



# PULTRUDED GRP (FIBREGLASS) COOLING TOWERS

# **Industrial Water Cooling's range of bespoke engineered Cooling Towers built from pultruded GRP are the best possible solution for long term use in corrosive environments. IWC's Pultruded GRP Cooling Towers are designed according to precise project specifications and conform to CTI STD-137 & CTI STD-152 standards.**

Thanks to Glass Reinforced Polyester (GRP) unique properties, Pultruded GRP is becoming the industry norm for the construction of large field erected cooling towers. GRP is a modern material that has many advantages over conventional materials of cooling tower construction such as concrete, steel or wood. Some of these advantages are:

- Exceptional Chemical and Corrosion resistance.
- Resistance to all types of aggressive water such as sea water, brackish water and others.
- Resistance to any weather condition as it is not affected by UV, sunlight, sandstorms, snow and acid rains.
- High impact strength and rigidity allows deformation without fractures.
- Very good life cycle cost.
- The light weight minimises foundation loads.
- High fire resistance. IWC's pultruded GRP structures are supplied in flame retardant material having a flame spread rate below 25 (ASTM E84).
- High temperatures resistance makes it ideal for high temperature process cooling.
- Estimated 50% reduction in erection time compared to conventional concrete construction.
- Longer service life than traditional materials with minimal maintenance.
- Excellent creep and fatigue performance.
- Very low deposition and scale formation rate.
- Inert to biological attack, and attack by micro-organisms.
- All pultruded material is environmentally friendly and fully recyclable.

Thanks to the unique benefits of Pultruded GRP, cooling tower owners and operators benefit from long service lives of cooling towers constructed from pultruded GRP.



# IWC Pultruded GRP Cooling Towers have the following standard features:

## Fan Assembly:

Our standard fan arrangement comprises an axial flow fan having either GRP or aluminum fan blades, right angle reduction gearbox (AGMA Rating > 2) carbon fibre composite drive shaft and electrical motors supplied to our customer's specifications.

As standard equipment we provide remote oil reservoirs equipped with a sight glass for checking and replenishing oil levels without having to enter the cooling tower. Gearbox's are fitted with anti-reverse rotation mechanisms to prevent back drafting of the fans thereby preventing inadvertent damage during start-up. Each gearbox is also supplied with a vibration trip switch as standard equipment.

The fan runs in a purpose made GRP fan stack comprising a bell inlet and fan ring. Pressure recovery diffusers are available as optional equipment.

All rotating equipment is adequately guarded to ensure our cooling towers meet the most stringent of health and safety requirements.

## Drift Eliminators:

A variety of drift eliminators are available depending on customer's emission requirements. As a standard we provide our extruded PVC wave type drift eliminators that ensure drift losses do not exceed 0.02% of the recirculating water flow rate. Drift loss rates can be reduced to as low as 0.001% if needed.

## Distribution System:

Each cooling tower cell is equipped with a fibreglass header pipe, other materials available on request. The terminal point is provided with a stub flange and backing ring drilled to suit our customers' requirements. Flanges are designed for 600 kPa unless otherwise specified. Low pressure down spray nozzles are specifically sized to the required flow rates and are fitted to PVC laterals. Where inlet water operating temperatures exceed 60°C alternative materials are provided.

## Fill:

Depending on water quality the following fills are on offer:-

Film Pack (Various flute sizes and materials)	Clean to moderately dirty water
Trickle Pack (Polypropylene)	Dirty water
Splash Grids	Very dirty water

IWC's team of cooling tower engineers has extensive application knowledge and are able to provide our customers with expert guidance in selecting the most suitable fill medium for their application.

## Louvres

All our cooling towers are fitted with GRP air inlet louvers to reduce water losses from the air inlets. High efficiency splash eliminators and dark room louvres can be provided as an option.

## Access Equipment

All cooling towers are provided with roof access either by means of a ladder or by means of an access staircase. Internal access is provided by means of a trap door in the roof deck. Internal access and maintenance access ladders and platforms are provided as standard equipment in our cooling towers.





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