

# EC-S

**PACKAGED COOLING TOWER**  
SINGLE-CELL UP TO 1700HRT COOLING CAPACITY

**TRUWATER**<sup>®</sup>

High Performance Counterflow Type



ISO9001  
CERTIFIED

CTI  
CERTIFIED



• ENERGY CONSERVATION  
• SPACE SAVING • DESIGN FLEXIBILITY

# EC-S

**TRUWATER**<sup>®</sup>

## SERIES COOLING TOWER

SINGLE-CELL UP TO 1700HRT COOLING CAPACITY

### INTRODUCTION

EC-S Series is an induced draft counter-flow, film filled, FRP multi-cell square cooling tower designed for the equipment cooling, and industrial process cooling and air conditioning applications.

The EC-S Series Cooling Tower is designed to meet maximum performance and reliability, and minimum maintenance.

The thermal performance of EC-S Series has been certified by CTI in accordance with CTI Standard STD-201.

EC-S Series Cooling Towers are designed and provided with high quality v-belt & pulley drive system or right-angle gear reducer drive system for trouble free operation.



### ADVANTAGES

#### Efficient Drift Eliminator

Up to 0.001% drift loss, solves water carry over problems.

#### Reduced Pump Head

Spray nozzle pressure less than 1m.

#### High Performance Fill

Reduces energy consumption.

#### Simplified Piping layout

Streamlined layout and lower piping cost.

#### Reliable Mechanical Driver System

Trouble free operation.

#### Safety Maintenance Platform

Meets OSHA requirements.



National Institute of Development Administration (NIDA), Thailand



Anantara Hua Hin, Thailand



ITE, Singapore

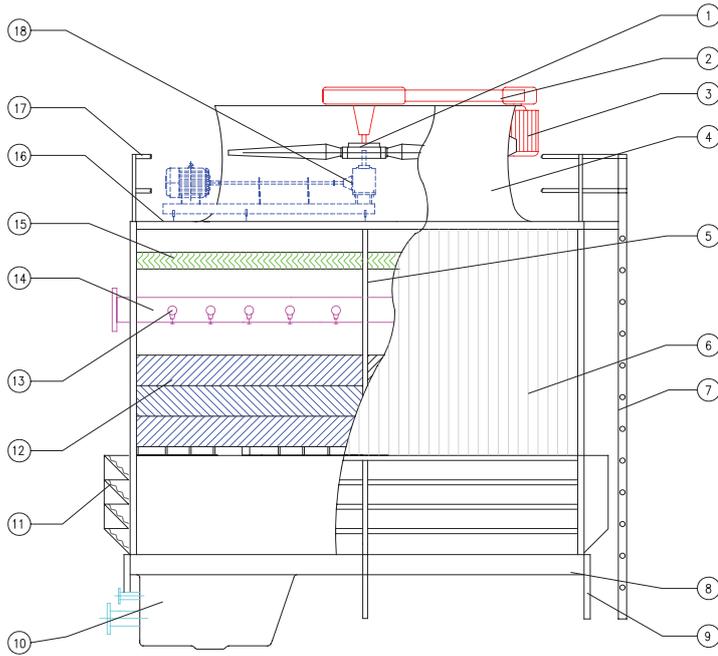


Hyatt Hotel, Taiwan



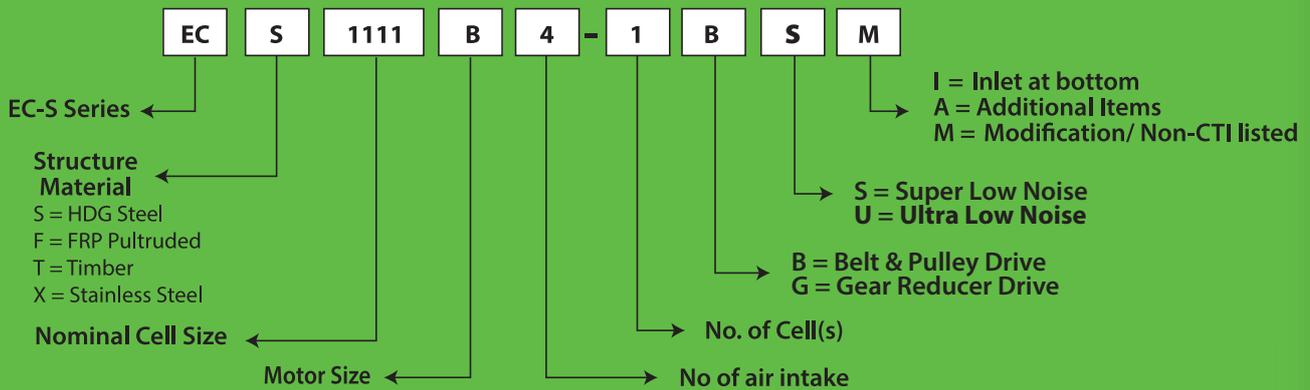
Pertamina Plaju, Indonesia

# FEATURES



No	Description	Material / Specification
1	Fan Assembly	Aluminium Alloy
2	V-Belt and Pulley System	FRP Pulley Cover
3	Motor	Weather Proof TEFC type
4	Fan Stack	FRP
5	Main Frame Structure	HDG Steel
6	Casing	FRP
7	Ladder	HDG Steel
8	Cold Water Basin Floor	FRP
9	Cold Water Basin Frame	HDG Steel
10	Cold Water Basin Sump	FRP
11	Louver	FRP
12	High Performance Film Fill Pack	PVC
13	Non-Clog Spray Nozzle	Polypropylene
14	Water Distribution System	PVC
15	Drift Eliminator	PVC
16	Safety Maintenance Platform	HDG Steel
17	Safety Handrail	HDG Steel
18	Gear Box System	Optional

## Model Definition Example



Plexus Penang, Malaysia



Tang Plaza, Singapore



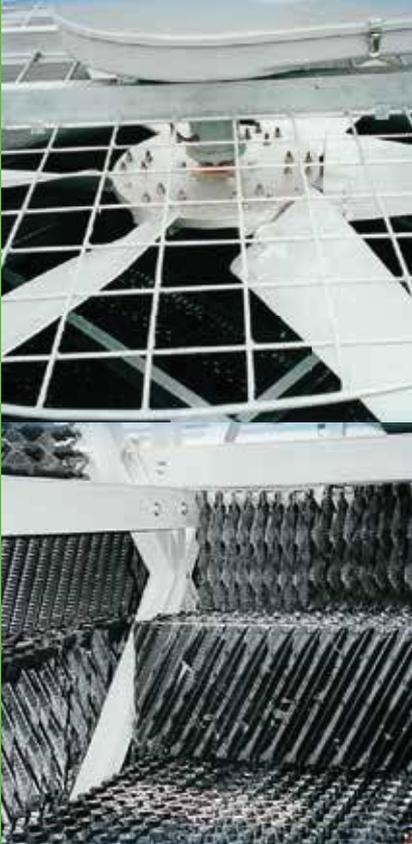
UKM Bangi, Malaysia



Setiawalk Puchong, Malaysia



Osram Penang, Malaysia



### 1.0 GENERAL

The cooling tower shall be induced-draft vertical discharge type, counterflow, rectangular, film filled, FRP Cooling Tower. It shall be designed with high efficiency drift eliminators to meet current environmental standards and guidelines for microbial control.

### 2.0 CAPACITY

Cooling Tower shall be capable of providing the thermal performance scheduled.

### 3.0 PERFORMANCE WARRANTY

The rated capacity shall be certified by the Cooling Tower Institute (CTI). The cooling tower manufacturer shall guarantee that the tower supplied will meet the specified performance conditions when the tower is installed according to plans.

### 4.0 CONSTRUCTION

The cooling tower main frame structure shall be hot dipped galvanized steel (HDGS). The casing, louver and fan cylinder shall be made of Fiberglass Reinforced Polyester (FRP).

### 5.0 MECHANICAL EQUIPMENT

- 5.1 Fan(s) shall be propeller type, incorporating heavy duty blades of cast aluminium alloy. Blades should be individually adjustable.
- 5.2 V belts shall be of rubber and pulleys shall be cast aluminium alloy with the grooves of standard dimensions. FRP Belt cover must be provided to protect V belts from moist discharge air.
- 5.3 Motor(s) shall be TEFC, weather proof, squirrel cage, for 3 ph/50Hz/415V power supply and installed outside air stream.
- 5.4 The complete mechanical equipment assembly for each cell shall be supported by a rigid, welded, hot dipped galvanised steel structural support. Vibration limit switches must be installed to shut off the motor if excessive vibration occurs. The switch is located on the motor end of the mechanical equipment support outside the fan cylinder, so as not to be exposed directly to the discharge air stream and for ease of maintenance and access to reset.



### 6.0 FILLS, LOUVERS AND DRIFT ELIMINATORS

- 6.1 Fill shall be film type, rigid, corrugated PVC sheets that are conducive to cooling water with UV protected and self extinguishing properties. Fill shall be cross-corrugated and the surface of the sheet shall have a suitable micro-structure to improve turbulence and water distribution. Fill sheets shall be bonded at all contact points. Fill shall be of alternate tip configuration to improve water drainage and minimize air pressure drop.
- 6.2 Drift Eliminators shall be assembled in easily removable modules. Drift Eliminator shall be 3 pass sinusoidal-shaped blade type. Guarantee drift losses must not exceed 0.005% of the design water flow rate.

### 7.0 HOT WATER DISTRIBUTION SYSTEM

Each cell of the tower shall be equipped with hot water distribution system. Header and lateral pipes shall be PVC. Nozzles shall be non-clogging, capable of passing objects up to 25mm in diameter. The spray must be designed such that the nozzle outlet is the lowest point in the system. The water inlet connection shall be located outside the tower casing. No rotating mechanical sprinkler system is allowed.

### 8.0 COLD WATER BASIN

The cold water basin shall be of FRP and supported on HDG Steel framework. The basin shall be designed with sufficient water capacity to avoid air entrainment in the outlet during operating conditions. FRP sump(s) shall be provided and equipped with suction strainer, make-up ball valve, overflow and drain. For multiple tower arrangement, equalising pipes between basins shall be provided to maintain the same level of water in each basin.

### 9.0 ACCESS AND SAFETY

Service and maintenance platform must be constructed at the fan deck level to facilitate easy inspection & maintenance of the fan machinery. Inspection door and caged ladder shall also be provided. Louver panel shall be removable for access to the sump, make-up, overflow and suction strainer. HDG steel fan guard shall be provided over each fan cylinder.



*...providing solution to your cooling needs*



Member

**TRUWATER**<sup>®</sup>

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