



Rail - Fire Performance

The reaction of products in the event of a fire is critical when it comes to effective product specification. There are recognised national and international standards related to products performance and reaction to fire. Flexicon can offer a wide range of conduit systems which have been independently tested.

At Flexicon we define a Low Fire Hazard product as having all of the following properties:

Highly Flame Retardant

to prevent a fire starting or limit its development if one does start.

Low Smoke

emission in the event of a fire to enable people to see their way to escape.

Low Toxicity

in the event of a fire to ensure people are not overcome during their escape.

Halogen Free

gives an indication of low smoke and low toxicity. It also rules out halogen acid gas emission - a fact that is of interest to insurers as acid smoke can destroy computer equipment and damage the structure of a building. Halogens are Fluorine, Chlorine, Bromine and Iodine.

Rail Industry Standards

Our product development programme involves extensive testing to the latest Rail Industry standards to ensure the safety of our products, thus providing confidence for specifiers and consultants when it comes to their reaction to fire.

- EN 45545-2 - European Fire Safety
- NFPA 130 - North American Standard
- AS/NZS 1530.3 - Australian Standard
- Russian Fire Safety Certificate - 1374363
- TFL S1085 - UK Underground Standard

EN 45545-2 European Fire Safety Standard

This new European standard is rapidly replacing national standards in Europe and consists of 7 parts.

- **Part 1: General**
- **Part 2: Requirements for fire behaviour of materials and components**

For Part 2, product groups are required to meet a set of performance requirement levels (R1 to R26), conduit performance **R22 is for interior parts** and **R23 is for exterior parts**. There are also three defined levels of performance related to the reaction of fire, HL1, HL2 and HL3.

HL3 is the highest level of performance when it comes to the reaction to fire and will be specified for higher risk applications.

The required HL level is given from a matrix of Operational Category of the track and Design Category of the train.

Flexicon EN 45545-2 conduits meet HL3 for both internal and external use.



| | | | | HL1 | HL2 | HL3 |
|---------------------|---------------------------------------|--------------------------|---------|-----|-----|------|
| R22 Internal use | T01 EN ISO 4589-2: OI | Oxygen Content % | Minimum | 28 | 28 | 32 |
| | T10.03 EN ISO 5659-2: 25 kWm-2 | Ds max. dimensionless | Maximum | 600 | 300 | 150 |
| | T12 NF X70-100-1 and -2, 600° C | C/TNLP dimensionless | Maximum | 1.2 | 0.9 | 0.75 |
| R23 External use | T01 EN ISO 4589-2: OI | Oxygen Content % | Minimum | 28 | 28 | 32 |
| | T10.03 EN ISO 5659-2: 25 kWm-2 | Ds max. dimensionless | Maximum | - | 600 | 300 |
| | T12 NF X70-100-1 and -2, 600° C | C/TNLP dimensionless | Maximum | - | 1.8 | 1.5 |