GUJARAT GAS

DATASHEET OF FILTER

Document No.: GGL/TS/DS/FILTER/2017/002

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DATASHEET OF FILTER

Sr. No.	Technical Description	Specifications
General		
1	Tag No.	Vendor to Furnish
2	Main line size	1" & larger
3	Quantity	As per P&ID
4	Governing Standard	ASME SEC VIII, DIVISION 1, ASME SEC V, ASME SEC IX
Service Condition		
5	Design Pressure & Class	150#- 19 Barg, 300# - 49 Barg, 600# - 98 Barg
6	Design Temperature	150# : 0 to 65 ˚C 300# & 600# : -10 to 65 ˚C
7	Operating Pressure	10 to 40 Barg (or as per user requirement/process parameter)
8	Operating Temperature	150# : 0 to 50 ˚C 300# & 600# : -10 to 50 ˚C
9	Filter Type	Vertical Type
10	Operating S.G./Mol. Wt.	Typically 0.6 / 17.38 (g/mol)
11	Specific heat ratio (Cp/Cv) / Compressibility Factor	1.27 / 0.98
12	Flash % /Viscosity cP (operating)	- / 0.0135
13	Flow gas - Min. / Max.(SCMH)	Design Flow: 100/250/500/750/1000/1500/2000/5000/10000 Filter shall be capable for max. flow of 1.2 times the design flow (or as per user requirement). Min : VENDOR TO FURNISH
Filter Construction Design		
14	Corrosion allowance (for CS parts)	1.5 mm
15	Filtration Capacity	≤ 5 micron
16	Filtration efficiency	99.9% filtration
17	Pr. Drop - clean (max)	0.1 Max
18	Pr. Drop - dirty (max)	0.5 Max
19	Dust content	0.1 mg/dm3
20	Filter element MOC	Polyester/Poly propylene/ Pleated synthetic
21	Filter element – make & Model	VENDOR TO FURNISH
22	OD x ID x Length	Flow SCMH / Element Size: 100 – 66mmOD X 28mmID X 110mmLong 250 – 95mmOD X 56mmID X 500mmLong 500 – 95mmOD X 56mmID X 500mmLong 750 – 114mmOD X 80mmID X 600mmLong 1000 – 114mmOD X 80mmID X 600mmLong 1500 – 160mmOD X 120mmID X 500mmLong 2000 – 160mmOD X 120mmID X 500mmLong 5000 – 160mmOD X 120mmID X 800mmLong 10000 – 220mmOD X 180mmID X 914mmLong
23	Nos. of cartridges	as per OEM recommendation and design
24	Element bursting pressure	2 barg (Differential pressure across element)
25	Flange Type	WNRF for size 2” NB and larger.

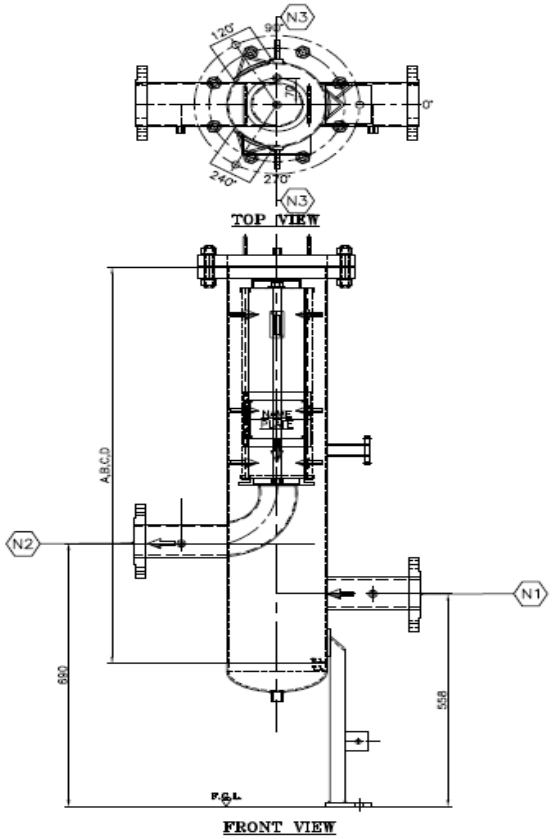
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		SORF for size lower than 2" NB
26	Fixing details	As per approved drawing
27	PSV size	1" x 2" (Applicable to DRS/IPRS/CPRS)
28	DPG size	1/2" 3000#
29	Vent Size	1/2" on Flange
30	Drain size	1", while for 100 scmh skid drain shall be ½''
31	Inlet/Outlet Size	As per approved drawing (Velocity for unfiltered (20m/s) & filtered gas (30 m/s) to be considered for nozzle sizing))
32	Head connection	As per approved drawing
Filter Dimension		
33	Overall Length	As per approved drawing
34	Overall height	As per approved drawing
35	Empty weight (kg)	As per approved drawing
36	Operating weight	As per approved drawing
Filter Material of Construction		
37	Shell	1. 150# - MOC-ASTM A 106 Gr. B (Charpy test at 0 deg C) or ASTM A 333 Gr. 6, WT matching to pipe WT as per GGL Piping and Valve material Specification 2. 300# & 600# - MOC- ASTM A 333, Gr.6. wall thickness matching to pipe WT as per GGL Piping and Valve material 3. The carbon content is greater than 0.12% in product analysis, the CE (IIW) shall not exceed 0.40% and if The carbon content is less than 0.12% in product analysis, the CE (Pcm) shall not exceed 0.20%.
38	Shell flange	1. 150# = ASTM A 105 (Charpy test at 0 deg C) 2. 300# = ASTM A 350 Gr. LF2, MSS SP 44 Gr.F52 3. 600# = ASTM A 350 Gr. LF2, MSS SP 44 Gr.F52, MSS SP 44 Gr.F65 The carbon content is greater than 0.12% in product analysis, the CE (IIW) shall not exceed 0.40% and if The carbon content is less than 0.12% in product analysis, the CE (Pcm) shall not exceed 0.20%.
39	Nozzle	Same as Shell MOC
40	Nozzle flange	Same as Shell flange MOC
41	Head	150# : ASME A 516 Gr.70 /SA 234 WPB 300#/600# : ASME A 420 Gr. WPL 6
42	Head flange	Same as shell flange MOC
43	Bottom	150# : ASME A515/ ASME A 516 Gr. 60/70 /SA 234 WPB 300#/600# : ASME A 420 Gr. WPL 6
44	Perforated sheet	CS plated

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45	Stud bolts / Nuts	1. For 150# - ASTM A 193 Gr. B7 / A194 Gr. 2H, Hot Dipped Galvanized as per ASTM A 153 2. FOR 300#/600#- STUD:ASTM A 320 Gr.L7 NUT: ASTM A 194 Gr.7 , Hot Dipped Galvanized as per ASTM A 153
46	Gaskets	SS 316 Spiral Wound with CANF filler + SS 316 Inner & Outer ring as per ASME 16.20
47	O ring	Buna N
48	Support	ASME A 283 Gr. C / IS : 2062
Accessories		
49	Davit Details (with make & Model)	Davit arm for filter shell size of 8" and above. Adequate lifting lugs may be provided for the vessel diameter 8"and larger
50	Companion flange, Blind, flange, Gaskets, Bolts / stud, Nuts for all nozzles, Earthing Lug	YES
INSPECTION , TESING & OTHERS		
51	Hydrostatic test	1.5 * Design Pressure
52	Radiography	100%
53	Dye Penetration Test	Yes
54	Post weld Heat treatment	N/A
55	Charpy Impact Test	Yes
56	Painting	As per Painting Datasheet
Note:		
1. All CS parts weld joints to be stress relieved. Hardness in welds not to exceed 200 BHN.		
2. Gas Composition & quality is as per process data sheet.		
3. Filtration area should be minimum 8 times of inlet nozzle area. Sizing calculations to be submitted by the vendor. Filter to attain instantaneous volume swing upto 20%		
4. Fire case PSV of suitable capacity shall be provided on each dry gas filter.		
5. Proper support, crossover and platform required for maintenance of filter, PSV, DPG etc. (where applicable)		
6. Sizing calculation of filter element to be submitted by VENDOR's.		
7. 100% Radiography applicable on welded joints		
8. Filter Design & Calculations shall be approved by TPIA. Ensure that there is adequate space between Vessel's inner surface and cartridge element for effective filtration.		
9. Typical GAD, Element size and shell size is enclosed. However, final sizing shall be checked by vendor and submitted to GGL.		

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A.	1040 MM LG.	ø160 X ø120 X 500
B.	1340 MM LG.	ø160 X ø120 X 800
C.	1110 MM LG.	ø114 X ø80 X 600
D.	1040 MM LG.	ø95 X ø65 X 500

Sr. No	Item Description	Number of element	Flow SCMH	Shell Diameter (mm)	Length (mm)
1	66mmOD X 28mmID X 110mmLong	1	100	76.2	200
2	95mmOD X 56mmID X 500mmLong	1	250	168	1040
3	95mmOD X 56mmID X 500mmLong	1	500	168	1040
4	114mmOD X 80mmID X 600mmLong	1	750	168	1110
5	114mmOD X 80mmID X 600mmLong	1	1000	168	1110
6	160mmOD X 120mmID X 500mmLong	1	1500	220	1040
7	160mmOD X 120mmID X 500mmLong	1	2000	220	1040
8	160mmOD X 120mmID X 800mmLong	1	5000	220	1340
9	220mmOD X 180mmID X 914mmLong	1	10000	324	1450