

**SALES ORDER REQUISITION & SUPPLY COLUMN**

ChemDist Process Solutions Pvt Ltd

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| QRN No. | **QRN:6827 R5** |
| Type. |  |
| Job No. | SO-656 |
| Date | 07/07/2022 |
| Rev | R1 |

# Address:

Plot No J-174/1, J-Block,

PCNTDA, Bhosari, Pune-411026, Maharashtra

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Email[: info@chemdist.in](mailto:info@chemdist.in)

1. **SCOPE OF SUPPLY :**

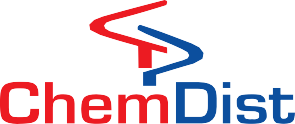
**Our scope of supply includes Manufacturing & Supply of below listed items:**

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| 1. **Description** | **Absorption Column (C-101) Qty – 1** |
| **Process Details** | |
| Design Pressure (kg/cm2 g) | 3.5 |
| Design Temperature (Deg C) | -10 to 200 |
| Shell Radiography | **10% L and C seams, 100% for all T joints** |
| Dishend Radiography | **100%** |
| **Vessel Details** | |
| Shell Diameter (ID) | ~3100 mm |
| Shell Height (Bottom TL to Top TL) | ~33050 mm |
| Top/Bottom | 2:1 Ellipsoidal Dish end |
| Shell Thickness | 12 mm for Bottom course no 1 to 3 (4100 mm) |
| Shell Thickness | 10 mm for course no 4 to 5 (3000 mm) |
| Shell Thickness | 8 mm for course no 6 to 14 (13500 mm) |
| Shell Thickness | 6 mm for course no 15 to 22 (12450 mm) |
| Top/Bottom end Thickness | Top – 10 mm (NOM), Bottom – 14 mm (NOM) |
| **Tray Support Rings** | **60 mm Width x 12 mm thk x 28 Nos** |
| Skirt (Top SS 304L Part) | 300 mm Lg x 12 mm Thick |
| Skirt ( Bottom MS Part) | 2510 mm Lg x 18 mm Thick |
| Body Flanges | NA |
| Type of Support | Skirt Support |
| Shell MOC | SA240 Gr 304L |
| Dish ends MOC | SA240 Gr 304L |
| Body Flange MOC | NA |
| Nozzles pipe MOC | * Upto 200 NB SA 312 TP 304L (Seamless) * Above 200 NB SA240 Gr 304L |
| Nozzle Flange MOC | * SA182 Gr 304L * Gas Inlet / outlet, Manhole Flange & cover flange – SA 516 Gr70 + SS 304L lining |
| Gasket | PTFE |
| Stud / Nut & Bolts Internal | SA 193 Gr B8 + SA 194 Gr 8 |
| Stud /Nut & Bolts External | SA 193 Gr B7 + SA 194 gr 2H |
| Skirt Support MOC | Top Shell – SA240 Gr 304L  Bottom Shell – IS 2062 Gr B with 2 coats of epoxy paint |
| Cage Ladder and Platform with Railings | IS 2062 Gr B (HDG) |
| Top Davit Arm for Nozzle B4 | IS 2062 Gr B (HDG) |
| Tailing Lug / Lifting Trunnion | IS 2062 Gr B with 2 coats of epoxy paint |
| Lifting Trunnion Pad | SA 240 Gr 304L |

**Nozzle Details:**

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| --- | --- | --- | --- | --- | --- | --- |
| NOZZLE NO. | SERVICE | Qty | NOZZLE PIPE | | End Connection | |
| NB | SCH | Type | Class |
| A1 | Inlet Gas | 1 | 900 | 10 thk | SORF | 150# |
| A2 | Inlet Lower Circulation | 1 | 200 | **6 thk** | SORF | 150# |
| A3 | Inlet Middle Circulation | 1 | 250 | 6 thk | SORF | 150# |
| A4 | Inlet Upper Circulation | 1 | 250 | 6 thk | SORF | 150# |
| A5 | Inlet Process Water | 1 | 50 | Sch 40 | SORF | 150# |
| A6 | Inlet Urea Solution | 1 | 50 | Sch 40 | SORF | 150# |
| B1 | Liquid Outlet with Vortex Breaker | 1 | 200 | **6 thk** | SORF | 150# |
| B2 | Outlet Middle Circulation (Draw off tray) | 1 | 250 | 6 thk | SORF | 150# |
| B3 | Outlet Upper Circulation (Draw off tray) | 1 | 300 | 6 thk | SORF | 150# |
| B4 | Outlet Gas | 1 | 900 | 10 thk | SORF | 150# |
| L1-12 | Level Instrument | 12 | 40 | Sch 40 | SORF | 150# |
| M1 | Manhole with cover & davit | 1 | 800 | 10 thk | SORF | - |
| M2-8 | Manhole with cover & davit | 7 | 600 | 10 thk | SORF | 150# |
| O1-4 | Analysis Point | 4 | 40 | Sch 40 | SORF | 150# |
| P1-4 | Pressure Instrument | 4 | 40 | Sch 40 | SORF | 150# |
| T1-3 | Thermowell | 3 | 40 | Sch 40 | SORF | 150# |
| SO | Skirt Opening | 1 | 600 | 10 thk | - | - |
| SV1-4 | Skirt Vent | 4 | 50 | Sch 40 | - | - |

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| **Notes** | |
| 1 | Any mechanical design validation regarding thicknesses, not considered in CDPS scope. |
| 2 | Site welding is required for this column due to transportation limitation. Column will be supplied in sections and these sections will be welded at site in horizontal position. CDPS will depute team for site welding work. |
| 3 | Necessary arrangements for site welding like rollers for column alignment, welding machines, consumables and crane for welding work only will be in CDPS scope. However client to provide necessary work permit, space for welding, safe electrical connections for welding machines, fire blanketing, fire fighting equipment’s etc. |
| 4 | All weld joints carried out at site will be DP tested instead of RT. |
| 5 | Client to arrange for crane / hydra required for final erection of column and CDPS will provide supervision for erection work. Client to provide required space for crane and hydra movement and if required client to do ground preparation for proper setup of crane / hydra. |
| 6 | Cage Ladder and 180 deg platform at manholes will be supplied in loose with bolting arrangement and same will be erected at site. Design of the same will be as per good engineering practice. |
| 7 | We are considering 6 nos. access platforms of 180 degree only. |
| 8 | **All Internals assembly will be done at site only by Client / Other supplier of Internals.** |
| 9 | **Pneumatic test will be performed at site in horizontal position after welding work at 1 kg/cm2 g pressure (To be confirmed with consultant by client). Client to arrange compressor for pneumatic test.** |
| 10 | **All nozzle RF Pad sizes considered as per good engineering practice instead of as mentioned in drawing nozzle schedule table. (Client to verify with consultant and confirm)** |
| 11 | **For nozzle flanges liner will be plate welded instead of weld overlay. (Client to verify with consultant and confirm)** |
| 11 | **Foundation bolts, template and civil work in client scope.** |
| 12 | **400% Spare gaskets are considered in CDPS scope for installed gaskets (Manholes only)** |
| 13 | **110% Spare fasteners are considered in CDPS scope for installed fasteners (Manholes only)** |
| 14 | **All nozzle openings will be blanked by plastic caps.** |
| 15 | **Equipment will be transported to site on wooden saddles.** |
| 16 | **TPI if any will be in client scope, one week additional delivery time will be required.** |
| 17 | **Standard QAP for column is provided along with this revision.** |
| 18 | **External stiffeners are not considered in CDPS scope.** |
| 19 | **All internal attachments will be as per Sulzer drawing.** |



**Equipment Manufacturing Sr. No.**

**UFC Absorption Column CDPS-656-C1925-2022**

## Notes:

1. All ‘\*’ mark shall be confirmed by design team.
2. All thicknesses shall be confirmed by design team.

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| Delivery Date (Ex-works) | **28th September 2022 ( Ex-works)** |
| Internal Inspection Report | Required |
| TPI | YES |
| Remark/Instruction | Test Certificates Required as per QAP |

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|  | **Signature** | | |
| Prepared By | PMD | | |
| Checked By | PMD |  |  |
| Approved By | TW | | |

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| --- | --- | --- | --- |
| **Issued By** | **Signature** | **Received By** | **Signature** |
| Marketing |  | Design/Dwg |  |
|  |  | Manufacturing |  |
|  |  | Purchase |  |