

September 19, 2011

PED Categories & Classifications

For additional information, refer to BLACOH [Technical Bulletin PED01](#)
 PED COMPLIANCE UPDATE, Update to Pressure Equipment Directive (PED) 97/23/EC

BLACOH pulsation dampeners are classified under PED (fixed equipment) as pressure accessories and are classified under Category I and SEP. Working fluids are classified under PED into 2 groups. Group 1 consists of dangerous fluids (flammable, toxic and/or oxidizing). Group 2 consists of all other fluids (non-dangerous) not covered in Group 1. Pressure equipment has distinct categories based on maximum allowable pressure, type of working fluid and internal free volume.

In accordance with PED guidelines, BLACOH pulsation and surge suppressors can be used with both Group 1 and Group 2 fluids for specific applications within the EEA. BLACOH products can be classified within the PED directive as either Category I (bearing the CE Mark) or SEP (not allowed to bear CE Mark). See **Table A** for specific PED category criteria.

Table A. PED Categories for Group 1 & 2 Fluids

Category	Criteria (for Group 2 fluids)	Criteria (for Group 1 fluids)
SEP (Module 0) CE Mark not required or allowed	Must be less than 50 B/L. For V less than 1L, PS must be less than 1000bar.	Must be less than 25 B/L. For V less than 1L, PS must be less than 200bar.
I (Module A) CE Mark is required	Greater than 50 and Less than 200 B/L. V is larger than 1 Liter.	Greater than 25 and Less than 50 B/L. V is larger than 1 Liter.

$$\text{Pressure (PS) x Volume (V) = ____ B/L (bar X liter)}$$

Table B shows PED classification for BLACOH pulsation dampeners, surge suppressors and Tef-Guard models. Notice that all seven SEP classified models (metal) have less than 1 liter of free volume: Sentry II (flat top), Sentry III (Dome & Flat), Tef-Guard and XP models (8, 12 and 24). Both the Sentry III and the Tef-Guard models are suitable for Group 1 and 2 fluids without a reduction in pressure. All other models will need the maximum rated pressure from Group 2 reduced for service with Group 1 fluids.

All plastic dampeners can be rated for maximum pressure of 150 psig (10 bar), except for Sentry I - Group 1 fluid (115 psig, 8 bar). Notice that five of six models are SEP approved for Group 2 fluids and four of these models are approved for SEP Group 1 fluids. The Sentry I model series will be rated to Category I for Group 1 fluids.

Table B. BLACOH Products with PED Classification

METAL ⁽¹⁾			Group 2		PED Classification	bar-liter B/L	Group 1		PED Classification	bar-liter B/L
			MAX psig	MAX bar			MAX psig	MAX bar		
Type	Cubic Inch									
SENTRY I ⁽²⁾	Dome Top	370	300	21	Category I	125.4	115	8	Category I	48.1
	Flat Top	175	1000	69	Category I	197.7	250	17	Category I	49.4
SENTRY II ⁽²⁾	Dome Top	85	1000	69	Category I	96.0	500	34	Category I	48.0
	Flat Top	36	1000	69	SEP	40.7	1000	69	SEP	40.7
SENTRY III	Dome Top	10	1000	69	SEP	11.3	1000	69	SEP	11.3
	Flat Top	4	1000	69	SEP	4.5	1000	69	SEP	4.5
SENTRY IV	5 Gallon	1155	150	10	Category I	195.7	35	2	Category I	45.7
SENTRY V	10 Gallon	2310	75	5	Category I	195.7	19	1	NA	49.6
SENTRY I	2.5 Gallon	577	150	10	Category I	97.8	75	5	Category I	48.9
	XP, 8	8	4000	276	SEP	36.2	2800	193	SEP	25.3
	XP, 12	12	4000	276	SEP	54.2	2800	193	SEP	38.0
	XP, 24	24	4000	276	SEP	108.5	2800	193	SEP	75.9
	TEF-Guard	12	2000	138	SEP	27.1	2000	138	SEP	27.1

PLASTIC ⁽¹⁾			Group 2		PED Classification	bar-liter B/L	Group 1		PED Classification	bar-liter B/L
			MAX psig	MAX bar			MAX psig	MAX bar		
Type	Cubic Inch									
SENTRY I	Dome Top	370	150	10	Category I	62.7	115	8	Category I	48.1
	Flat Top	175	150	10	SEP	29.7	150	10	Category I	29.7
SENTRY II	Dome Top	85	150	10	SEP	14.4	150	10	SEP	14.4
	Flat Top	36	150	10	SEP	6.1	150	10	SEP	6.1
SENTRY III	Dome Top	10	150	10	SEP	1.7	150	10	SEP	1.7
	Flat Top	4	150	10	SEP	0.7	150	10	SEP	0.7

⁽¹⁾ End user is responsible for determining either Group 1 or Group 2 fluid category

⁽²⁾ Consult BLACOH for flange models

BLACOH Technical Bulletin PED01 PED COMPLIANCE UPDATE, Update to Pressure Equipment Directive (PED) 97/23/EC is available on our web site at www.blacoh.com/certifications.aspx.

For information or assistance, call BLACOH at 951.342.3100 (toll free 800.603.7867) or email us at Sales@blacoh.com. We sincerely appreciate your business and look forward to serving you.