Concrete Technology LLC
Established in 1996 based in the Emirate of Dubai, a leading specialist in the field of architectural and structural precast and pre-stressed concrete construction. Our team of professional engineers, with vast experience in their relative fields, endeavors to provide our clients innovative solution to their construction problems. These solutions generally incorporate precast and/or pre-stressed precast concrete architectural and structural elements. Our dedication to the provision of these enhanced performance solutions is coupled with a dedication to quality and economy. The quality and economy are achieved though rigorous attention to the proper detailing on all the stages of construction of the works from initial stage preparing preliminary proposal, design, detailed drawings and construction method.

- Structural Building Systems
- Industrial Building
- Foundations
- Beams
- Partition Walls
- Precast Septic Tanks & Soakaways
- Column Necks
- Slabs
- Boundary Walls Units
- External Cladding
- Load Bearing Walls
- Columns
- Stair Elements

- Any type of Structural or Architectural Concrete Elements Which Lends it to the possibility of precasting
- Value Engineering
- Technical Support in all aspects of concrete Structures Design & Detailing
- Structural Design and Shop Drawings
INTRODUCTION

Concrete Technology's system provides you the fast and best insulating solution to insulate external façade and external wall, it has designed to provide thermal insulation with enough strength and aesthetic appearance. For last 8 years a lot of researches carried out by Concrete Technology to achieve the most economic and effective insulated system for the external precast insulated panels. During this time Concrete Technology was able to construct numbers of projects which became landmarks in the emirates of Dubai and Sharjah. Concretex succeed to create its own system which used in a wide range of prestigious projects such as Dubai Marina Phase I & II, Jumeirah Beach Residence, Al-Ferdan Towers, The Meadows villas .....etc. Our system is accepted to most of consultants and meets the international codes and standards.

SYSTEM DESCRIPTION

Concrete Technology's system was made of rigid extruded polystyrene insulated covered by two layers of concrete and provided with vapor barrier. To assure the integrity of the composite section stainless steel connecting members are provided to maintain the section dimensions and properties the same. Number and spacing between the steel connecting members will be decided according to the panel configuration. Our system offers a wide range of insulated panels sections varies from 210 mm thickness up to 360 mm. Selection of the section shall be according to the use of the precast panels.

![Typical Cross Section](image-url)
SYSTEM SPECIFICATIONS

External concrete skin:
External concrete skin will be of concrete with minimum thickness of 75 mm. Gray or white exposed aggregate concrete will be used according to the use of the precast panel. Minimum concrete strength will be 40 MPa. And the aggregate size varies from 3mm up to 20 mm. Concrete Density will vary from 24.0 to 25.5 KN/m³
Reinforcement steel mesh will be provided; size will be according to the structural design.

Internal Concrete Skin:
Internal concrete skin will be of concrete with minimum thickness of 75 mm. Only gray concrete will be used for both load bearing panels or external façade cladding panels. Minimum concrete strength will be 40 MPa. And aggregate size 20 mm. Concrete Density will vary from 24.0 to 25.5 KN/m³
Reinforcement steel mesh will be provided; size will be according to the structural design.

Extruded Polystyrene Insulation:
Extruded polystyrene insulation used will be one of the approved materials by Dubai Municipality.
Density will be 32-35 Kg/m³, thermal conductivity $k = 0.208$ Btu/in².hr.°F
Composition strength at 10% deflection = 300 kPa

Stainless steel Connecting Members:
Stainless steel of grade A4 will be used. A truss will be formed in order to connect the two concrete layers, diameter of truss members will be 6 mm.
Stainless steel of $fy = 275$ N/mm², will be used.

Reinforcement:
Steel reinforcement mesh of $fy = 460$ N/mm² will be used in each skin separately. A standard steel mesh or custom made mesh to be used according to the panel type and panel configuration.
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Section No as per Dubai Municipality approved material list
Published on DM website. www.dm.gov.ae
**SYSTEM USE**

**External façade cladding:**

Concretex's insulated panels are widely used for the external façade cladding. Where it saved time and money where it used. Jumeriah Beach Residence, Dubai Marina Phase one and Dubai Marina Phase two are good examples.

**External Insulated Load bearing wall:**

Concretex's insulated load bearing walls are widely used for the external walls in low rise buildings and labour accommodation.

**External Insulated Warehouses wall:**

Concretex's insulated panels can be used for the external warehouses walls to provide the required thermal insulation.

Dubai Humanitarian City is a good example
SYSTEM ADVANTAGES

- Energy saving.
- Cost saving.
- Time Saving.
- High Quality.
- Stability.
- Easy Installation.
- Easy for maintenance.
- Environmentally Safe.
- Dubai Municipality approved.
- Functional guarantee for 60 years.
- Panel can be designed to any size and shape.
- Panel is totally harmless to human and environment.
- Panel is good resistant against shocks and beats up to 40 N/mm².
SYSTEM DETAILS

EXTERNAL SKIN

JOINT SEALANT AND BACKING ROD (TYPICAL FOR ALL TRUE JOINTS)

EXPANSION ANCHOR

32X100 mm DEEP DRILLED HOLE ON SITE FILLED WITH CEMENTOUS GROUT BEFORE ERECTION OF PC ELEMENT

CAST-IN-PLACE REINFORCED CONCRETE

TYPICAL DETAIL-1

STAINLESS STEEL TRUSS SPACING 1000MM (MAX.)

REINFORCEMENT MESH

INTERNAL SKIN

POLYSTYRENE INSULATION

JOINT SEALANT AND BACKING ROD (TYPICAL FOR ALL TRUE JOINTS)

H10 REINF. BARS

T8<=200 DOWELS

TYPICAL DETAIL-2

For guidance only
SYSTEM DETAILS

LINE OF PRECAST PANEL (BELOW)

60mm THK. EXTRUDED POLYSTYRENE INSULATION

LOCAL WET CONNECTION @ TWO SUPPORT LOCATIONS

TYPICAL HORIZONTAL DETAIL

PLASTIC SLEEVE ON 40X100mm ROUND PLASTIC SLEEVE

PRECAST SANDWICH PANEL

MEMBRANE

60mm THK. EXPANDED POLYSTYRENE INSULATION

TYPICAL CONNECTION @ VERTICAL JOINT

CAST IN PLACE COLUMN

60mm THK. EXPANDED POLYSTYRENE INSULATION

TYPICAL CONNECTION @ HORIZONTAL JOINT AROUND COLUMN

PRECAST SANDWICH PANEL

60mm THK. EXPANDED POLYSTYRENE INSULATION

TYPICAL CONNECTION @ HORIZONTAL JOINT

TYPICAL VERTICAL DETAIL

For guidance only
SAMPLE PROJECTS

Jumeirah Beach Residence
Sector 07

Jumeirah Beach Residence
Sector 07

Dubai Humanitarian City
SAMPLE PROJECTS

Dubai Marina
Phase II

Dubai Marina
Phase II

Dubai Marina
Phase I
PRECAST SANDWICH PANEL DETAILS

- Structural Building Systems
- Load Bearing Walls
- Columns
- Stair Elements
- Precast Septic Tanks & Soakaways
- Any type of Structural or Architectural Concrete Elements Which Lends its to the possibility of precasting
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CONCRETEC

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