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Translation

Certificate

on the testing of a butterfly valve for
pressure shock resistance and
flashback safety in closed state

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Reference: 100/410b/08 BVS-Fu

Bochum, 10/08/2009

DEKRA EXAM GmbH

Signed: Michael Faber
(Michael Faber)

Signed: Dr. Oliver Fuß
(Dr. Oliver Fuß)

The butterfly valve DN 200 with silicone gasket between the valve blade and the housing, manufactured by Fr. Jacob Söhne GmbH & Co., Porta Westfalica according to drawings

- ENG-015287, of 27/04/2009
- 10571011, of 24/11/1993 & 10/1/1994 with amendment a of 10/1/1994, amendment b of 11/11/2003, amendment c of 24/08/2004, amendment d of 12/11/2004, and amendment e of 19/11/2004
- 10571018, of 21/3/1994 & 19/12/1995 with amendment a of 4/4/1995, amendment b of 19/12/1995, amendment c of 11/11/2003, and amendment d of 10/11/2004
- 10571026, of 1/7/2003 with amendment a of 11/11/2003
- 10571027, of 1/7/2003 with amendment a of 11/11/2003, and amendment b of 09/12/2004
- 10577007, of 14/2/2005 with amendment a of 26/7/2005, and amendment b of 15/9/2005
- 10577002, of 8/11/2004 & 19/5/2005
- 11DSF001, of 27/4/2009

was flanged to a 1 m³ vessel and exposed to methane explosions. The explosion tests were performed with the valve blade closed.

The explosive mixture of methane and air was obtained by flush filling. The mixture was fired by a squib (E = 100 J) at the centre of the vessel.

Under the predefined test conditions, the butterfly valve was exposed to a maximum explosion gauge pressure of 3.8 bar.

As a result of the explosion tests according to DIN EN 14460, the butterfly valve **DN 200** with silicone gasket can be certified to be pressure shock resistant to **3.4 bar**.

Besides, the butterfly valve in closed state is effective against flame and spark propagation of dust explosions of organic dust up to explosion gauge pressures of 3.4 bar if the drive holds the butterfly valve blade closed with a torque of ≥ 60 Nm. The pressure shock resistance and effectiveness against flame and spark propagation also apply to the identical smaller size of DN 175 with no change of the drive torque.

In addition, explosion tests were performed on a **DN 150** butterfly valve, but with a lower torque of the drive of ≥ 29 Nm. The pressure shock resistance of **3.4 bar** and effectiveness against flame and spark propagation in closed state to dust explosions of organic dust up to explosion gauge pressures of 3.4 bar can be confirmed for sizes DN 150, DN 140, DN 120, DN 100, and DN 80 of the butterfly valve also with reduced torque of the drive.

Bochum, 10/08/2009

Responsible

Dr. Fuß