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# HAIL SUPPLEMENT

to the High Wind Standards



2020

## How to Use this Supplement

The FORTIFIED Home™ Hail Supplement is not intended to be used alone. Rather, it is intended to be used *in conjunction with* the 2015 FORTIFIED Home™–High Wind standard.

- Meeting the requirements of the high wind standard will result in a FORTIFIED designation (either FORTIFIED Roof™, FORTIFIED Silver™, or FORTIFIED Gold™) under FORTIFIED Home–High Wind.
- Meeting the requirements of this hail supplement *in addition to those of the high wind standard* will result in a FORTIFIED designation (either FORTIFIED Roof™, FORTIFIED Silver™, or FORTIFIED Gold™) under FORTIFIED Home–High Wind & Hail.

See the high wind standard at <https://fortifiedhome.org/wp-content/uploads/2019/05/FORTIFIED-Home-High-Wind-Standards-2015.pdf>.

## Requirements

Selecting and installing a qualified steep-slope (2:12 or greater) impact-rated roof covering (re-roof or new roof installation)

### Asphalt Shingles

#### *Shingle Impact-Resistance Requirement*

- ✓ IBHS Roof Shingle Hail Impact Rating Excellent or Good

The [IBHS Impact Resistance Test Protocol for Asphalt Shingles](#) is a test standard developed in 2019 to evaluate the hail performance of new asphalt shingle roof products. The test method uses state-of-the-art hailstone characteristics, kinetic energies, and damage assessment technology to evaluate new shingle performance against hail. IBHS has published, and will periodically refresh, the performance ratings for the most widely sold, basic impact-resistant shingles when subjected to 2-in. impacts according to the test protocol. [Products with a Good or Excellent rating](#) must be used. Refer to Appendix A for the list of IBHS roof shingle hail impact ratings as of October 1, 2019.

**Note:** For asphalt shingle products that have not yet been tested by IBHS, and therefore do not appear on the IBHS Impact Ratings List, documentation must indicate that the products are polymer-modified and have either a UL 2218 Class 4 rating or FM 4473 Class 4 rating to be eligible.

### Clay and Concrete Roof Tiles

#### *Tile Impact-Resistance Requirements*

- ✓ FM 4473 Class 4

FM 4473 is a test standard administered by Factory Mutual Research that uses pure water frozen ice balls to evaluate impact resistance of new rigid roof covering materials (like concrete tile, clay tile, or slate). It involves firing the ice balls from a sling or air cannon at the roof-covering product. A Class 4 rating requires the product to still be functional following two impacts in the same spot with 2-in. ice balls. Clay and concrete roof tiles must meet a Class 4 impact rating.

## Metal Panels

### *Metal Roof Impact-Resistance Requirements*

- ✓ UL 2218 Class 4

UL 2218 is a test standard developed by Underwriters Laboratories for assessing the impact resistance of new flexible roofing products, like metal panels or metal shingles. It involves dropping steel balls of varying sizes from heights designed to simulate the energy of falling hailstones. Class 4 indicates the product was still functional after being struck twice in the same spot by 2-in. steel balls. Class 4 rated products must be used.

It should be noted that while impact-resistant metal roofs have good impact resistance and are likely to survive impact from most hailstone sizes without functional damage, metal roofs can be vulnerable to aesthetic damage since hail can cause permanent indentations in the roofing panels. Use of metal roofing products with granular coatings may reduce the visibility of small indentations.

## Other Roof Coverings

For all other roof coverings, documentation must indicate that the roof cover has either a UL 2218 Class 4 rating or FM 4473 Class 4 rating to be eligible.

### Selecting and installing a qualified low-slope (less than 2:12) impact-rated roof covering (re-roof or new roof installation)

Low-slope roof covers must meet one of the following test standards:

- ✓ FM 4470 with a Class 1-SH or 1-VSH
- ✓ UL 2218 Class 4

## Selecting and installing qualified impact-rated skylights

Skylights shall meet at least one of the following impact rating requirements:

- ✓ ASTM E1886 cyclic pressure test requirements and be ASTM E1996 missile impacted rated "B," "C," "D," or "E"
- ✓ FM Approved per ANSI/FM 4431 with Severe Hail Rating
- ✓ Miami-Dade County Approved (MDCA) with current Notice of Acceptance

## Selecting and installing qualified impact-rated photovoltaic (PV) systems























































Roof-mounted PV systems require the following:

- ✓ Flexible PV modules that are FM Approved for hail or meet FM 4476 that includes a Severe Hail rating
- ✓ Rigid PV modules that are FM Approved for hail or meet FM 4478 that includes a Class 4 rating
- ✓ Rigid modules that meet UL 1703 Standards for Flat-Plate Photovoltaic Modules and Panels

## Appendix A

### IBHS Roof Shingle Hail Impact Ratings

The ratings shown were last updated October 1, 2019. Ratings change as additional testing is performed. For the most current ratings, refer to the IBHS website at <https://ibhs.org/hail/shingle-performance-ratings>.

ROOF SHINGLE HAIL IMPACT RATINGS				
Manufacturer/ Brand	Overall Rating	Dents/ Ridges	Tears	Granule Loss
 StormMaster® Shake				
 TruDefinition® Duration FLEX™				
 Roofing NorthGate®				
 Roofing Products Legacy®				
 Roofing Products Vista®				
 Nordic™				
 Timberline® Armorshield™ II				
 BUILDING PRODUCTS Heritage® IR				
 TruDefinition® WeatherGuard® HP				
 Roofing Landmark® IR				
Key  Excellent  Good  Marginal  Poor				