Bellaforté Slate & Shake

Third Party Testing

Test	Objectives	Method	Results
Fire test ASTM E 108	Earn classification for fire.	Buring brand, intermittent flame, spread of flame.	Class A
UL 2218 Impact	Earn UL classification for impact.	Two-inch steel ball wighting 1.2 lbs is dropped from 20 feet on to an installation. test is repeated. Both impacts must be within 1/4".	Class 4
ASTM D3161 same as UL 997 Wind Uplift	Earn certification for wind.	A roofing assembly is subjected to sustained winds at specified velocities for two hours. Test ran at 110mph.	Passed
Accelerated Weathering ASTM 4798	Determine material performance in respect to brittleness, color-fade, curling/warping and coating adhesion.	4500 hours of exposure to UV radiation, elevated temperature, moisture, and thermal shock.	Nearly imperceptible color change. No appreciable change in tensile strength.
Freeze-thaw ICC-ES Acceptance Criteria ACO7 section 4.9	Determine material performance in extreme temperature cycling.	Exposure to temperatures from -40 F to 180 F in 22 hour cycles for approximately a month.	There was no sign of crazing, cracking, or other deleterious surface changes.
ICC-ES AC07 Section 4.4	Penetration	Samples subjected to applied load in an Instron Machine.	200 lbs. Passed
ASTM D 471 Water Absorption	Determine if material absorbs water to discount freeze-thaw issues.	Sample is put in water at 158 F for 166 hours and then weighed to find out if any water absorption has occurred.	Virtually no water absorption.
ASTM D 3462 Nail Pull Through Resistance at 32 F and 72 F	Identify nail tear resistance to determine if nails will pull through the shingle.	Shingle is nailed and stabilized at 73 F and then at 32 F. Force is applied until shingle is pulled past nail.	138 lbs/ft of force required at 73 F and 166.9 lbs/ft at 32 F.
ASTM G21 Fungus (algae) test	Determine if algae wants to grow on DaVinci products.	Our sample is inoculated with blue green algae and put in a warm, damp place along with a control sample for four to six weeks.	The algae did not grow on our sample shingle.
ASTM D 638 Tensile Strength	Determine effects of long-term weathering on material strength.	Tensile strength of sample is measured before and after accelerated weathering. Weathering duration is 4500 hours.	No meaningful reduction of strength. Post test results showed a 2.6% reduction in material strength from pre-test measurement.
TAS-100	Earn certification for wind driven rain. Pass or fail only.	A roofing assembly is subjected to increasing wind speeds along with an abundance of water blown at the system at speeds up to 110 mph.	Passed
TAS-125	Earn certification for wind uplift resistance in High Velocity Hurricane Zones. Pass or fail only.	A roofing assembly is subjected to positive and negative pressure in 60 minute cycles to measure wind uplift resistance at 150 mph.	Passed

Code Approvals

ICC-ES ESR-2119 • Slate: TDI RC-166 Shake: TDI RC-370 • Florida Building Code • Miami Dade County, FL NOA No. 12-0831.01 • CCMC 14094-R • WUI 4175

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