Evaluation Report CCMC 13429-R
Derby Building Products, LLC's "TandoStone™" and "TandoShake™" Polypropylene Wall Siding

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1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that Derby Building Products, LLC's "TandoStone™" and "TandoShake™" polypropylene wall siding, when used as an exterior siding for buildings of combustible construction in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code (NBC) of Canada 2015:

- Clause 1.2.1.1.(1)(b) of Division A, as an alternative solution that achieves at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the following applicable acceptable solutions:
  - Subsection 9.27.12., Vinyl Siding

This opinion is based on CCMC's evaluation of the technical evidence in Section 4 provided by the Report Holder.

Ruling No. 10-06-243 (13429-R) authorizing the use of this product in Ontario, subject to the terms and conditions contained in the Ruling, was made by the Minister of Municipal Affairs and Housing on 2010-04-12 (revised on 2012-12-20) pursuant to s.29 of the *Building Code Act*, 1992 (see Ruling for terms and conditions). This Ruling is subject to periodic revisions and updates.

2. Description

The wall siding panels and corners are made of injection-molded, press-formed polypropylene and are fastened to the building structure with corrosion-resistant fasteners every 200 mm (8 in.) through pre-punched nailing slots located along the top edge of the panel, which are concealed once the upper panel is installed.

"TandoStone™" and "TandoShake™" have a nominal wall thickness of 2.3 mm (0.09 in.).

The products evaluated that fall under CCMC 13429-R are:

- "TandoStone™" (Stacked Stone, Atlas Stone, Creek Ledgestone, Brick, and Hand-Cut Stone profiles), and
- "TandoShake™" (Rustic Cedar 9, RoughSawn Cedar Single, Dual and Staggered, Hand Split, R&R 4.5, Portsmouth S9 Hand-Split Shake and Scalloped Perfection profiles).

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by "TandoStone™" and "TandoShake™" being used in accordance with the conditions and limitations set out below.

- The siding panels must be installed on furring providing a second line of defence that consists of a continuous, clear, uninterrupted air space of 19 mm outboard of the sheathing membrane.
- The furring must be installed over the sheathing membrane.
- The system requires flashing at appropriate locations in order to drain water to the outside.
- Furring for the attachment of the cladding must be securely nailed to the sheathing or framing, spaced not more than 600 mm o.c., and be not less than 19 mm × 38 mm.
- As per the manufacturer's installation guidelines, 38-mm-diam plastic spacers must be used behind nailing slots that are not aligned with the furring.

4. Technical Evidence

The Report Holder has submitted technical documentation for CCMC's evaluation. Testing was conducted at laboratories recognized by CCMC. The corresponding technical evidence for this product is summarized below.

4.1 Material Requirements

4.1.1 Material Test Results

Table 4.1.1 Material Test Results

Property	Unit	Requirement	Result
Impact resistance	N·m	≥ 3.95	11
Weathering	-	Siding shall be free of any structural changes or visible surface changes such as peeling, chipping, cracking, flaking or pitting	Pass

4.2 Performance Requirements

4.2.1 Performance Test Results

Table 4.2.1 Performance Test Results

Property		Requirement	Result
Deformation (sustained pressure)		No damage observed after a sustained pressure for 1 hour at a maximum pressure of ± 450 Pa (TandoStone™).	Q_{50}[(1)(2)(3)] < 0.45 kPa
		No damage observed after a sustained pressure for 1 hour at a maximum pressure of ± 1000 Pa (TandoShake™).	Q_{50} < 1.00 kPa
Repeated positive and negative pressure test (cyclic pressure)		No damage observed after 2 000 cycles reversing from positive to negative pressures at a maximum of ± 660 Pa (TandoStone™).	Q_{50} < 0.45 kPa
		No damage observed after 2 000 cycles reversing from positive to negative pressures at a maximum of ± 1460 Pa (TandoShake™).	Q_{50} < 1.00 kPa
Safety test (gust loads)		No damage observed after a maximum applied pressure of 980 Pa for 3 seconds (TandoStone™).	Q_{50} < 0.45 kPa
		No damage observed after a maximum applied pressure of 2180 Pa for 3 seconds (TandoShake™).	Q_{50} < 1.00 kPa
Surface burning characteristics[(4)]	**flame spread**	Declare	35
	smoke developed	Declare	600

Notes to Table 4.2.1:

1. Q_{50} represents the 1-in-50 probability of the designated wind speed being exceeded in any given year. Geographical areas and their corresponding reference wind velocity pressures are indexed in the NBC 2015.
2. The table is generally intended for non-post-disaster low-rise buildings that have a height from grade to the uppermost roof of 12 m or less, and are located within a build-up area, no less than 120 m away from the boundary between this area and open terrain, including bodies of water upwind of the building.
3. The table did not take into account the site specific topographic factor Ct, where Ct = 1.0, except for buildings that are constructed on hills or escarpments with a slope defined in Article 4.1.7.4., Topographic Factor, of the NBC 2015. For buildings constructed on hills and escarpments, anticipated wind pressures may be greater.
4. Testing was conducted in accordance with CAN/ULC-S102.2, "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies." A series of three runs were conducted for each test.

Report Holder

Derby Building Products, LLC
1111 NW 165th Street
Miami, FL 33169-5819
USA

Tel.: 844-698-2636
Fax: 877-471-0562
Email: info@derbybp.com
Web site: www.novik.com
www.tandobp.com

Plant(s)

Miami, FL, USA

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