

(1) EC-Type Examination Certificate

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
- (3) No. of the EC-Type Examination Certificate: **BVS 09 ATEX H 026 X**
- (4) Equipment: **Gate valves**
series WB, XV, XVE, HG, HGE, MV, MVE
- (5) Manufacturer: **EBRO ARMATUREN**
Gebr. Bröer GmbH
- (6) Address: **Karlstraße 8**
58135 Hagen
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.
- (8) The certification body of DEKRA EXAM GmbH, Notified Body No. 0158 according to Article 9 of Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report PP 09EXAM 10246 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with

DIN EN 13463-1:2009**DIN EN 13463-5:2004**

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

II 1/1D c TX
-20°C ≤ T_a ≤ +60°C

DEKRA EXAM GmbH
Bochum, dated 11/07/2011

Signed: Simanski
Certification body

Signed: Hesener
Special services unit

- (13) Appendix to
 (14) EC-Type Examination Certificate
BVS 09 ATEX H 026 X
 (15) 15.1 Subject and Type

Gate valve series WB, XV, XVE, HG, HGE, MV, MVE

The operating data of the gate valves of relevance from the point of explosion protection are summarised in Table 1 below.

Table 1: Relevant operating data

Operating data	Gate valve series											
	WB			XV / XVE			HG / HGE			MV / MVE		
Size (DN)	50 -	350 300	500 400	80 150	200 600	700 800	80 250	300 300	50 125	150 300	350 600	700 1000
Max. permitted working pressure (bar)	10	6	4	16	10	6	10	6	16	10	6	4
Max. relative speed of the valve plate												$\leq 1 \text{ m} \cdot \text{s}^{-1}$
Valve plate seal												See Table 2
Max. permitted conveying temperature T_F of the products handled												See Table 2

The permitted conveying temperature of the products moving through the gate valve depends on the technical design of the seal, which is specified in Table 2 below.

Table 2: Seals and permitted conveying temperatures

Gate valve series	Seal type	Max. permitted conveying temperature of the products handled
WB	NBR	100 °C
	EPDN	100 °C
XV / XVE	PTFE with viton	180 °C
	PTFE with nitrile	100 °C
HG / HGE	PTFE with viton	180 °C
	Polyurethane	90 °C
	Graphite	150 °C
	EPDM	120 °C
MV / MVE	Nitrile	100 °C
	Viton	180 °C
	PTFE with nitrile	100 °C
	PTFE with viton	180 °C
	Polyurethane	90 °C
	Graphite	300 °C

15.2 Description

The gate valves of series WB, XV, XVE, HG, HGE, MV and MVE are intended for gating, passing and regulating the flow of dust products in flanged pipelines. The flow rate is regulated by a valve plate.

The design of the seal of the valve plate depends on the valve type. In order to integrate the valve plate, which is isolated by the embracing seal, in the equipotential bonding, a metal spring between the valve plate and the valve housing provides a path for electric discharge. To integrate the valve in the equipotential bonding system of the plant, a ground clip is provided on the valve housing.

The valve plate is moved by manual wheel, pneumatic piston or electric drive. The electrical equipment for controlling the drive, position indication and therefore the drive as such is not part of this EC-Type Test Certificate. The requirements on the electrical equipment used depend on the purpose to which the valve is put and must be complied in accordance with Directive 94/9/EC.

(16) Test and Assessment Report

PP 09EXAM 10246 EG, as of 11/07/2011

(17) Special Conditions for Safe Use

The potentially explosive products handled should have the following safety parameters. The permitted minimum ignition and smoulder temperatures depend directly on the conveying temperature T_F of the products handled.

Minimum ignition energy	$> 1 \text{ mJ}$	determined according to DIN EN 13821
Maximum conveying temperature T_F	\leq specification according to Table 2	
Ignition temperature	$\geq \frac{3}{2} T_F$	determined according to DIN EN 50281-2-1
Smoulder temperature	$\geq T_F + 75^\circ\text{C}$	determined according to DIN EN 50281-2-1

The conveyance of material susceptible to ignition or explosion by impact or friction (e.g., class 4.1 ADR material) or hybrid mixtures is forbidden. Basically, the equipment is not suitable for gating, passing or regulating self-decomposing material.

The gate valves must be integrated in the plant's equipotential bonding system at a ground clip provided on the gate valve housing to ensure that the resistance to ground is $< 10^6 \Omega$.

If the gate valves are used in a potentially explosive atmosphere, they must exclusively be operated with equipment suitable for the respective application and marketed in accordance with Directive 94/9/EC. If the gate valves are assembled with components or equipment not considered by this EC-type Test certificate, (e.g., drive), a separate risk assessment for additional ignition risks must be prepared.

As far as the drive is concerned, compliance with the maximum relative speeds as specified in Section 15.1 of the EC-test Type Certificates should be ensured.

As far as the selection of the electrical equipment is concerned, the requirements of DIN EN 60079-14 should be observed.

In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, Germany, 19 August 2011
11EXAM 10800

DEKRA EXAM GmbH

Certification body

Special services unit