

# Water Chilling Plant



## Schwing Stetter Moves Concrete - World wide

Wherever concrete is produced and moved, where you will find Schwing Stetter Machinery. With in India, Germany, Austria, USA, Brazil, Russia, China as well more than 100 sales and service facilities, the every application is what makes Schwing-Stetter the No.1 system supplied for concrete machinery worldwide.

### Why Chilled Concrete is required?

In hot weather countries like India , concrete temperature is an important concern. Quality, Strength and Durability of High performance concrete and mass concrete mainly depend on its temperature from the time of delivery up to the time of curing. Hot weather can lead to many problems in mixing, placing and curing of concrete. American concrete institute (ACI) committee 305 defines hot weather concrete as any combination of high ambient temperature, low relative humidity, wind velocity and solar radiation; the effects of any combination of the above can lead to rapid evaporation of moisture, which is the primary cause of plastic shrinkage cracks in concrete.



The easiest way to keep concrete cool during hot weather is using ice or chilled water in place of some or all of the water during batching. Ice or chilled water added during batching will slightly extend the setting time during hot weather. This allows more time to place, consolidate and finish concrete as desired.

### Advantages of Temperature Controlled Concrete:

- Reduction of Plastic shrinkage cracks.
- Control the rate of setting.
- Reduction in slump loss.
- Decrease the water demand.
- No need for early curing.
- Reduction of heat in lengthy pumping concrete.
- Low cost comparing to Ice

### Application areas of Temperature Controlled Concrete:



High Rise Building



Dam Projects



Power Plants



Precast yard



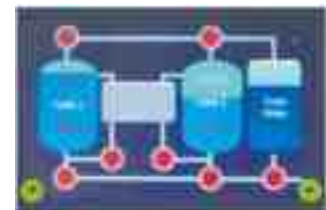
Road & Bridges

# Benefits of Using Steffer Water Chilling Plant

- Easily erectable, re-locatable and transportable.
- Minimum of 5°C water available in insulated cold water storage tank.
- Maintenance free scroll compressors.
- Anti freezing easily serviceable Tank and coil evaporator .
- Parallel chilling circuits with High pressure and low pressure switch
- leads to less break down and less operational energy.
- In built adjustable time delay for smooth start and stop operation



- PLC Based control system.
- Uninterrupted and consistent cooling water to batching plant.
- Manual Digital setting for compressor and condenser ON and OFF Display
- All operational feature and temperature of all tanks.



(Optional)

- Communication of all fault alarms.
- Touch screen for control and visualization of all operations.(Optional)
- Remote operation of chilling plant from batching plant control room.(Optional)

## Safety Features

- Over Load Relay for Compressor and condenser fan
- Anti freeze thermostat
- Digital Amps meter
- High pressure switch
- Low pressure Switch
- Phase Sequence Monitoring
- Phase Loss
- Unbalance detection
- Time delay control for sequence operation
- Multifunction meter to display current
- Over Voltage and Under Voltage protection.

## TECHNICAL DATA STANDARD VARIANTS

Description	47 TR	54 TR	70TR	90TR	120TR	150TR
Designed for continuous concrete of Output M <sup>3</sup> /Hr ***	30	40	50	66	86	100
Cooling Cap. in K.cal/hr	142128	163296	211680	272160	362880	453600
5°C Water O/p in Lts/Hrs. **	5000	6000	7500	10000	13000	15000
Final Water Temperature	5°C	5°C	5°C	5°C	5°C	5°C
Evaporator Type	Tank & Coil	Tank & Coil	Tank & Coil	Tank & Coil	Tank & Coil	Tank & Coil
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Compressor Make	Danfoss	Danfoss	Danfoss	Danfoss	Danfoss	Danfoss
Power/Current Consumption in KW/A****	66Kw/ 115A	85Kw/147A	106Kw/184A	141Kw/245A	176Kw/306A	208Kw/363A
DG requirement (KVA)	125	140	180	250	320	380

\*Other than above capacities can be made based on requirements.

\*\* Considering input water temp @30°C and Max. ambient temp of 45°C.






\*\*\*Considering 150 litres of water per M<sup>3</sup> of concrete

\*\*\*\* Maximum power consumption at ambient temp of 45°C. ( Power consumption will reduce as the ambient temp reduces)

# SCHWING - STETTER

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-  Resident Engineer with Spares Depot
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