



Fire Type-Test Certificate

Office: **Coventry**

Date: **03 October 2014**

This Certificate is issued to **CONCEPT 2 ENGINEERING LTD., Hey Lane, Scammonden, Huddersfield, HD3 3FW, to certify that the undersigned did attend their works on 6th June 2014 in order to witness fire testing of the valve listed below. Testing was carried out on behalf of EVOLUTION VALVES LIMITED in accordance with Testing Procedure TP-084 Rev. 0 and ISO 10497: 2010, 3rd Edition: -**

GEARBOX OPERATED TOV BUTTERFLY VALVE, DN200 Nom
RATED PRESSURE CLASS 150 – DRAWING NO: 8in 150 REV. 0
MANUFACTURED IN FERRITIC STEEL (BS1501-161-430A) BODY
GLAND BOLTING: GRADE B7

The valve was mounted in the test apparatus with the bore in a horizontal position, and flame environment thermocouples and calorimeter cubes located in position. The test apparatus was verified to comply with the requirements of the testing procedure and calibration of test equipment was also verified.

The valve was then subjected to a pressure test to a pressure in accordance with the requirements of paragraph 5.1 of the testing procedure.

The closed valve was then subjected to a 30 minute burn test with the pressure being maintained in accordance with paragraph 5.2 of the testing procedure. The average temperature of the thermocouples was maintained between 761°C and 980°C, with no temperature reading less than 704°C during the burn period. The average temperature of the calorimeter cubes was 650°C within 15 minutes of the burn period and maintained with no temperature recorded of less than 565°C.

The burner was then shut off, and the valve force cooled to below 100°C within the time specified in paragraph 5.4 of the testing procedure.

Through seat leakage (high test pressure) during the burn period, external leakage (high test pressure) during burn and cool-down periods, through seat leakage (low test pressure) after cool-down, and final external leakage (high test pressure) after cool-down and subsequent valve operation (paragraph 5.6) were measured, and found to be in accordance with the standard.

The test valve was fully opened against test pressure as per paragraph 5.5 of the testing procedure and the maximum force noted.

The sizes qualified as per the standard are DN200 and larger. Class rating qualified as per the standard are 150 and 300. In accordance with paragraph 7.2.1 of ISO 10497, the materials of construction of the pressure retaining envelope qualify other ferritic materials of construction within this generic classification

With regard to the satisfactory results of the above tests, and satisfactory review of the test report, it is considered that the above referenced valve meets the requirements of approved Testing Procedure No. TP-084 Rev. 0 and ISO 10497: 2010, 3rd Edition


Coventry Office
Lloyd's Register EMEA

COV001.2013.12 CERT

M. J. Lucas

Surveyor to Lloyd's Register EMEA

A subsidiary of Lloyd's Register Group Limited

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.