



CERTIFICATE NUMBER

DATE

04-HS415201A-PDA

19 February 2004

ABS TECHNICAL OFFICE

Houston SED - Ship Systems

CERTIFICATE OF Design Assessment

This is to Certify that a representative of this Bureau did, at the request of
NORRISEAL Controls

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate. It will remain valid for five years from the date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first).

PRODUCT: High Performance Butterfly Valves
MODEL: M285 Series, R285 Series
ABS RULE: 2004 Steel Vessel Rules 4-6-2/9.13, 4-6-2/5.9, 4-6-4/5.5.4(b), 4-6-4/13.7.2, 4-6-2/7.3.2
OTHER STANDARD: API 609, AWWA C504-70, ANSI 16.34, MSS SP-67, BS 3952; MILV-22133C, 16468;

AMERICAN BUREAU OF SHIPPING

Hans P. Haendler

Engineering Type Approval Co-ordinator

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Product: High Performance Butterfly Valves

Model: M285 Series, R285 Series

Intended Service:

Salt and fresh water cooling systems, cargo oil lines, bilge suctions for holds in bulk carriers, discharge system

Description:

M285 Series: Metal Lined, R285 Series: Elastomer Lined

Ratings:

Sizes: 2 in.- 36 in.; Pressure: 285 psi (ANSI 150); Temperature: -40 degrees F to +350 degrees F (Metal Lined); -20 degrees F to +250 degrees F (Elastomer Lined)

Service Restrictions:

Only lug type valves to be used at the shell of the vessel.

Comments:

Elastomer lined valves not to be used at the shell of the vessel, on oil tanks with a static head of oil and on firemain sprinkler, other fire safety systems, cargo oil tanks with static head of oil and at manifolds. All valves (metal lined) which may be used at the shell or below the deepest loadwater line are to be hydrostatically tested to a pressure of at least 5 bar (72.5 psig) in the presence of the ABS Surveyor.

Term of Validity:

This product/model is covered under Product Design Assessment (PDA) Certificate # 04-HS415201A-PDA, dated 19/Feb/2004. This PDA Certificate expires Feb of 2009. It will remain valid for the 5 years from date of issue or until the Rules or specifications used in the assessment are revised (whichever occurs first).

STANDARDS

ABS Rules:

2004 Steel Vessel Rules 4-6-2/9.13, 4-6-2/5.9, 4-6-4/5.5.4(b), 4-6-4/13.7.2, 4-6-2/7.3.2

National:

API 609, AWWA C504-70, ANSI 16.34, MSS SP-67, BS 3952

Others:

MILV-22133C, 16468