

## FRP Distributors/Collectors

### 1. Description of the FRP Distributors/Collectors

Seawater desalination plants using Reverse Osmosis (RO) typically use large diameter metal pipes to feed and collect concentrate to and from the FRP membrane Pressure vessels.

As seawater is highly corrosive, these pipes are typically made of expensive materials like Super Stainless Steel or Super Duplex materials.

Protec Arisawa has developed an innovative system using Fiber Reinforced Plastic (FRP) to economically replace the expensive high grade metal piping.

Figure 1 shows a typical seawater header design where a main header pipe distributes raw feed or collects concentrate water to or from multiple 8" sub-headers made in FRP.

Each sub-header is equipped with up to 12 side ports (3" diameter in this case) on a length of ± 8 meters.

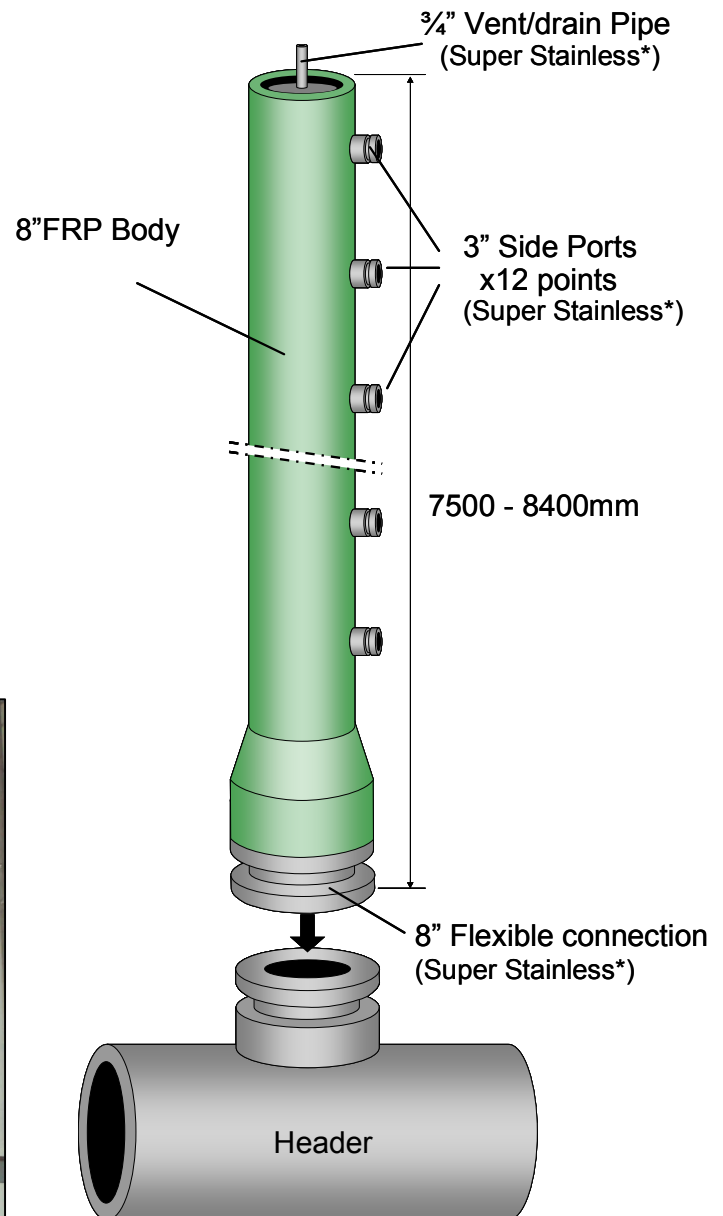


Figure 1

## 2. Technical specification

Design and Qualification Code	Based on ASME Section X
Diameter of the FRP Distributors/Collector	8" (*)
FRP Material	Fiberglass + Epoxy Resin
Diameter of ports	3" (*)
Ports Material	Super Stainless 6Mo, Super Duplex
Design Pressure	1000 psi (69 bar) (*)
Operating Temperature	5 – 50 °C (41-122 °F)
Maximum Longitudinal Elongation	2 mm for 8400 mm
Hydrostatic Test	1.5x design pressure

(\*) For any other specific requirements, please check with your local Protec Arisawa representative.