Water Cooling Tower TAS – TASF series

TAS-TASF TOWER

TAS / TAS**F**, series, designed for maximum corrosion resistance, offers open circuit cooling towers, with a wide range of thermal potentials from hundreds of kW to very respectable sizes over 10 MW. All models apply a modular concept and are fully factory pre-assembled to minimize on-site installation costs. Each model can be customized with dimensions and characteristics based on project needs and in order to respect environmental constraints with reduced acoustic and energy impact. Regarding this, special executions are provided for ATEX environments ("EX" versions), for low temperature environments ("SN" versions), or for low noise emissions ("LN" version).

This series is used in all sectors in civil and industrial field in presence of corrosive environments (for metallurgy and beyond) with excellent results, thus being able to avoid the use of expensive materials such as stainless steel for structures. The main features of these open circuit evaporative towers are the following:

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EXOSKELETON / MONOLITHIC ENCLOSURE (body, fan stack and collection basin).

The tower exoskeleton is characterized by profiles made of hot-dip galvanized steel in accordance with UNI EN ISO 1461: 1999. The side cover panels are made with a multilayer fiberglass matrix (fiberglass FRP).

Each diffuser can be walked on, and has a truncated pyramid shape to uniform the air crossing speeds in the lower section of the tower, improving the overall efficiency of the machines.

The tower body can be inspected thanks to the inspection doors and removable FRP walls (one for each cell), allowing the operator an easy entry.

An important feature is the presence of a particular coating called "SCAM / SHIELD", consisting of a FRP sheet fixed with stainless steel bolts along the internal structural walls, wrapping the dispersion elements. In this way, the internal metal structure is completely isolated from the process water, and the phenomenon called "by-pass on wall" is also reduced. With the expression "by-pass on wall" we mean the water that, being nebulized on the internal walls of the tower, does not meet the air rising in against the current, (with consequent loss of efficiency). The perfect internal and external insulation therefore allows the meticulous elimination of any water leaks from the walls of the tower.

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The collection basin, complete with all necessary connections for normal use, can be made on request in a weight-saving "self-draining" EU version in line with current European anti-legionella guidelines.
The basin is supplied with a pre-assembled structure consisting of welded metal sheet panels painted according to ISO 12944-5:2007 standards with SCAMBOND/HYB-C3M surface protection treatment (C4M or C5M on request) diversified anti-corrosion on internal and external surfaces, sandblasted with SA 2.5 grade with ISO 8501-1 quartz or metal grit. On the internal surfaces of the basin in the TAS**F** series only, the diversified protective coating DURABOND / HYB is used: an evolution for aggressive environments consisting of a two-component epoxy-polyamide cycle preparatory to the subsequent FRP resin coating with the deposition of 2 hand-applied layers of glass fiber 450 g / m2 and a finish with epoxy / polyester resin (overall thickness 1500 g / m2).

BOLTS are supplied as standard on this model in STAINLESS STEEL or even DUPLEX on request.

Upon request, it is possible to propose stainless steel as the construction materials for the tower. With TAZ / TAX models (SS304 or 316 depending on the needs), where the characteristics of the project make it essential to use noble metallurgy, highly resistant to corrosion.

VENTILATION UNIT

The direct drive ventilation unit consists of:
- High efficiency SCAMAIR / ST axial fan with asymmetrical "NACA" type profile of aeronautical derivation, designed for maximum efficiency and durability in compliance with the strictest acoustic standards. The components are of absolute quality such as the extruded aluminium hub to reduce vibrations to a minimum and allow the assembly of one blade at a time, for simplified and quick maintenance.;
- Electric motor SCAM T.P.E. three-phase multivoltage (230/400 - 400/690) and multi-frequency (50-60 Hertz) specific for cooling towers, result of the experience gained in this sector since 1956;
- Abnormal vibration switch wired in an IP67 junction box located outside the ventilation conduct only to be plugged;
- SS304 fan protection grid.

WATER DISTRIBUTION SYSTEM

In TAS series, distribution is made by means of pipes and fittings in hot-dip galvanized steel unified DIN or ASME with flanged connections, and composed by a main manifold with lateral branches equipped with "SCAM / NZ-RT" dynamic spray nozzles or "SCAM / NZ" static spray nozzles, both in PP.
In the FASF series, the water distribution pipes are made of HDPE (High Density Polyethylene) for the benefit of greater resistance against corrosion.

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Our SCAM / NZ-RT rotating nozzles are highly efficient, work at low pressure, and allow for significant energy and economic savings. They are anti-clogging, equipped with interchangeable internal inserts, allowing them to be adapted in the event of variations in flow rate, if you were to work with a work pattern other than the design one.

DRIFT ELIMINATORS

They are mainly used to retain water droplets dragged vertically in the flow of humid air exiting the evaporative tower. Our technology has achieved exceptional goals in separation efficiency, making available two different designs SCAM/DRF-DW180 (DW-180 line) in PP / PVC.

AIR INLET LOUVERS

They are placed in the intake air flow entering the cooling towers. They not only retain unwanted elements (such as foliage and debris), but also prevent water from splashing outside, which could cause ice formation during winter season. In addition, the windows are a barrier, limiting the sunlight entering the basin, thus hindering the growth of algae and microorganisms inside it. They are available in the SCAM / NET65 version in PP / PVC, customized in treated steel, or INOX / FRP, where the specifications require it.

FILLING (OR HEAT EXCHANGE PACK)

It is placed inside the tower body, and provides the heat exchange surface necessary to guarantee the heat exchange between the flow of hot water, properly atomized by our nozzles and the flow of cold air coming from the outside going up against the process water. Depending on the quality of circulating water, and therefore depending on the suspended solids present in the cooling circuit, the filling is available in different PP / PVC materials and FILM, HYBRID and SPLASH systems.

SPECIAL VERSIONS

In addition to the standard materials (Polyvinyl chloride PVC or Polypropylene PP), the plastic parts inside the tower can be supplied in special materials (CPVC over-chlorated, PVC HT for high temperatures, ABSPVC with excellent non-flammability qualities, PPS ...) for particular operating conditions at customer specification.

For further information on the products, please visit the *** section of the site.

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