



Code Compliance Research Report

CCRR-0142

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1.0 Subject

TruSlate® Premium Roofing System

2.0 Research Scope

2.1. Building Codes:

2006 International Building Code® (IBC)
 including 2007 Supplements

2006 International Residential Code® (IRC)
 including 2007 Supplements

2.2. Properties:

Fire Classification

Weather Resistance

Wind Resistance

3.0 Description

3.1. General – The *TruSlate® Premium Roofing System* is used as a Class A or Class B roof covering when installed according to the manufacturer's instructions and this report. See Figure 1 and Figure 2.

3.2. Materials – The *TruSlate® Premium Roofing System* consists of a series of stainless steel battens and hangers (TruGrip™ system) that are attached to a structurally sound sheathed roof. Naturally quarried slates are supported by the hangers. The system also uses GAF VersaShield® Fire-Resistant Roof Deck Protection, GAF Tiger Paw™ Roof Deck Protection, or GAF Deck-Armor™ Premium Breathable Roof Deck Protection, as well as GAF Leak Barriers (such as GAF StormGuard® or GAF Weather Watch®), adhered to the deck. *TruSlate® UnderBlock™ UV & Moisture Barrier* is used as an interlayer between slates. See Figure 1.

3.2.1. Natural Slates – *TruSlate® Premium* slate is a natural stone product quarried from various sources domestically and internationally. The slates measure 12 inches wide by 12 inches long and have beveled edges on all

four sides. *TruSlate® Premium* slates approved by this report include three colors: Charcoal, Autumn Dusk, Onyx Black, and that are hand-split to a minimum thickness of 6.3 mm. Color is dependent upon chemical and mineral composition.

3.2.2. A 0.022 inch thick black high-density polyethylene *TruSlate® UnderBlock™ UV and Moisture Barrier* is supplied in rolls 12-3/4 inches wide and is installed as an interlayer between slates.

3.2.3. The TruGrip™ battens consist of battens manufactured from 430 stainless steel measuring 2 inches wide by 48 inches long. The battens are anchored with nails through the roof underlayment and into the solid roof sheathing. See Figure 2.

3.2.4. The TruGrip™ hangers are 14 gauge 304 grade stainless steel spring wire that is powder coated. One end is bent to clip into the battens and the other is bent to capture the lower edge of the slate. See Figure 2.

4.0 Performance Characteristics

4.1. The *TruSlate® Premium Roofing System* is tested per ASTM C 406-05 and is classified by grade based on the test results as outlined in ASTM C 406-05.

4.2. Fire Classification – The *TruSlate® Premium Roofing System* is classified as a Class A roof covering when used in conjunction with one layer of GAF VersaShield® Fire-Resistant Roof Deck Protection. See Sections 5.2.1 and 5.2.2 for underlayment installations.

The system is classified as a Class B roof covering when used in conjunction with ASTM D 226 Type I and/or ASTM D 4869 compliant underlayment or other evaluated alternative as further identified herein (see Section 5.2 under Installation).

4.3. The *TruSlate® Premium Roofing System* has been tested for wind uplift resistance to UL 580 and UL 1897. Both standard and high wind installations were tested to each of these specifications. A description of each installation and their associated uplift values are shown in Table 1.

5.0 Installation

Installation shall be in accordance with the requirements of the applicable code, the manufacturer's installation instructions, and this report. Where differences occur between this report and the manufacturer's installation instructions, this report shall govern.

5.1. The *TruSlate® Premium Roofing System* must be installed over a solidly sheathed roof. For installations with slopes 4:12 up to and including 5:12, see Section 5.2.1 for underlayment installation. For installations with slopes greater than 5:12, see Section 5.2.2 for underlayment installation.

5.2. Underlayment used with this system must comply with ASTM D 226 Type I, ASTM D 4869 Type IV, or one of the following evaluated alternatives:

For Class A fire rating installations: GAF VersaShield® Fire-Resistant Roof Deck Protection (subject of ICC-ES ESR-2053).

For Class B fire rating installations: GAF Deck-Armor™ Premium Breathable Roof Deck Protection (subject of ICC-ES ESR-2808); GAF StormGuard® and GAF Weather Watch® (subjects of ICC-ES ESR-1322); or GAF Tiger Paw™ Roof Deck Protection (subject of ICC-ES ESR-3286).

5.2.1. Underlayment installation for slopes 4:12 up to and including 5:12 – Apply one of GAF's self-adhering Leak Barriers over the full deck according to the manufacturer's installation instructions. For Class A installations, install one layer of GAF VersaShield® Fire-Resistant Roof Deck Protection over the GAF Leak Barrier.

5.2.2. Underlayment installation for slopes greater than 5:12 – Apply one layer of self-adhering GAF Leak Barrier at all vulnerable areas of the roof. Over the full deck, apply either one layer of a GAF Leak Barrier, one layer of GAF Deck-Armor™ Premium Breathable Roof Deck Protection, GAF TigerPaw™ Roof Deck Protection, or two layers of ASTM D 226 Type I asphalt saturated underlayment. Alternatively, for Class A fire rating installations, install one layer of GAF VersaShield® Fire-Resistant Roof Deck Protection over the GAF Leak Barrier or GAF Roof Deck Protection. All GAF Leak Barriers and underlayment products are to be applied in accordance with manufacturer's installation instructions.

5.3. In areas where the average daily temperature in January is 25°F or less or where the possibility of ice forming along the eaves causing a backup of water, an ice barrier that consists of at least two layers of underlayment cemented together or a self-adhering GAF Leak Barrier recognized by ICC-ES ESR-1322 shall be used from the lowest edges of all roof surfaces to at least 24 inches inside the exterior wall of the building.

5.4. Flashings and edge materials shall meet the minimum requirements of IBC Section 1507.7 and/or IRC Sections R903.2 and R905.6.6.

5.5. TruGrip® battens are fastened as described in Table 1 with 9-1/2 to 10 inches vertical spacing. Two TruGrip™ hangers are attached to the batten for each slate. Each slate must be secured with two hangers.

5.6. *TruSlate® UnderBlock™ UV & Moisture Barrier* must be installed under each slate as described in the manufacturer's installation instructions and as shown in Figure 1. Following the UnderBlock™ installation, the *TruSlate® Premium* slates are placed in the hangers. See Figure 2.

6.0 Supporting Evidence

6.1. Manufacturer's drawings and installation instructions.

6.2. Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

6.3. Reports of testing demonstrating compliance with the following: for durability, ASTM C 406-05 “*Standard Specification for Roofing Slate*”; for uplift, UL 580 “*Tests for Uplift Resistance of Roof Assemblies*” and UL 1897 “*Uplift Tests for Roof Covering Systems*”; and for fire resistance, UL 790 “*Tests for Fire Resistance of Roof Covering Materials*”.

7.0 Conditions of Use

TruSlate® Premium Roofing System applications identified in this report are deemed to comply with the intent of the provisions of the referenced building codes subject to the following conditions:

7.1. The *TruSlate® Premium Roofing System* is designed for steep roofing applications and must not be installed on any roof slope less than 4:12.

7.2. Installation of GAF VersaShield® Fire-Resistant Roof Deck Protection shall be in accordance with ICC-ES ESR-2053. The recognition of GAF VersaShield® Fire-Resistant Roof Deck Protection as an approved element of the *TruSlate® Premium Roofing System* is contingent on the maintenance of a valid ICC-ES ESR-2053 report.

7.3. Installation of GAF Tiger Paw™ Roof Deck Protection shall be in accordance with ICC-ES ESR-3286. The recognition of GAF Tiger Paw™ Roof Deck Protection as an approved element of the *TruSlate® Premium Roofing System* is contingent on the maintenance of a valid ICC-ES ESR-3286 report.

7.4. Any construction other than that described in Section 4.3 shall be evaluated for effects on stated wind uplift values.

7.5. *TruSlate® Premium* products are specified, monitored, and administered at the Parsippany, NJ facility by GAF. Materials are distributed through GAF warehouse located in Dallas, Texas. The products are in accordance with the manufacturer's approved quality control system with inspections by Architectural Testing (IAS AA-676).

8.0 Identification

The *TruSlate® Premium Roofing System* produced in accordance with this report shall be identified with labeling on the packaging crates that includes the following information: the name of the report holder or product name; the mark of the independent inspection agency, Architectural Testing; and the Architectural Testing Code Compliance Research Report number (CCRR-0142).

9.0 Code Compliance Research Report Use

9.1. Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

9.2. Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product or manufacturer by Architectural Testing.

9.3. Reference to the Architectural Testing internet web site address at www.ati-es.com is recommended to ascertain the current version and status of this report.

**Table 1**

<i>TruSlate® Premium Roofing System</i> Uplift Resistance and Associated Minimum Construction		
	Standard Application	High Wind Application⁽¹⁾
UL 580 Rating	Class 90	Class 90
UL 1897 ⁽²⁾ (Allowable uplift pressure)	62 psf	92 psf
Deck	5/8" (min 19/32") thk, CDX plywood	Min 15/32" thk, Type B-C Plywood
Fasteners, Battens to Deck	3/8" head dia, x 1-1/4" long, Stainless steel STD roofing nails	3/8" head dia, x 1-1/4" long, stainless steel ring shank nails
Underlayment	ASTM D 226, Type I, with min 2" lap	
Battens Spacing	9-1/2" to 10"	
Hanger Spacing	6" OC, 2 per slate	
Interlayment	<i>TruSlate®</i> UnderBlock™ UV & Moisture Barrier	
<i>TruSlate®</i> Slate Exposure	9-1/2" to 10"	

⁽¹⁾ The high wind uplift testing was performed on an assembly installed as defined in UL Construction No. NM536.

⁽²⁾ The allowable uplift pressure utilizes a factor of safety of 2.0 applied to maximum test pressures obtained.

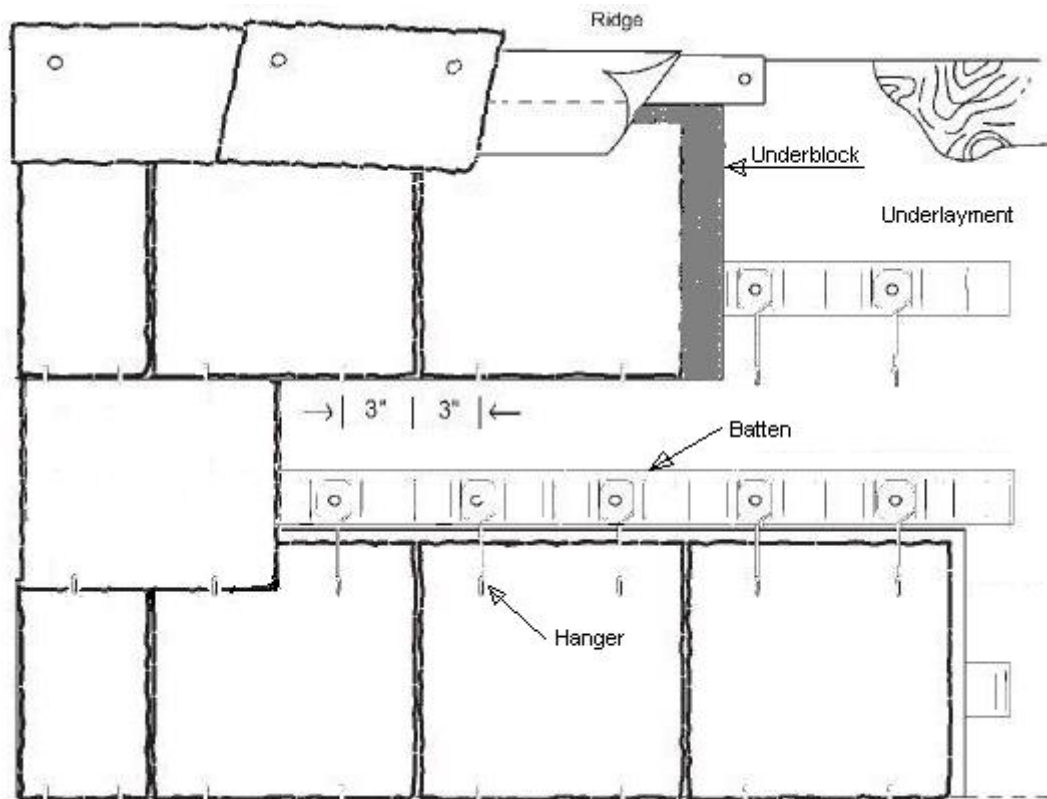


Figure 1
GAF TruSlate® Premium Roofing System

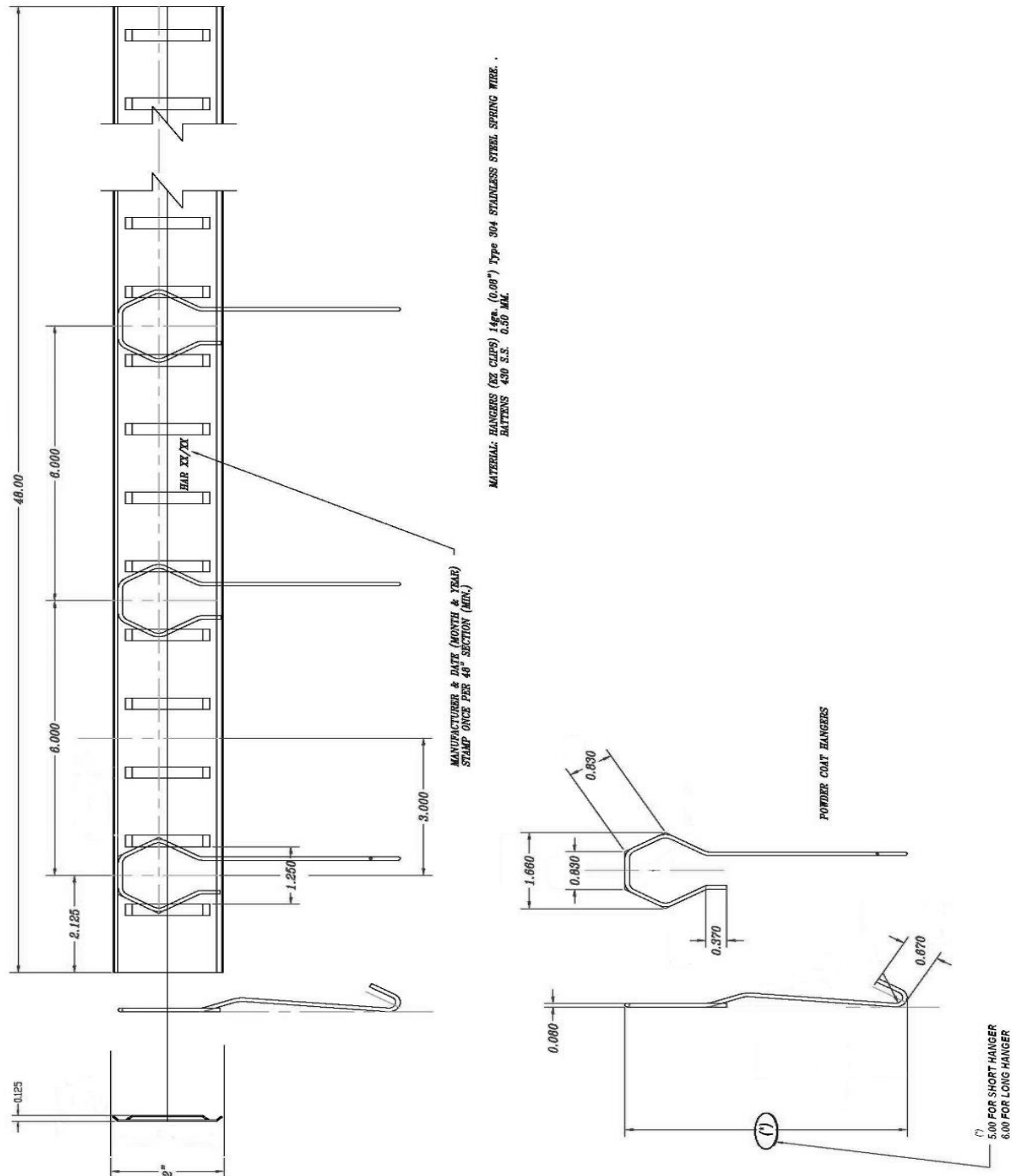


Figure 2

GAF TruSlate® Premium Roofing System – TruGrip™ Battens and Hanger