



ISOENCertifications s.r.l.

sede legale: via Suardi, 24 - 24124 Bergamo

sede operativa: via Puccini, 1 - 24040 Madone (BG)

tel. 035 4997726 - fax 035 4943471

P.IVA & C.F. 03940380169

e-mail info@isoencertifications.it

website www.isoencertifications.it

CUSTOMER

GHIBSON ITALIA S.R.L.

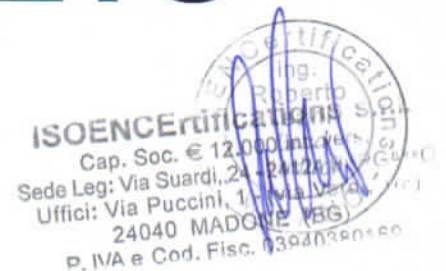


Legal site and Manufacturing Site:	Via Abitazione, 9/3 – 40053 Valsamoggia loc. Monteveglio (BO)
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FINAL RESULTS

BUTTERFLY VALVES

**Types
KI, KA, KX, PD**





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PFD – SINGLE ELEMENT – LOW DEMAND

Considering the calculations done, for conservative reason the worst values are considered as reference. So, final results are:

KI, KA, KX, PD

		Test Interval frequency (months)				
		6	12	24	36	48
Partial Stroke frequency (months)	1	2,6062E-05	4,0278E-05	6,8709E-05	9,7140E-05	1,2557E-04
	2	3,7908E-05	5,2124E-05	8,0555E-05	1,0899E-04	1,3742E-04
	3	4,9755E-05	6,3970E-05	9,2402E-05	1,2083E-04	1,4926E-04
	6		9,9509E-05	1,2794E-04	1,5637E-04	1,8480E-04
	9				1,9191E-04	
	12			1,9902E-04	2,2745E-04	2,5588E-04

		Test Interval frequency (months)				
		6	12	24	36	48
NO Partial Stroke Test		8,5294E-05	1,7059E-04	3,4118E-04	5,1176E-04	6,8235E-04


 ing. Roberto
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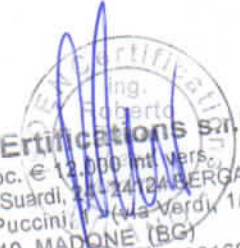


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	KI, KA, KX, PD
λ_{DD}	3,2456E-08
λ_{DU}	6,4912E-09
λ_S	3,1158E-08
λ_{TOT}	7,0104E-08
MRT	24
SFF	>90%

According to Beta calculation sheet the value of β is 0,05.


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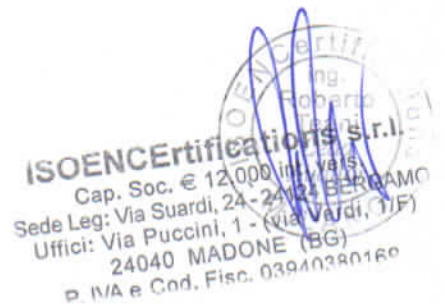
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According to the results and the assumptions (Type A, Low Demand Mode, HTF = 0, Systematic Capability = 3, etc.), as per these values, the product object of this study can be used up to SIL level as a "single device" according to the following tables:

KI, KA, KX, PD

		Test Interval frequency (months)				
		6	12	24	36	48
Partial Stroke frequency (months)	1	SIL3	SIL3	SIL3	SIL3	SIL3
	2	SIL3	SIL3	SIL3	SIL3	SIL3
	3	SIL3	SIL3	SIL3	SIL3	SIL3
	6		SIL3	SIL3	SIL3	SIL3
	9				SIL3	
	12			SIL3	SIL3	SIL3

		Test Interval frequency (months)				
		6	12	24	36	48
NO Partial Stroke Test		SIL3	SIL3	SIL3	SIL3	SIL3





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PFH – SINGLE ELEMENT – HIGH DEMAND

Considering the calculations done, for conservative reason the worst values are considered as reference. So, final results are:

	<i>KI, KA, KX, PD</i>
<i>PFH</i>	2,7367E-09
<i>SFF</i>	>90%

According to the results and the assumptions (Type A, High Demand Mode, HTF = 0, Systematic Capability = 3, etc.), as per these values, the product object of this study can be used up to SIL level as a "single device" according to the following table:

	<i>KI, KA, KX, PD</i>
<i>SIL</i>	SIL3

