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Legacy report on the 1997 *Uniform Building Code*™

DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07310—Shingles

METAL ROOFING SHINGLES AND PANELS

DELTA BUILDING PRODUCTS, LTD.
9969 RIVER WAY
DELTA, BRITISH COLUMBIA V4G 1M8
CANADA

1.0 SUBJECT

Metal Roofing Shingles and Panels.

2.0 DESCRIPTION

2.1 General:

The Delta Building Products roofing shingles and panels are installed over solid sheathing and provide Class A or Class B roof classifications for new roof assemblies and reroofing applications.

2.2 Materials:

2.2.1 Metal Shingles: The metal shingles are press-formed from 0.019-inch-thick (0.48 mm) 3105 aluminum alloy having a 26 ksi (179 MPa) minimum tensile strength and a 17 ksi (117 MPa) yield strength; or from galvanized steel complying with ASTM A 792, Grade 33, and having a base-metal thickness of 0.013 inch (0.33 mm) and a G90 galvanized coating. Each shingle measures 9.44 inches long (239.8 mm) by 18.12 inches wide (206.2 mm), and has formed edges that act as interlocking seals with adjacent shingles. The shingles are coated with a Kynar 500 fluorocarbon coating having a minimum 1.0-mil (0.025 mm) dry-film thickness.

2.2.2 Metal Panels: The metal panels are pressed-formed from 3105 aluminum alloy or galvanized steel as described in Section 2.2.1 of this report, and are coated with a Kynar 500 fluorocarbon coating having a minimum 1.0 mil (0.025 mm) dry-film thickness. The panels measure a maximum of 15¹/₂ inches (394 mm) in width and are available in various lengths; each panel has formed edges that act as interlocking seals with adjacent panels.

2.2.3 Roof Sheathing: Roof sheathing must be minimum 1⁵/₃₂-inch-thick (11.9 mm) solid structural sheathing complying with the code.

2.2.4 Underlayment: Asphalt-saturated organic felt is Type 15 or Type 30, and must comply with UL Standard Specification 55-A. On construction permitted to be nonrated roofing in accordance with Section 1504.3 of the *Uniform*

Building Code™ (UBC), Flexia Corporation Tri-Flex 30 (ER-5843) may be used as an equivalent to Type 30 saturated felt.

2.2.5 Insulation Boards:

2.2.5.1 Dens-Deck Roof Boards: The Dens-Deck Roof boards specified in Section 2.4 of this report are manufactured by G-P Gypsum Corporation and are 1/4 inch (6.4 mm) thick.

2.2.5.2 Perlite Board: Perlite thermal insulation boards are limited to products recognized in a current ICC-ES evaluation report.

2.2.6 Fasteners: Fasteners for aluminum shingles are aluminum nails having a 0.155-inch-diameter (3.94 mm) shank and a 1/2-inch-diameter (12.7 mm) head. Fasteners for steel shingles are hot-dipped galvanized steel nails having a 0.122-inch-diameter (3.1 mm) shank and a 7/16-inch-diameter (11.1 mm) head. Fasteners for aluminum panels are aluminum nails having a 0.155-inch diameter (3.94 mm) shank and a 1/2-inch-diameter (12.7 mm) head. Fasteners for aluminum panel trim are No. 10 aluminum screws having a 5/8-inch-diameter (15.9 mm) head and a neoprene washer. Fasteners are supplied by Delta Building Products Ltd.

2.3 Installation:

2.3.1 General: The shingles and panels are installed over sheathing and underlayment described in Sections 2.4 and 2.5 of this report. The formed lock-seal shingle edges interlock with adjacent shingles, and one nail is used to attach the shingle nailing tab to roof sheathing. The formed lock-seal panel edge interlocks with an adjacent panel and the panel is attached to the sheathing with screws placed in each nail slot spaced at 7 inches (178 mm) on center. The shingles and panels are attached to the roof sheathing with fasteners that penetrate through or 3/4 inch (19.1 mm) into the sheathing thickness, whichever is less. Underlayment must be attached to the sheathing in accordance with the manufacturer's instructions. Flashing must comply with Sections 1508 and 1509 of the UBC. See Figure 1 for details.

2.3.2 Special Installation Requirements: For use in areas subject to wind-driven snow, ice buildup, or wind-driven dust or sand, or in other areas designated by the building official, two layers of Type 15 felt, applied shingle fashion and solid cemented together with approved cementing material between the plies, are installed at the eave and extend up the roof to a point 36 inches (914 mm) past the inside face of the exterior wall line of the building.

2.4 Shingle Roofing Classifications:

ICC-ES legacy reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



2.4. New Roof Construction:

2.4.1.1 New Roof—Class B: Metal shingles are installed over plywood or solid sheathing complying with the code, with one layer of Atlas Roofing Corp. FR-50 fiberglass cap sheet overlaid with one layer of Type 30 underlayment, on roofs having a minimum slope of 3:12. This installation is a Class B roof covering in accordance with Section 1504.1 of the UBC.

2.4.1.2 New Roof—Class A: A Class A roof assembly consists of plywood or solid sheathing complying with the code; overlaid with one layer of $\frac{1}{4}$ -inch-thick (6.4 mm) Dens-Deck Roof Board; overlaid with Type 30 underlayment; and roofed with the metal shingles. The Dens-Deck Roof Board and underlayment are attached to the solid sheathing with a sufficient number of fasteners to hold them in place until attachment of the metal roof covering. Roof slope is limited to 3:12.

2.4.1.3 Noncombustible Roof Covering: Shingles manufactured from steel described in Section 2.2.1 of this report, and installed as described in Section 2.3.1 over structural sheathing covered with two layers of Type 15 or one layer of Type 30 underlayment, are noncombustible roof coverings in accordance with Section 1504.2 of the UBC.

2.4.2 Reroofing:

2.4.2.1 General: When the old roof covering is completely removed, all conditions noted in Sections 2.3 and 2.4.1 of this report apply. The existing structure must be inspected as set forth in Appendix Chapter 15 of the UBC.

2.4.2.2 Reroofing—Class B: A Class B reroof assembly consists of one layer of Type 30 or two layers of Type 15 saturated felt installed over an existing Class B composition shingle roof over minimum $\frac{15}{32}$ -inch-thick (11.9 mm) plywood or solid sheathing, the whole roofed with metal shingles. Minimum roof slope is 3:12.

2.4.2.3 Reroofing—Class A: A Class A reroof assembly consists of one layer of $\frac{1}{4}$ -inch-thick (6.4 mm) Dens-Deck Roof Board installed over existing Class B composition shingles having a maximum $5\frac{1}{2}$ -inch (140 mm) exposure and installed on nominal $\frac{1}{2}$ -inch-thick (12.7 mm) plywood. The Dens-Deck Roof Board is overlaid with one layer of Type 15 underlayment and roofed with metal shingles. Minimum roof slope is 3:12.

2.5 Panel Roofing Classification: Reroofing—Class A:

A Class A reroof assembly consists of one layer of $\frac{1}{2}$ -inch-thick (12.7 mm) perlite insulation board and two layers of

Type 15 underlayment installed over an existing built-up roof covering, consisting of three layers of felt and 125 pounds per roofing square (6.1 kg/m²) of pea gravel, and roofed with metal panels. The roof deck must be minimum nominal $\frac{1}{2}$ -inch-thick (12.7 mm) plywood sheathing. The perlite insulation boards are attached to the solid sheathing with aluminum nails that protrude through the sheathing. The panels are attached to the roof plywood sheathing with fasteners described in Section 2.2.7. Roof slope is minimum $\frac{1}{4}$:12 for standing seam panels with no lap joints. With lap joints that are sealed, minimum roof slope is $1\frac{1}{2}$:12. With lap joints that are not sealed, minimum roof slope is 3:12.

2.6 Identification:

Each package bears a label with the Delta Building Products, Ltd., name and address and the evaluation report number (ER-4479).

3.0 EVIDENCE SUBMITTED

Data in accordance with the Acceptance Criteria for Metal Roof Coverings (AC166), dated November 2001.

4.0 FINDINGS

That the Delta Building Products, Ltd., metal roofing shingles and panels described in this report comply with the 1997 Uniform Building Code™ (UBC), subject to the following conditions:

- 4.1 Installation complies with this report and the manufacturer's published installation instructions.**
- 4.2 Installation is limited to locations having a basic wind speed up to 80 mph (129 km/h) and Exposure B terrain as defined in Section 1616 of the UBC, and on structures not exceeding 40 feet (12 192 mm) in height above grade.**
- 4.3 Inspection of existing roofing is conducted in accordance with Appendix Chapter 15 of the code before application of reroofing assemblies.**
- 4.4 Roof underlayments, including felts, cap sheets, and insulation boards, described as components for classified assemblies, are listed by an approved inspection agency.**

This report is subject to re-examination in two years.

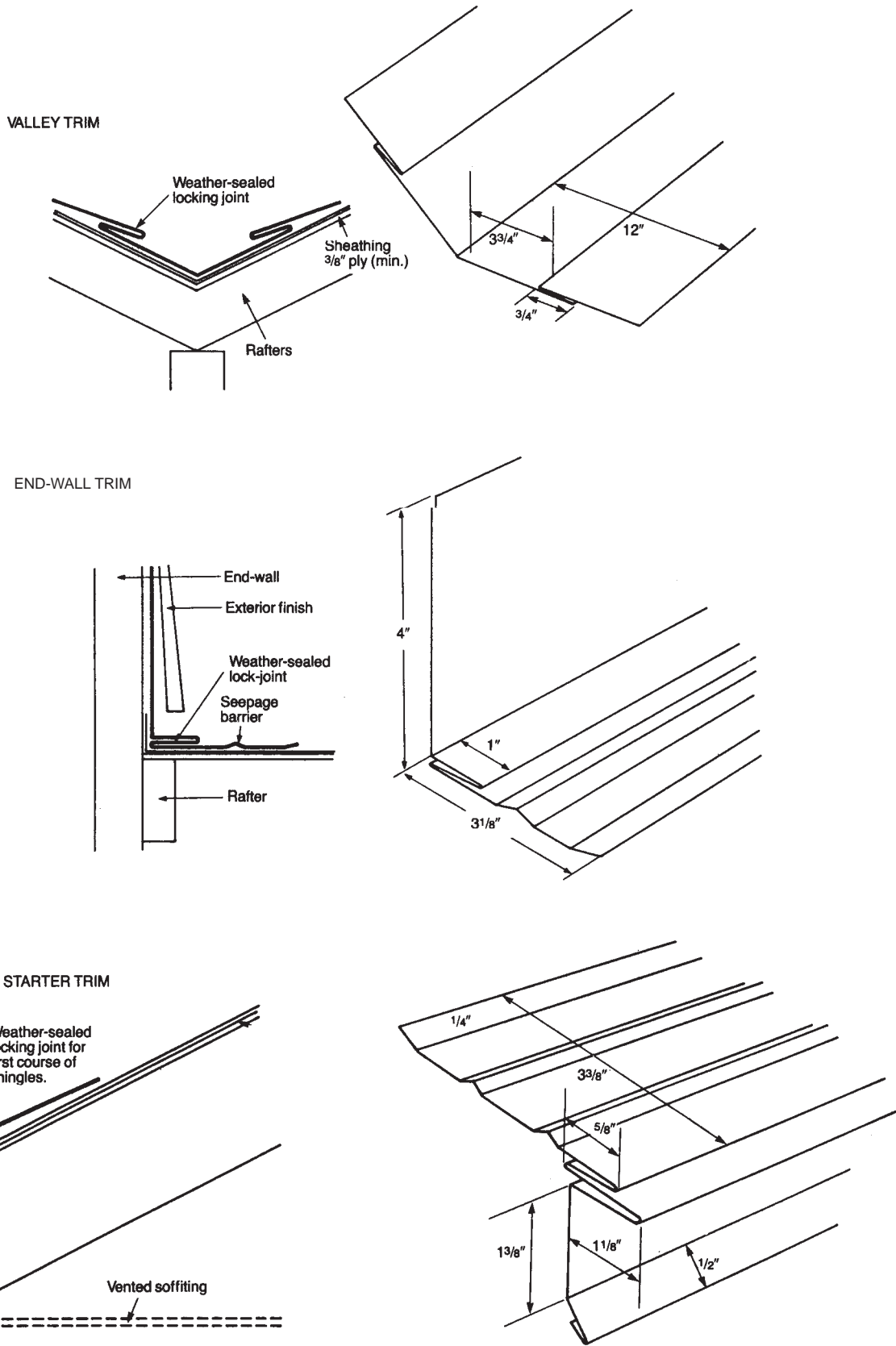


FIGURE 1

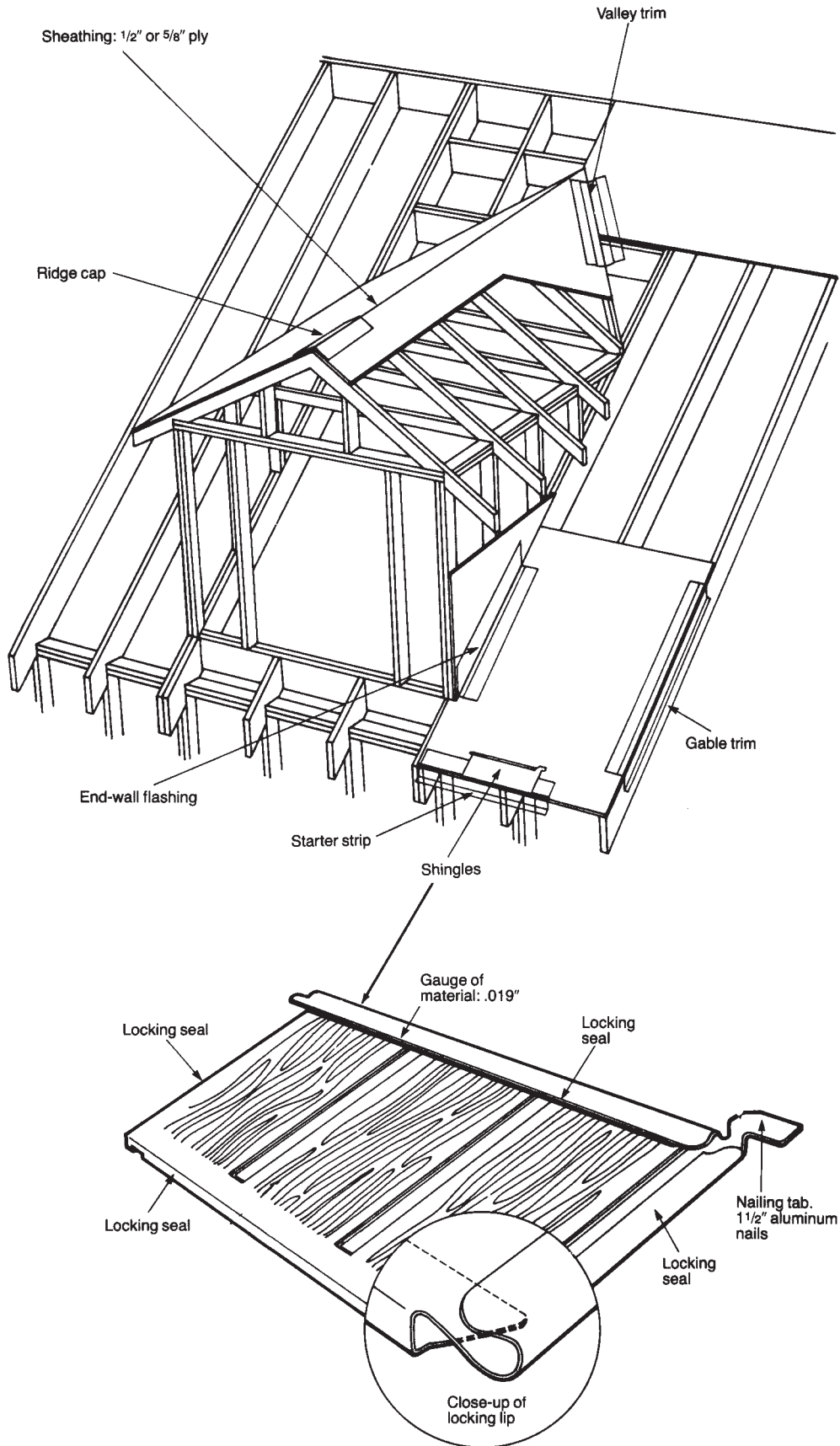


FIGURE 1—(Continued)