

UL 94 flammability testing

There are two types of pre-selection test programs conducted on plastic materials to measure flammability characteristics. The first determines the material's tendency either to extinguish or to spread the flame once the specimen has been ignited. The first program is described in UL 94, The Standard for Flammability of Plastic Materials for Parts in Devices and Appliances, which is now harmonized with IEC 60707, 60695-11-10 and 60695-11-20 and ISO 9772 and 9773.

Flammability

Flammability Ratings

(from lowest to highest rating):

- 94HB
- 94V-2
- 94V-1
- 94V-0
- 94-5V

Flammability Ratings -- Defined:

- **94HB:** Horizontal burn test conducted on materials. Plastic does not self extinguish; burn rate is measured.
- **94V-2:** Vertical flame test with 3/4 in. flame conducted on material. Material self-extinguishes but may drop flaming particles which ignite surgical cotton.
- **94V-1:** Same as 94V-2. Plastic rated according to the time it takes to self-extinguish. Material cannot drop flaming particles which ignite surgical cotton.
- **94V-0:** Same as 94V-1 except the time allowed to self extinguish is decreased.
- **94-5V:** Five applications of a 5-inch vertical flame test. Each application lasts 5 seconds with 5-second intervals between. The sample cannot continue to burn for more than one minute after the last application.

Finding

ASC-WallDamp is fire rated **UL 94 V-1** which means it has been tested for vertical flame spread and found to be self extinguishing and that it does not drop flaming particles which ignite surgical cotton. This test is on exposed WallDamp.

In normal construction applications WallDamp is not directly exposed to open flame. It is sandwiched between two layers of gypsum board.

Arthur Noxon, PE, Acoustical Engineer, Eugene, Oregon, Oct 08

