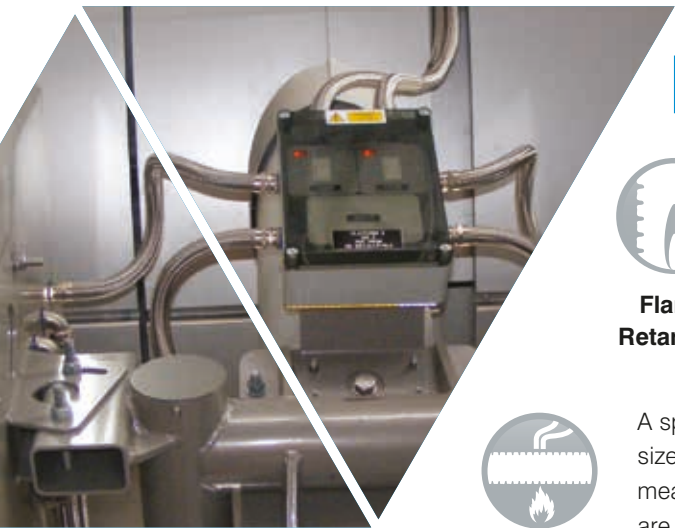


Low Fire Hazard systems are required to protect the public, personnel and property in the event of a fire and are demanded by Specifiers, Industry Bodies, Train and Network Operators, Fire Services and even Insurers.



## Assessing Fire Performance



### Flame Retardant

To assess how flame retardant a material is, the defined test method is to measure the Limiting Oxygen Index (LOI) according to BS EN ISO 4589-2 which determines the percentage of oxygen that needs to be present to support combustion. The higher the LOI percentage, the greater the flame retardancy of the material. Oxygen present in normal air is approx. 21%.



### Smoke

A specified sample of material is burnt under controlled conditions in a given size smoke chamber and the smoke obscuration of a defined beam of light is measured. Although the different tests are similar, the results and the requirements are different. The lower the smoke density, the more efficient evacuation and safety for fire fighting becomes.



### Toxicity

A specified sample of material is burnt under controlled conditions in a given size smoke chamber and the fumes are analysed for various gases, the concentration of each gas is then multiplied by its toxic potency to give a toxicity index. If halogens, sulphur or phosphorus are present in a material, it is unlikely to pass the low toxicity tests.



### Halogen Free

Halogen based materials give off highly toxic fumes and often thick smoke. A material cannot be considered as Low Fire Hazard if it contains halogen. However a halogen free material is not necessarily Low Fire hazard as it may not be low toxicity, low smoke and highly flame retardant. Halogen content is assessed by various chemical tests and analytical techniques.

## Simple classifications of performance from Flexicon...



### Inherently Low Fire Hazard

These products are made entirely from metals so there is no non-metallic material to burn or create smoke or toxic fumes. Inherently Low Fire Hazard products include; FU, SSU, FB, FUSBS, FTCS, FSS, FSSBRD and metal fittings.



### Extra Low Fire Hazard

These products have a Limiting Oxygen Index of greater than 32% as well as being low smoke and low toxicity.

Extra Low Fire Hazard products include; LFHU, LFHUBRD, LTPLFH, LTBRDLFH, LFHP, FPR, FPRSS, FPIHR, FPIHRSS and FPRTC.

LOI	Conduits	
35.9%	FPIHR & FPIHRSS	 
37.0%	FPR, FPRSS & FPRTC	
48.3%	LFHU, LFHUBRD, LTPLFH, LTBRDLFH & LFHP	



### Standard Low Fire Hazard

These products have a Limiting Oxygen Index of greater than 26% as well as being low smoke and low toxicity. Standard Low Fire Hazard products include; FPAS, FPAH, FPI, FPISS, FPIH, FPIHSS and PA66 fittings.