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Proposed Change 1332

Code Reference(s):	**NBC20 Div.B Table 5.9.1.1. (first printing)**
Subject:	Environmental Separation Table 5.9.1.1.
Title:	Replacement and Addition of Standards in Table 5.9.1.1.
Description:	This proposed change replaces the standard CAN/CGSB-41.24-95, "Rigid Vinyl Siding, Soffits and Fascia," by ASTM D3679-17, "Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Siding," and ASTM D4477-16, "Standard Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit," in Table 5.9.1.1., and adds the standards ASTM D7254-17, "Standard Specification for Polypropylene (PP) Siding," and ASTM D7793-17, "Standard Specification for Insulated Vinyl Siding," to the Table.

This change could potentially affect the following topic areas:

- ☐ Division A
- ☐ Division C
- ☐ Building operations
- ☑ Small Buildings
- ☐ Fire Protection
- ☐ Accessibility
- ☑ Building Envelope
- ☐ Heating, Ventilating and Air Conditioning
- ☑ Division B
- ☑ Design and Construction
- ☑ Housing
- ☑ Large Buildings
- ☐ Occupant safety in use
- ☐ Structural Requirements
- ☐ Energy Efficiency
- ☐ Plumbing
- ☐ Construction and Demolition Sites

Problem

The currently referenced standard CAN/CGSB-41.24-95, “Rigid Vinyl Siding, Soffits and Fascia,”

- is outdated and was withdrawn in March 2012, and
- does not reflect the products available on the market and used in construction.

In addition, the NBC does not address polypropylene (PP) siding and insulated vinyl siding (IVS) though they have been used for more than ten years in practice. In the absence of standards, a variety of materials have been used with inconsistent applications and results.

Justification

After reviewing the standards ASTM D3679-17, "Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Siding," and ASTM D4477-16, "Standard Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit," and comparing them to CAN/CGSB-41.24-95, the following was determined:

- CAN/CGSB-41.24-95
    - was withdrawn in 2012,
    - has not been updated since 1995,
    - refers to materials that are not currently available on the market, and
    - is not currently used by the industry or in practice.
- ASTM D3679-17
    - was developed through consensus,
    - reflects materials that are currently available on the market,
    - has been recognized and used by the industry and in practice, and
    - does not address soffits, necessitating the addition of a reference to ASTM D4477-16.
- Replacing CAN/CGSB-41.24-95 by ASTM D3679-17 and ASTM D4477-16 in Table 5.9.1.1.
    - will reduce the risk of unacceptable performance and the liability of professionals, as it will allow the use of materials that are available on the market and tested for performance, and
    - will lessen the workloads of contractors, manufacturers, designers, specification writers and building officials in determining Code compliance.

Furthermore, a review of ASTM D7254-17, "Standard Specification for Polypropylene (PP) Siding," and ASTM D7793-17, "Standard Specification for Insulated Vinyl Siding," found that these two standards offer acceptable minimum levels of performance, thus making them acceptable for reference in Table 5.9.1.1.

The four ASTM standards (ASTM D3679-17, ASTM D4477-16, ASTM D7254-17 and ASTM D7793-17) that would be added to Table 5.9.1.1 do not specifically include cold-weather testing of the materials they cover. In a review of currently available standards for these materials, none were found to include cold-weather testing. However, the currently available standards do provide other testing requirements that indicate expected performance criteria. Therefore, the Standing Committee on Environmental Separation concluded that referencing current industry standards for these materials would be better than not referencing any standards at all.

PROPOSED CHANGE

Table [5.9.1.1.] 5.9.1.1.
Standards Applicable to Environmental Separators and Assemblies Exposed to the Exterior
Forming Part of Sentence 5.9.1.1.(1)

Issuing Agency	Document Number	Title of Document
ANSI	A135.6	Engineered Wood Siding
ASME	B18.6.1	Wood Screws (Inch Series)
ASTM	A123/A123M	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM	A153/A153M	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM	A653/A653M	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM	C4	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile
ASTM	C73	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)
ASTM	C126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
ASTM	C212	Standard Specification for Structural Clay Facing Tile
ASTM	C412M	Standard Specification for Concrete Drain Tile
ASTM	C444M	Standard Specification for Perforated Concrete Pipe
ASTM	C553	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM	C612	Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM	C700	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM	C726	Standard Specification for Mineral Wool Roof Insulation Board

Issuing Agency	Document Number	Title of Document
ASTM	C834 (1)	Standard Specification for Latex Sealants
ASTM	C840	Standard Specification for Application and Finishing of Gypsum Board
ASTM	C920 (1)	Standard Specification for Elastomeric Joint Sealants
ASTM	C991	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings
ASTM	C1002	Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM	C1177/C1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
ASTM	C1178/C1178M	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
ASTM	C1184 (1)	Standard Specification for Structural Silicone Sealants
ASTM	C1280	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing
ASTM	C1311 (1)	Standard Specification for Solvent Release Sealants
ASTM	C1330 (1)	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
ASTM	C1396/C1396M (2)	Standard Specification for Gypsum Board
ASTM	C1658/C1658M (3)	Standard Specification for Glass Mat Gypsum Panels
ASTM	D1227/D1227M	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
ASTM	D2178/D2178M	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
ASTM	D3019/D3019M (4)	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered
ASTM	D3679 (5)	Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Siding
ASTM	D4477 (6)	Standard Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit
ASTM	D4479/D4479M	Standard Specification for Asphalt Roof Coatings – Asbestos-Free

Issuing Agency	Document Number	Title of Document
ASTM	D4637/D4637M	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane
ASTM	D4811/D4811M	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing
ASTM	D6878/D6878M	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
ASTM	D7254 (7)	Standard Specification for Polypropylene (PP) Siding
ASTM	D7793 (8)	Standard Specification for Insulated Vinyl Siding
ASTM	E2190	Standard Specification for Insulating Glass Unit Performance and Evaluation
BNQ	BNQ 3624-115	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage
CGSB	CAN/CGSB-11.3-M	Hardboard
CGSB	CAN/CGSB-12.1	Safety Glazing
CGSB	CAN/CGSB-12.2-M	Flat, Clear Sheet Glass
CGSB	CAN/CGSB-12.3-M	Flat, Clear Float Glass
CGSB	CAN/CGSB-12.4-M	Heat Absorbing Glass
CGSB	CAN/CGSB-12.8	Insulating glass units
CGSB	CAN/CGSB-12.9	Spandrel glass
CGSB	37-GP-9Ma	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing
CGSB	CAN/CGSB-37.50-M	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing
CGSB	CAN/CGSB-37.54	Polyvinyl Chloride Roofing and Waterproofing Membrane
CGSB	CAN/CGSB-37.58-M	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing
~~CGSB~~	~~CAN/CGSB-41.24~~	~~Rigid Vinyl Siding, Soffits and Fascia~~
CGSB	CAN/CGSB-51.32-M	Sheathing, Membrane, Breather Type
CGSB	CAN/CGSB-51.33-M	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction

Issuing Agency	Document Number	Title of Document
CGSB	CAN/CGSB-51.34-M	Vapour Barrier, Polyethylene Sheet for Use in Building Construction
CGSB	CAN/CGSB-93.1-M	Sheet, Aluminum Alloy, Prefinished, Residential
CGSB	CAN/CGSB-93.2-M	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use
CSA	A23.1	Concrete materials and methods of concrete construction
CSA	CAN/CSA-A82	Fired masonry brick made from clay or shale
CSA	CAN3-A93-M	Natural Airflow Ventilators for Buildings
CSA	CAN/CSA-A123.2	Asphalt-Coated Roofing Sheets
CSA	A123.3	Asphalt Saturated Organic Roofing Felt
CSA	CAN/CSA-A123.4	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems
CSA	A123.5	Asphalt shingles made from glass felt and surfaced with mineral granules
CSA	CAN/CSA-A123.16	Asphalt-coated glass-base sheets
CSA	A123.17	Asphalt Glass Felt Used in Roofing and Waterproofing
CSA	A123.23	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced
CSA	A123.51	Asphalt shingle application on roof slopes 1:6 and steeper
CSA	A165.1	Concrete block masonry units
CSA	A165.2	Concrete brick masonry units
CSA	A165.3	Prefaced concrete masonry units
CSA	CAN/CSA-A179	Mortar and Grout for Unit Masonry
CSA	CAN/CSA-A220 Series	Concrete Roof Tiles
CSA	CAN/CSA-A371	Masonry Construction for Buildings
CSA	A3001	Cementitious Materials for Use in Concrete
CSA	B182.1	Plastic drain and sewer pipe and pipe fittings
CSA	G40.21	Structural quality steel

Issuing Agency	Document Number	Title of Document
CSA	CAN/CSA-G401	Corrugated steel pipe products
CSA	CAN/CSA-O80 Series	Wood preservation
CSA	O118.1	Western Red Cedar Shakes and Shingles
CSA	O118.2	Eastern White Cedar Shingles
CSA	O121	Douglas fir plywood
CSA	O141	Softwood Lumber
CSA	O151	Canadian softwood plywood
CSA	O153	Poplar plywood
CSA	O325	Construction sheathing
CSA	O437.0	OSB and Waferboard
HPVA	ANSI/HPVA HP-1	American National Standard for Hardwood and Decorative Plywood
ULC	CAN/ULC-S701.1	Standard for Thermal Insulation, Polystyrene Boards
ULC	CAN/ULC-S702.1	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification
ULC	CAN/ULC-S703	Standard for Cellulose Fibre Insulation (CFI) for Buildings
ULC	CAN/ULC-S704.1	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced
ULC	CAN/ULC-S705.1	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification
ULC	CAN/ULC-S705.2	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application
ULC	CAN/ULC-S706.1	Standard for Wood Fibre Insulating Boards for Buildings

Issuing Agency	Document Number	Title of Document
ULC	CAN/ULC-S710.1	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S711.1	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S717.1	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties

Notes to Table [5.9.1.1.] 5.9.1.1.:

(1) See Note A-Table 5.9.1.1.

(2) The *flame-spread rating* of gypsum board shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1396/C1396M.

(3) The *flame-spread rating* of gypsum panels shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1658/C1658M.

(4) For the purpose of compliance with Part 5, ASTM D3019/D3019M shall only apply to the non-fibered and non-asbestos-fibered types of asphalt roll roofing.

(5) The *flame-spread rating* of rigid polyvinyl chloride siding shall be determined in accordance with CAN/ULC-S102.2, in lieu of ASTM E84 as indicated in ASTM D3679.

(6) The *flame-spread rating* of rigid polyvinyl chloride soffits shall be determined in accordance with CAN/ULC-S102.2, in lieu of ASTM E84 as indicated in ASTM D4477.

(7) The *flame-spread rating* of polypropylene siding shall be determined in accordance with CAN/ULC-S102.2, in lieu of ASTM E84 as indicated in ASTM D7254.

(8) The *flame-spread rating* of insulated vinyl siding shall be determined in accordance with CAN/ULC-S102.2, in lieu of ASTM E84 as indicated in ASTM D7793.

Impact analysis

No additional costs are expected to be incurred as a result of replacing CAN/CGSB-41.24-95 by ASTM D3679-17 and ASTM D4477-16 in Table 5.9.1.1. The benefit of this replacement is that standards referenced are relevant and current, were developed through consensus, and represent today's products.

No additional costs are expected to be incurred as a result of adding ASTM D7254-17 and ASTM D7793-17 to Table 5.9.1.1., as materials covered in the standards have been commonly used in Canada for the last 10 years.

This proposed change would simply add references to ASTM standards that are currently in use within these product categories and would provide more material options.

Enforcement implications

Compliance with the new standards can be enforced without additional resources.

Who is affected

Designers, specifiers, manufacturers, contractors, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

N/A