

UNDERWRITERS LABORATORIES ASSURES THAT ROOF COVERINGS ARE

MORE THAN JUST SHINGLES OVERHEAD

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Figure 1 - UL provides conformity assessment programs with respect to fire, wind and uplift testing of roofing materials.

Each year, significant amounts of roof covering materials that protect homes, businesses, schools, and other buildings are damaged by wind and hail. Consistent problems, such as leaky roofs caused by damage to roof covering materials by various acts of nature, have led Underwriters Laboratories Inc. (UL) to provide conformity assessment programs with respect to fire, wind, and uplift testing of roofing materials. Now, in addition to information found in the Roofing Materials and Systems Directory and the Fire Resistance Directory, roofing consultants, contractors, building inspectors, architects, jurisdictional authorities, and others can access information on UL's website at <http://www.ul.com>. After choosing the "Search UL's Online Data Base" option from the homepage, users may search the database by company name, File No., Design/Construction No. or by product designation. The user may print a hard copy of the information at no charge.

Roofing product certification information is now just a mouse click away. The information presented is based upon more than a century of testing and evaluating products, materials, and systems in the interest of public safety that has earned UL worldwide recognition and respect. UL's reputation is built on its precise investigations and unbiased reporting of findings. Roofing consultants, contractors, building inspectors, architects, and jurisdictional authorities look for

UL-Listed or Classified roof covering materials and systems because they realize these materials and systems have been evaluated by a leading independent, third-party conformity assessment organization.

The familiar UL mark on a product—the UL symbol in a circle—means that representative roofing materials and systems have been tested and evaluated to nationally recognized standards with regard to fire, wind resistance, and property protection. The UL mark also means that the materials and systems



Figure 2 - UL has been testing and evaluating products, materials and systems in the interest of public safety for more than a century.



A significant amount of roof covering materials that protect homes and other buildings is damaged by fire each year.

have been produced under UL's Follow-Up Service. It is the UL mark that provides the link between the products evaluated by the laboratories and referenced in one of its directories with those that arrive at the job site.

UL has been testing, listing, and classifying roofing materials and systems for fire performance for more than 85 years and for wind and uplift performance for nearly 40 years. The results of these tests are used to determine compliance with building codes. Roof covering materials and systems that comply with UL requirements and are produced under UL's Follow-Up Service are identified in UL's Roofing Materials and Systems Directory and are entitled to bear the UL mark.

Once a product has been Listed or Classified, it is monitored by UL's Follow-Up Services Program. UL's team of trained field representatives make unannounced factory visits to check the means used by the manufacturers to determine whether they continue to comply with UL's Standards and requirements (including the conduct of pertinent fire and uplift tests). Continued compliance with UL requirements permits the manufacturer's continued right to use the UL mark.

The test methods used by UL are found in UL's Standards for Safety, UL 790 (E-108), UL 263 (E-119), UL 1256, UL 997 (D-3161), UL 1897, UL 580, and UL 2218. The numbers in parentheses are the ASTM equivalents to the respective UL Standard. These methods of test and evaluation of roofing products and systems provide for measurement of distinct characteristics. The materials and construction methods that are required to provide the appropriate performance may not be the same for all characteristics. Therefore, it is important to know which rating is required in a particular situation and then to be sure that only the proper materials are used and that they are installed in the proper manner. Even small changes in materials and conditions can lead to large differences in performance.

Each of the testing and evaluation procedures described

below brings unique considerations related to specified performance needs and compliance with applicable building code or insurance authority requirements that must be met without compromise. This requires careful review of the plans and specifications and verification that the materials arriving at the job site bear the UL mark as appropriate for the specified roofing system. UL requires that its markings on products include the product trade name and designation for reference when consulting the website or the respective UL Directory. It is also critical that materials be applied or installed in a manner consistent with the UL Classification.

The task of the roofing professional becomes even more complicated with respect to assessment of each of the evaluation issues when recover or replacement of existing roof covers is involved. Performance must be reassessed with respect to the current requirements of the applicable building code or insurance authority.

UL 790—Tests for Fire Resistance of Roof Covering Materials

UL 790 investigates the ability of a roof covering material to resist spreading fire. Roof coverings provide protection against fire vulnerability from outside a building. This vulnerability may include flying and burning coal or wood from distant fires, or flames from nearby structures. The UL 790 test methods evaluate various roofing component groups for resistance to fires that start on a building's exterior. Ratings are designated as Class A, B, or C based on fire performance.

UL 263—Fire Tests of Building Constructions and Materials

UL 263 evaluates the hourly internal fire-resistance ratings of roof/ceiling assemblies. These assemblies (as described in UL's Fire Resistance Directory, under alphanumeric design numbers)

provide resistance or containment of fire occurring within a building. Such assemblies are required to resist collapse and to slow down the flow of heat through the assembly to the outside surface. The roof covering system can affect the fire performance of these assemblies and, therefore, must comply with the description in the specific Fire Resistant Design.

UL 1256—Fire Test of Roof Deck Constructions

The spread of fire on the underside of a roof deck is a concern when buildings have large, open, interior space. Under UL 1256, roofing systems are investigated for their potential to contribute to interior fire spread away from a localized severe fire exposure. The evaluations are conducted through use of fire tests involving either large-scale or laboratory-scale tests.

UL 997—Wind Resistance of Prepared Roof Covering Materials

UL 997 evaluates the wind resistance of asphalt composition prepared roof-covering materials (shingles). Materials exposed to the wind test in this standard are intended to resist damage when subjected to winds in the Beaufort Scale No. 10 range (55-63 mph). The adhesive bonds of self-sealing shingles must be strong enough to keep the entire shingle from lifting. Interlocking shingles must not tear loose or detach from their locking position.

UL 1897—Uplift Tests for Roof Covering Systems

This test method provides comparative uplift resistance data regarding the securement of the roofing system to the roof deck based upon the system's ability to resist short-term incremental static load, developed by using differential air pressure. The amount of uplift resistance required is related to many design factors specific to the respective building structure.

UL 580—Test for Uplift Resistance of Roof Assemblies

UL 580 evaluates the uplift resistance of roof assemblies (including the deck attachment). This test method provides comparative uplift resistance data regarding the attachment of the roof deck to structural supports, as well as the securement of any system to the deck that may be used in the roof assembly. This method simulates the effects of wind gusts by using oscillat-

ing external negative pressure on the topside and positive pressure on the underside of the assembly. The uplift resistance performance under this statement is designed by a rating index of Class 30, 60, or 90.

UL 2218—Impact Resistance of Prepared Roof Covering Materials

UL 2218 evaluates impact resistance of prepared roof covering materials. Free-falling steel balls ranging in diameters of 1 to 2 inches are dropped from different heights to generate levels of kinetic energy that are selected based on kinetic forces of variously-sized hailstones falling at peak velocities. Roofing materials subjected to the test method are ranked in ascending order of resistance, Class 1 through Class 4, with Class 4 representing the most resistant materials.

For additional information on ULs testing and certification programs, contact the corporate headquarters at 333 Pfingsten Road, Northbrook, Illinois, 60062-2096, by telephone at (847) 272-8800; or by fax at (847) 509-6395. ■

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