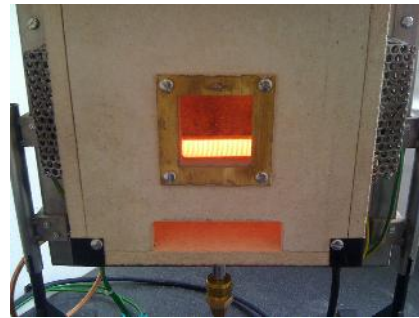




Flammability Test Rig

Description

During the development of fire retardant coatings, it is required to carry out tests to ensure compliance with BS476, part 6. This requires the use of specific test hardware to test the flammability of the material at varying temperatures.



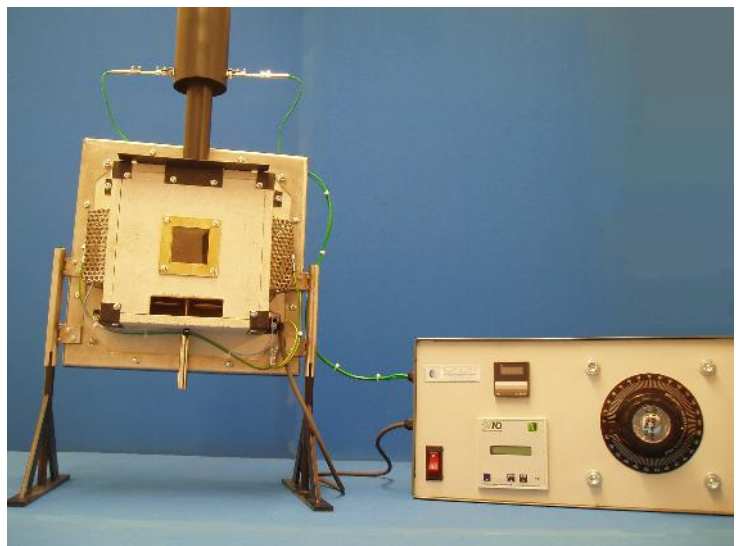
System Under Test

The scope of the project was therefore to design and manufacture a compliant fire propagation test rig. The design was based around a stainless steel support frame clad in 7 mm and 12 mm thick “asbestos equivalent” sheet (Duratec), forming the main body of the test chamber. To ensure acceptable material properties, it was heat treated and the joints sealed with fire cement. An observation window was provided, manufactured from 1 mm thick “Mica” along with 2 off 1 kW heating elements supported in quartz tubes and a multi-hole gas burner for flame propagation.

Two type K thermocouples were mounted in the exhaust chimney for temperature measurement, feeding to a controller for overall test rig temperature control. Calibration test pieces were supplied in Monalite M1 material.

Specification Summary

- Fire propagation test rig to BS 476
- Stainless steel frame with “Duratec” body
- Mica observation window
- 2 off 1 kW heaters plus gas burner
- 2 off type K thermocouples
- Separate temperature control unit
- Monalite M1 calibration test pieces



Test Rig and Temperature Controller

Disciplines Used

- Mechanical & electrical design, manufacture, assembly & test