

## ***PRODUCT SHEET: SELF SUPPORTING WAREHOUSES***

*Revisione 2 del 13 Aprile 2020*

automatic warehouses are increasing, especially in countries where the cost of labor is higher.

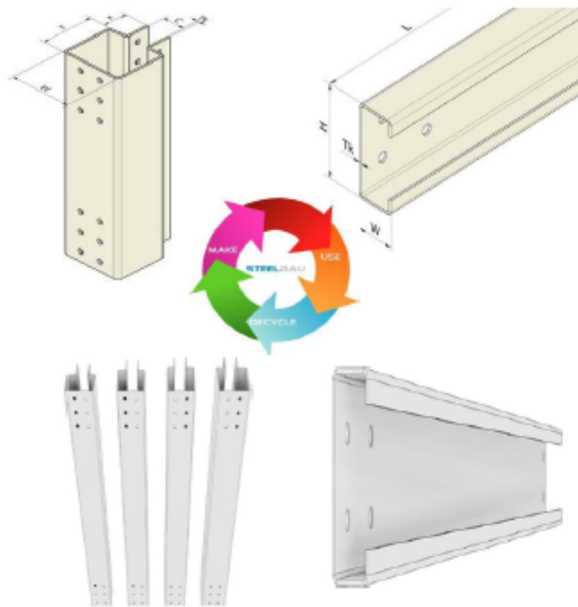
Automation achieves economic convenience in shorter times in companies with greater product rotation, who work on multiple shifts, with goods that are difficult to handle, or dangerous, or in the presence of high picking frequencies. With higher height of the warehouse, lower is the cost per unit stored.

Up to fifteen meters in height, the entrepreneur can choose whether to build a concrete building and insert the warehouse, even if, normally, the self-supporting warehouse is cheaper. For higher warehouses, the self-supporting structure is instead the only technically possible solution.

Self-supporting warehouse means a pallet, shelf or cantilever racking, designed according to the automation technology chosen, suitably sized to support the roof and walls, made of sandwich panels with different grade and thickness insulation in polyurethane foam. or rock wool and with various textures and colors.

The design, made according to the technical construction standards, takes into account the forces pushing the wind, snow load, earthquake, movement tolerances of the structure which are very stringent (movement allowed within 1/1000 of the height of the system subjected to thrusts accidental dynamics).

The racks are anchored and leveled on a suitably designed base according to the loads to be stored, their own weight and accidental loads. It is possible to bury part of the warehouse under the ground level, increasing the useful storage height, mitigating the visual impact and environment solicitations.

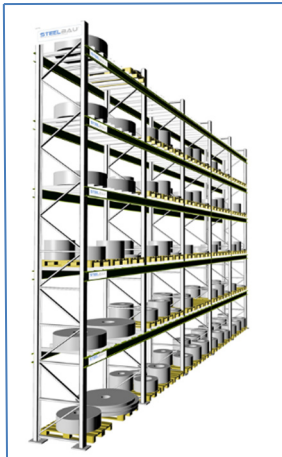


Our company offers high performance profiles, UNI EN 1090 certified specifically designed for the construction of self-supporting warehouses. The dimensions of the uprights (single vertical element) range from 120x80x2.5 mm. at 180x180x6mm. with capacities up to 1000 kN (about 100 tons). Each shoulder, formed by two uprights and the trellis, can therefore carry up to 200 tons. It follows that we can build single-shoulder warehouses where the competition must use two. The standard vertical drilling pitch of 50 mm. allows a fine adjustment of the support levels of the loading units made with horizontal longitudinal elements, typically through sections with lifting tubes in multi depths or guides for satellite systems (shuttle).

The quality and precision of the bends of the profiles guarantee high standards of rigidity and load capacity especially in self-supporting structures with heights out of the standard, allowing to create structures that optimize resistance to earthquakes up to important levels of horizontal acceleration, on all types of ground

***The static and seismic sizing of the structures are made according to the UNEN 15512, UNIEN 16681 and NTC 2018 standards with the release of the elevation calculation report and of the floor, where required.***





With our product, we can also create special shelving and seismic resistant for large flow rates, to be inserted inside your buildings.

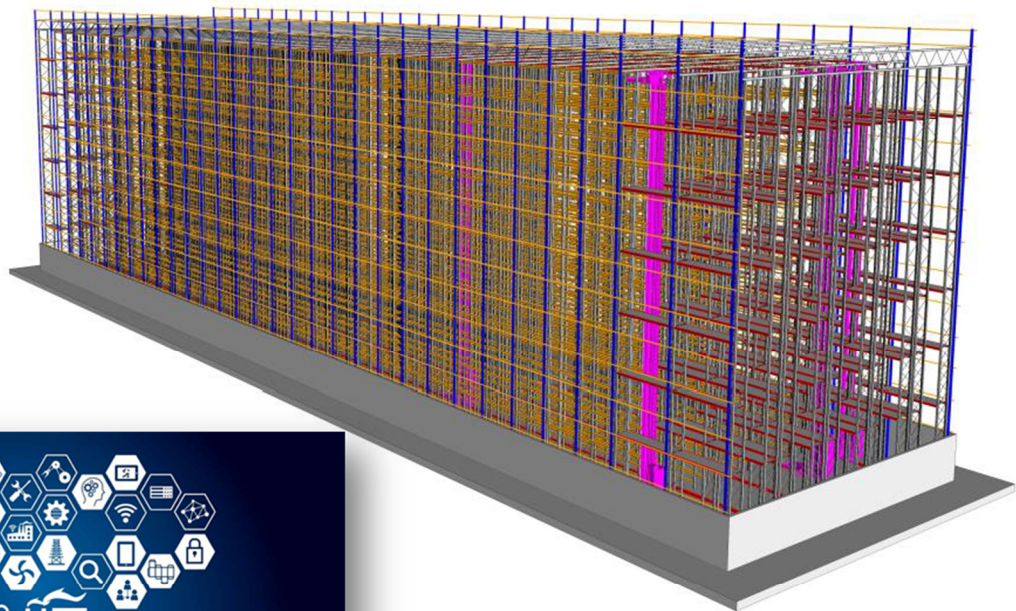
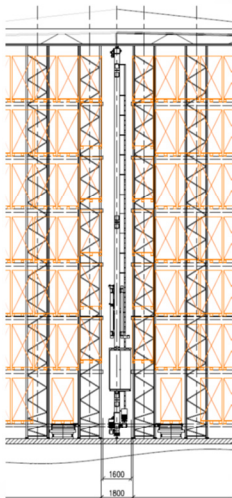
A peculiarity of our proposal is the circular economy concept M.U.R. (Make\_Use\_Recycle), or the use of recycled materials that make up the certified high strength steel.

If we consider the scarce endowment of primary resources of extractive origin in the EU, ferrous scrap, whose use allows significant savings in terms of energy and CO2 emissions, must be considered an authentic European "mine" that must be carefully preserved, increasing availability and quality. Our company is

engaged to create the conditions for the virtuous cycle of the circular economy to actually close in the EU territory, avoiding a drainage of material, ready to be recycled, to countries that in many cases only partially guarantee the same European standards of sustainability.

the steel used for our heavy shelves can be remelted for multiple cycles without ever losing any of its intrinsic properties such as strength, ductility, formability, which make it performant in multiple structural applications and, especially, in free-standing.

For this reason, we can attribute a Life Time Cycle or a permanent life cycle to steel.



We follow our customers even after installation, with the service of inspections and checks for the maintenance of the structures, according to the UNI EN 15635 standard.

Checks that we can also perform on third-party shelving

by proposing protocols compliant with the highest European standards that they enable you to know the status of every single element of your shelving and evaluate the replacement or repair of damaged elements with use, identified uniquely in a graphic accompanied by photographic documentation, according to the three standardized risk levels.