DARMATT KM1

Fire barrier system for nuclear installations

DARMATT KM1 is a fire protection barrier system developed for the protection of safety and critical electrical equipment in the nuclear industry.

The system has successfully passed 1 and 3 hour fire tests in a wide range of boundary and site specific configurations. Boundary conditions include zero percent cable fill as well as free fall single and grouped cables. Fire tests are fully compliant with NRC Generic Letter 86-10, Supplement 1, and include configurations for both upgrades of existing systems as well as new applications.

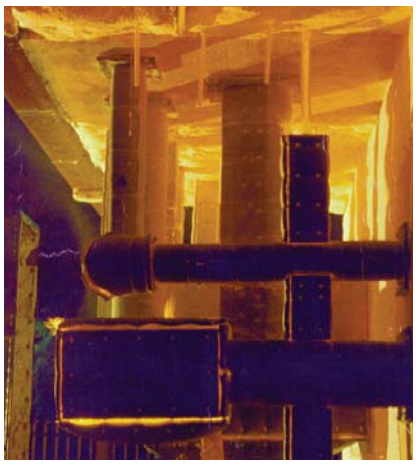
The system is based on a patented semi-rigid board, made of ceramic fibre sheets containing a strongly endothermic material which absorbs heat during a fire, creating an effective delay to the heat transfer mechanism.

The system has been designed for ease of installation and for future removal and replacement. Site installation is carried out using a kit of parts custom fabricated by Darchem from site survey information. The installed system is durable, weather proof and aesthetically appealing.

Darchem has been closely involved with the nuclear industry for over 30 years, during which time it has developed an extensive capability to solve customer problems through engineering, development, testing, manufacturing and installation under strong project management and compliance with international quality standards.

Darchem Engineering has specialised in the design, development and supply of fire barrier systems for primary circuit equipment with contracts on over 100 nuclear reactors.

Darchem Engineering is also engaged in the fire protection of cable trays and electrical equipment associated with emergency shut down systems. It has a strong reputation in the petrochemical and nuclear industries and has developed a capability for comprehensive engineering and test services.



Certification Testing
The system has successfully passed a number of boundary and site specific tests consistent with NRC procedure for both new and upgrade material to cover the configurations shown on right.

Fire tests have been UL witnessed and certified and successfully comply with the criteria of: NRC generic letter 86-10, supplement 1 UL 1724 and ASTM E119

other tests include:

- Ampacity derating - IEEE P848 Draft 16
- Ageing - ASTM E1027
- Combustibility - ASTM E136
- Corrosibility - US Reg. 1.36
- Surface spread of flame - ASTM E84
- UV Resistance testing.

Tests have been carried out at both the Faverdale Technology Centre, a NAMAS accredited, internationally recognised fire testing laboratory, our in-house UKAS approved test facility, and independent test facilities in the USA, such as Omega Point and Wyle Laboratories