



Field Erected Cooling Towers

Recognised as the market leader, IWC has designed and constructed numerous pultruded, concrete and steel structured cooling towers around the globe.

Each cooling tower requirement is analysed and designed by our engineers who collectively, have over a century of experience in this field.



Field Erected Cooling Towers

The IWC range of cooling towers has proven itself to be one of the most efficient and reliable in the world. Our flexible approach to designing customer centric solutions considers fan power, pumping head, plan area, water quality and environmental considerations to ensure the best possible solution. Our engineers review each cooling tower application to assure that the components selected will work together as an integrated system, ensuring efficient performance and a long, reliable operational life.

Our field erected towers are constructed from various materials, from GRP and concrete, to steel and timber. Our design engineers select from a number of possible cooling tower component combinations that result in economical selections, capable of the thermal performance required.



Components

Fan Assembly

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

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

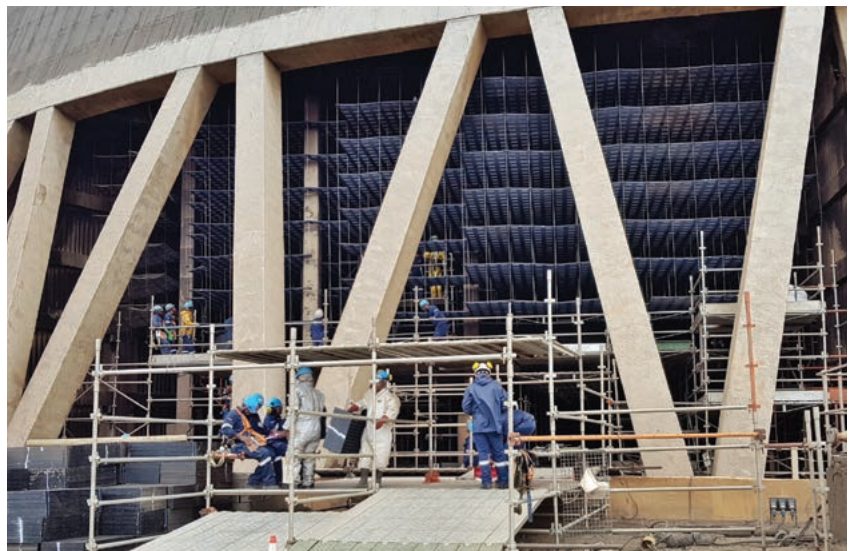
The fan runs in a purpose-made GRP or concrete fan stack. Pressure recovery diffusers are available as optional equipment.

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 are available on request. The terminal point is provided with a stub flange and backing ring, drilled to suit our customers' requirements. Flanges are typically 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:

Clean to moderately dirty water - Film Pack (various flute sizes and materials)

Dirty Water - Trickle pack (polypropylene)

Very dirty water - splash grids

Louvres

All our cooling towers are fitted with GRP air inlet louvres 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 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.



Structures

Pultruded GRP Towers (Fibreglass)

Our pultruded GRP towers are built according to precise project specifications and conform to CTI STD-137 & CTI STD-152 standards.

Due to the unique properties of Glass Reinforced Polyester (GRP), pultruded GRP is becoming the industry norm for the construction of large field erected cooling towers, and owners and operators can benefit from long service life of cooling towers constructed from pultruded GRP. Construction durations are reduced as well as the initial capital cost. These cooling towers can be rapidly deployed to remote project sites and assembled with limited skills, plant and equipment.

Advantages

- Exceptional chemical and corrosion resistance
- Low capital cost and good service life
- Light weight structure minimizes foundation loads

Concrete Cooling Towers

Concrete is a natural material which is ideally suited for long service life in the harshest environment and defies the detrimental effects of heat and ultraviolet light. IWC has an impressive installed base of cast in situ concrete cooling towers, across a number of different industries, and countries.

Cast in situ concrete cooling tower structures have a superior lifespan and generally require very little, to no maintenance when compared to other materials of construction.

Advantages

- Good chemical and corrosion resistance
- Exceptional service life

Steel or Timber Cooling Towers

IWC can construct cooling towers from other materials to suit customers' requirements, the choice of material for the cooling tower structure is largely dependent on the cooling water chemistry.

Some of the materials that are widely used for cooling tower structures are:

- Clad carbon steel – hot dip galvanized or coated
- Clad stainless-steel structures (various grades)
- Clad treated timber structures





Industrial Water Cooling (Pty) Ltd

55 Lake road
Longmeadow Business Estate North, Edenvale, 1609
T +27 (0) 11 466 0699 E mail@iwc.co.za W iwc.co.za