

## Age Testing of FF107 Intumescent Material

Users and installers of fire protection products require materials to provide levels of protection that meet the highest standards over extended periods of time, often many years. Materials are exposed to varying levels of temperature and moisture and it is important to understand the effect of each on product performance and reliability.

Accelerated age testing of materials is performed under short-term conditions that simulate the long-term effects of environmental conditions over time. This is commonly used across a number of industries and is based on the fact that reaction rates double for every 10 degree rise in temperature. Testing over 12 months equates to 40 years in real life terms.

At **TENMAT** we carry out accelerated age testing using our state of the art laboratory facilities to provide information that demonstrates the high level of reliability required for such products.

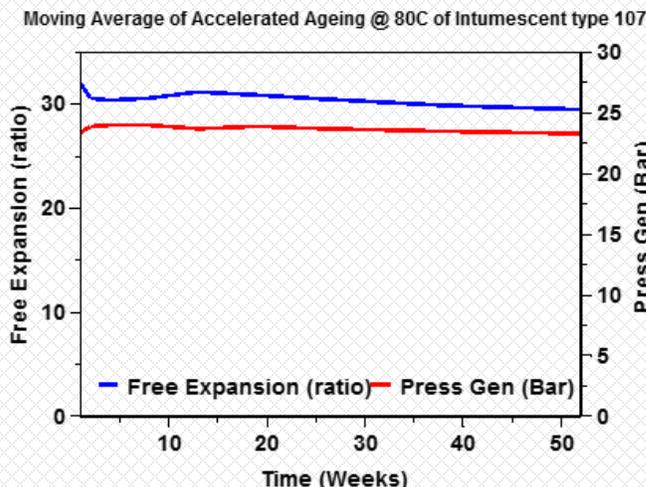
### Accelerated Age Testing

**TENMAT** FF107 has been tested at intervals under accelerated ageing conditions for a period of 12 months to simulate 40 years under ambient conditions.

Testing is carried out at 80 °C and at 80% Relative Humidity (RH) to demonstrate the long term effects of temperature and moisture. Test samples are also immersed in water to show the effect of full exposure to liquid water.

The measures of product stability are:

- Pressure Generation where the maximum load exerted by the expanding intumescent material is recorded after it is heated.
- Free Expansion which is the ratio of thickness before and after expansion over 15 minutes at 450 °C.



**TENMAT** Intumescent FF107 demonstrates stable behaviour over a simulated 40 year period with little degradation in properties and performance.