



Elevational View Breakdown

View Aspect	Visible Components	Instrumentation / Fittings	Primary Function
Front Elevation	Frontal Valve Manifold & Labeling	Dual Analog Pressure Gauges	Operational interface & pressure monitoring
Right Side Elevation	Side Access Ports & Riser Piping	Bolted Inspection Flanges	Maintenance access & internal bed inspection
Rear Elevation	Main Header Pipe Assembly	Flanged Connection Joints	Primary raw water inlet & backwash outlet
Left Side Elevation	Insulated Discharge Line & Supports	Thermal Wrap & Drain Valves	Filtered water outlet & system drain-down

System Technical Specifications

FILTER MEDIA, OPERATING PARAMETERS & MAINTENANCE PROTOCOLS

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Section: Mechanical Specifications

Elevation Subsystem Specifications

1. FRONT VALVE MANIFOLD

- Valves:** 5-valve butterfly array for filtration & backwash.
- Gauges:** Inlet & outlet pressure differential indicators (0–10 bar).
- Capacity Mark:** High-visibility "CAPACITY-85M³" rating badge.

2. SIDE MAINTENANCE PORTS

- Handholes:** Dual bolted access hatches for media loading/unloading.
- Flange Spec:** ANSI B16.5 Class 150 heavy-duty flanges.
- Shell Integrity:** Epoxy-coated mild steel pressure vessel wall.

3. REAR PIPING MATRIX

- Header Diameter:** DN150 (6") heavy-gauge steel piping.
- Structural Rigidity:** Integrated vertical support pillars.
- Connections:** Victaulic/Flanged joints for easy servicing.

4. LEFT OUTLET & INSULATION

- Thermal Lining:** Wrapped insulation jacket on clean water line.
- Drainage:** Low-point ball valve for complete dewatering.
- Base Mounting:** Reinforced concrete pad anchor legs.

Operating & Structural Parameters

Parameter	Design Value	Operational Limits
Treatment Capacity	85 m ³ /hr flow rate	Nominal operating throughput
Operating Pressure	3.5 bar (Design: 6.0 bar)	Max differential before backwash: 0.8 bar
Filter Media Layers	Quartz Sand (0.5–1.2mm) + Pebbles	Total media bed depth: 1,200 mm
Backwash Flow Rate	30–35 m ³ /m ² /hr	Duration: 10–15 minutes per cycle

Maintenance Advisory: Perform routine backwash cycles when the pressure differential between inlet and outlet gauges exceeds 0.8 bar. Annual inspection of internal lateral strainers and epoxy coating is required to prevent media channelling and vessel corrosion.