



## PRECAST COUNTERFORT RETAINING WALL ON PRECAST STRIP FOUNDATION MONACHINO



WALL FACED WITH NATURAL STONE



FAIR-FACED CONCRETE WALL



STONE-GRASS / CEMENT-GRASS WALL

Precast retaining walls are concrete structures for retaining soil. They are made up of a line of full-height modular panels. The side facing the soil is endowed with one or more vertical stiffening ribs that go from the base to the top of the wall.

They are placed on a precast foundation of varying size that has been laid beforehand. The two elements are anchored through a concrete pour.

The precast foundation can be both direct (shallow) and indirect (deep). If the terrain requires it, piles or micropiles can be driven into the ground before laying the precast foundation.

The precast retaining walls are produced in four different types: exposed cement facing, covered in local stone or with horizontal flowerbeds (stone-grass or cement-grass). They can be used for the construction of retaining walls for embankments, toe walls, counterscarp walls, bridge abutments, abutments for artificial tunnels and noise barriers.

Both the precast elements and their highly automatized production techniques are protected by patents and are perfectly suitable for any kind of soil pressure, be it low, medium or high. The wall facing can be made perpendicular to the laid substructure or inclined between 0% -15%.

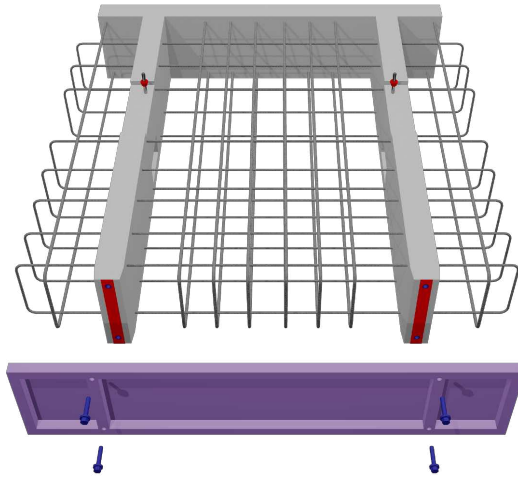
Placement is very quick and produces a structure which is ready to be filled.



## Precast Strip Foundation for Retaining Walls

“Precast Strip Foundation”:

The precast foundation is a reinforced concrete element made up of a tied rebar beam cage incorporated within a semi-precast concrete element which acts as formwork. The geometric dimensions and the steel area are established through static calculations elaborated according to the distributed loads  $N$ ,  $M_x$ ,  $T_x$ ,  $M_y$ ,  $T_y$  and the  $p_t$  pressure admissible on the terrain.



### Assembly Retaining Wall - Foundation:

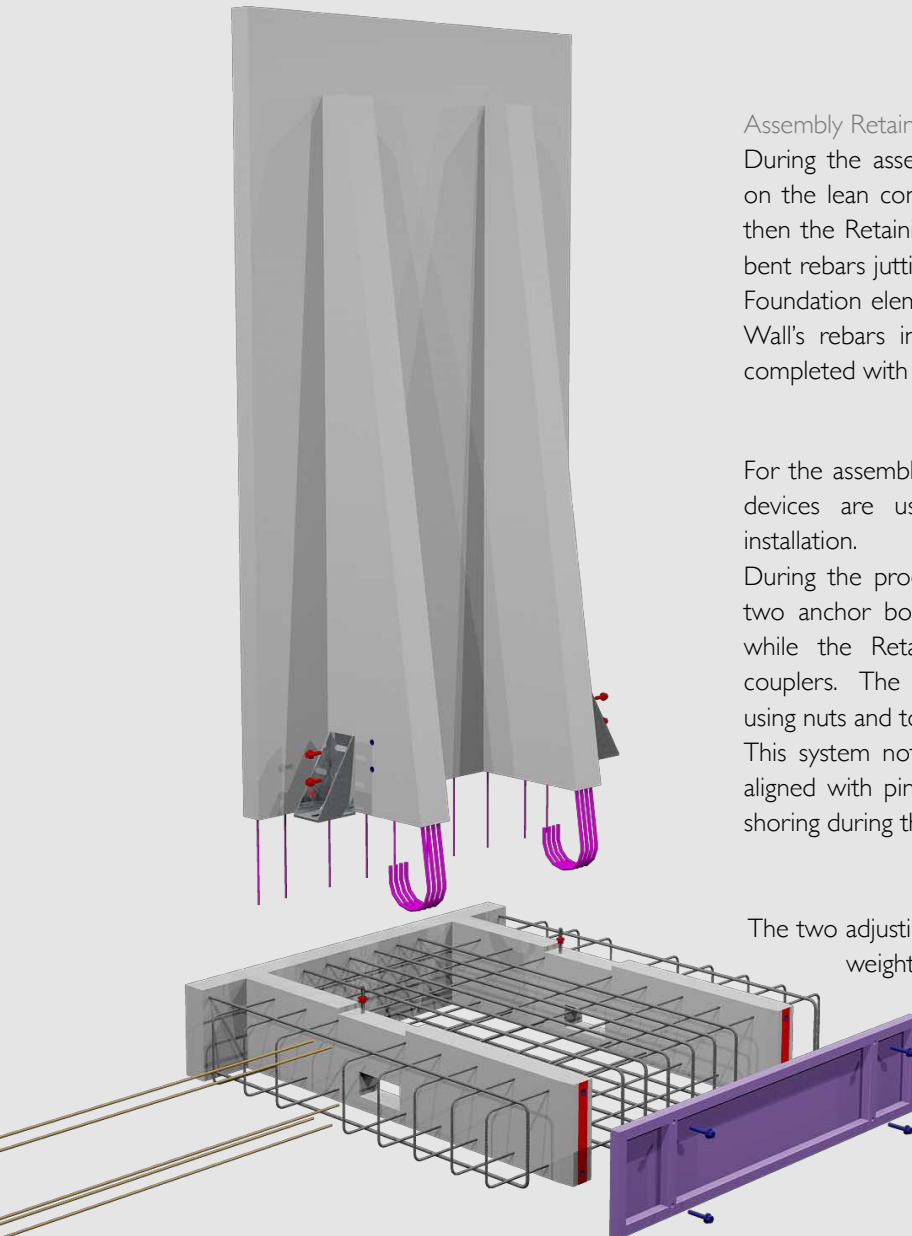
During the assembly process, the precast foundation is placed on the lean concrete, which has previously been prepared (1), then the Retaining Wall is mounted on the foundation and the bent rebars jutting out from the base (2) are inserted inside the Foundation element (3). A final casting of concrete embeds the Wall's rebars inside the precast foundation (4). The work is completed with the removal of all adjustment devices (5).

For the assembly and alignment of the Retaining Wall, adjusting devices are used. These allow an easy, fast and precise installation.

During the production phase of the Precast Strip Foundation, two anchor bolts are left within its internal concrete beams, while the Retaining Wall is equipped with four threaded couplers. The adjusting devices are fixed to the anchor bolts using nuts and to the Retaining Wall using bolts.

This system not only allows the precast Retaining Wall to be aligned with pinpoint precision, but also eliminates any kind of shoring during the assembly.

The two adjusting devices will be dimensioned in relation to the weight and other strains to which the Retaining Wall is subject and are used merely for assembling the precast elements.





## Concreting

When the concrete inside of the precast foundation has cured, all the adjusting devices are removed.

Thanks to the technology with which it has been designed, the two precast structures manage to form, after the final pour of concrete, a perfect monolithic structure.

In order to optimise the amount of the concrete using for the construction of the Wall the precast foundation can be produced slightly sloped.

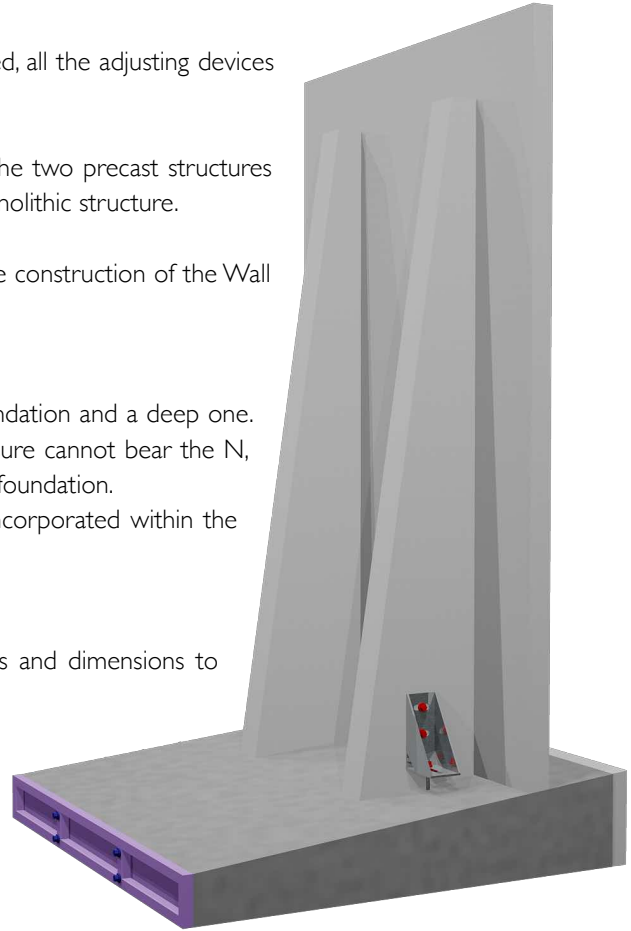
## Deep foundation on piles or mini piles,

The precast element may be mounted both in a shallow foundation and a deep one. When faced with conditions in which the admissible pt pressure cannot bear the N, Mx, Tx, My, Ty loads, piles or mini piles are introduced into the foundation.

The jutting out reinforcements at the head of the pile are incorporated within the footing base through the pouring of concrete.

## Dimensions

The "Precast Foundation" can be produced in different forms and dimensions to satisfy every design and structural need.



## The Advantages of the Precast Strip Foundation

1. 40% savings on completion times.
2. 30% savings on total work costs.
3. The work is terminated without the need of skilled labor for the positioning of the foundation reinforcement.
4. Speed of assembly and adjustment of the precast Retaining Walls.
5. Pinpoint precision in the adjustment of the elements.
6. Braces are not needed





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General information:

[www.monachinotechnology.com](http://www.monachinotechnology.com)  
[info@monachinotechnology.com](mailto:info@monachinotechnology.com)

