



Bumpon™ Protective Products

UL 94 Flammability Tests and UL 94HB Recognized Bumpon Protective Products

Technical Bulletin

Subject UL 94 Flammability tests and UL 94HB Recognized Bumpon™ Protective Products.

Purpose The purpose of this bulletin is to:

- Provide general differences between Underwriters Laboratories (UL) flammability tests 94HB (horizontal burn) and 94V (vertical burn).
- Provide a listing of all UL 94HB Recognized Bumpon Protective Products.

Scope UL 94 requirements cover tests for the flammability of plastic materials used for parts in devices and appliances. They are intended to serve as a preliminary indication of their acceptability with respect to flammability for a particular application.

Both 94HB and 94V tests require the same test samples (5.0" length x 0.5" width). Both tests require the same test flame.

The 94V test requirements are more difficult to pass in comparison to the 94HB test requirements.

UL 94 Test Procedures and Requirements

94HB:

For the 94HB test, the sample is positioned horizontally and the test flame is applied to one end. The flame is applied for 30 seconds or until the flame reaches a specific mark on the sample.

In order to pass the requirements of 94HB, the burning rate must not exceed a particular value, depending on the sample thickness. The flame does not need to extinguish during the test.

94V:

For the 94V test, the sample is positioned vertically and the test flame is applied to the bottom of the sample. The flame is applied for 10 seconds; after 10 seconds the flame is removed and if the sample is burning the flame time is recorded. As soon as the flame extinguishes, or if there is not flaming, the flame is immediately applied to the test sample for another 10 seconds. Again, the flame time is recorded. If the sample glows after the flame extinguishes the time of glowing is also recorded.

In order to pass the requirements of 94V, the sample must self-extinguish after the removal of the test flame. The length of time required to self-extinguish and the presence or absence of dripping flame particles determines the particular 94V rating of the material, (e.g., 94V-0, 94V-1, or 94V-2, 94V-0) has the shortest after-flame time (self-extinguish time).

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UL Recognized 3M Bumpon Protective Products

The following Products are currently recognized by Underwriter Laboratories for passing UL 94HB test requirements (UL File Number E116693):

Bumpon Product Type	Product Series	Product Colors Recognized
Molded	SJ-5000	all*
Molded	SJ-5500	all*
Molded	SJ-5700	all*
Molded	SJ-6100	black*
Rollstock	SJ-5800	all*
Rollstock	SJ-6000	black, brown
Rollstock	SJ-6000	black, brown
Rollstock	SJ-6200	black
Rollstock Foam	SJ-5900** (except SJ-5916***)	black
Molded (Easy Slide)	SJ-6300	black
Rollstock	SJ-5600	clear
Molded (PCB Spacers)	SJ-6700	black

*Including custom colors through Design-A-Bump custom Bumpon program.

**Products recognized for passing UL 94HBF requirements. 94HBF designation indicates that the material is a foam.

***SJ-5916 product has been submitted for testing; however, the material did not meet UL 94HBF requirements.

Note: Bumpon products have been submitted to Underwriter Laboratories for UL 94V testing. The products did not meet UL 94V requirements.

Technical Information and Data

The technical information and data, recommendations, and other statements provided in this document are based on tests or experience which 3M believes to be reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Please remember that many factors can affect the use and performance of a 3M product in a particular application. The materials to be used with the 3M product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

Limited Warranty and Limited Remedy

The 3M product will be free from defects in material and manufacture for a period of one (1) year from the date of manufacture. 3M MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. If the 3M product is defective within the warranty period stated above, YOUR EXCLUSIVE REMEDY AND 3M'S SOLE OBLIGATION SHALL BE, AT 3M'S OPTION, TO REPLACE OR REPAIR THE 3M PRODUCT OR REFUND THE PURCHASE PRICE OF THE 3M PRODUCT.

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This Industrial Tape and Specialties Division product was manufactured under a 3M quality system registered to ISO 9002 and QS9000 standards.



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