



# The green alternative to precast slab Cofraplus<sup>®</sup> 80



The lightweight,  
easy-to-handle  
solution

# Economic and environmental benefits

ArcelorMittal Construction launches a lightweight alternative to concrete precast slabs: Cofraplus® 80 - a new profile for construction companies who want to build differently.

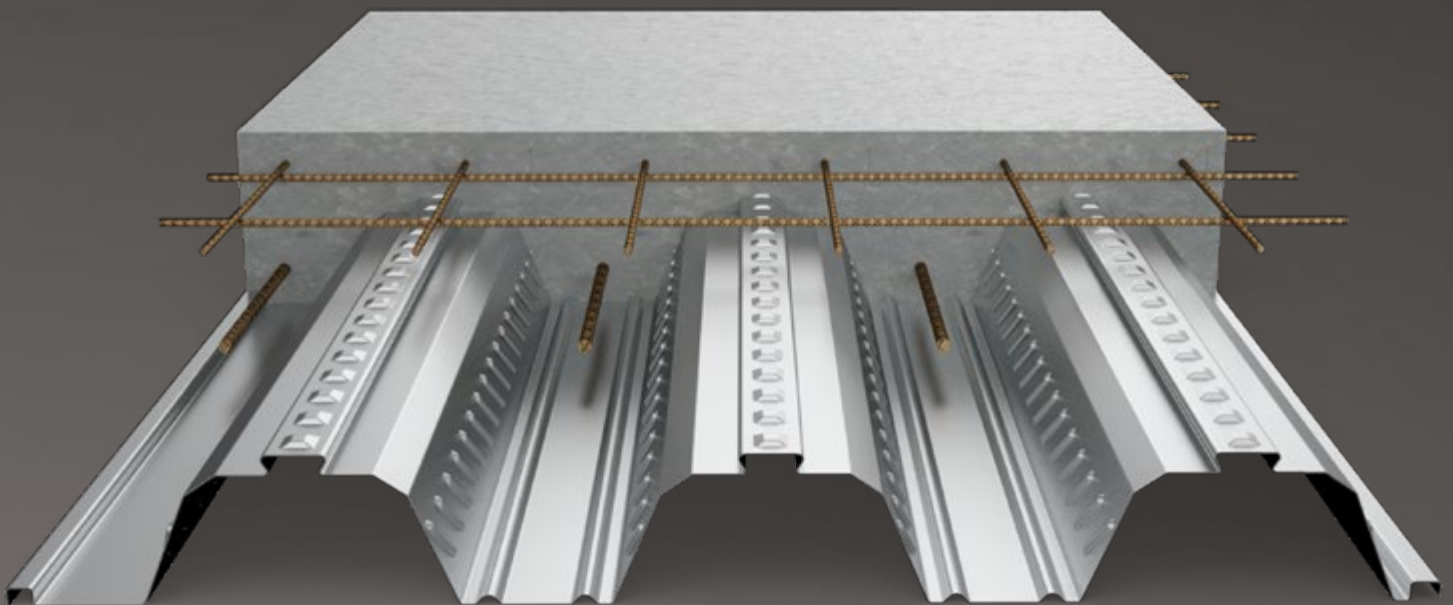
Today's environmental regulations impose green design choices and sustainable ways of working onto every construction project. But these exist alongside economic constraints as well, which is why the performance of any slab system has to work in the context of both.

With its optimal shape, ArcelorMittal Construction's new profile Cofraplus® 80 offers strong mechanical resistance

with a lower volume of concrete compared to traditional precast slabs.

It also delivers major savings on installation and logistics costs, with fewer trucks required to deliver to site, quicker and easier installation and reduced crane usage to offer a competitive solution from both an economic and an environmental perspective.

Cofraplus® 80 can be used alongside other structural materials - including steel or timber beams and concrete or masonry walls. It also comes with a new range of ArcelorMittal Construction accessories which mean it can be adapted to work with any kind of modern build method.



# Up to 30% reduced slab weight – less concrete, more sustainable

The ribbed shape of the Cofraplus® 80 floor deck helps to deliver a 25% weight saving over comparable concrete slabs. That has a positive impact on surrounding load bearing beams, columns and even foundations, leading to more cost effective, lower mass and ultimately more sustainable buildings, particularly on projects where there are difficult soil conditions. Cofraplus® 80 reduces the CO<sub>2</sub> emissions by 15%, allowing to save 200 g of CO<sub>2</sub> eq. compared to a traditional precast slab.\*

\*Calculations made using the dedicated tool One Click

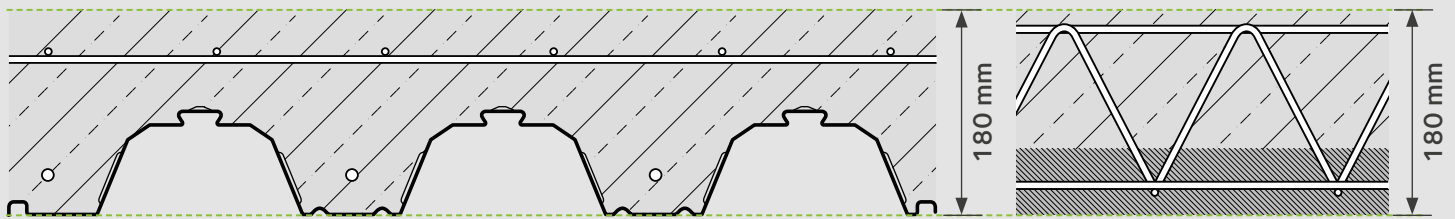
## Concrete consumption & slab weight

| Total slab thickness                    | [mm]                 | 130 | 140 | 150 | 160 | 170 | 180 | 200 | 220 |
|---|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Concrete volume                         | [l/m <sup>2</sup> ]  | 85  | 95  | 105 | 115 | 125 | 135 | 155 | 175 |
| Self weight of final composite slab*    | [kg/m <sup>2</sup> ] | 223 | 248 | 273 | 298 | 323 | 348 | 398 | 448 |
| Self weight of reinforced concrete slab | [kg/m <sup>2</sup> ] | 325 | 350 | 375 | 400 | 425 | 450 | 500 | 550 |
| Reduction of self weight                | [%]                  | 31  | 29  | 27  | 25  | 24  | 23  | 20  | 18  |

\*Concrete density 2500 kg/m<sup>3</sup> and steel thickness of 0.88 mm

### Cofraplus® 80


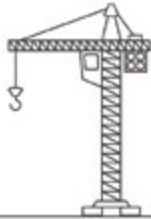

### Precast slab



Total slab thickness -----

## Optimised logistics to and around site

Logistics is one of the key areas where Cofraplus® 80 really scores over the prefabricated concrete alternative, providing a number of advantages:

| Slab system   | Transport & traffic  | Crane usage for unloading  | Self weight per element  |
|---------------|--|--|--|
| Precast slab  | <br>1400 m <sup>2</sup><br>8 trucks | <br>96 Cycles | <br>1875 kg |
| Cofraplus® 80 | <br>1 truck  | <br>12 Cycles  | <br>52 kg  |

\*Values provided for 6 m spans, a total surface area of 1400 m<sup>2</sup>, a precast slab thickness of 5 cm, a steel thickness for Cofraplus® 80 of 0,88 mm, a total slab thickness of 180 mm, G=0,7 kN/m<sup>2</sup> and Q=3,5 kN/m<sup>2</sup>

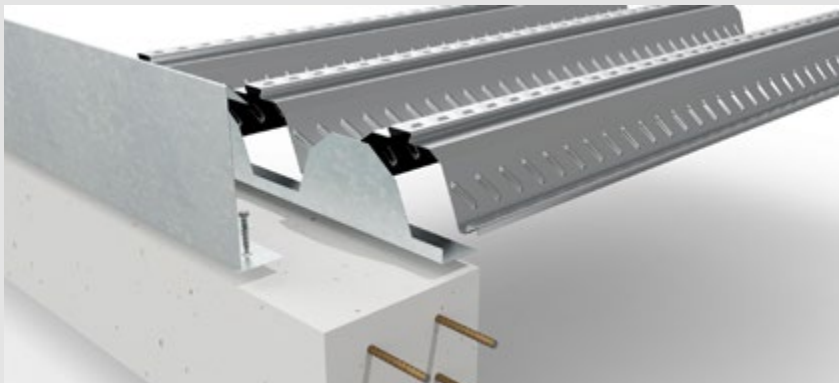
# Plug and play option for suspended elements








The dovetail on the top of the Cofraplus® 80 steel section allows suspended options such as tubes, ducts and suspended ceiling elements to be anchored direct. That eliminates the need for drilling of the concrete during installation or refurbishment, saving time and cost on floor adaptations and reducing noise levels for those living or working nearby.

It also facilitates flexible usage, and even allows tenant specific adaptations to be made on each individual floor throughout the lifetime of the building.

## Accessories brand



Our accessories range developed alongside Cofraplus® 80 means the system is flexible enough to work in any project situation. It includes edge trims, concrete fillers and stitching screws.

| Weight<br>element  | Installation<br>capacity  | Total<br>reinforcement  | Additional<br>concrete volume<br>for 18 cm slab   |
|--|---|---|---|
| <br>kg | <br>Up to 540 m <sup>2</sup> /d<br>obligatory by crane | <br>≈ 10 kg/m <sup>2</sup> | <br>130 l/m <sup>2</sup> |
| <br>kg | Up to 600 m <sup>2</sup> /d<br>manually   | ≈ 8 kg/m <sup>2</sup>   | 135 l/m <sup>2</sup>  |

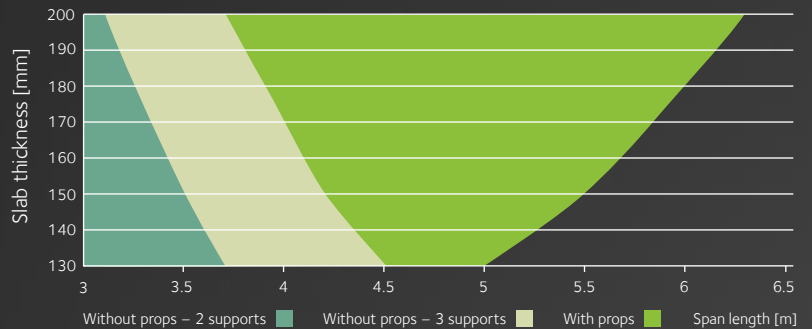
# Technical information



## Self-weight of Cofraplus® 80 steel profile:

| Nominal steel thickness  | [mm]                 | 0.88  | 1.00  | 1.13  | 1.25  |
|--------------------------|----------------------|-------|-------|-------|-------|
| Self-weight of the sheet | [kg/m <sup>2</sup> ] | 10.66 | 12.11 | 13.69 | 15.14 |

## Allowable spans for Cofraplus® 80



## Cofraplus® 80 is a practical, lightweight and flexible alternative to prefabricated concrete floor slabs.

- Spans up to 4.50 m without props and more than 6.50 m with props as a result of its mechanical performance.
- The profile is used as shuttering during the pouring phase and reinforcement during the service phase. Its specific geometry means that composite action with the concrete is optimal.
- With its corrugated shape, the volume of concrete is reduced up to 30%, meaning a reduction in the slab weight and the weight of the overall structure and a subsequent improvement in green building ratings.
- If it is being used with composite beams, Cofraplus® 80 can be supplied in a pre-punched version to suit shear connectors welded to the beam. The standard version is compatible with through-deck welding connectors.
- Trapezoidal shape means the steel sections are easily stackable for efficient transportation and storage on site.
- Dovetail on the top of profile section allows suspended elements to be fixed to the steelwork without any drilling required.
- Cofraplus® 80 is also sustainable thanks to our metallic coating ZMEvolution®



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