Technical Evaluation Report™ - Canada

A Duly Authenticated Report from an Approved Agency

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Owens Corning® Lumber Marine Grade Decking® - Canada

Trade Secret Report Holder:

Owens Corning

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CSI Designations:

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

Section: 06 73 00 - Composite Decking

Section: 06 73 13 - Composite Structural Decking

1 Innovative Product Evaluated[1]

1.1 Owens Corning Lumber Marine Grade Decking

2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1**, available colors are shown in **Figure 2**, and it is as described in **Table 1**.

Figure 1. Owens Corning Lumber Marine Grade Decking

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Table 1. Owens Corning Lumber Marine Grade Decking - Product Information

Marine Grade Decking Profile ID	Description	Material	Standard Length	Nominal Width	Nominal Thickness	Available Colors[1]
1" x 6"	Wood-Free Composite Lumber Decking	High-Density Polyethylene (HDPE) Reinforced with Advantex® Glass Fiber	3,650 mm, 4,880 mm, 6,100 mm (12', 16', 20')	140 mm (5½")	26 mm (1.02")	See **Figure 2**
1" x 8"				184 mm (7¼")	26 mm (1.02")	
2" x 6"				140 mm (5½")	34 mm (1.35")	
Joists[3] (Owens Corning® Lumber Structural Framing)			Reinforced polymeric lumber for joist applications (edgewise orientation) available in the following sizes in (mm): 38 x 140, 38 x 190, 38 x 235, and 38 x 285 *Nominal Sizes:* 2 x 6, 2 x 8, 2 x 10, and 2 x 12			
Posts[4] (Owens Corning® Lumber Structural Posts)			Chopped fiberglass reinforced PVC extrusion with an acrylic surface coating: ≥ 15% of overall total weight is fibrous glass < 2.5% by weight of organic surface binder			

1. Refer to **Error! Reference source not found.** for additional details.
2. Custom lengths up to 8.54 m (28') are available.
3. See Report Number 2405-112 for material properties.
4. See Report Number 2307-07 for material properties.

Figure 2. Owens Corning Lumber Marine Grade Decking – Available Colors

2.2 As needed, review material properties for design in **Section 4** and the regulatory evaluation in **Section 5**.

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3 Applicable Codes and Standards[2]

3.1 *Codes*

3.1.1 *NBC — 15, 20, 25: National Building Code of Canada*

3.1.2 *NECB — 17, 20, 25: National Energy Code of Canada for Buildings*

3.1.3 *O Reg. 163/24: Ontario Building Code (OBC)[3]*

3.2 *Standards and Referenced Documents*

3.2.1 *ASTM D1037: Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials*

3.2.2 *ASTM D1761: Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials*

3.2.3 *ASTM D2394: Standard Test Methods for Simulated Service Testing of Wood and Wood-Based Finish Flooring*

3.2.4 *ASTM D6109: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastic Lumber and Related Products*

3.2.5 *ASTM D7032: Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, Guards, and Handrails*

3.2.6 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*

4 Tabulated Properties Generated from Nationally Recognized Standards

4.1 *Structural Applications*

4.1.1 As an alternative to wood decking, flexural design properties of Owens Corning Lumber Marine Grade Decking are determined in accordance with the provisions for proprietary structural products in CSA O86 Section 17.3.

4.1.2 Unless otherwise noted, adjustment of the design stresses for duration of load shall be in accordance with the applicable code.

4.1.3 The design provisions for wood construction in compliance with the NBC using LSD shall be in accordance with CSA O86.

4.1.4 Owens Corning Lumber Marine Grade Decking was evaluated in accordance with ASTM D7032.

4.1.4.1 Flexural properties in dry and ambient conditions, as defined in ASTM D7032: 20° C ± 2.22° C and 50 ± 5% Relative Humidity (RH) are provided in **Table 2**.

Table 2. Owens Corning Lumber Marine Grade Decking Flatwise Orientation Flexural Limit States Design Values[1]

Owens Corning Lumber Marine Grade Decking Profile ID	f_b (MPa)	EI (kN-mm^2)	MOE (MPa)	Nominal I_x (cm^4)	Nominal S_x (cm^3)
1" x 6"	23	710,000	3,515	20.2	15.6
1" x 8"	26	900,000	3,375	26.7	20.6
2" x 6"	21	1,390,000	2,960	46.9	27.4

Imperial Units: 1 MPa = 145.038-psi, 1 cm^4 = 0.024 in^4, 1 kN-mm^2 = 0.35 lb-in^2

1. Flexural properties based on a temperature factor of 1.0.

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4.1.5 The effects of temperature (-28.9° C and 51.7° C) and freeze-thaw cycles on Owens Corning Lumber Marine Grade Decking were evaluated.

4.1.5.1 For design considerations, reductions in bending strength and stiffness shall be considered when Owens Corning Lumber Marine Grade Decking products will experience sustained exposure to elevated temperatures. Temperature factors are presented in **Table 3**.

Table 3. Temperature Factors

Property	T ≤ 23° C	23° C ≤ T ≤ 30° C	30° C ≤ T ≤ 37° C	37° C ≤ T ≤ 45° C	45° C ≤ T ≤ 52° C
f_b	1.00	0.90	0.81	0.71	0.62
MOE	1.00	0.95	0.90	0.85	0.81

4.1.6 The maximum allowable total load at various deflection points per joist spacing is provided in **Table 4**.

Table 4. Maximum Total Uniform Load (kPa) at Various Deflection Points[1,2]

Owens Corning Lumber Marine Grade Decking Profile ID	Span (Joist Spacing)								
	305 mm (12") o.c.			406 mm (16") o.c.			610 mm (24") o.c.		
	l/180	l/240	l/360	l/180	l/240	l/360	l/180	l/240	l/360
1" x 6"	75	56	38	32	24	16	9.3	6.9	4.8
1" x 8"	75	56	38	32	24	16	9.3	6.9	4.8
2" x 6"	150	113	75	63	47	32	19	14	9.3

Imperial Units: 1 in = 25.4 mm, 1 psf = 47.9 Pa

1. Deflections were based on the simple span formula and a temperature factor of 1.0.
2. Loads may be increased where decking is continuous over two or more spans. See CSA O86 Section 6.5.10 and Table 6.18 of CSA O86.

4.1.7 *Stair Tread Performance:*

4.1.7.1 Owens Corning Lumber Marine Grade Decking was evaluated for its performance as stair treads in accordance with ASTM D7032 Section 5.3.2.

4.1.7.2 See **Table 5** for assessment of stair tread performance.

Table 5. Stair Tread Performance

Owens Corning Lumber Marine Grade Decking Profile ID	Span (mm)	Deflection[1] (mm)	Pass/Fail Criteria[1]	Support[2]
1" x 6"	355	<3.18	Pass	Maximum 355 mm span
1" x 8"				
2" x 6"				

Imperial Units: 1 in = 25.4 mm

1. Evaluated in accordance with ASTM D7032. Deflection at 1.58 kN (1.33 kN + 18% adjustment) (354 lb [300 lb + 18% adjustment]). The deflection at the adjusted load shall not be greater than 3.18 mm.
2. Minimum concentrated load of 4.61 kN (3.34 kN + 38% adjustment) (1,037 lb [750 lb + 38% adjustment]).

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4.1.8 *Creep Resistance:*

4.1.8.1 Owens Corning Lumber Marine Grade Decking was evaluated for creep recovery in accordance with ASTM D7032 Section 5.4.

4.1.8.2 See **Table 6** for assessment of creep recovery.

Table 6. Creep Recovery

Owens Corning Lumber Marine Grade Decking Profile ID	Span (mm)	Average Percent Recovery (%)	Pass/Fail[1] Criteria
1" x 6"	610	> 75%	Pass
1" x 8"			
2" x 6"			

Imperial Units: 1 in = 25.4 mm

1. Based on requirements specified in ASTM D7032 Section 5.4.

4.2 *Mechanical Fasteners*

4.2.1 Withdrawal loads for nails and screws installed in Owens Corning Lumber Marine Grade Decking shall be in accordance with CSA O86 for sawn lumber.

4.2.2 Fasteners connecting Owens Corning Lumber Marine Grade Decking to the supporting members must be at least 63 mm ($2^1/_2$") long in accordance with CSA O86 Section 6.5.10.2.1.

4.2.2.1 Head pull-through resistance of Owens Corning Lumber Marine Grade Decking installed with #10 x $2^1/_2$" CAMO Premium 316 Stainless Steel deck screws, #10 x $2^3/_4$" Starborn® CAP-TOR® xd 305 Stainless Steel deck screws, and #9 x $2^1/_2$" Deckmate® composite screws were evaluated.

4.2.2.2 Allowable pull-through values are shown in **Table 7**.

Table 7. Reference Factored Head Pull-Through Design Values (N)

Owens Corning Lumber Marine Grade Decking Profile	Fastener		
	CAMO Premium 316 Stainless Steel Deck Screw, #10 x $2^1/_2$"	Starborn CAP-TOR xd 305 Stainless Steel Composite/PVC Screw, #10 x $2^3/_4$"	Deckmate Composite Screw,[1] #9 x $2^1/_2$"
$^1/_2$" x 6" or $^1/_2$" x 10"	1,115	535	-
1" x 6" or 1" x 8"	1,170	1,335	1,100
2" x 6"	1,645	1,645	1,100

Imperial Units: 1 N = 0.225 lb, 1 mm = 0.0394 in

1. Average measured head diameter of 0.261" (6.63 mm).

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4.2.2.3 Resistance of fasteners to lateral movement of Owens Corning Lumber Marine Grade Decking installed with composite screws were evaluated.

4.2.2.3.1 Allowable lateral values are presented in **Table 8** for fasteners installed into the wide face of the Owens Corning Lumber Marine Grade Decking profiles.

Table 8. Reference Factored Lateral Resistance Design Values[1] (N) for Fasteners Installed in the Wide Face

Owens Corning Lumber Marine Grade Decking Profile	Loaded Towards Factory Edge		Loaded Towards Cut End	
	CAMO Premium 316 Stainless Steel Deck Screw, #10 x 2 1/2"	Starborn CAP-TOR xd 305 Stainless Steel Composite/PVC Screw, #10 x 2 3/4"	CAMO Premium 316 Stainless Steel Deck Screw, #10 x 2 1/2"	Starborn CAP-TOR xd 305 Stainless Steel Composite/PVC Screw, #10 x 2 3/4"
1/2" x 6" or 1/2" x 10"	2,045	1,380	1,755	1,755
1" x 6" or 1" x 8"	2,800	2,800	2,560	2,490
2" x 6"	3,360	3,715	2,625	3,000

Imperial Units: 1 N = 0.225 lb, 1 mm = 0.0394 in

1. Loads are applicable when listed fasteners are installed minimum 13 mm (1/2") from the edge or end of the deck board. Direction of loading is towards the shortest distance between the fastener and the edge or end of the deck board.

4.2.2.3.2 Allowable lateral values are shown in **Table 9** for fasteners installed into the narrow face (edge) of the Owens Corning Lumber Marine Grade Decking profiles.

Table 9. Reference Factored Lateral Resistance Design Values[1] (N) for Fasteners Installed in the Narrow Face (Edge)

Owens Corning Lumber Marine Grade Decking Profile ID	Loaded Towards Factory Edge		Loaded Towards Cut End	
	CAMO Premium 316 Stainless Steel Deck Screw, #10 x 2 1/2"	Starborn CAP-TOR xd 305 Stainless Steel Composite/PVC Screw, #10 x 2 3/4"	CAMO Premium 316 Stainless Steel Deck Screw, #10 x 2 1/2"	Starborn CAP-TOR xd 305 Stainless Steel Composite/PVC Screw, #10 x 2 3/4"
1" x 6"	4,115	3,135	3,045	2,760
1" x 8"				
2" x 6"				

Imperial Units: 1 N = 0.225 lb, 1 mm = 0.0394 in

1. Loads are applicable when listed fasteners are installed minimum 13 mm (1/2") from the edge or end of the deck board. Direction of loading is towards the shortest distance between the fastener and the edge or end of the deck board.

4.3 *Protection Against Decay*

4.3.1 Owens Corning Lumber Marine Grade Decking contains no wood or cellulosic materials and meets the requirements of the NBC and CSA O86 where protection against biodegradation and decay is required.

4.4 *Protection Against Termites*

4.4.1 Owens Corning Lumber Marine Grade Decking contains no wood or cellulosic materials and meets the requirements of the NBC and CSA O86 where protection against termite attack is required.

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4.5 *Surface-Burning Characteristics*

4.5.1 Owens Corning Lumber Marine Grade Decking was evaluated to assess its surface burning characteristics in accordance with ASTM E84.

4.5.2 The flame spread index is presented in **Table 10**.

Table 10. Surface Burning Characteristics[1]

Product	Flame Spread Index (FSI)
Owens Corning Lumber Marine Grade Decking	< 75

1. Tested in accordance with ASTM E84.

4.6 *Slip Resistance*

4.6.1 Slip resistance of Owens Corning Lumber Marine Grade Decking was evaluated in accordance with ASTM D2394. Results are shown in **Table 11**.

Table 11. Slip Resistance – Coefficient of Friction

Product	Surface	Direction of Test[1]			
		A		B	
		Coefficient of Static Friction, μ_s	Coefficient of Kinetic Friction, μ_k	Coefficient of Static Friction, μ_s	Coefficient of Kinetic Friction, μ_k
Owens Corning Lumber Marine Grade Decking	Dry	0.38	0.23	0.33	0.23
	Wet	0.43	0.26	0.42	0.32

1. Direction of tests are as follows:
   a. Parallel to the direction of manufacture (along the length).
   b. Perpendicular to the direction of manufacture (along the width).

4.7 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.

5 Regulatory Evaluation and Accepted Engineering Practice

5.1 Owens Corning Lumber Marine Grade Decking complies with the following adopted codes and/or accepted engineering practice for the following reasons:

5.1.1 Owens Corning Lumber Marine Grade Decking was tested and/or evaluated for:

5.1.1.1 Flexural property testing at various ambient conditions was conducted in accordance with ASTM D6109 with conditioning in accordance with ASTM D7032

5.1.1.2 Stair tread testing was conducted in accordance with ASTM D7032

5.1.1.3 Creep resistance testing was conducted in accordance with ASTM D7032

5.1.1.4 Head pull through testing was conducted in accordance with ASTM D1761

5.1.1.5 Resistance of fasteners to lateral movement in accordance with ASTM D1037

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5.1.1.6 Surface burning characteristics testing was conducted in accordance with ASTM E84

5.1.1.7 Slip resistance was evaluated in accordance with ASTM D2394

5.2 Any building code, regulation and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this report were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[4] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[5] respectively.

5.3 Testing and related engineering evaluations are defined as intellectual property and/or trade secrets.[6]

5.4 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise that is also its areas of professional engineering competence.[7]

6 Installation

6.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.

6.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.

6.3 *General*

6.3.1 The installation guide[8] detailing the installation process can be found on the Owens Corning website: Owens Corning's Installation Guide, Deck Construction: Structural Framing and Marine Grade Decking.

6.3.2 When installing, all of the raised directional lines on the Owens Corning Lumber Marine Grade Decking products shall be faced in the same direction to ensure a uniform deck appearance.

6.3.3 *Minimum Screw Lengths:*

6.3.3.1 3" long screws for Owens Corning Lumber Marine Grade Decking profiles: 2" x 6"

6.3.3.2 $2^1/_2$" long screws for Owens Corning Lumber Marine Grade Decking profiles: 1" x 6" and 1" x 8"

6.3.3.3 When cutting Owens Corning Lumber Marine Grade Decking products, use a 40T blade for miter saws and a 14 TPI carbide blade for jigsaws.

6.4 *Installation Procedure*

6.4.1 Install a ledger board to the desired structure per building code requirements.

6.4.1.1 For fasteners not specified in building codes, fastener spacing provisions from other approved sources may be permitted for the installation of the ledger board.

6.4.1.2 Ledger board shall be greater than or equal to the joist size.

6.4.2 Assemble 3-ply posts using 2 x 6 Owens Corning Lumber Structural Framing and #10 x 4" (102 mm) screws.

6.4.2.1 Screws shall be staggered and placed 203 mm (8") o.c.

6.4.2.2 Posts shall be anchored to footings in compliance with the applicable building codes.

6.4.3 Maximum allowable post spacing for specific projects may be found by using *Table 2: Max. Post Spacing for Support of Beams at 2 Locations* (see page 5 of the installation guide) or *Table 3: Max. Post Spacing for Support at 3 or more Locations* (see page 5) in the installation guide, or see Report Number 2405-112.

6.4.4 Install drop beams (2-ply or 3-ply) onto the posts per building code requirements and manufacturer instructions.

6.4.4.1 Overhangs up to 0.6 m (2') over the sides of the joists may be permitted.

6.4.4.2 Overhangs are limited to the lesser of 0.6 m (2') or twenty-five percent (25%) of the length of the beam span between posts.

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6.4.5 Install Owens Corning Lumber Structural Framing band joists, comprised of two 2x Owens Corning Lumber Structural Framing, using #10 x 3" (76 mm) composite deck screws.

6.4.5.1 Use *Table 5: Max. Allowed Joist Spans* in the installation guide, or see Report Number 2405-112, to determine spacing and allowable joist span for specific projects.

6.4.5.2 Screws shall be staggered and placed 305 mm (12") o.c.

6.4.5.3 Secure the band joists and subsequent single 2x joists using the appropriate joist hangers and fasteners.

6.4.6 Install blocking between each joist every 102 to 127 mm (4' to 5') using #10 x 3" (76 mm) composite deck screws.

6.4.7 Install front rim joist using #10 x 3" (76mm) composite deck screws.

6.4.8 Install Owens Corning Lumber Marine Grade Decking boards perpendicular to each joist using two #9 x $2^1/_2$" (64 mm) composite deck screws.

6.4.8.1 Minimum end-to-end and side-to-side spacing between each board shall be at least 2 mm ($^1/_{16}$").

6.4.8.1.1 5 mm ($^3/_{16}$") spacing is recommended.

6.5 *Stair Tread*

6.5.1 Minimum of a two span configuration shall be installed when deck boards are used for stair tread applications.

6.5.2 Stringers shall be reinforced with blocking.

7 Substantiating Data

7.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

7.1.1 Flexural testing in accordance with ASTM D6109 per ASTM D7032 with additional conditioning requirements specified in ASTM D7032 Section 4.5 and 4.7

7.1.1.1 Conditioning requirements to assess the effects of the following on the flexural properties of Owens Corning Lumber Marine Grade Decking:

7.1.1.1.1 High temperature 51.67° C (125° F)

7.1.1.1.2 Low temperature -28.89° C (-20° F)

7.1.1.1.3 Freeze/thaw cycles

7.1.2 Creep-recovery in accordance with ASTM D7032

7.1.3 Fastener head pull-through in accordance with ASTM D1761

7.1.4 Surface burning characteristics in accordance with ASTM E84

7.1.5 Slip resistance in accordance with ASTM D2394

7.1.6 Resistance of fasteners to lateral movement in accordance with ASTM D1037

7.2 Information contained herein is the result of testing and/or data analysis by sources that conform to the evaluation requirements of NBC Volume 1 Relationship of the NBC to Standards Development and Conformity Assessment and/or professional engineering regulations. DrJ relies upon accurate data to perform its ISO/IEC 17065 evaluations.

7.3 Where appropriate, DrJ's analysis is based on provisions that have been codified into law through provincial, territorial, or local adoption of codes and standards. The developers of these codes and standards are responsible for the reliability of published content. DrJ's analysis may use code-adopted provisions as a control sample. A control sample versus a test sample establishes a product as being equivalent to that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

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7.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, listings, certified reports, duly authenticated reports from approved agencies, and research reports prepared by approved agencies and/or approved sources provided by the suppliers of products, materials, designs, assemblies and/or methods of construction. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this report, may be dependent upon published design properties by others.

7.5 *Testing and Engineering Analysis*

7.5.1 The strength, rigidity and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.

7.6 Where additional conditions of use and/or code compliance information is required, please search for Owens Corning Lumber Marine Grade Decking on the DrJ Certification website.

8 Findings

8.1 As outlined in **Section 4**, Owens Corning Lumber Marine Grade Decking has performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

8.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, Owens Corning Lumber Marine Grade Decking shall be approved for the following applications:

8.2.1 Use as an alternative to sawn lumber decking material for balconies, porches, decks, stair treads, and other exterior walking surfaces in accordance with NBC and CSA O86.

8.2.2 Owens Corning Lumber Marine Grade Decking is permitted to be used where termite protection is required in accordance with NBC Clause 9.3.2.9.(1)(b).

8.2.3 Owens Corning Lumber Marine Grade Decking is permitted to be used where decay resistance is required in accordance with NBC Sentence 9.3.2.9.(3).

8.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Owens Corning.

8.4 This innovative product has been evaluated in the context of the codes listed in **Section 3** and is compliant with all known provincial, territorial, and local building codes. Where there are known variations in provincial, territorial, or local codes applicable to this report, they are listed here:

8.4.1 No known variations

8.5 NBC Volume 1 Relationship of the NBC to Standards Development and Conformity Assessment:

> **Certification**
>
> Certification is the confirmation by an independent organization that a product, service, or system meets a requirement…Certification bodies publish lists of certified products and companies…Several organizations, including the Canadian Construction Materials Centre (CCMC), offer such evaluation services.
>
> **Evaluation**
>
> An evaluation is a written opinion by an independent professional organization that a product will perform its intended function. An evaluation is very often done to determine the ability of an innovative product, for which no standards exist, to satisfy the intent of the Code requirement...

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8.6 ISO/IEC 17065 accredited third-party certification bodies,[9] including but not limited to, Standards Council of Canada (SCC)[10] and ANSI National Accreditation Board (ANAB),[11] confirm that product certification bodies have the expertise to provide technical evaluation services within their scope of accreditation. All SCC and ANAB product certification bodies meet NBC requirements to offer evaluation services for alternative solutions.[12]

8.6.1 DrJ is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131[13] and employs professional engineers.[14]

8.7 Through ANAB accreditation and the IAF Multilateral Agreements, this report can be used to obtain product approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*." IAF specifically says, "*Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope*."[15]

8.8 Product certification organizations, accredited by the SCC and ANAB, are defined as equivalent evaluation services:

8.8.1 Canada-United States-Mexico Agreement (CUSMA), Article 11.6 Conformity Assessment confirms mutual recognition by stating, "*...each Party shall accord to conformity assessment bodies located in the territory of another Party treatment no less favorable than that it accords to conformity assessment bodies located in its own territory or in the territory of the other Party*."

8.8.2 The SCC National Conformity Assessment Principles states, "*SCC is a member of a number of international organizations developing voluntary conformity assessment agreements that help ensure the international acceptance of Canadian conformity assessment results. Signatories to these agreements (like SCC) recognize each other's accreditations as being equivalent to their own*."[16]

8.9 Building official approval of a licensed professional engineer is performed by verifying the professional engineer and/or their business entity are listed by the engineering regulators of the relevant jurisdiction.

9 Conditions of Use

9.1 As defined in **Section 4**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

9.2 As listed herein, Owens Corning Lumber Marine Grade Decking shall be subject to the following conditions:

9.2.1 Owens Corning Lumber Marine Grade Decking shall be installed with supports spaced no greater than 610 mm (24") o.c.

9.2.2 When used as stair treads, Owens Corning Lumber Marine Grade Decking shall be installed with stringers spaced no greater than 355 mm (14") o.c.

9.2.3 Fasteners used for installation shall be in accordance with the manufacturer and conform to NBC Article 9.23.3.1.

9.2.3.1 Fasteners shall have a corrosion-resistance coating or be manufactured from stainless steel.

9.2.3.2 Two fasteners shall be installed at each joist location.

9.2.4 Owens Corning Lumber Marine Grade Decking shall bear a label on its packaging that indicates compliance with ASTM D7032 and include the allowable load and maximum allowable span in accordance to ASTM D7032.

9.3 Use of Owens Corning Lumber Marine Grade Decking as a component of a fire resistance rated assembly is outside the scope of this report.

9.4 Compatibility of the specified fasteners with other hardware components used in the construction of the deck and the supporting structure are outside the scope of this report.

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9.5 When required by regulation and enforced by the building official, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:

9.5.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

9.5.2 This report and the installation instructions shall be submitted at the time of permit application.

9.5.3 This innovative product has an internal quality control program and a third-party quality assurance program.

9.5.4 At a minimum, this innovative product shall be installed per **Section 6** of this report.

9.5.5 This report shall be reviewed for code compliance by the AHJ in concert with the duties and powers granted to the building official by the provincial regulations governing such duties and powers.

9.5.6 The application of this innovative product in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspections, and any other regulatory requirements that may apply.

9.6 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner).

9.7 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

10 Identification

10.1 Owens Corning Lumber Marine Grade Decking, as listed in **Section 1.1**, is identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

10.2 Additional technical information can be found at www.owenscorning.com/en-us/lumber/products/marine-grade-decking.

11 Review Schedule

11.1 This report is subject to periodic review and revision. For the latest version, visit www.drjcertification.org.

11.2 For information on the status of this report, please contact DrJ Certification.

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Notes

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 Unless otherwise noted, all references in this report are from the 2020 version of the NBC. This alternative solution is also approved for use with the 2010 and 2015 NBC and the standards referenced therein.

3 References in this report to the National Building Code of Canada (NBC) apply to the Ontario Building Code (OBC), unless noted otherwise.

4 Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

5 https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

6 18 U.S. Code § 1831 - Economic espionage - Whoever, intending or knowing that the offense will benefit any foreign government, foreign instrumentality, or foreign agent, knowingly steals, or without authorization appropriates, takes, carries away, or conceals, or by fraud, artifice, or deception obtains a trade secret shall be fined not more than $5,000,000 or imprisoned not more than 15 years, or both. Any organization that commits any offense described shall be fined not more than the greater of $10,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. https://www.law.cornell.edu/uscode/text/18/part-I/chapter-90.

7 ANAB is part of the USMCA and IAF MLA, where the purpose of these agreements are to ensure mutual recognition of accredited certification and validation/verification statements between agreement signatories, and subsequent acceptance of ANAB accredited certification and validation/verification statements by professional engineers based upon having one universal approval process for the timely approval of innovative materials, products, designs, services, assemblies and/or methods of construction.

8 See https://dcpd6wotaa0mb.cloudfront.net/mdms/dms/CSB/10026715/10026715-OC-Lumber-Installation-Guide-for-Residential-Deck-Construction.pdf?v=1723817868000

9 https://anabpd.ansi.org/Accreditation/product-certification/DirectoryListingAccredited?menuID=1&prgID=1

10 https://iaf.nu/en/member-details/?member_id=91

11 https://iaf.nu/en/member-details/?member_id=14

12 NBC Division A Clause A-1.2.1.1.(1)(b) provides information on code compliance via alternative solutions and defines alternative solutions as *"...achiev[ing] at least the minimum level of performance required by Division B."* NBC Division C Section 2.3 includes additional guidance for documentation of alternative solutions.

13 https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?&prgID=1&OrgId=2125&statusID=4

14 Through ANAB accreditation and the IAF MLA, DrJ certification can be used to obtain material, product, design, or method of construction approval in any jurisdiction or country that has IAF MLA Members & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*".

15 https://iaf.nu/en/about-iaf-mla/#:~:text=required%20to%20recognise

16 The National Conformity Assessment Principles states, "*Product regulations and standards may vary from country to country. If these are set arbitrarily, they could be deemed as protectionist. The World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT Agreement) is intended to ensure that technical regulations, standards and conformity assessment procedures of member countries do not create unnecessary obstacles to trade. Under the TBT Agreement, members of the WTO agree to use international standards, including conformity assessment standards and guides, as a basis for their technical requirements*."

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