



GUJARAT GAS

## DATASHEET OF FILTER

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

|                |  |                      |
|----------------|--|----------------------|
| 01             | Filter requirement based on wall mounted skid  | 11.08.2025           |
| 00             | Original Document  | 16.10.2025           |
| <b>REV. NO</b> | <b>REVISION DESCRIPTION</b><br>Previous doc - GGL/TS/DS/FILTER/2017/002<br>R1 - Added element shell dimensions for 100 & 10000 scmh<br>R0 - Filter shall be capable for max. flow of 1.2 times the design flow | <b>DATE OF ISSUE</b> |



GUJARAT GAS

**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<br>300# & 600# : -10 to 65 °C  |
| 7                            | Operating Pressure                                   | 150#: 02 to 16 Barg<br>(or as per user requirement/process parameter)<br>300#: 10 to 40 Barg<br>(or as per user requirement/process parameter)   |
| 8                            | Operating Temperature                                | 150# : 0 to 50 °C<br>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:<br>100/250/500/750/1000/1500/2000/5000/10000<br>Filter shall be capable for max. flow of 1.2 times the design flow (or as per user requirement).<br>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/dm3   |
| 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<br>65mm OD x 35mmID x 200mmLong  |



|                                 |                               | B. For Ground mounted IMS <table><tr><th>Flow SCMH</th><th>Element Size</th></tr><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></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 |
|---------------------------------|-------------------------------|--|-----------|--------------|-----|-----------------------------|-----|-----------------------------|-----|-----------------------------|-----|------------------------------|------|------------------------------|------|-------------------------------|------|-------------------------------|------|-------------------------------|-------|-------------------------------|
| 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.<br>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<br>b. ½” 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  |           |              |     |                             |     |                             |     |                             |     |                              |      |                              |      |                               |      |                               |      |                               |       |                               |
| 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<br>2. 300# & 600# - MOC- ASTM A 333, Gr.6. wall thickness matching to pipe WT as per GGL Piping and Valve material<br>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)<br>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<br>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<br>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<br>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<br>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)           |  |  |



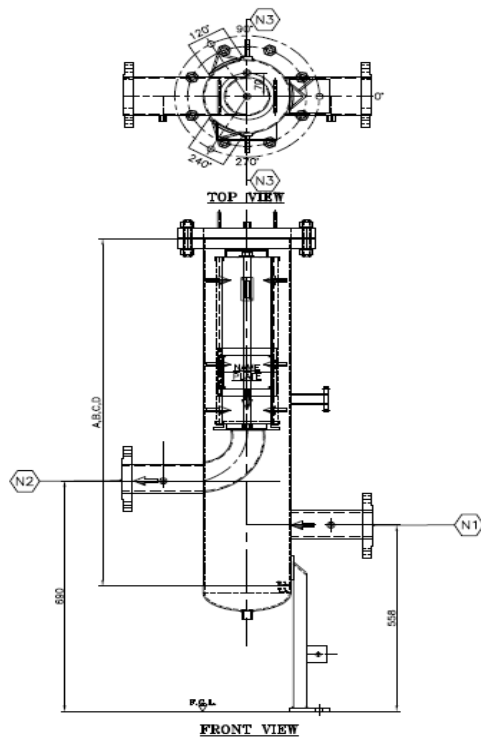
GUJARAT GAS

|   |
|---|
| 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   |



GUJARAT GAS

## TYPICAL DRAWING



|    |             |                   |
|----|-------------|-------------------|
| 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                  | 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 |