FIRE REGULATION IN CARS

WORLD OVERVIEW
The level of performance required is proportional to the hazard situation of the mass transport considered. The more available has to be the escape time, the higher the requirements of the regulation (Figure 1).

Figure 1: test severity vs type of mass transport

The standard ISO 3795 and European Directives or FMVSS 302 (Federal motor vehicle standard safety n° 302, USA) specifies burn resistance requirements for materials used in the occupant compartments of motor vehicles.

The test is conducted in a metal cabinet for protecting the test specimens from drafts. The interior of the cabinet is 381 mm long, 203 mm deep, and 356 mm high. It has a glass observation window in the front, a closable opening to permit insertion of the specimen holder, and a hole to accommodate tubing for a gas burner.

The test specimen is inserted between two matching U-shaped frames of metal stock 25 mm wide and 10 mm high. The interior dimensions of the U-shaped frames are 51 mm wide by 330 mm long.
Figure 2: test appliance

A specimen that softens and bends at the flaming end is kept horizontal by supports consisting of thin, heat-resistant wires, spanning the width of the U-shaped frame under the specimen at 25 mm intervals.

A Bunsen burner with a tube of 10 mm inside diameter is used. The gas-adjusting valve is set to provide a flame, with the tube vertical, of 38 mm in height. The specimen is oriented so that the surface closest to the occupant compartment air space faces downward on the test frame.

The corresponding burn rate is calculated from this experiment. Generally speaking, this test is widely use and been duplicated as internal standard in carmaker companies.
We have devoted lots of energy to set up this document and probably all the updates are not in – hope however it will help you to catch the big picture of the complex fire standards and regulation.

Please feel free to contact CREPIM for further information:

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