



GUJARAT GAS

## DATASHEET OF FILTER

**Document No.: GGL/TS/PE-PNG/SUPPLY/FILTER**

REV. NO	REVISION DESCRIPTION	DATE OF ISSUE
	Previous doc - GGL/TS/DS/FILTER/2017/002 R1 - Added element shell dimensions for 100 & 10000 scmh R0 - Filter shall be capable for max. flow of 1.2 times the design flow	



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## DATASHEET OF FILTER

Sr. No.	Technical Description	Specifications
<b>General</b>		
1	Tag No.	Vendor to Furnish
2	Main line size	1" & larger
3	Quantity	As per P&ID/GAD
4	Governing Standard	ASME SEC VIII, DIVISION 1, ASME SEC V, ASME SEC IX
<b>Service Condition</b>		
5	Pressure Class and MOAP	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	150#: 02 to 16 Barg (or as per user requirement/process parameter) 300#: 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
14	Corrosion allowance (for CS parts)	1.5 mm
<b>Filter Element Design</b>		
15	Filtration fineness/micron rating	≤ 5 micron
16	Filtration efficiency	99.9% filtration
17	Pr. Drop - dry (max)	0.1 Max
18	Pr. Drop - wet (max)	0.5 Max
19	Dust content	0.1 mg/dm <sup>3</sup>
20	Filter element MOC	Polyester/Poly propylene/ Pleated synthetic
21	Filter element – make & Model	Filter elements shall be procured from approved vendor list provided by GGL.
22	OD x ID x Length	A. For Wall mounted IMS 65mm OD x 35mmID x 200mmLong



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		B. For Ground mounted IMS																				
		<table border="1"> <thead> <tr> <th>Flow SCMH</th> <th>Element Size</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>66mmOD X 28mmID X 110mmLong</td> </tr> <tr> <td>250</td> <td>95mmOD X 56mmID X 500mmLong</td> </tr> <tr> <td>500</td> <td>95mmOD X 56mmID X 500mmLong</td> </tr> <tr> <td>750</td> <td>114mmOD X 80mmID X 600mmLong</td> </tr> <tr> <td>1000</td> <td>114mmOD X 80mmID X 600mmLong</td> </tr> <tr> <td>1500</td> <td>160mmOD X 120mmID X 500mmLong</td> </tr> <tr> <td>2000</td> <td>160mmOD X 120mmID X 500mmLong</td> </tr> <tr> <td>5000</td> <td>160mmOD X 120mmID X 800mmLong</td> </tr> <tr> <td>10000</td> <td>220mmOD X 180mmID X 914mmLong</td> </tr> </tbody> </table>	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
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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. 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 (Applicable to DRS/IPRS/CPRS)																				
30	Drain size	a. 1" dia. for 250 scmh and higher ground mount skids b. 1/2" dia for 100 scmh skid & Wall mount skids																				
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																				
<b>Filter Dimension</b>																						
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																				
<b>Filter Material of Construction</b>																						
37	Shell	<ol style="list-style-type: none"> <li>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</li> <li>300# &amp; 600# - MOC- ASTM A 333, Gr.6. wall thickness matching to pipe WT as per GGL Piping and Valve material</li> <li>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%.</li> </ol>																				
38	Shell flange	<ol style="list-style-type: none"> <li>150# = ASTM A 105 (Charpy test at 0 deg C)</li> <li>300# = ASTM A 350 Gr. LF2, MSS SP 44 Gr.F52</li> </ol>																				



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		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
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
<b>Accessories</b>		
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
<b>INSPECTION , TESING &amp; OTHERS</b>		
51	Hydrostatic test	1.5 * Design Pressure
52	Radiography except fillet joints	100%
53	Dye Penetration Test	Yes
54	Post weld Heat treatment	N/A
55	Charpy Impact Test	Yes
56	Painting	As per Painting Datasheet
<b>Note:</b>		
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. Sizing calculations to be submitted by the vendor approved by TPI. Filter to attain instantaneous volume swing up to 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. (wherever applicable)		



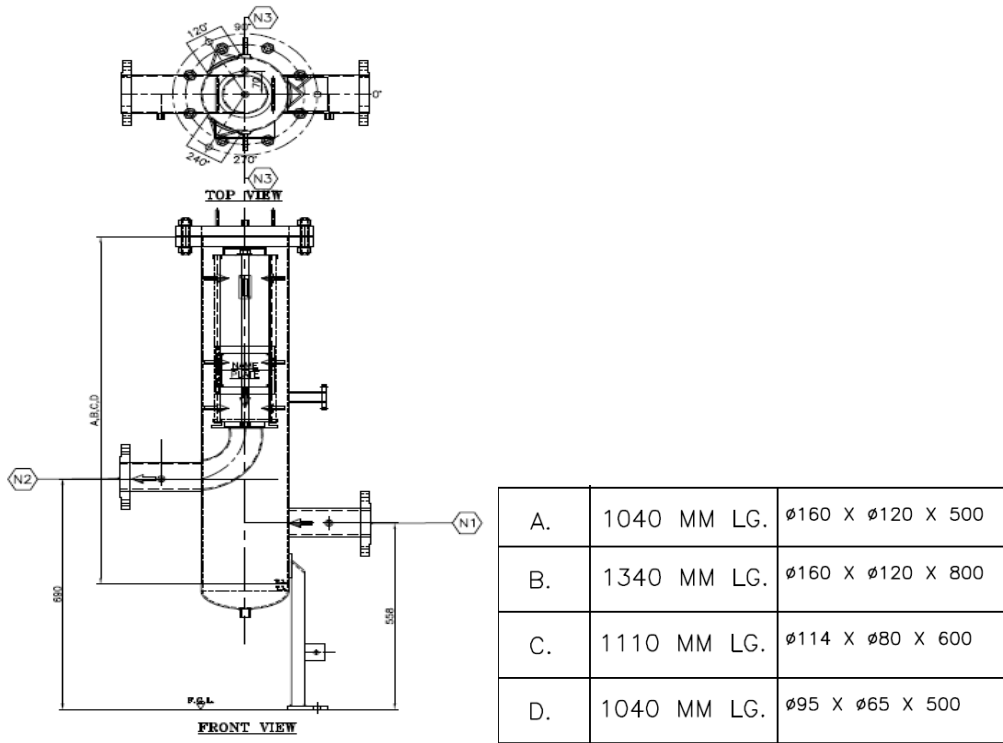
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| 6. Sizing calculation & cartridge performance curve chart of filter element to be submitted by VENDOR's.  |
| 7. 100% Radiography on butt welded joints, relevant NDT methods for fillet joints as per ASME codes   |
| 8. Filter Design & Calculations 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.   |
| 10. Minimum ASNT Level-II inspector is required for NDT interpretations   |



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### TYPICAL DRAWING



Sr. No	Item Description	Number of element	Flow SCMH	Shell Diameter (mm)	Length (mm)
1	66mmOD X 28mmID X 110mmLong	1	100	76	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
10	65mm OD x 35mmID x 200mmLong	1	200	Vendor to furnish	Vendor to furnish