

6.20.2. Valves for Refineries „ESD“

Emergency Shut Down Valves (ESD)

Quarter-turn valves are the most common ESD control valves for actuation. Automatic control valves are fitted with hydraulic, pneumatic and electric actuators that respond to changes in pressure, flow or temperature, and automatically open or close the valve.

Danger and damage from fire at refineries, petrochemical and offshore installations can be minimized by efficient protection of the systems controlling the plant.

Remote valve operation station of fire proof actuator with accessories and air reservoir system to guarantee three complete cycle in the event of fire pneumatic operated with “Darchem” fire proof protection.



Figure 6.20.2.-1: Butterfly Type LTR 43 with Darmatt fire protection system

Darchem Engineering has developed DARMATT¹ to provide a flexible fire protection system, which can dramatically reduce fire loss or damage by allowing a controlled shutdown of critical facilities.

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,

¹ <http://www.darmatt.com>

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 fibre glass 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.

ESD Butterfly valves

Metal seated, fire safe Size 3 - 20" ANSI Class 150 – 900 with Fire safe certification in accordance with BS EN ISO 10497:2004, second edition & ANSI/API Standard 607, fifth Edition, June 2005

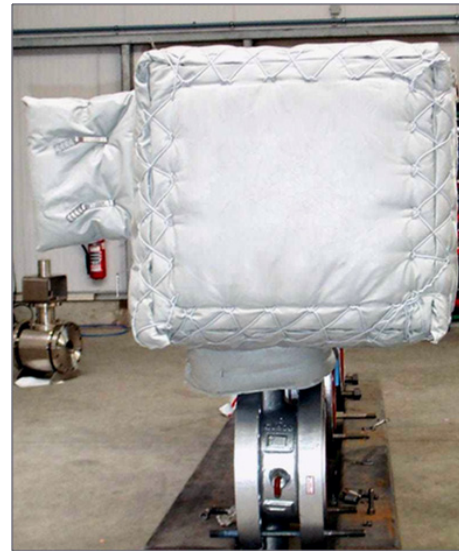
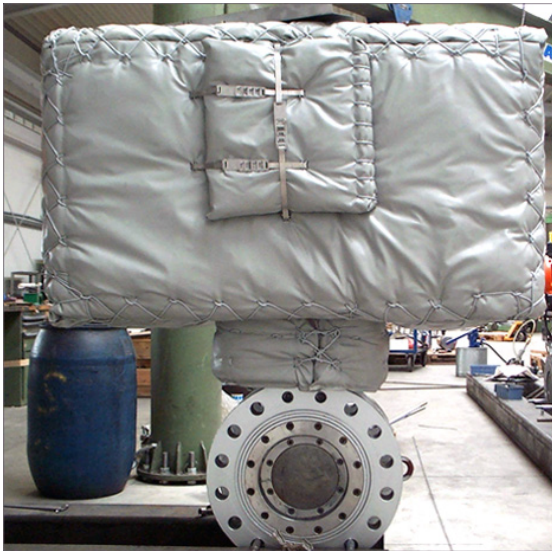


Figure 6.20.2.-2: Butterfly Type LTR 43 with Darmatt fire protection system



Figure 6.20.2.-3: Photo DARMATT

FIRE TEST QUALIFICATION CERTIFICATE



Score (Europe) Ltd



Item	Butterfly Valve (Type LTR 43)
Size	8"
Class	150
Serial no	No Data / Test direction flow behind disc as per arrow
Body material	1.4404
Seat	316SS/Graphite
Manufactured by	Leusch GmbH
In accordance with job number	182476 COW
In accordance with drawing number	L-983818 dated 04/12/06

The above valve was tested by Score (Europe) Ltd at their Specialised Valve Research and Test Centre, Cowdenbeath, Scotland and the results have been recorded as a PASS, having complied with the minimum performance requirements stated in specification

BS EN ISO 10497 2004, Second Edition & ANSI/API Standard 607, Fifth Edition, June 2005

Test date	18/01/07
Other sizes qualified	8" & larger
Other pressure ranges qualified	150, 300 & PN10, PN16, PN25, PN40

Tested by W Hay / S Penman / S Fox



Witnessed by W Campbell –
Lloyds Register
EMEA

Signature of W Campbell
24 JAN 2007

This certificate must be read in conjunction with the full
Score Test Report Number

182476-1