



# Fire Type-Test Certificate

Office: **Coventry**

Date: **31 July 2014**

This Certificate is issued to **Concept 2 Engineering Ltd., Hey Lane, Scammonden, Huddersfield, HD3 3FW**, to certify that the undersigned Surveyor to Lloyd's Register EMEA did at their request attend their works on 28 July 2014 to witness fire testing of the valve listed below. Testing was carried out in accordance with Testing Procedures TP-059 Rev 1, ISO 10497:2010, 3<sup>rd</sup> Edition and API 607, 6<sup>th</sup> Edition.

VALVE TYPE: GEARBOX OPERATED BUTTERFLY VALVE  
VALVE SIZE: DN200  
CLASS RATING: 150  
BODY MATERIAL: ASTM A216 WCB

The valve was mounted in the test apparatus with the bore in a horizontal position, and flame environment thermocouples and calorimeter cubes in position. The test apparatus was verified to comply with the requirements of the testing procedure. The valve was then subjected to a pressure test in accordance with the requirements of the testing procedure. The closed valve then subjected to a 30 minute burn test with the pressure being maintained in accordance with the testing procedure. The average temperature of the thermocouples was maintained between 760°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 560°C. The burner was then shut off, and the valve force cooled to below 100°C within 10 minutes. Through seat leakage (low test pressure) during the burn period, external leakage (low test pressure) during burn and cool-down periods, low Pressure seat test following the burn period and final external leakage (high test pressure) after cool-down and subsequent valve operation were measured, and found to be in accordance with the standard. The valve was operated against test pressure to the fully open position and external leakage was recorded again. The sizes qualified a per standard are DN200 and above. Class ratings qualified as per the Standards 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 ??? 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 Nos. TP-059 Rev 1, ISO 10497:2010, 3<sup>rd</sup> Edition and API 607 6<sup>th</sup> Edition.



Coventry Office  
Lloyd's Register EMEA  
COV001.2013.12 CERT

Peter Olson  
Surveyor to Lloyd's Register EMEA

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