



PRECAST DECKING SYSTEM

"The slabs are structurally more efficient and considerably lighter than solid slabs or even conventional rib and block slabs"

— Pr.Eng. Ugo Rivera

obute

CONCRETE BUILDING TECH

About:

Founded in 1994 in the Western Cape, Cobute (Concrete Building Technology) brings extensive experience in the manufacturing of precast elements for the building industry in Italy. Cobute started with the production of an innovative **precast reinforced concrete decking system**, the lightest precast system available on the market, which does not require the use of crane to be installed.

New products were developed with the assistance of a Civil Engineer in 1996, to offer the easiest method of installation on site; a patent was registered, under the name Shuttercrete, for **permanent precast concrete shutters for columns, beams and staircases**.

Currently, Cobute produces and offers over 30 different products that serve markets not only in the Western Cape but throughout South Africa and the SADEC community.

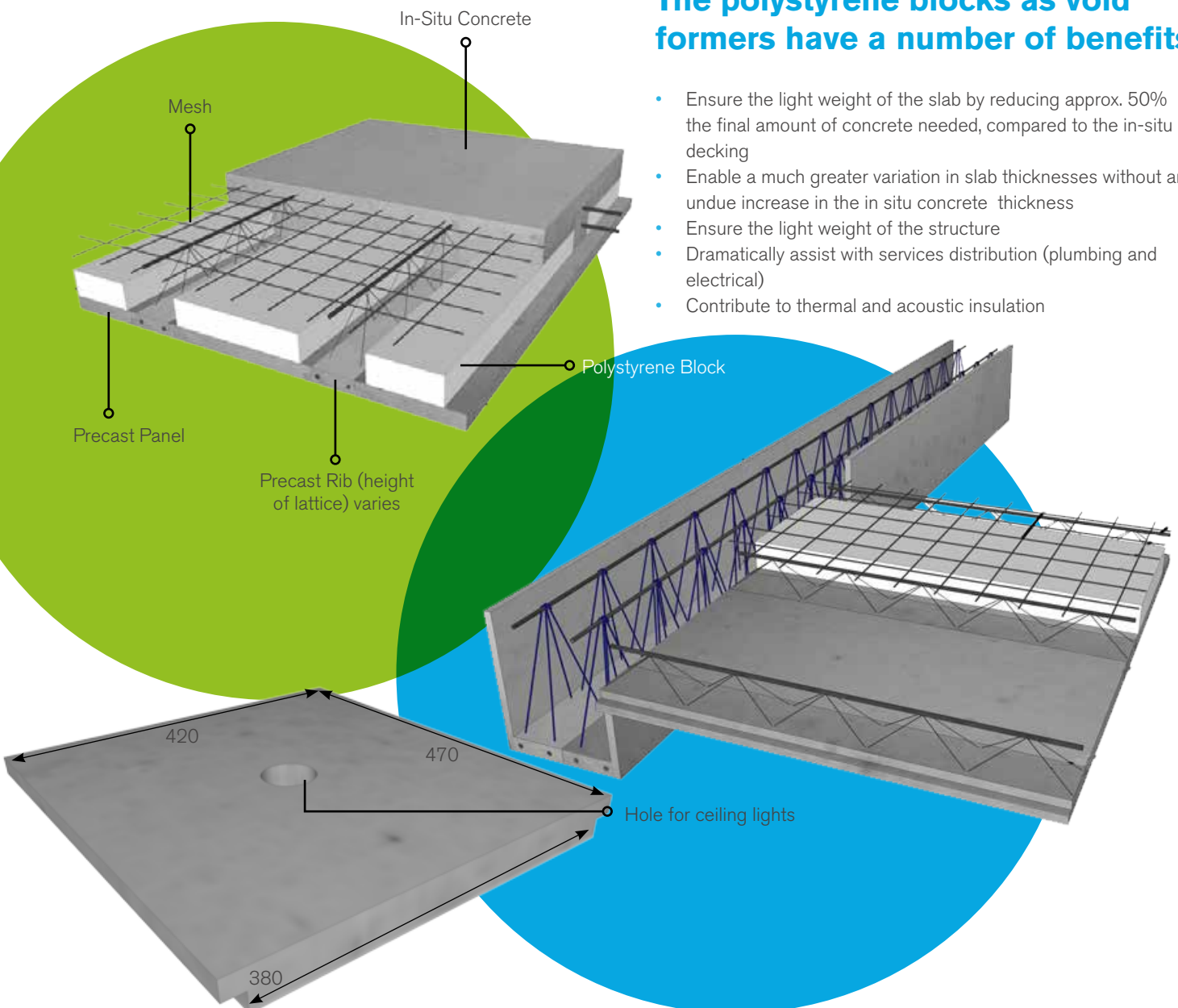
The Cobute Decking System consists of **3 elements: precast lattice rib, precast panels and polystyrene blocks**. The own weight of the system is roughly 97kg /m².

The lattice rib and precast panels are manufactured in a standard width and thickness that complement each other, as they **interlock with precision**. Cobute can accommodate special requests such as creating **perforated panels** for light points, down lighters or speaker boxes as well as supplying narrower panels to **minimise shuttering on site**.

Polystyrene blocks are delivered to the site in the standard width (380mm) and varying lengths and thickness, as specified by the Engineer.

The polystyrene blocks as void formers have a number of benefits:

- Ensure the light weight of the slab by reducing approx. 50% the final amount of concrete needed, compared to the in-situ decking
- Enable a much greater variation in slab thicknesses without any undue increase in the in situ concrete thickness
- Ensure the light weight of the structure
- Dramatically assist with services distribution (plumbing and electrical)
- Contribute to thermal and acoustic insulation



The **R Value of a 250 mm Cobute slab is 0.4889.**
 The fire resistance of a **230 mm thick Cobute slab is 150 minutes.**

Why Cobute precast decking system?

- Unique patented system
- High R Value
- Lightest decking system complemented by a beam and staircase system, to cast the whole project in only one pour

- Requires less concrete yet durable
- Easy and light to install
- Thermal and Acoustic Insulation

While the system can be designed by any Professional Engineer, Cobute can supply engineer calculations, layout drawings, completion certificates as well as NHBRC documents through a strong network of Consulting Engineers.

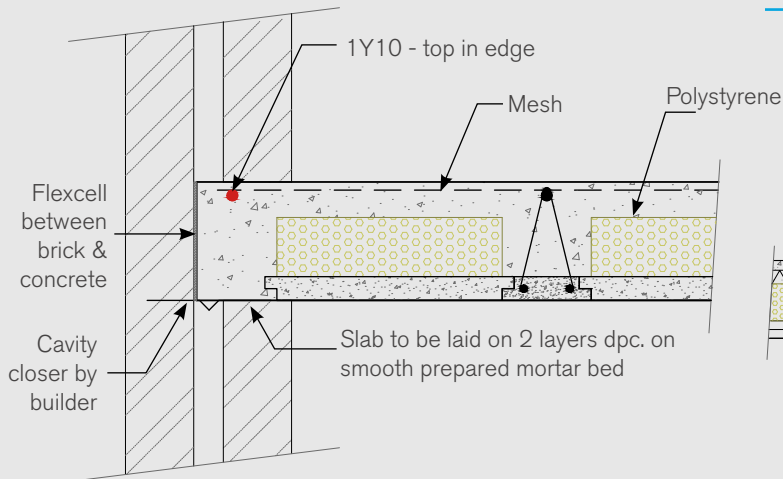
TECHNICAL DETAILS

Cobute manufactures slabs of 10 different thicknesses, in increments of 25mm, and 15 different reinforcing combinations to suit the Engineer's design. The system can be used not only as a **rib and panels** system by means of the polystyrene blocks placed on the panels, **but also as a two-way spanning slab** by removing the polystyrene and introducing steel reinforcement as required by the Engineer.

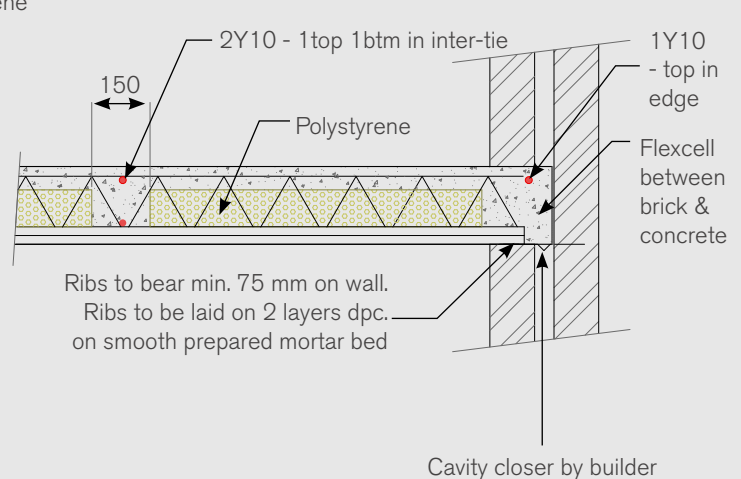
It's not necessary to use additional screeding to get a weather step in the slab; this is due to the fact that Cobute manufactures **stepped ribs**, using code 41 top steel.

Ribs generally bear 90 to 100mm on the inner skin wall (minimum 75mm).

Typical edge detail (parallel to ribs)



Typical edge detail (perpendicular to ribs)



Typical sections

If specified by the Engineer, transverse stiffeners can be incorporated to provide additional reinforcement to the slab. Similarly, edge steel can be supplied to provide reinforcement on the edge.

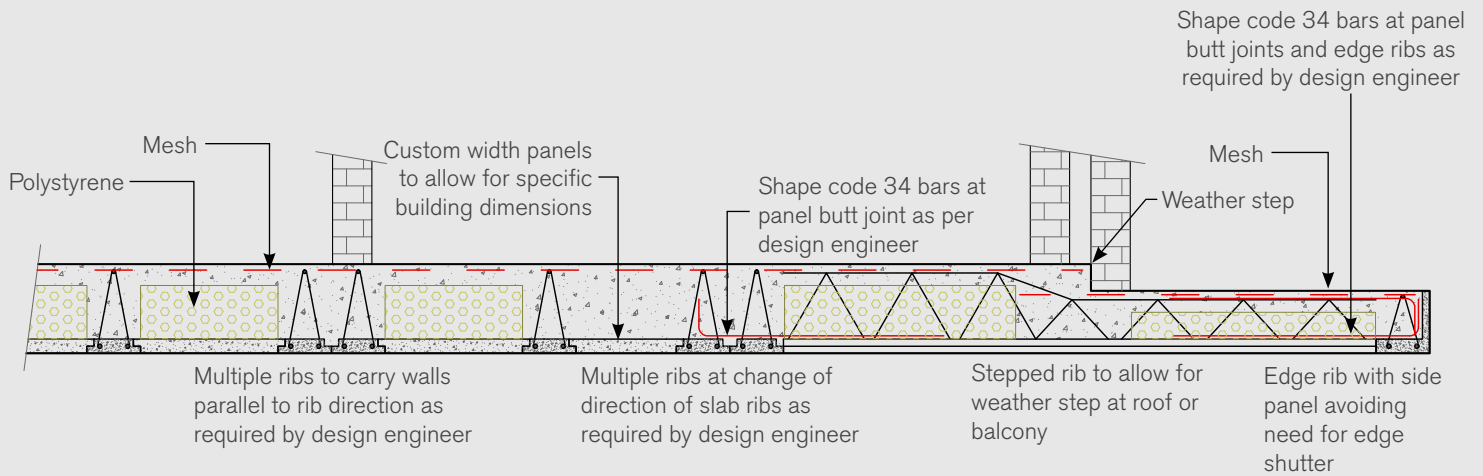
The double rib/beam-in-slab system is used as additional support to walls running along the rib on the floor above.

An edge rib can be used as a side shutter along the stair opening or edge to the balcony etc, when specified by the Engineer.

Propping requirements are as follows:

- Ribs to be propped at 1,5m centre maximum
- Props set at 1, 5m-1,8m (not more than every 4th rib) apart
- Props left in for minimum of 14 days after casting
- Ribs must be propped before packing the panels and walking on the deck. Cobute recommends to only walk on the ribs and not on the panels.

Typical section of Cobute slab



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