

FLAMMABILITY TESTS

Plastlab Laboratory, you can make the **FLAMMABILITY TEST**, increasingly in demand by the industry automotive and more, in order to test the safety in products used in vehicles, in residential, commercial and industrial. The executable tests, better detailed in the following pages, are the following:

TESTS OF BEHAVIOR TO COMBUSTION AND / OR THE ABILITY TO REJECT FUELS OR LUBRICANTS OF MATERIALS USED IN THE MANUFACTURE OF CERTAIN CATEGORIES OF MOTOR VEHICLES

Novità

according to **REGULATION UN-ECE-R118* rev.3 Annex 6/7/8/9/10**

The Plastlab Laboratory has been recognized as suitable for the execution of the aforementioned test, thanks to the **certification** issued by the **Ministry of Transport**. Thanks to this recognition, you can contact us to perform tests that, if positive, can start the **Homologation** process according to this regulation.

Contact us for more information: info@plastlab.it.

FLAMMABILITY TESTS FOR INTERIOR AUTO according to FMVSS 302*, ISO 3795*, FIAT 7-G2000*, WV TL 1010*

FLAMMABILITY TESTS FOR TEXTILES according to ISO 6940*, ISO 6941*, ISO 15025*

FLAMMABILITY TESTS FOR PLASTICS according UL94*, WV TL 1011*

The Plastlab Laboratory is equipped with n. 2 **CABIN OF REACTION TO FIRE** and many auxiliary equipment, thanks to which it is able to perform the aforementioned **STANDARDS**.

Instrument CABIN FOR TESTS OF REACTION WITH HORIZONTAL FIRE, mod. AA04, producer NOSELAB ATS S.r.l.	Instrument CABIN FOR TESTS OF REACTION UL94, mod. ED 01-UL94, producer NOSELAB ATS S.r.l.	Equipment to DETERMINE THE INFLAMMABILITY OF CAR COMPONENTS WITH VERTICAL POSITION
		
Instrument for DRIPPING TEST	Equipment to DETERMINE THE ABILITY OF MATERIALS TO REPLACE FUELS AND LUBRICANTS IN THE ENGINE COMPARTMENT	Equipment to DETERMINE THE FLAMMABILITY OF ELECTRIC CABLES
		

*Prova non accreditata Accredia

FLAMMABILITY TESTS

TESTS OF BEHAVIOR TO COMBUSTION AND / OR TO THE ABILITY TO REPLACE FUELS OR LUBRICANTS OF MATERIALS USED IN THE MANUFACTURE OF CERTAIN CATEGORIES OF MOTOR VEHICLES according to **REGULATION UN-ECE-R118* Rev.2 Annex 6/7/8/9/10**

The CEE-UN regulation R118 concerns the behavior to combustion and / or the ability to reject the fuel or the lubricant of the materials used in the construction of vehicles of the category M 3 classified II or III for the transport of minimum 8 people excluding the driver. The regulation describes the types of approval applicable to the type of vehicle and the components located in certain areas of the vehicles, with regard to their fire behavior and / or their ability to reject fuel or lubricants. Regarding the reaction to fire of the different materials present in the vehicle, the R118 regulation describes five different tests:

• **Annex 6 → Test to determine the SPEED OF HORIZONTAL BURNING MATERIAL**



The sample is held horizontally in a combustion chamber in a U-shaped support. The free end of the sample is exposed to a flame for 15 s.

The time required for the flame to travel the distance between the first measurement point and the last one (or the measuring point where the flame is extinguished) is measured to calculate the horizontal burning rate of the material.

The same test is also required by the **ISO 3795***, **FMVSS 302*** and **FIAT 7-G2000*** standards

• **Annex 7 → Test to determine the BEHAVIOR AT THE MERGER OF THE MATERIALS**

The sample is placed 30 mm below a 3 W/cm^2 radiant heat source. Below the sample is a container filled with cotton wool.

The purpose of this test is to observe:

- if the sample lights up ,
- if there are flaming droplets or not flaming droplets ,
- if the cotton wool turns on or not.

The same test is also required by the **NF P92-505***, **EU 95/28 / EC*** regulations .

• **Annex 8 → Test to determine the SPEED OF VERTICAL BURNING MATERIAL**



The rectangular sample is held vertically in a sample holder, which allows to place 3 horizontal thread markers , at three fixed distances defined by the standard, from the lower edge of the sample. A 40 mm flame, inclined 30° from the vertical, is applied for 5 seconds on the sample. During the test, the time required for breaking the wire markers 1, 2 and 3 is measured from the moment the flame is applied.

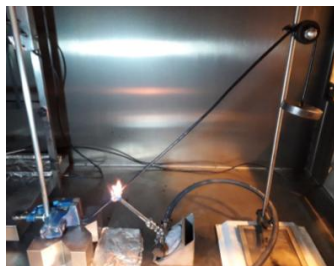
The same test is also required by the **ISO 6940***, **ISO 6941***, **UNI EN ISO 15025*** standards .

• **Annex 9 → Test to determine the CAPACITY OF THE MATERIALS TO REJECT FUELS OR LUBRICANTS**

With this test it is possible to determine the ability of materials to reject fuel or lubricant, test the capacity of the insulating materials used in the engine compartments and separate heating compartments. The test samples must measure: 140 mm x 140 mm, the thickness of the samples must be 5 mm



• **Annex 10 → Test to determine the RESISTANCE TO PROPAGATION OF THE FLAME OF ELECTRIC CABLES**



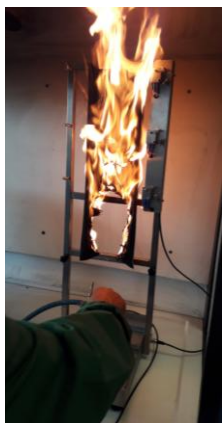
This test is used to determine the flame propagation resistance of electrical cables used in the vehicle. Five samples are tested with a length of at least 600 mm of insulation which will be tested through a Bunsen burner with an appropriate gas, and a 9 mm combustion tube. The sample is suspended in a chamber without drafts and exposed in esam and to the internal cone of the flame . The upper end of the cable points from the nearest wall of the chamber. The sample must be subjected to stress, eg by means of a weight on the pulley, to keep it always straight. The cable angle must be $45^\circ \pm 1^\circ$ with respect to the vertical line. In any case, the shortest distance from any sample of the chamber must be at least 100 mm from any wall of the chamber. Apply the flame on the inner wall (500 ± 5)

mm from the upper end of the insulation. The same test is also required by **ISO 6722* §5.22** .

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FLAMMABILITY TESTS**TESTING OF FLASH 'FOR INTERN The AUTO , COATINGS AND FABRICS**

according to FMVSS 302* , ISO 3795* , FIAT 7-G2000* , ISO 6940* , I SO 6941* , ISO 15025* , WV TL 1010*



Specification the resistance to burns requirements for materials used in the compartments of occupants of motor vehicles (for example cars, passenger utility vehicles, trucks and buses), after they have been exposed to a flame of modest energy . This is to reduce the deaths and injuries to vehicle occupants caused by vehicle fires, particularly those originating from the interior of a vehicle from sources such as matches or cigarettes.



The materials and the internal lining elements of the vehicles are tested, individually or in combination, up to a thickness of 13 mm, which must not burn or transmit a flame front on its surface, at a speed greater than 4 inches per minute .

TESTS OF FLASH 'ON PLASTIC MATERIALS according to UL 94* , WV TL 1011*

The tests described and by the legislation Americana UL 94 (Underwriters Laboratories) are the most used for determining the

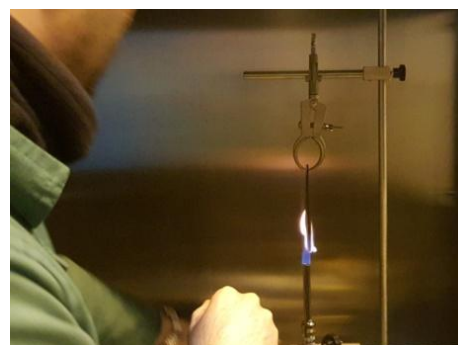


flammability of a plastic polymer . It is concerned with standard sized specimens and its use is intended only for measuring and describing the flammability properties of materials, used in devices and appliances, in response to heat and flame under controlled laboratory conditions.

The UL standard classifies plastics based on the minimum thickness at which it stops burning when tested in a horizontal or vertical orientation.

The types of tests / flammability levels covered by UL 94 for flammability of plastics include:

- Horizontal combustion test (HB, HBF, HF-1, HF-2)
- Vertical combustion test (V-0, V-1, V-2 , 5VA, 5VB, VTM-0, VTM-1, VTM-2)



Do not hesitate to ask for a quotation!!! For more information send an email to info@plastlab.it or call (+39)011/9034652 from Monday to Friday from 9.00 am to 1.00 pm to 2.00 pm to 6.00 pm