



Evaluation Report CCMC 13260-R

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Gerard Shingle, Granite Ridge, and Guardian Shingle

1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “Gerard Shingle, Granite Ridge, and Guardian Shingle” when used as a roofing system in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code 2005:

- Clause 1.2.1.1.(1)(a), Division A, using the following acceptable solutions from Division B:
 - Subsection 9.23.15. Roof Sheathing
 - Subsection 9.26.5. Eave Protection for Shingles and Shakes
 - Article 9.26.13.1. Thickness (sheet metal roofing)
- Clause 1.2.1.1.(1)(b), 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:
 - Article 9.26.2.1. Material Standards (roofing material)

This opinion is based on CCMC's evaluation of the technical evidence in Section 4.1 provided by the Report Holder.

2. Description

The “Granite Ridge” panel is formed from a 0.42-mm-thick aluminum-zinc alloy steel sheet metal and the “Gerard Shingle and Guardian Shingle” panels are formed from 0.34-mm-thick aluminum-zinc alloy steel sheet metal. The underside of all the panels is finished with a corrosion-resistant coating. The upper surface of the panels is finished with an acrylic resin basecoat onto which mineral aggregates are spread and covered with an acrylic overglaze (see Figure 1).

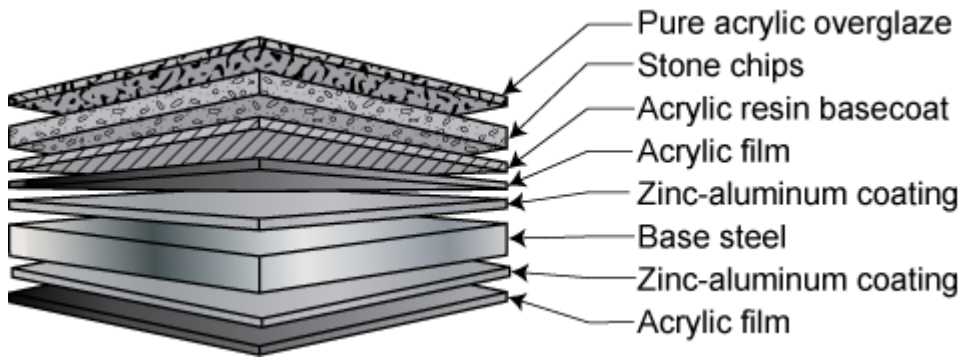


Figure 1. “Gerard Shingle, Granite Ridge, and Guardian Shingle” material layers

The panels are 1 170 mm x 397 mm of which 1 118 mm x 348 mm is exposed. The panels are designed to resemble traditional asphalt roofing products (see Figure 2).

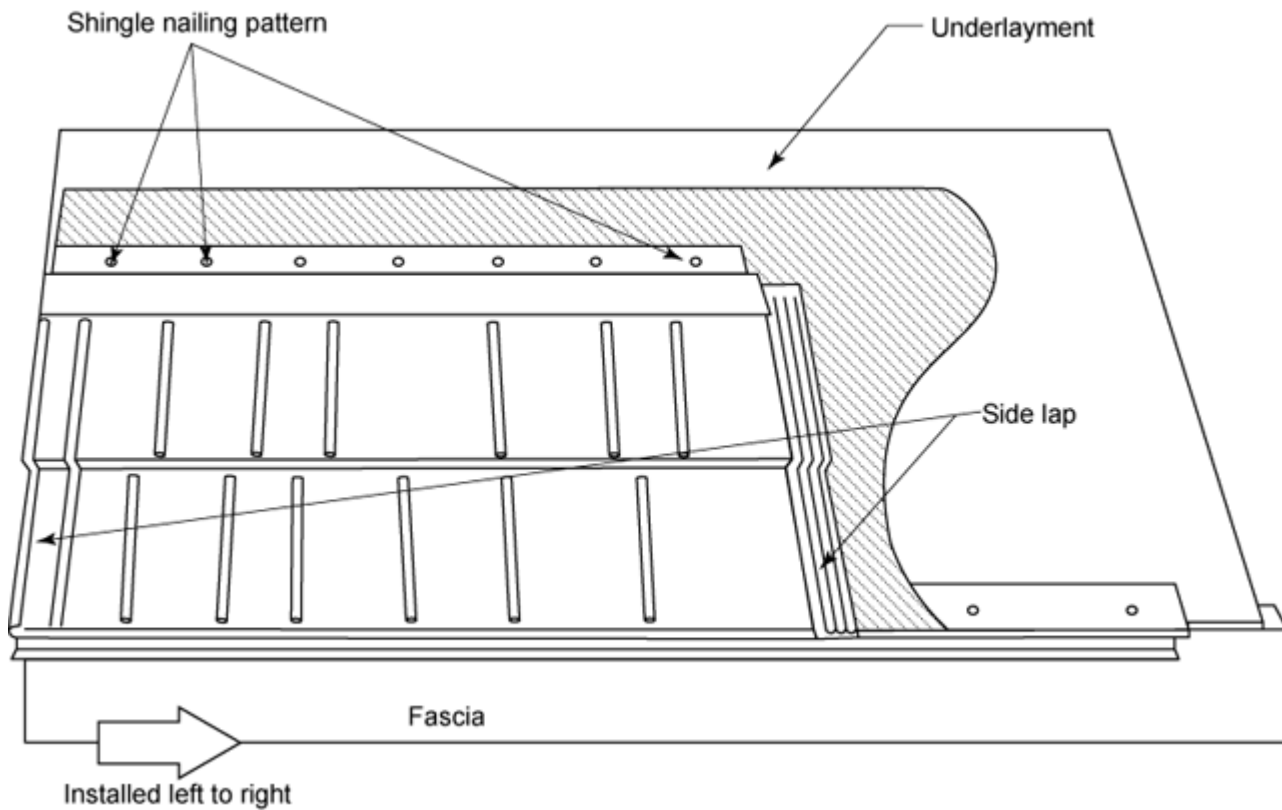


Figure 2. Product details for “Gerard Shingle, Granite Ridge, and Guardian Shingle”

A starter strip must be installed at the eave. The nose-end of the first row of panels interlocks with the starter strip. The side laps of each panel must overlap from left to right. Each successive row of panels is attached by interlocking the bottom edge of the panel with the top fold of the previous row of panels and fastening through the nailing strip (see Figures 3 and 4).

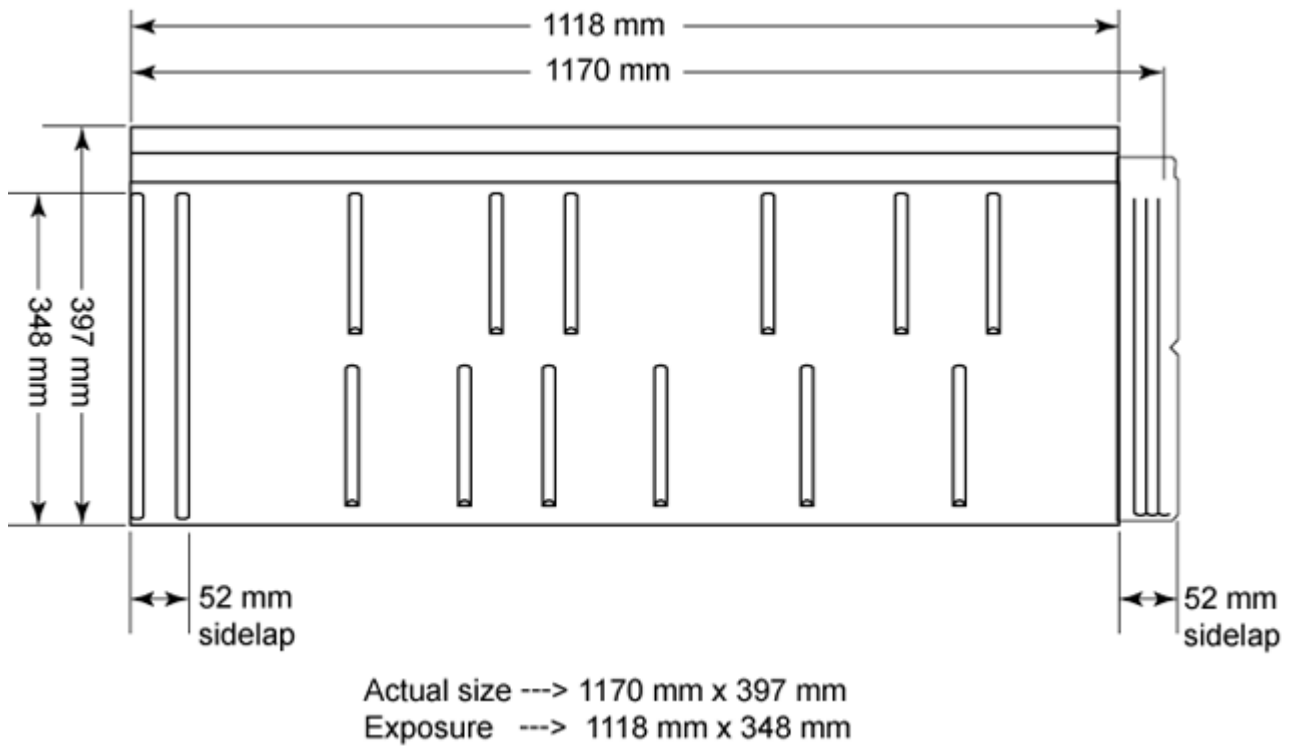


Figure 3. “Gerard Shingle, Granite Ridge, and Guardian Shingle” first course installation detail

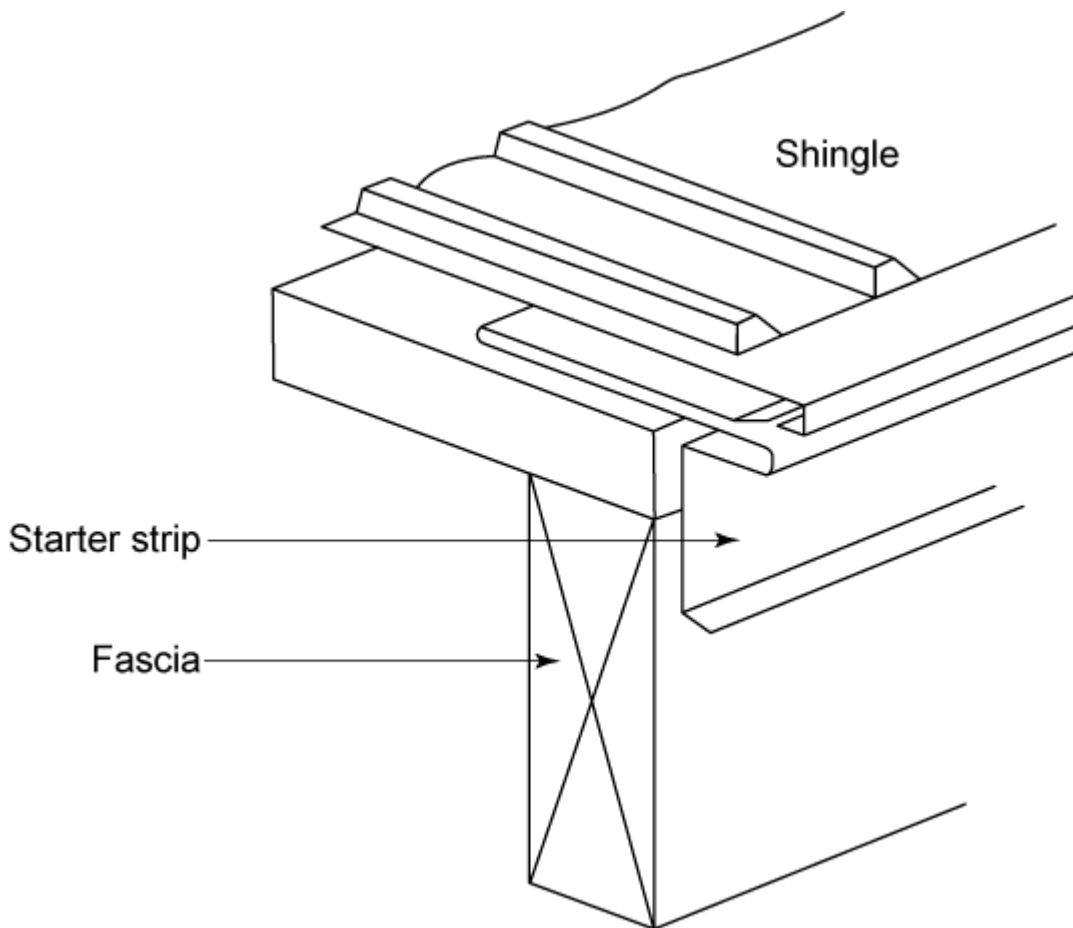


Figure 4. “Gerard Shingle, Granite Ridge, and Guardian Shingle” first course installation detail – staggered diagram

The complete roofing system includes accessories, such as the starter strip, rake cover, hip and ridge cover, valley and valley cap, ridget, and Z-bar.

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the “Gerard Shingle, Granite Ridge, and Guardian Shingle” being used in accordance with the conditions and limitations set out below.

- The panels must be installed on roofs having a minimum slope of 1 in 3.
- The panels must be installed over solid sheathing complying with the requirements of Subsection 9.23.15. of Division B of the NBC 2005.
- An underlay consisting of two layers of Type 15 organic felt or one layer of Type 30 organic felt must be used in conjunction with the panels.
- Flashing must be installed in compliance with the requirements of Subsection 9.26.4., Flashing at Intersections, of Division B of the NBC 2005.
- The panels must be installed with eave protection as indicated in Subsection 9.26.5. of Division B of the NBC 2005.
- Only fasteners and accessories supplied by the manufacturer may be used in conjunction with the products. The fasteners and accessories must be compatible with the base metal of the panels.
- The “Gerard Shingle, Granite Ridge, and Guardian Shingle” roofing systems must be installed by manufacturer approved installers in strict conformance to the manufacturer's instructions.
- The roofing systems are for use in locations where access is limited for maintenance or repair purposes. When access is needed, temporary walkways or roof boards are recommended to avoid any permanent damage to the panels.
- The use of the panels is limited to geographical areas where the wind load, as factored for local exposure conditions and building heights, does not exceed 170 km/h.

4. Technical Evidence

CCMC's Technical Guide for “Gerard Shingle, Granite Ridge, and Guardian Shingle” sets out the nature of the technical evidence required by CCMC to enable it to evaluate a product as an acceptable or alternative solution in compliance with the NBC 2005. The Report Holder has submitted test reports for CCMC's evaluation. Testing was conducted at independent laboratories recognized by CCMC. The corresponding test results for “Gerard Shingle, Granite Ridge, and Guardian Shingle” are summarized below.

4.1 NBC 2005 Compliance Data for “Gerard Shingle, Granite Ridge, and Guardian Shingle” on which CCMC Based its Opinion in Section 1

4.1.1 Performance Requirements

4.1.1.1 Base Material

The panels meet the requirements for aluminum-zinc alloy material in accordance with ASTM A 792/A 792M-06A, “Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process,” and the coating designation Z150.

4.1.1.2 Traffic Load Test

Under an applied load of 890 N, the panels withstood the force without permanent distortion.

4.1.1.3 Wind Uplift

Table 4.1.1.3 Wind uplift test for “Granite Ridge”

Pressure (kPa)	Requirement	Result ⁽¹⁾
1.4	No evidence of deformation, permanent damage or failure	Pass
2.9	No evidence of deformation, permanent damage or failure	Pass
4.3	No evidence of deformation, permanent damage or failure	Pass
9.1	No evidence of deformation, permanent damage or failure	Plywood fastener pull-through

Note to Table 4.1.1.3:

(1) “Granite Ridge” panels were installed on top of Type 30 organic felt that was laid over 12-mm grade B-C, APA rated plywood. Each panel was fastened to the plywood with seven No. 8-14 32 mm screws. The plywood was fastened onto 50 mm x 250 mm joists that were spaced 600 mm o.c. using No. 8 coarse thread screws.

4.1.1.4 Dynamic Pressure Water Infiltration Resistance

Table 4.1.1.4 Dynamic pressure water infiltration resistance test for “Gerard Shingle”

Wind Speed (km/h)	Simulated Rainfall (L/m ² •min)	Duration (min)	Requirement	Result ⁽¹⁾
50	3.4	15	No leakage or damage	Pass
110	3.4	15	No leakage or damage	Pass
140	3.4	15	No leakage or damage	Pass
170	3.4	5	No leakage or damage	Pass

Note to Table 4.1.1.4:

(1) “Gerard Shingle” panels were installed on top of two layers of Type 15 organic felt that was laid over 12 mm APA 32/16 span rated sheathing. Each panel was fastened to the sheathing with eight 9.5 mm x 32 mm galvanized ring shank nails.

4.2 Additional Performance Data Requested by the Report Holder

Data in this section does not form part of CCMC's opinion in Section 1.

4.2.1 Granular Mineral Surfacing

Table 4.2.1 Granule adhesion test for “Gerard Shingle, Granite Ridge, and Guardian Shingle”

Sample	Average Initial Weight (g)	Average Final Weight (g)	Average Weight Loss (g)
Colourquartz	65.074	64.985	0.096
Roofing granule	63.88	63.71	0.0176

4.2.2 Fire Protection

See UL Certificate TFX7.R12596 for fire protection information.

Report Holder: Gerard Roofing Technologies
955 Columbia Street
Brea, CA 92621-2927
U.S.A.
Tel: 714-529-0407
Fax: 714-529-6643

Plant(s): Brea, CA, U.S.A.

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