

RAILWAY TRANSPORTATION ACTIVITIES

TESTS AND STUDIES OF FIRE BEHAVIOUR

Your issue: ensuring the customers that your products or materials meet the reaction to fire standards.

The transportation sector is increasingly demanding safety, performance and competitiveness of materials and equipment.

Your products or materials are used for interior or exterior design or railway coaches.

You are a manufacturer, distributor or importer of equipment, accessories, components and materials for railway: floors and floor coverings, walls and wall coverings, doors, tables and window frames, ceilings and ceiling coverings, lightings and light diffusers, seat elements, bed articles, seats, curtains and blinds, insulation materials (thermal and acoustic), seals, sheaths...

You are a railway coach manufacturer

- High speed trains, main lines, regional, trams and subways.
- Intended for the French market, the European market or for export.

■ EUROPEAN STANDARD EN 45545-2 + A1

- ▶ **The EN 45545 replaces all national standards** used in Europe dealing with fire behavior in railway rolling stock. LNE is:
 - Pioneer and deeply involved in drafting and validation of tests described in EN 45545-2 + A1 standard especially concerning the use of FTIR device for analysis of effluent toxicity.
 - Currently active in drafting and validation of future evolutions of EN 45545 standard regarding toxicity measurements requirements.
- ▶ **Technical and regulation assistance regarding the EN 45545-2 + A1 standard**
 - Determination of the applicable requirements to a product/material.
 - Development of an experimental design to select the products to be tested within a range of products.

■ LNE'S COMPETENCES AND SOLUTIONS

- ▶ **Nationally and internationally recognized testing facilities** for civil maritime, military maritime; automotive transportations, and especially for the railway transportation.
- ▶ **Technical assistance** for companies in order to support them in conducting or carrying out suitable tests regarding products.
- ▶ **Fire safety engineering** to support conception and development of new materials or products. Dedicated simulation tools for smoke control, evacuations and composite materials degradations.
- ▶ **Well recognized competences**



COFRAC (ISO 17025)

French Accreditation Committee: all regulatory fire reaction tests are produced under accreditation.

(List of activities, accredited sites and scope available on www.cofrac.fr)



CERTIFER

Leader in rail certification.

The LNE is certified by CERTIFER to carry out fire-smoke tests.

NF F 16-101, NF F 16-102 and EN 45545-2.

LNE'S IS AVAILABLE AT ALL LEVELS OF THE PRODUCT AND EQUIPMENT LIFECYCLE

- Check safety (electrical safety, electromagnetic compatibility, mechanical safety...).
- Check the suitability for use of products and materials (simulation of environmental constraints, chemical and physico-chemical analyses; ergonomics...)
- Management of manufacturing processes and quality management of your products (metrology connection, calibration of your measuring instruments and sensors, supply of specific test benches and measuring benches...)
- Training, technical and regulatory assistance, expertise, certification.

CARRYING OUT ALL EN 45545-2 + A1 STANDARD TESTS ON MOST OF THE MATERIALS USED IN RAILWAY ROLLING STOCK



Smoke toxicity in furnace
(NF X 70-100-1/-2)



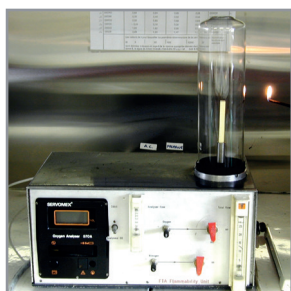
Smoke toxicity and opacity
(ISO 5659-2 + FTIR)



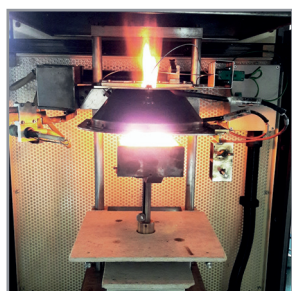
Flame spread for walls/ceilings
(ISO 5658-2)



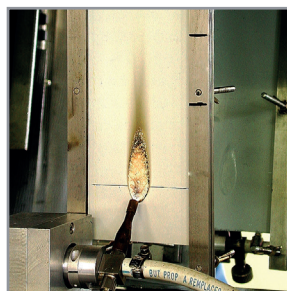
Flame spread for floors
(ISO 9239-1)



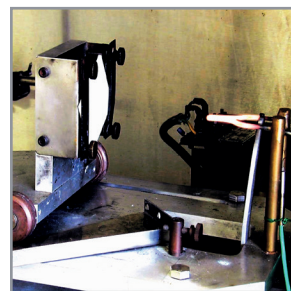
Oxygen index
(ISO 4589-2)



Heat release
(ISO 5660-1)



Inflamability
(NF EN ISO 11925-2)



Glow wire
(NF EN 60695-2-10 to 13)

A CONFIRMED PARTNERSHIP OF TRANSPORTATION INDUSTRIES

LNE is carrying out orientation or complete certification tests according to EN 45545-2 standard (requirements R1 to R26). Most of tests are carried out at LNE since many years.

LNE is a major actor in regulation with participation in ISO IC92, CEN TC256, French mirror group X65T and X65M and BNPPT50A commission to ensure up to date services and an accurate vision of regulatory evolutions. LNE is also able to feed-back information from industrial actors to regulation commissions.

LNE is also recognized for:

- Radiometer characterization (NF X 10-702-1) and surface reflection.
- UE for Euroclasses reaction to fire test for construction products.
- OMI for FTP code 2010 fire tests.
- NATO for STANAG 4602 - AFAP fire tests.

This multi-faceted knowledge makes it possible to work on cross-functional applications of products throughout many sectors.

Contact

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