



ISOENCertifications s.r.l.

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 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.

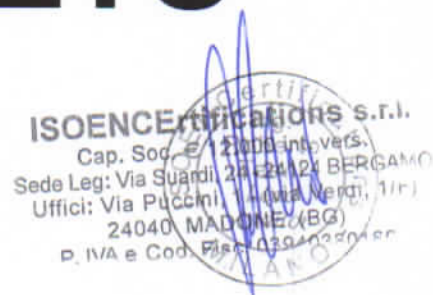


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FINAL RESULTS

BUTTERFLY VALVES

**Types
HD**





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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:

HD

		Test Interval frequency (months)				
		6	12	24	36	48
Partial Stroke frequency (months)	1	1,1943E-03	1,8231E-03	3,0808E-03	4,3385E-03	5,5962E-03
	2	1,7183E-03	2,3472E-03	3,6049E-03	4,8626E-03	6,1203E-03
	3	2,2423E-03	2,8712E-03	4,1289E-03	5,3866E-03	6,6443E-03
	6		4,4433E-03	5,7010E-03	6,9588E-03	8,2165E-03
	9				8,5309E-03	
	12			8,8453E-03	1,0103E-02	1,1361E-02

		Test Interval frequency (months)				
		6	12	24	36	48
NO Partial Stroke Test		3,7731E-03	7,5463E-03	1,5093E-02	2,2639E-02	3,0185E-02


 ing. Roberto
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	HD
λ_{DD}	1,4357E-06
λ_{DU}	2,8715E-07
λ_S	1,3783E-06
λ_{TOT}	3,1012E-06
MRT	24
SFF	>90%

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

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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:

HD

		Test Interval frequency (months)				
		6	12	24	36	48
Partial Stroke frequency (months)	1	SIL2	SIL2	SIL2	SIL2	SIL2
	2	SIL2	SIL2	SIL2	SIL2	SIL2
	3	SIL2	SIL2	SIL2	SIL2	SIL2
	6		SIL2	SIL2	SIL2	SIL2
	9				SIL2	
	12			SIL2	SIL1	SIL1

		Test Interval frequency (months)				
		6	12	24	36	48
NO Partial Stroke Test		SIL2	SIL2	SIL1	SIL1	SIL1


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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:

	- HD
PFH	4,0159E-07
SFF	>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:

	HD
SIL	SIL3

