



TILT-UP INSULATED CONCRETE CONSTRUCTION

The most versatile, resilient and efficient building system in the world today



What is Tilt-Up Insulated Concrete Construction?

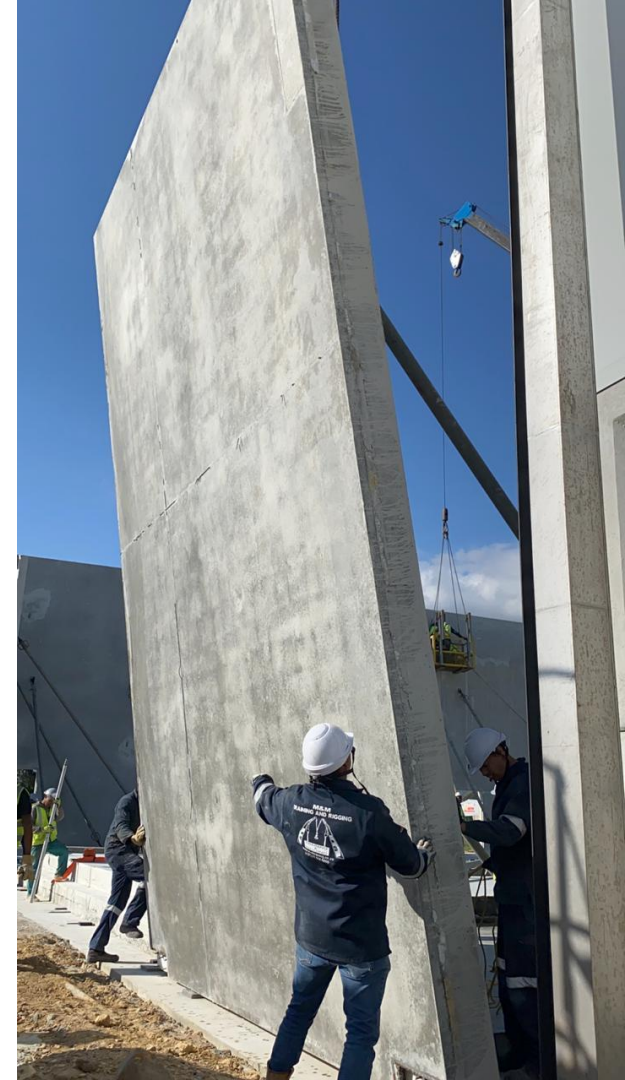


Tilt-Up Concrete Construction

- **Tilt-Up Construction** has been around for a number of decades. But with modern advances in concrete technology and the availability of mobile cranes, the process is being viewed as a **more cost-effective** and **versatile** means to construct large structures.
- Tilt-Up concrete walls are poured near their final position on site before they are raised into position by means of a mobile crane. Panels are temporarily braced until the roof structure - that supports these panels – has been installed.

In the USA alone, more than 10 000 buildings covering over 60 million m² are constructed annually.

- The critical advantage in terms of the completed structure is that: **‘the walls support the roof - and the roof supports the walls’.**
- This eliminates the need for perimeter columns providing a **solid, durable structure** and the **optimal use of space.**





Why use **Tilt-Up Construction** as opposed to other more conventional methods?

Why use Tilt-Up Construction as opposed to other more conventional methods?

- **Faster construction time** with reduced labour, significant reduction in building waste - all within a safer site environment.
- **Reduced fire risk.**
- **Thermal and energy efficient buildings** with a reduced **ecological footprint.**
- **Longer-term maintenance** benefits (costs and upkeep).
- **Flexible design and durable construction** of tall buildings and structures (Water / Airtight structures).
- **Economical:** Reduced costs, reduced energy consumption over the lifecycle of the building.

Faster

Reduced Fire Risk

Energy Efficient

Less Maintenance

Flexible Design

Economical





Advantages and Benefits of Tilt-Up Concrete Construction

Advantages and Benefits



Quality & Durability

- Tilt-Up structures are much more durable than conventional face brick, plaster/paint metal clad buildings.
- Larger panels mean less joints – and less air infiltration.
- The sealing of panel joints is much easier due to the depth of the concrete internally and externally when compared to metal clad buildings.
- When left unpainted, maintenance costs are virtually eliminated.



The Tilt-Up Concrete Construction Process

01

The Process:

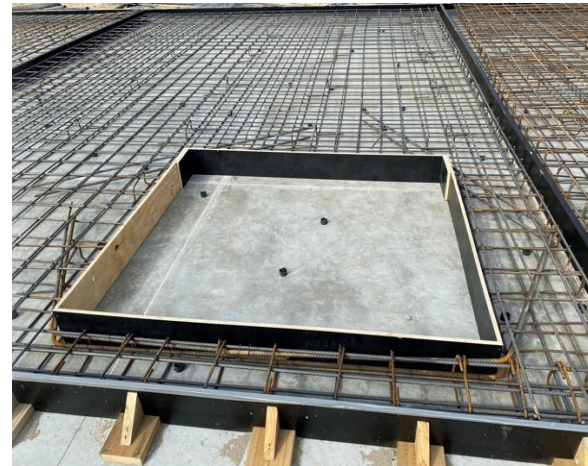
CASTING OF PERMANENT CONCRETE FLOORING / TEMPORARY CASTING BEDS



The Process:

INSTALLATION OF FORMWORK / OPENINGS / PENETRATIONS





The Process:

CASTING OF PROTECTIVE LAYER AND INSULATION



The Process:

STRUCTURAL STEEL, LIFTING INSERTS AND CONNECTING PLATES

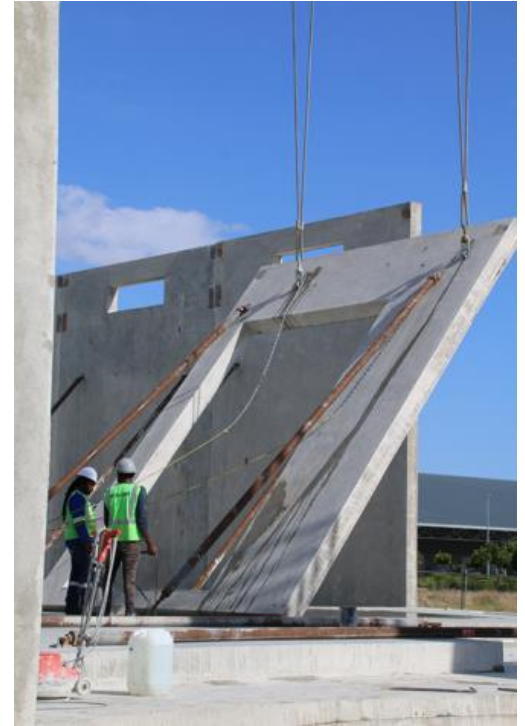


The Process:

CONCRETE POURING & FLOATING



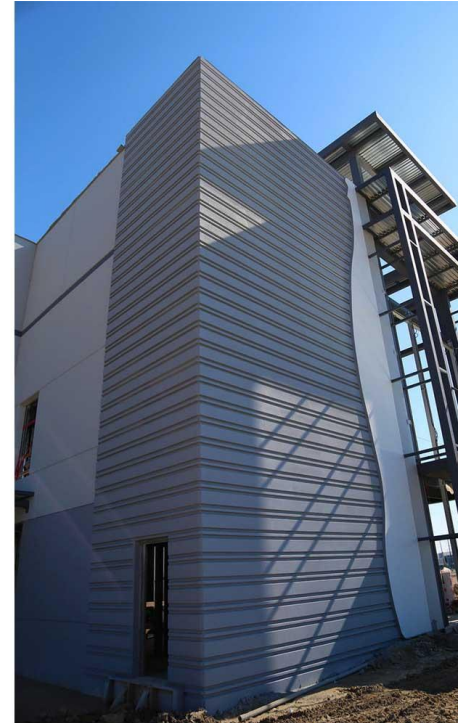
LIFTING AND PLACING THE PANELS





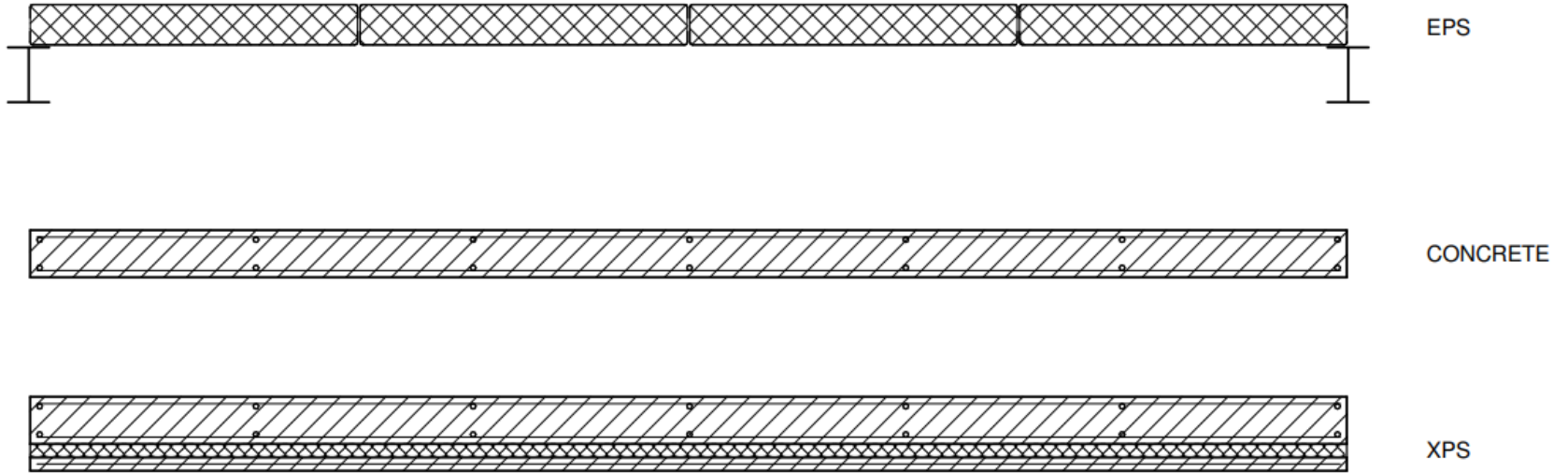
Insulated Concrete Panels

Concrete, while a very **durable and cost-effective material** does not provide enough **thermal insulation** required in modern, temperature controlled facilities such as cold stores, freezers and controlled atmospheric stores and other temperature controlled buildings.



Traditional insulated metal clad versus insulated Tilt-Up concrete structures

Insulated concrete panels are more durable than insulated metal panels. Less floor area is required and less maintenance. Insulated concrete panels reduce fire risks and improves thermal control and energy efficiencies. Also, there is less air infiltration due to the larger panel sizes.



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Buildings suited to Tilt-Up Construction

Numerous buildings can be economically constructed with Tilt-Up Construction:

- Warehousing
- Production facilities
- Cold rooms / Freezers / Low temperature storage buildings
- Apartment blocks / hotels / student accommodation
- Shopping centres
- Schools & academic / research institutions
- Office buildings
- Medical facilities



Primary benefits and advantages for the South African and African market

- **Fire compartmentalisation:** 4 Hours and higher. Reduced owners risk and insurance premiums.
- **Real cost savings.**
- **Longevity and durability.**
- **Multi-purpose applications** - From cold storage to warehousing to specialized facilities, retail and office buildings.
- **Ease of maintenance and reduced maintenance.**
- **Safety & Security.**
- **Flexible and innovative design.**



Contact us



www.ecocast.co.za

Phone: +27 (0)87 231 7272

Email: evert@ecocast.co.za

The Colosseum

Unit 305

Cnr Century Blvd & Century Way

Century City

Cape Town

7446