



## DARMATT & DARMATT J120 - Actuators

### Product Description

**DARMATT** is a flexible composite mattress system featuring multiple layers of ceramic fibre at various densities. The composite is compressed to approximately half its free thickness and held in compression with nylon pins incorporating a Stainless Steel woven wire mesh layer, Stainless Steel S316 Multi-core Lacing Wire and Stainless Steel Toggles, Fasteners, Buckles, etc., as deemed necessary. The specific composite for each application is dependant upon the time / temperature requirements, geometry and mass of the protected equipment, and site conditions such as ambient temperature, fuel sources, air flow etc. Darchem's Lloyds approved Thermal Transient Programme addresses each of these variables to determine the optimum solution.

Darmatt's exterior layer is usually either vinyl-coated polyester or a coated fibreglass cloth, in a fire this sacrificial fabric cover burns off, the nylon pins melt and release, allowing the composite to expand, increasing the insulating effect of the fibre.

Darmatt has a high resistance to corrosion, vibration, acoustics and shows no deterioration of performance throughout intended life span. Darmatt is lightweight enough for ease of handling and is totally removable to facilitate access to the protected equipment or fittings.

**DARMATT** is a durable unique fire protection system, which provides passive resistance to high temperature and flame impingement for electrical, pneumatic, structural, and other systems in the event of fire. The use of **DARMATT** can dramatically reduce fire losses by making possible a controlled systematic shutdown of critical facilities.

**DARMATT** is designed to maintain internal protection and permit continued operation of cables and equipment even under the most extreme conditions where fire temperatures exceed 1000° C. Typical **DARMATT** installations range from 15 mins of certified fire protection up to a full 2 hours.

The flexibility of the **DARMATT** material facilitates installation on restricted clearance areas and allows installation on existing equipment. Enclosures are supported by the equipment itself or by a supplementary frame. The installed weight of **DARMATT** products is 1.8 to 3.5 lb/sq. ft. depending on the fire protection criteria.

**DARMATT** has been tested and accepted by a number of major oil and petrochemical companies including Exxon, Mobil, Chevron, Dupont, Texaco, Aramco and British Petroleum. The **DARMATT** composite often recommended for petrochemical plants provides a protection window from between 15 minutes to 120 minutes in an 1100° C Hydrocarbon fire.

## **Darmatt J120 Flexible Fire Protection Systems**

The system **DARMATT J120** is based on standard **DARMATT** mattress widely used in the petrochemical, offshore and power generation markets for the protection of electrical cables and related safety critical plant equipment such as ESD Valves, actuators, vessels and pipework.

**DARMATT J120** is a flexible composite mattress system constructed with both a varying number of layers and density using ceramic or other fibres. An outer layer of stainless steel mesh is fitted that serves to protect against the effects of hydrocarbon jet fire (the standard **DARMATT** will not have the mesh fitted).

**DARMATT** flexible fireproofing system has successfully passed a 2 hour jet fire and 1.62 bar blast overpressure tests.

### **DARMATT & DARMATT J120 Fastening / Locking Mechanism Detail**

The **DARMATT** system is held together by highly flexible PVC coated stainless steel multi strand wire lacing that helps to keep the jacket compact and integral. Tie loops are built into each panel to accommodate the lacing wire. As the wire is extremely flexible, the fastening of the panels is a simple task when the installation instructions are followed. This fastening system has been used on all **DARMATT** systems supplied by Darchem and to date there have not been any problems experienced either with installation or removal / re-installation of these systems.

### Applications

Darmatt is design to Protect:

- Cable Trays
- Actuators & Valves
- Vessels & Manways
- Pipe & Fittings

### Certification

DARMATT has been approved and verified by Lloyds and other certifying authorities for applications for the protection of critical control equipment

DARMATT J120 is a fully compliant product, certified by both Lloyds and DNV and successfully meets the following requirements:

- Jet Fire – 2 hour duration at Sintef NBL, the Norwegian Fire Research Institute and 2 hour duration at the Buxton H.S.E. Fire Test Facility.
- Blast overpressure – Blast tests up to 1.6 Bar at the Building Research Establishment, Cardington.
- Water Ingress – 30 minutes duration at approved water deluge rates monitoring and certified by Lloyds

