Flammability test

The following materials should not be used in the manufacture of toys:

- celluloid (cellulose nitrate) and materials with the same behaviour in fire (except when used in varnish or paint).
- materials with a pile surface which produces surface flash on the approach of a flame.

Surface flash - rapid spread of flame over the surface of a material, without combustion of the basic structure at that time.

When filled, soft toys with a pile surface or textile surface are tested, the rate of spread of flame on the surface should not be more than 30mm/second. A toy should be tested as supplied including any clothing. This applies to animals and dolls, etc, but not dolls with heads and limbs made from non-textile fabric.

Testing in industry

Before any test, the toy or sample must have been conditioned for at least 7 hours in an atmosphere with a temperature of 15–20°C.

The toy should be vertical with the head uppermost. The burner should be at an angle of 45 degrees. An 18–22 mm flame is applied for 3 seconds at a distance of 5mm from the toy. The flame makes contact between 20mm and 50mm above the lower edge of the most flammable material.

After removal of the flame, measure the time taken for the flame to spread on the surface of the toy over the distance between where the flame was applied to the top of the toy.

Testing in school

Strips of fabric or filling should be securely fastened to a metal rod with a clip, which in turn is fastened securely to a stand. The stand should be placed on a metal tray.

A TEACHER MUST BE WITH YOU !

A flame is applied to the bottom of each sample for two seconds. The fabric is then observed as it burns to find out:

- How fast the flame travels
- Whether ash is formed or the sample melts into a hard ball
- How long each sample takes to burn
- How much smoke is produced

Your results should be recorded, a conclusion drawn and a decision made regarding the filling and/or material.