

SUPPORTING STRUCTURE

ARCH: built with two or three elements composed of $\varnothing 60 \times 2$ mm hot galvanized tubes, calendered with optimal radius to obtain the composition of the arch.



JUNCTION SLEEVE: made of $\varnothing 55 \times 2$ mm tube, hot galvanized after machining.

It is equipped with a robust pre-drilled plate which has a dual function: to create an unmovable attachment for the tie rods/struts and to prevent the rotation of the arch sectors.



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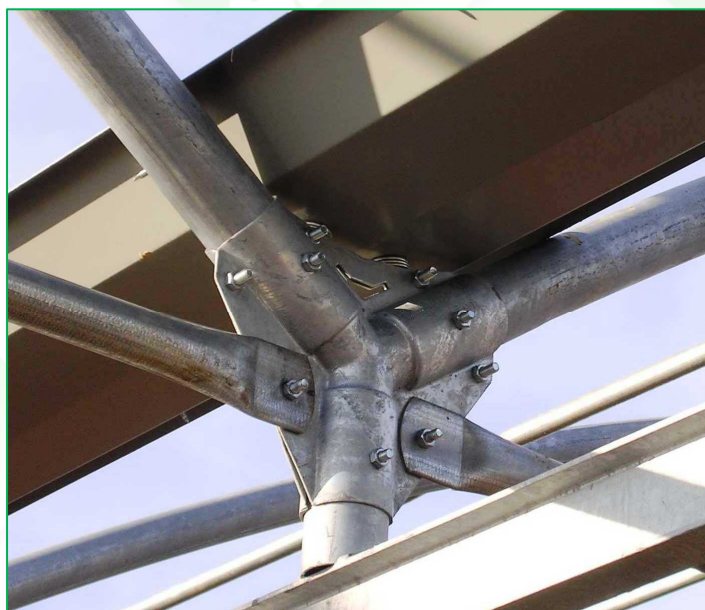
LATERAL HORN JUNCTION (2-WAY): made of $\varnothing 55 \times 2$ mm tube, hot galvanized after machining, pre-drilled for fixing both to the arch and to the upright.

It is equipped with a robust plate for attaching the tie rods and a pre-drilled bracket for mounting the side profile.



JUNCTION PLATE (3-WAY): made of galvanized 20/10 galvanized sendzimir Z275 sheet.

Composed of two opposing pieces, it is pre-drilled for the insertion of both the arches and the upright, as well as for the connection of the tie rod. It is also prepared for the double upper attachment of the gutter.



UPRIGHT: made of $\varnothing 60 \times 2$ mm hot galvanized tube and prepared to receive both the lateral junction horn and the plate for the connection of the arches.



CROSS BRACING: made of $\varnothing 30 \times 1.2$ or $\varnothing 40 \times 1.5$ mm sendzimir Z275 galvanized tube, depending on the requirements, they are very important elements for the stability of any structure. They are always placed in an oblique position at the four corners, between the first and the second arch, and at intervals of 20/25 m depending on the overall length.



CONNECTION LINES:

option 1: **roof batten**: connection at the centre line of the arc - made of $\varnothing 30 \times 1.2$ mm sendzimir Z275 galvanized tube and pressed at the ends, so as to allow the locking of the arches without any drilling.



option 2: $\varnothing 30 \times 1.2$ mm tube / 25 x 25 x 1.5 mm tubular pieces, galvanized sendzimir Z275 with specific racks: continuous connection under or over the arch.



On all the structures a line of roof battens is installed that in addition to connecting an arch with the next, allows them to be accurately separated at the pre-established distance.

To define which type and how many additional connecting lines are necessary, it is very important to define the type of use of each structure, also depending on the chosen roofing material.

- In the case of roofing using sheeting, longitudinal tubes are used, fixed under the arch with specific U-bolts. This solution prevents any "pockets" forming in the sheeting.
- In the case of double layer sheet, a sufficient number of roof batten lines is the best solution.
- In the case of roofing with rigid materials, the connecting lines between the arches must be intensified. Both the roof battens and the tubular pieces fixed above the arch are two excellent solutions.

TIE RODS AND STRUTS: made of $\varnothing 40 \times 1.5$ mm tube and/or $\varnothing 30 \times 1.2$ mm tube, **galvanized sendzimir Z275**, depending on the width of the arch. They are essential to improve the load-bearing capacity of the arch. It is possible to use the tie rod to hang the irrigation or lighting systems, as well as the cultivation channels.

LATERAL PROFILE: specific profile made of **sendzimir Z275 galvanized sheet metal**, which in addition to acting as a connection between the arches, is designed to receive the roofing materials in the upper part, and, in the lower part, any profile intended for the side wall.

GUTTER: made of **12/10 mm pre-painted sheet metal**, it is able to withstand aggressive atmospheric agents. It is very capacious, versatile and can be walked on.
At the end of each gutter line, blind covers and/or with a $\varnothing 100$ mm drain are provided.
It is fixed to the structure through the use of **INOX A2 screws** and aluminium washers.
Specific silicone for grey sheet metal is used on all the joints.

STEP JUMP: depending on the needs and the final use of the structure, it is possible to eliminate some uprights, supporting the arch with fair-sized beams. This special application can be mounted both on the row of lateral uprights and on the central uprights. All the step jumps and any uprights/beams are **hot galvanized** at the end of all the workshop machining.

With this system it is easy to create access porticoes; furthermore, by reducing the overall dimensions inside the structure, circulation and/or the creation of paths are facilitated.



CALCULATION STANDARDS:

Our facilities are calculated based on accidental, atmospheric and operating overloads, envisaged for greenhouses by the UNI-EN 13031-1: 2004 standards, according to the different climatic zones in which D.M. 14/01/08 subdivides the Italian territory.

The minimum snow load used for the calculation of the structures is as follows:

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|---|-------------------------|
| ➤ ZONE | I |
| ➤ Altitude: | < 200 m a.s.l. |
| ➤ Reference snow level for civil constructions: | 150 kg/mq |
| ➤ Snow load for greenhouses: | starting from 53 kg/sqm |