm of exposed height of the component, or <p>d) the wall is a masonry <i>cavity wall</i> or the cladding is masonry veneer constructed according to Section 9.20, <u>or</u></p> <p>e) <u>the cladding conforms to Subsection 9.27.13.</u></p>	
<p>9.27.3.1. Elements of the Second Plane of Protection</p> <p>2) The inner boundary of the drainage plane shall comply with Articles 9.27.3.2. to 9.27.3.6.</p>	<p>9.27.3.1. Elements of the Second Plane of Protection</p> <p>2) <u>Except for cladding systems conforming to Subsection 9.27.13.,</u> the inner boundary of the drainage plane shall comply with Articles 9.27.3.2. to 9.27.3.6.</p>	
<p>9.27.5.1. Attachment</p> <p>5) Where asbestos-cement shingles are applied to sheathing that is not suitable for attaching the shingles, the shingles are permitted to be fastened to a wood lath not less than 89 mm by 9.5 mm thick securely nailed to the framing.</p> <p>6) Lath referred to in Sentence (5) shall be applied so that it overlaps the preceding shingle course by not less than 20 mm.</p>	<p>9.27.5.1. Attachment</p> <p>5) Where asbestos-cement shingles are applied to sheathing that is not suitable for attaching the shingles, the shingles are permitted to be fastened to a wood lath not less than 89 mm by 9.5 mm thick securely nailed to the framing.</p> <p>6) Lath referred to in Sentence (5) shall be applied so that it overlaps the preceding shingle course by not less than 20 mm.</p>	Removed asbestos.
<p>9.27.8.1. Material Standards</p> <p>1) Plywood cladding shall be exterior type conforming to</p> <ul style="list-style-type: none"> a) CSA O115-M, “Hardwood and Decorative Plywood,” b) CSA O121, “Douglas Fir Plywood,” c) CSA O151, “Canadian Softwood Plywood,” or d) CSA O153-M, “Poplar Plywood.” 	<p>9.27.8.1. Material Standards</p> <p>1) Plywood cladding shall be exterior type conforming to</p> <ul style="list-style-type: none"> a) CSA O115-M, <u>ANSI/HPVA HP-1</u>, “Hardwood and Decorative Plywood,” b) CSA O121, “Douglas Fir Plywood,” c) CSA O151, “Canadian Softwood Plywood,” or d) CSA O153-M, “Poplar Plywood.” 	
N/A	<p><u>9.27.13. Exterior Insulation Finish Systems</u></p> <p><u>9.27.13.1. Application</u></p> <p><u>1) Except as provided in Sentence (2), this Subsection applies to exterior insulation finish systems (EIFS) that</u></p> <ul style="list-style-type: none"> <u>a) are covered in the scope of CAN/ULC-S716.1, “Exterior Insulation and Finish Systems (EIFS) - Materials and Systems,” and</u> <u>b) have a geometrically defined drainage cavity with a minimum cavity depth of 10 mm and an open area equal to not less than 13% of the area of a full-size EIFS panel.</u> <p><u>(See Note A-9.27.13.1.(1).)</u></p>	Inserted new Subsection 9.27.13.

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	<p>2) EIFS that are not covered by Sentence (1) shall comply with Part 5.</p> <p>9.27.13.2. Materials 1) The materials used in EIFS shall conform to CAN/ULC-S716.1, “Exterior Insulation and Finish Systems (EIFS) - Materials and Systems.” 2) The substrate on which the EIFS is installed shall a) be compatible with that particular system (see Note A-9.27.13.2.(2)(a)), and b) comply with the structural requirements for sheathing materials stated in Section 9.23.</p> <p>9.27.13.3. Design and Installation 1) The design and installation of EIFS on the substrate described in Sentence 9.27.13.2.(2) shall comply with a) CAN/ULC-S716.2, “Exterior Insulation and Finish Systems (EIFS) - Installation of EIFS Components and Water Resistive Barrier,” and b) CAN/ULC-S716.3, “Exterior Insulation and Finish System (EIFS) – Design Application.”</p>	
<p>9.28.6. Stucco Application (See also Alternative Method in Article 9.28.6.6.)</p>	<p>9.28.6. Stucco Application (See also Alternative Method in Article 9.28.6.6.)</p>	
<p>9.28.6.6. Alternative Method 1) Stucco shall be applied in at least 2 coats to provide a total thickness of not less than 19 mm measured from the face of the sheathing paper to the face of the second coat where lath is used. 2) The second coat shall be continuous across the entire surface of the first coat and have no gaps or voids. 3) When the finish coat is other than stone dash, the base shall be dampened but not saturated with water before the finish coat is applied. 4) When a stone dash finish is used, the stone shall be partially embedded in the second coat before the second coat starts to set or stiffen. 5) Accessories used with stucco shall be in grounds of 19 mm when the total thickness of the stucco is required to be at least 19 mm. 6) The base coat and the finish coat shall be maintained at a temperature of not less than 5°C during the application and for not less than 48 h afterwards.</p>	<p>9.28.6.6. Alternative Method 1) Stucco shall be applied in at least 2 coats to provide a total thickness of not less than 19 mm measured from the face of the sheathing paper to the face of the second coat where lath is used. 2) The second coat shall be continuous across the entire surface of the first coat and have no gaps or voids. 3) When the finish coat is other than stone dash, the base shall be dampened but not saturated with water before the finish coat is applied. 4) When a stone dash finish is used, the stone shall be partially embedded in the second coat before the second coat starts to set or stiffen. 5) Accessories used with stucco shall be in grounds of 19 mm when the total thickness of the stucco is required to be at least 19 mm. 6) The base coat and the finish coat shall be maintained at a temperature of not less than 5°C during the application and for not less than 48 h afterwards.</p>	Deleted Article 9.28.6.6.
<p>9.29.5.2. Materials 1) Gypsum products shall conform to a) CAN/CSA-A82.27-M, “Gypsum Board,”</p>	<p>9.29.5.2. Materials 1) Gypsum products shall conform to a) CAN/CSA-A82.27-M, “Gypsum Board,”</p>	

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b) ASTM C 1178/C 1178M, "Coated Glass Mat Water-Resistant Gypsum Backing Panel," or c) ASTM C 1396/C 1396M, "Gypsum Board."	b)a) ASTM C 1178/C 1178M, "Coated Glass Mat Water-Resistant Gypsum Backing Panel," or e)b) ASTM C 1396/C 1396M, "Gypsum Board," <u>except that the flame-spread rating of gypsum board shall be determined in accordance with CAN/ULC-S102, "Test for Surface Burning Characteristics of Building Materials and Assemblies."</u>	
9.30.2.2. Materials and Thickness 1) Panel-type underlay shall be not less than 6 mm thick and shall conform to a) ANSI A208.1, "Particleboard," b) CAN/CGSB-11.3-M, "Hardboard," c) CSA O115-M, "Hardwood and Decorative Plywood," d) CSA O121, "Douglas Fir Plywood," e) CSA O151, "Canadian Softwood Plywood," f) CSA O153-M, "Poplar Plywood," or g) CSA O437.0, "OSB and Waferboard."	9.30.2.2. Materials and Thickness 1) Panel-type underlay shall be not less than 6 mm thick and shall conform to a) ANSI A208.1, "Particleboard," b) CAN/CGSB-11.3-M, "Hardboard," c) CSA O115-M ANSI/HPVA HP-1, "Hardwood and Decorative Plywood," d) CSA O121, "Douglas Fir Plywood," e) CSA O151, "Canadian Softwood Plywood," f) CSA O153- M , "Poplar Plywood," or g) CSA O437.0, "OSB and Waferboard."	
9.30.5.1. Materials 1) Resilient flooring used on concrete slabs supported on ground shall consist of asphalt, rubber, vinyl-asbestos, unbacked vinyl or vinyl with an inorganic type backing.	9.30.5.1. Materials 1) Resilient flooring used on concrete slabs supported on ground shall consist of asphalt, rubber, vinyl-asbestos , unbacked vinyl or vinyl with an inorganic type backing.	Removed asbestos.
9.31.2.4. Safety Glass 1) Glass used in shower and bathtub enclosures shall be laminated or tempered safety glass conforming to CAN/CGSB-12.1-M, "Tempered or Laminated Safety Glass."	9.31.2.4. Safety Glass 1) Glass used in shower and bathtub enclosures shall be laminated or tempered safety glass conforming to CAN/CGSB-12.1-M, "Tempered or Laminated Safety Glass." <u>comply with Sentence 9.6.1.4.(6).</u>	
N/A	<u>9.32.1.3. Venting of Laundry-Drying Equipment</u> <u>1) Exhaust ducts or vents connected to laundry-drying equipment shall discharge directly to the outdoors.</u> <u>2) Exhaust ducts connected to laundry-drying equipment shall</u> <u>a) be independent of other exhaust ducts,</u> <u>b) be accessible for cleaning,</u> <u>c) be constructed of a smooth, corrosion-resistant material,</u> <u>d) not include screens, and</u> <u>e) not be secured with fasteners protruding into the duct.</u> <u>(See Note A-9.32.1.3.(2).)</u> <u>3) Where collective venting of multiple installations of laundry-drying equipment is used, the ventilation system shall</u>	Inserted new Article 9.32.1.3. based on Sentence 9.32.3.11.(13) of the ABC 2014.

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	<ul style="list-style-type: none"> a) <u>be connected to a common <i>exhaust duct</i> that is vented by one central exhaust fan and incorporates one central lint trap.</u> b) <u>include an interlock to activate the central exhaust fan when laundry-drying equipment is in use, and</u> c) <u>where required by Article 9.32.3.8., be provided with make-up air.</u> 	
9.32.1.3. Roughed-in Plumbing	9.32.1.3. 9.32.1.4. Roughed-in Plumbing	Renumbered Article.
9.32.3.5. Ventilation Systems Not Used in Conjunction with Forced Air Heating Systems 10) Except as provided in Sentence (11), outdoor air shall be distributed by a system of trunk and branch <i>supply ducts</i> , from the outdoor air supply fan required by Sentence (2) to <ul style="list-style-type: none"> a) each bedroom, b) any <i>storey</i>, including <i>basements</i> and heated crawl spaces, without a bedroom, and c) the principal living area. 	9.32.3.5. Ventilation Systems Not Used in Conjunction with Forced Air Heating Systems 10) Except as provided in Sentence (11), outdoor air shall be distributed by a system of trunk and branch <i>supply ducts</i> , from the outdoor air supply fan required by Sentence (2) to <ul style="list-style-type: none"> a) each bedroom, b) any <i>storey</i>, including <i>basements</i> and heated crawl spaces, without a bedroom, and c) <u>if there is no <i>storey</i> without a bedroom, to</u> the principal living area. 	
9.32.3.11. Ducts 13) Clothes dryer vents <ul style="list-style-type: none"> a) in a <i>residential occupancy</i> shall be ducted to the outside, b) are not permitted to have a screen, c) except in single family <i>dwelling units</i> and houses with <i>secondary suites</i>, shall be installed with suitable access doors for cleaning purposes, d) shall not be secured with screws protruding into the vent, e) shall not be connected to any other exhaust system, <i>gas vent</i> or <i>chimney</i>, and f) if collectively vented, shall <ul style="list-style-type: none"> i) comply with Sentence 6.2.3.8.(8), or ii) be provided with a sheet metal duct, and a continuously operating fan positioned downstream from all dryer-vent outlets to positively exhaust all moisture and lint. 	9.32.3.11. Ducts 13) Clothes dryer vents <ul style="list-style-type: none"> a) in a <i>residential occupancy</i> shall be ducted to the outside, b) are not permitted to have a screen, c) except in single family <i>dwelling units</i> and houses with <i>secondary suites</i>, shall be installed with suitable access doors for cleaning purposes, d) shall not be secured with screws protruding into the vent, e) shall not be connected to any other exhaust system, <i>gas vent</i> or <i>chimney</i>, and f) if collectively vented, shall <ul style="list-style-type: none"> i) comply with Sentence 6.2.3.8.(8), or ii) be provided with a sheet metal duct, and a continuously operating fan positioned downstream from all dryer-vent outlets to positively exhaust all moisture and lint. 	Moved to Article 9.32.1.3.
9.32.3.13. Outdoor Intake and Exhaust Openings 13) An outdoor air intake opening 0.008 m ² or less in area in a return air system shall not be dampered.	9.32.3.13. Outdoor Intake and Exhaust Openings 13) An outdoor air intake opening 0.008 m² or less in area in a return air system shall not be dampered.	Deleted Sentences (13) to (15).

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<p>14) An outdoor air intake opening more than 0.008 m² in area but less than 0.033 m² in area in a return air system shall be equipped with a manually operated 50% damper.</p> <p>15) An outdoor air intake opening not less than 0.033 m² in area in a return air system shall be equipped with an automatic damper.</p>	<p>14) An outdoor air intake opening more than 0.008 m² in area but less than 0.033 m² in area in a return air system shall be equipped with a manually operated 50% damper.</p> <p>15) An outdoor air intake opening not less than 0.033 m² in area in a return air system shall be equipped with an automatic damper.</p>	
<p>9.33.3.1. Indoor Design Temperatures</p> <p>2) Winter design temperature shall be determined in conformance with Subsection 1.1.3.</p>	<p>9.33.3.1. Indoor Design Temperatures</p> <p>2) Winter design temperature shall be determined in conformance with Subsection 1.1.3.</p>	Deleted Sentence (2).
<p>9.33.4.8. Asbestos</p> <p>1) Asbestos shall not be used in air distribution systems or equipment in a form or in a location where asbestos fibres could enter the air supply or return systems.</p>	<p>9.33.4.8. Asbestos</p> <p>1) Asbestos shall not be used in air distribution systems or equipment in a form or in a location where asbestos fibres could enter the air supply or return systems.</p>	Removed asbestos.
<p>9.33.6.2. Materials in Air Duct Systems</p> <p>1) Except as provided in Sentences (2) to (6) and in Article 3.6.4.3., all ducts, duct connectors, associated fittings and <i>plenums</i> used in air duct systems shall be constructed of steel, aluminum alloy, copper, clay, asbestos-cement or similar <i>noncombustible</i> material.</p>	<p>9.33.6.2. Materials in Air Duct Systems</p> <p>1) Except as provided in Sentences (2) to (6) and in Article 3.6.4.3., all ducts, duct connectors, associated fittings and <i>plenums</i> used in air duct systems shall be constructed of steel, aluminum alloy, copper, clay, asbestos-cement or similar <i>noncombustible</i> material.</p>	Removed asbestos.
<p>9.33.6.4. Coverings, Linings, Adhesives and Insulation</p> <p>5) Except as provided in Sentence (6), <i>foamed plastic</i> insulation shall not be used as part of an air duct or for insulating an air duct.</p> <p>6) <i>Foamed plastic</i> insulation is permitted to be used in a ceiling space that acts as a return air <i>plenum</i> provided the <i>foamed plastic</i> insulation is protected from exposure to the <i>plenum</i> in accordance with Sentence 3.1.5.12.(2).</p>	<p>9.33.6.4. Coverings, Linings, Adhesives and Insulation</p> <p>5) Except as provided in Sentence (6), foamed plastic foamed plastic insulation shall not be used as part of an air duct or for insulating an air duct.</p> <p>6) Foamed plastic insulation conforming to Article 9.25.2.2. is permitted to be used to insulate a galvanized steel, stainless steel or aluminum air duct, provided</p> <p>a) the foamed plastic insulation applied to supply ductwork is not less than 3 m from the furnace bonnet,</p> <p>b) the temperature within the ductwork where the insulation is installed is not greater than 50°C,</p> <p>c) duct joints are taped with a product conforming to Sentence 9.33.6.3.(1),</p> <p>d) return air plenums are separated from the foamed plastic insulation, and</p> <p>e) the foamed plastic insulation is protected</p> <p>i) by one of the interior finishes described in Subsections 9.29.4. to 9.29.9.,</p> <p>ii) provided the building does not contain a Group C major occupancy, by sheet metal that is mechanically fastened to the supporting assembly independent of the insulation, is not less than 0.38 mm thick and has a melting point of 650°C or more, or</p>	“Foamed plastic” is no longer a defined term. Inserted new Sentence (6).

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	<p>iii) by any thermal barrier that meets the requirements of Clause 3.1.5.15.(2)(e).</p> <p>6)7) Foamed plasticFoamed plastic insulation is permitted to be used in a ceiling space that acts as a return air <i>plenum</i> provided the foamed plasticfoamed plastic insulation is protected from exposure to the <i>plenum</i> in accordance with Sentence 3.1.5.12.(2).</p> <p>***EXISTING SENTENCES RENUMBERED***</p>	
<p>9.33.6.11. Warm-Air Supply Outlets</p> <p>10) A crawl space shall not be used as a warm air <i>plenum</i>.</p>	<p>9.33.6.11. Warm-Air Supply Outlets</p> <p>10) A crawl space shall not be used as a warm air <i>plenum</i>.</p>	Deleted Sentence (10).
<p>9.33.6.13. Return-Air System</p> <p>8) If more than one <i>furnace</i> system serves a <i>dwelling unit</i>, the return-air system for each <i>furnace</i> shall be independent.</p>	<p>9.33.6.13. Return-Air System</p> <p>8) If more than one <i>furnace</i> system serves a <i>dwelling unit</i>, the return-air system for each <i>furnace</i> shall be independent.</p>	Deleted Sentence (8).
<p>9.34.1.6. Public Corridors and Stairs</p> <p>1) Except as provided in the electrical regulations made pursuant to the Safety Codes Act for <i>residential occupancies</i>, <i>public corridors</i> and public stairs shall have at least one duplex receptacle for each 10 m length or fraction thereof.</p>	<p>9.34.1.6. Public Corridors and Stairs</p> <p>1) Except as provided in the electrical regulations made pursuant to the Safety Codes Act for <i>residential occupancies</i>, <i>public corridors</i> and public stairs shall have at least one duplex receptacle for each 10 m length or fraction thereof.</p>	Deleted Article 9.34.1.6.
<p>9.35.3.1. Foundation Required</p> <p>N/A</p>	<p>9.35.3.1. Foundation Required</p> <p>2) Detached garages of less than 55 m² floor area and not more than 1 storey in height that are not of masonry or masonry veneer construction are permitted to be supported on</p> <p>a) wood mud sills, or</p> <p>b) a 100 mm thick concrete floor slab.</p>	Inserted new Sentence (2).
<p>9.35.3.3. Small Garages</p> <p>1) Detached garages of less than 55 m² <i>floor area</i> and not more than 1 <i>storey</i> in height are permitted to be supported on wood mud sills or a 100 mm thick concrete floor slab provided the garage is not of masonry or masonry veneer construction.</p>	<p>9.35.3.3. Small GaragesDrainage</p> <p>1) Detached garages of less than 55 m² <i>floor area</i> and not more than 1 <i>storey</i> in height that are permitted to be supported on wood mud sills or a 100 mm thick concrete floor slab provided the garage is not of masonry or masonry veneer construction need not conform with the foundation drainage requirements stated in Section 9.14., where the finished ground level is at or near the elevation of the garage's floor and where the ground slopes away from the building.</p>	
<p>9.35.4.4. Thermal Insulation</p> <p>1) The walls and ceilings of an attached garage shall be provided with thermal insulation that conforms to Subsection 9.25.2. (See also Sentence 9.25.2.1.(3).)</p>	<p>9.35.4.4. Thermal Insulation</p>	

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	1) Except as required by Section 9.36., the walls and ceilings of an attached garage shall be provided with thermal insulation that conforming to Subsection 9.25.2. (See also Sentence 9.25.2.1.(3).)	
9.36.1.3. Compliance and Application 5) Except as required by Sentence 9.36.2.1.(8), buildings or portions of buildings that are not required to be conditioned spaces are exempted from the requirements of this Section. (See Appendix A.)	9.36.1.3. Compliance and Application 5) Except as required by Sentence 9.36.2.1.(8), b buildings or portions of buildings that are not required to be conditioned spaces are exempted from the requirements of this Section. (See Appendix <u>Note A-9.36.1.3.(5).</u>) (See also <u>Article 9.25.2.1.</u>)	
9.36.2.1. Scope and Application 2) The requirements of this Subsection also apply to components of a building envelope assembly that separate a conditioned space from an adjoining storage garage, even if the storage garage is intended to be heated. (See Appendix A and A-9.36.1.3.(5) in Appendix A.) 8) The requirements of this Subsection also apply to components of a building envelope assembly that separate a heated or unheated attached garage from unconditioned space or the exterior air, where the attached garage serves a) not more than one dwelling unit, or b) a house with a secondary suite.	9.36.2.1. Scope and Application 2) The requirements of this Subsection also apply to components of a building envelope assembly that separate a conditioned space from an adjoining storage garage, even if the storage garage is intended to be heated. (See Appendix <u>Notes A-9.36.2.1.(2)</u> and A-9.36.1.3.(5) in Appendix A.) (See also <u>Article 9.25.2.1.</u>) 8) The requirements of this Subsection also apply to components of a building envelope assembly that separate a heated or unheated attached garage from unconditioned space or the exterior air, where the attached garage serves a) not more than one dwelling unit, or b) a house with a secondary suite.	Deleted Sentence (8).
9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies 4) The effective thermal resistance of opaque building assemblies shall be determined from a) calculations conforming to Article 9.36.2.4., or b) laboratory tests performed in accordance with ASTM C 1363, "Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus," using an indoor air temperature of 21±1°C and an outdoor air temperature of -35±1°C.	9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies 4) The effective thermal resistance of opaque building assemblies shall be determined from a) calculations conforming to Article 9.36.2.4., or b) laboratory tests performed in accordance with ASTM C 1363, "Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus," using an indoor air temperature of 21±1°C and an outdoor air temperature of -35 <u>18</u> ±1°C.	
9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground 1) Except as provided in Sentence (2) and Article 9.36.2.5., the effective thermal resistance of building assemblies that are below-grade or in contact with the ground shall be not less than that shown for the applicable heating-degree day category in a) Table 9.36.2.8.A., where the ventilation system does not include heat-recovery equipment, or	9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground 1) Except as provided in Sentence (2) and Article 9.36.2.5., the effective thermal resistance of building assemblies that are below- <u>grade</u> or in contact with the ground shall be not less than that shown for the applicable heating-degree day category in a) Table 9.36.2.8. A. , where the ventilation system does not include heat-recovery equipment, or	"Grade" was made a defined term.

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<p>b) Table 9.36.2.8.B., where the ventilation system includes heat-recovery equipment conforming to Article 9.36.3.9. (See Appendix A.) ...</p> <p>10) Junctions between below-grade assemblies shall be protected from the ingress of <i>soil</i> gas in conformance with Subsection 9.25.3.</p>	<p>b) Table 9.36.2.8.-B., where the ventilation system includes heat-recovery equipment conforming to Article 9.36.3.9. (See Appendix Note A-9.36.2.8.(1).) ...</p> <p>10) Junctions between below-<i>grade</i> assemblies shall be protected from the ingress of <i>soil</i> gas in conformance with Subsection 9.25.3.</p>	
<p>9.36.2.9. Airtightness 1) The leakage of air into and out of <i>conditioned spaces</i> shall be controlled by constructing</p> <p>a) a continuous <i>air barrier system</i> in accordance with Sentences (2) to (6), Subsection 9.25.3. and Article 9.36.2.10.,</p> <p>b) a continuous <i>air barrier system</i> in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a <i>building</i> assembly having an air leakage rate not greater than 0.20 L/(s·m²) (Type A4) when tested in accordance with CAN/ULC-S742, “Air Barrier Assemblies – Specification,” at a pressure differential of 75 Pa, or</p> <p>c) a continuous <i>air barrier system</i> in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a <i>building</i> assembly having an air leakage rate not greater than 0.20 L/(s·m²) when tested in accordance with ASTM E 2357, “Determining Air Leakage of Air Barrier Assemblies.” (See Appendix A.)</p>	<p>9.36.2.9. Airtightness 1) The leakage of air into and out of <i>conditioned spaces</i> shall be controlled by constructing</p> <p>a) a continuous <i>air barrier system</i> in accordance with Sentences (2) to (6), Subsection 9.25.3. and Article 9.36.2.10.,</p> <p>b) a continuous <i>air barrier system</i> in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a <i>building</i> assembly having an air leakage rate not greater than 0.20 L/(s·m²) (Type A4) when tested in accordance with CAN/ULC-S742, “Air Barrier Assemblies – Specification,” at a pressure differential of 75 Pa, or</p> <p>c) a continuous <i>air barrier system</i> in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a <i>building</i> assembly having an air leakage rate not greater than 0.20 L/(s·m²) when tested in accordance with ASTM E 2357, “Determining Air Leakage of Air Barrier Assemblies,” <u>where</u></p> <p>i) <u>the building will not be subjected to sustained wind loads calculated based on a 1-in-50 hourly wind pressure that exceed 0.65 kPa, and</u></p> <p>ii) <u>the air barrier assembly is installed on the warm side of the thermal insulation of the opaque building assembly.</u> (See Appendix Note A-9.36.2.9.(1).)</p>	
<p>9.36.3.6. Temperature Controls 3) Space temperature control devices used to control unitary electric resistance space heaters shall conform to CAN/CSA-C828, “Thermostats Used with Individual Room Electric Space Heating Devices.”</p>	<p>9.36.3.6. Temperature Controls 3) Space temperature control devices used to control unitary electric resistance space heaters <i>space heaters</i> shall conform to CAN/CSA-C828, “Thermostats Used with Individual Room Electric Space Heating Devices.”</p>	<p>“Space heaters” was made a defined term.</p>
<p>9.36.4.2. Equipment Efficiency</p> <p style="text-align: center;">Table 9.36.4.2. Service Water Heating Equipment Performance Standards Forming Part of Sentences 9.36.4.2.(1) and (2)</p>	<p>9.36.4.2. Equipment Efficiency</p> <p style="text-align: center;">Table 9.36.4.2. Service Water Heating Equipment Performance Standards Forming Part of Sentences 9.36.4.2.(1) and (2)</p>	<p>Corrected error in formula.</p>

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Component	Input ⁽¹⁾	Standard	Performance Requirement ⁽²⁾	Component	Input ⁽¹⁾	Standard	Performance Requirement ⁽²⁾	
Storage-Type Service Water Heaters				Storage-Type Service Water Heaters				
...	
Gas-fired ⁽³⁾	< 22 kW	CAN/CSA-P.3	EF ≥ 0.67 – 0.0005V	Gas-fired ⁽³⁾	< 22 kW	CAN/CSA-P.3	EF ≥ 0.67 – 0.0005V	
	≥ 22 kW	ANSI Z21.10.3/CSA 4.3	E _t ≥ 80% and standby loss ≤ rated input ⁽⁴⁾ /(800 + 16.57·√V)		≥ 22 kW	ANSI Z21.10.3/CSA 4.3	E _t ≥ 80% and standby loss ≤ rated input ⁽⁴⁾ /(800 + 16.57·√V)	
Oil-fired	≤ 30.5 kW	CAN/CSA-B211	EF ≥ 0.59 – 0.0005V	Oil-fired	≤ 30.5 kW	CAN/CSA-B211	EF ≥ 0.59 – 0.0005V	
	> 30.5 kW	ANSI Z21.10.3/CSA 4.3 and DOE 10 CFR, Part 431, Subpart G	E _t ≥ 78% and standby loss ≤ rated input ⁽⁴⁾ /(800 + 16.57·√V)		> 30.5 kW	ANSI Z21.10.3/CSA 4.3 and DOE 10 CFR, Part 431, Subpart G	E _t ≥ 78% and standby loss ≤ rated input ⁽⁴⁾ /(800 + 16.57·√V)	
...	
9.36.5.6. Building Envelope Calculations 4) The energy model calculations shall account for the effect that each assembly in contact with the ground has on below-grade heat transfer due to <ol style="list-style-type: none"> the geometry of the <i>foundation</i>, <i>soil</i> conditions (see A-1.1.3.1.(1) in Appendix A), and the configuration of the insulation. 				9.36.5.6. Building Envelope Calculations 4) The energy model calculations shall account for the effect that each assembly in contact with the ground has on below- grade <i>grade</i> heat transfer due to <ol style="list-style-type: none"> the geometry of the <i>foundation</i>, <i>soil</i> conditions (see Note A-1.1.3.1.(1) in Appendix A), and the configuration of the insulation. 				
9.36.5.14. Modeling Building Envelope of Reference House 3) The effective thermal resistance and overall thermal transmittance values, as applicable, used in the energy model calculations for the reference house shall be determined for the applicable heating degree-day zone in accordance with <ol style="list-style-type: none"> Table 9.36.2.6.A. for walls, ceilings below attics, roof assemblies and <i>rim joists</i>, Table 9.36.2.7.A. for doors, and Table 9.36.2.8.A. for below-grade walls and slabs-on-ground. 				9.36.5.14. Modeling Building Envelope of Reference House 3) The effective thermal resistance and overall thermal transmittance values, as applicable, used in the energy model calculations for the reference house shall be determined for the applicable heating degree-day zone in accordance with <ol style="list-style-type: none"> Table 9.36.2.6.-A- for walls, ceilings below attics, roof assemblies and <i>rim joists</i>, Table 9.36.2.7.-A- for doors, and Table 9.36.2.8.-A- for below- grade<i>grade</i> walls and slabs-on-ground. 				“Grade” was made a defined term.