

FRP Duct Hangers & Supports

Guideline Information for Users

Oct 04



Installing Fibreglass Ducting

Corrosion resistant and light weight fibreglass ducting is widely used for ducting corrosive gases at industrial sites and in corrosive atmospheres. This bulletin gives generalised information on hangers and supports when installing fibreglass ducting. The information is guideline only. Design for each installation needs to take into account site specific factors.

Source of Information

The information given is taken from the Australian Standard 2634-1983 "Chemical Plant Equipment - Made from Glass-Fibre Reinforced Plastics (GRP) Based on Thermosetting Resins". This standard was withdrawn in 2003 but is still used as it provides an excellent collection of user friendly design information.

General Hanger/Support Spacings

The recommended maximum hanger/support spacings for specific duct wall thicknesses are given below.

Nominal Duct Size, mm	Duct Wall, thickness, mm	Max Hanger/Support Spacing, mm
50	3	2500
75	3	3000
100	3	3000
150	3	3500
200	3	3500
250	3	4500
300	3	4500
450	3	4500
500	3	4500
600	5	4500
750	5	4500
900	5	6000
1000	6	6000
1200	6	6000
1400	6	6000
1500	6	6000

The information in the table above is based on contact moulded manufacturing, a design factor of 5 to 1, pressure and vacuum limitations, ambient temperatures, and that there is no need for a corrosion barrier.

Detailed Fibreglass Ducting Design

For the detailed design of fibreglass ducting, specific factors that need to be taken into account include:

- Chemicals and temperature to be handled
- Duct pressure, often partial vacuum
- Expansion and contraction
- Wind and seismic loads
- Other loads such as dampers and equipment
- Personnel and other loads during eg clean out
- Loads from any solids deposition
- Positions hangers and supports can be placed.

The general figures for hangers and supports given in the table opposite are not always able to be used. Also a network analysis of the pressure drops is usually done to ensure the correct sized ducting is selected and where dampers need to be placed so the airflows can be balanced.

Hanger and Support Design

In general ducts up to 600mm in diameter and not subject to vacuum service should be placed on saddles or in hangers providing 120 degrees minimum bottom support and full bearing over the supported area. For ducts of 600mm nominal diameter and above, 180 degrees bottom support should be provided. Any clamps or "U" bolts used in conjunction with the bottom supporting structure should provide a snug fit and not exert clamp pressure. Duct supports should have a minimum width of 50mm. Ducting should be supported and anchored to prevent undue loads on the duct itself and on connected equipment, and to permit controlled thermal expansion and contraction between fixed points and changes in direction.



FRP duct and supports at a wastewater treatment plant.

ARMATEC Environmental Ltd

P.O. Box 3046, New Plymouth, New Zealand.

Ph 06-755-0410

Fax 06-755-2346

email: k-k@armatec.co.nz

www.armatec.co.nz

