



Certificate

The Certification Body RWTÜV Italia S.r.l. hereby certifies

PIBIVIESSE S.p.A.

Via Bergamina, 24
I-20014 Nerviano (MI)

That the product

**Fully Welded Ball Valves
Series W0, W1, W3**

Meets the below mentioned requirements:

IEC 61508: 2000, part 1 to 7

Functional Safety of electrical/electronic/programmable electronic safety related systems; Type A, Low Demand Mode

λ_s [1/h]	λ_{du} [1/h]	$\lambda_{dd(ps)}$ [1/h]	SFF (Partial Stroke Test)	SFF (No Partial Stroke Test)
$3,82 \cdot 10^{-7}$	$1,87 \cdot 10^{-8}$	$4,69 \cdot 10^{-9}$	98,8 %	94,2 %

PFD_{AVG} values for different values of TI and TI_{PS}: see Annex 1

As per these values, based on RWTÜV Assessment Report No. 233J04001/C in the valid version, the Pibiviesse Fully Welded Ball Valves can be used up to SIL 3 as a single device.

Date 2006-07-31

Carlo Tarantola
Carlo Tarantola

Certificate No. 233J04001/C
Expiry date: 2009-06-30

RWTÜV Italia S.r.l.
Via Pisacane, 46 – I-20025 Legnano



Annex 1 to Certificate

PIBIVIESSE S.p.A.

Via Bergamina, 24
I-20014 Nerviano (MI)

Fully Welded Ball Valves
Series Series W0, W1, W3

		Proof Test Interval Frequency (months)					
		6	12	24	36	48	60
Partial Stroke frequency (months)	1	1,76E-05	2,79E-05	4,84E-05	6,89E-05	8,94E-05	1,10E-04
	2	2,45E-05	3,47E-05	5,52E-05	7,57E-05	9,62E-05	1,17E-04
	3	3,13E-05	4,16E-05	6,21E-05	8,26E-05	1,03E-04	1,24E-04
	6	5,18E-05	6,21E-05	8,26E-05	1,03E-04	1,24E-04	1,44E-04
	9		8,26E-05	1,03E-04	1,24E-04	1,44E-04	1,65E-04
	12			1,24E-04	1,44E-04	1,65E-04	1,85E-04

PFD_{AVG} values (with Partial Stroke Test)

Proof Test Interval Frequency (months)					
6	12	24	36	48	60
5,18E-05	1,03E-04	2,06E-04	3,08E-04	4,11E-04	5,13E-04

PFD_{AVG} values (without Partial Stroke Test)

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