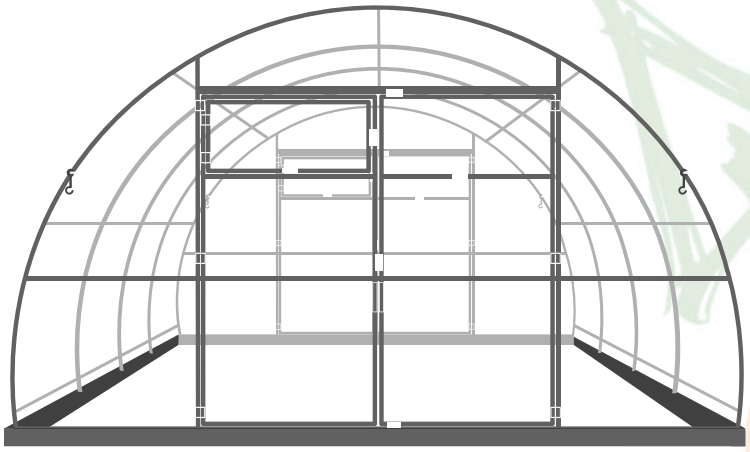
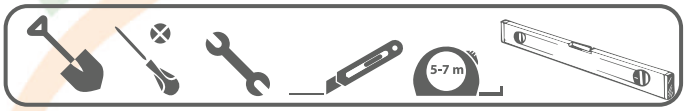


Greenhouse Comfort Prof

x2+



1. PRODUCT SET

No	Part name	Number, pcs.				
		4 m	6 m	8 m	10m	12m
1.	The set of end-wall elements with doors and a vent includes 7 straight beams (without connection bends) and 7 connecting beams (with connection bends on one end).	1	1	1	1	1
2.	2 end-wall arc set	1	1	1	1	1
3.	3 arc set	1	1	1	1	1
4.	2 arc set	-	1	2	3	4
5.	A set of 7 connecting beams (with connecting bend on one end)	-	1	2	3	4
6.	Latches (for doors and vents)	8	8	8	8	8
7.	Hinges (for doors and vents)	16	16	16	16	16
8.	Hook (to fix the vent and doors in an open position)	4	4	4	4	4
9.	Handles	4	4	4	4	4
10.	Bolt M6x65 (or M6x70) mm with a washer and a nut (to connect the arcs and beams)	35	49	63	77	91
11.	Bolt M6x50 (or M6x55) mm with a washer and a nut (for arc assembly)	10	14	18	22	26
12.	Screw 5.5x19 (or 5,5x25) mm (for attaching polycarbonate)	172	192	212	232	252
13.	Screw 4.2x16 mm (to attach end-wall parts, latches, hinges, hooks, anchors to the frame)	164	166	168	170	172
14.	Anchors (for anchoring the greenhouse in soil)	6	8	10	12	14
15.	Cellular polycarbonate (not included in the set), m2	46,2	60,9	75,6	90,3	105

4. ORDER OF ASSEMBLY

Step 1. End-wall assembly

The first step is to assemble both end-walls of the frame. The end-wall assembly is done through connecting a smaller cross-section pipe with a larger cross-section pipe through corresponding openings in the appropriate parts of the greenhouse frame. After connection the arcs are fastened by use of bolts M6x50 (or M6x55) mm reinforced with M6 washers and M6 nuts. Other connections are fastened by use of the screws 4.2x16 mm (see picture 1), as well as roofing screws with a rubber washer for polycarbonate fastening.

Doorways consisting from two parts are to be assembled first. Doorway elements are interconnected by use of horizontal inserts in the upper and lower parts (picture 2, connection 6). Connections are reinforced by use of 4.2x16 m screws (4 screws in the lower part and 4 screws in the upper part). After the doorway is assembled, the internal width should be 1940 mm.

Attention! Ensure equal diagonal dimensions of the doorways in both greenhouse end-walls.

Insert stick elements in the lower part of the doorway, from both sides. The fastening of these elements to the doorway is performed by use of two screws 4.2x16 mm from both sides of the doorway (picture 2, connection 4). Following dimensions should be observed: extruded part of the stick must be 975 mm, the total length of the lower part of the greenhouse must be 3950 mm.

Afterwards the greenhouse end-wall arcs must be assembled and attached to the doorway.

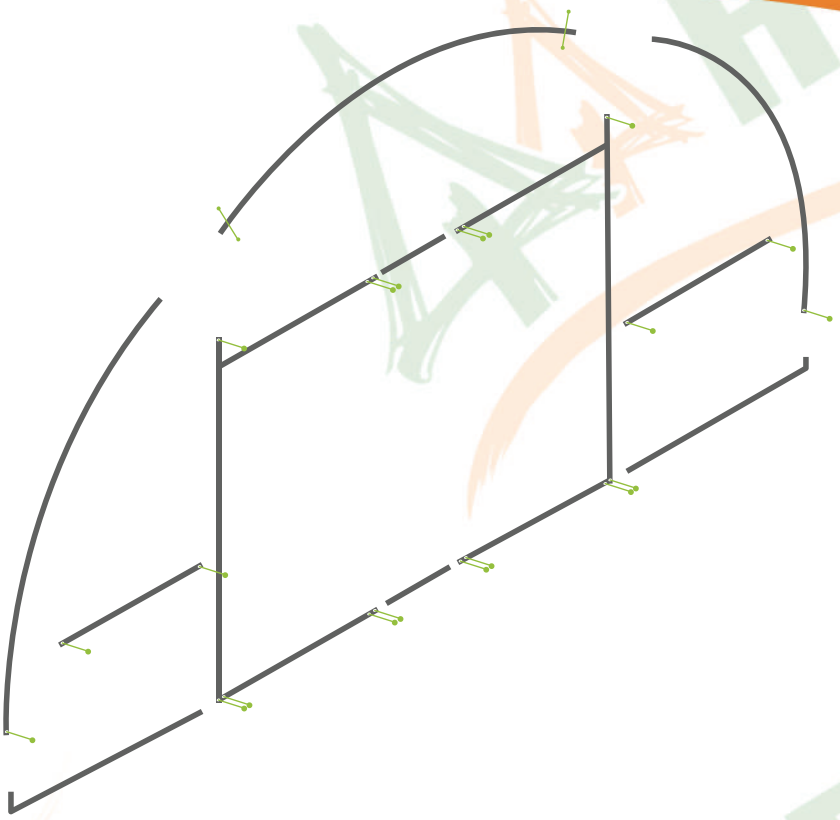
Attention! End-wall arcs differ from the other arcs (they are shorter). Due to this, pay close attention to the information shown on the arc packaging.

Arcs are connected and reinforced by insertion of M6x50 (or M6x55) mm bolts with washers and nuts in one of the two drilled openings (see picture 1). The second hole is designed for attachment of the beams during the full frame assembly (see picture 6). A washer and a nut must be installed from the inside of the greenhouse (under the arc). A No. 10 wrench is required for assembly.

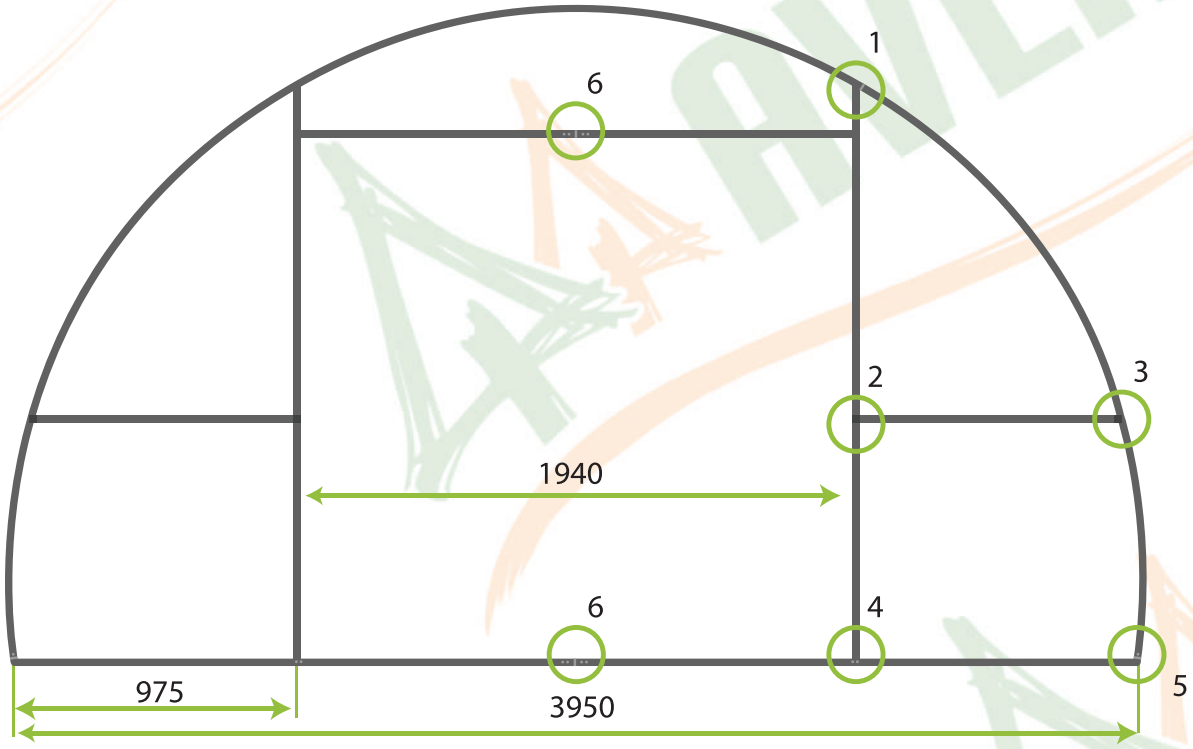
The assembled end-wall arc must be installed on the lower part of the end-wall (see picture 2, connection 5), as well as on to the upper part of the end-wall (see picture 2, connection 1). Connections are reinforced by use of 4.2x16 m screws (one screw per connection).

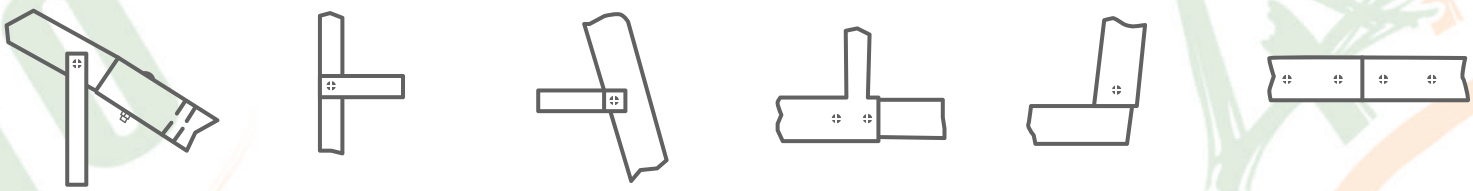
The final part is the connection of barge board flashings (see picture 2, connections 2-3).

Attention! During the assembly, the screws 4.2x16 mm must be inserted on the side that will be the internal side of the greenhouse after the assembly is completed. Polycarbonate is attached from the external side of the greenhouse by use of roofing screws, rubber gaskets and nuts. Due to this, during the end-wall assembly make sure that all fastening elements are inserted on the same side of the end-wall.



Picture 1 – Greenhouse end-wall assembly schematic (inside view)





Picture 2 – Greenhouse end-wall part interconnection schematic (inside view)

Step 2. Installation of cellular polycarbonate

Read the polycarbonate installation provisions prior to the polycarbonate installation on the greenhouse.

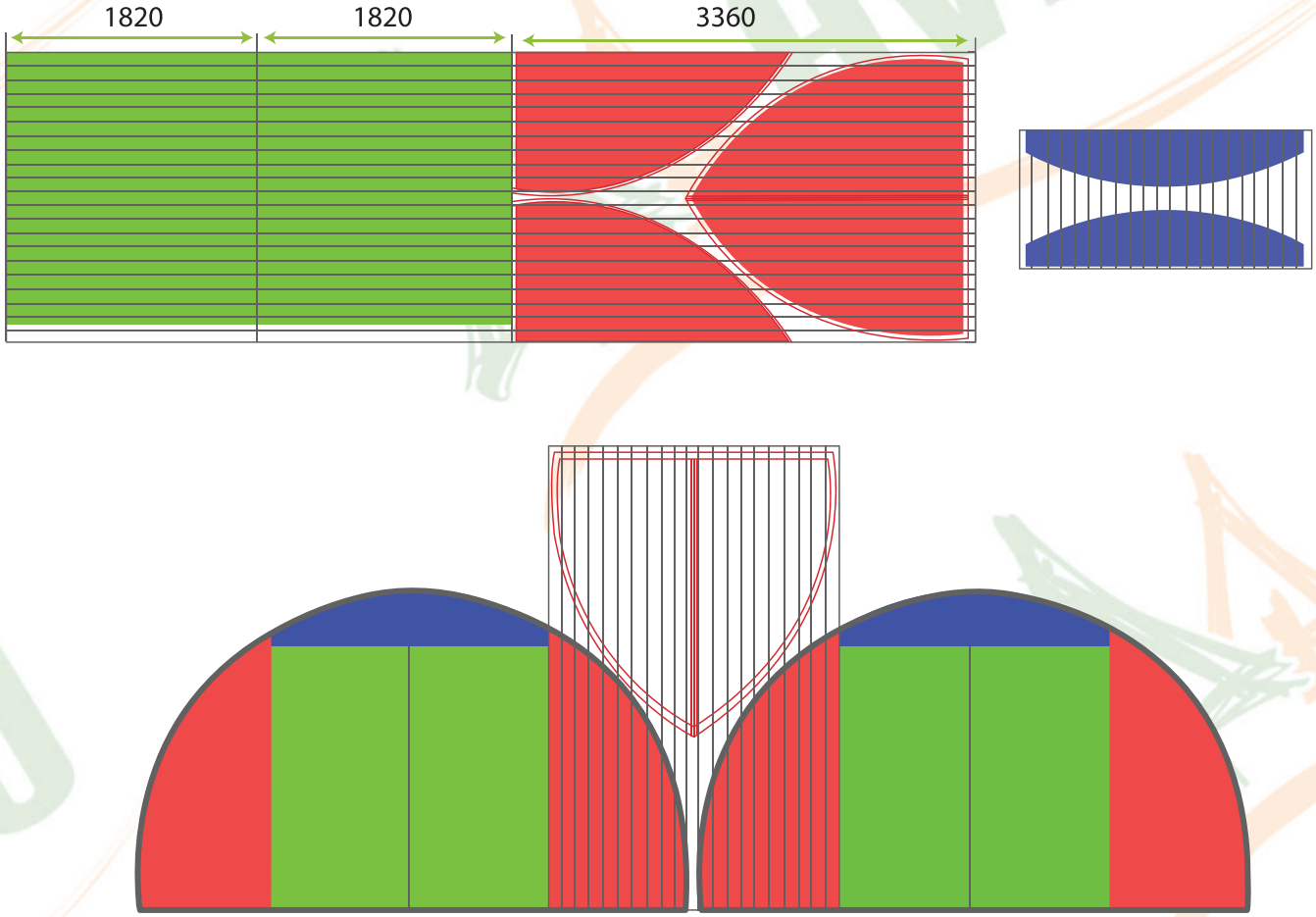
General provisions for installation of cellular polycarbonate

Polycarbonate sheets must be attached to the greenhouse frame by use of roofing screws with a rubber gasket. The polycarbonate sheet fastening spots are marked on the greenhouse frame parts. The holes in the polycarbonate must be 2 mm larger than the screw diameter to account for the thermal expansion. Screws should not be overtightened during assembly, but a slight clearance should be left for "free movement".

Cellular polycarbonate is protected against the UV radiation and it must be installed in a way that ensures that the side with the UV protection layer is on the outside. Due to this, pay additional attention to the correct side of the polycarbonate and appropriate markings on the sheets or on the packaging.

Polycarbonate sheets must be cut with a construction knife or electric cutter designed for metal cutting.

After the cellular polycarbonate sheets are installed, the protective film must be removed from both sides of the sheet (if applicable).



Picture 3 – 7x2,1 m and 1.x2.1 m polycarbonate sheet cutting schematic to cover the greenhouse end-walls

To prevent dust, humidity, bugs and other pollution from entering the cell channels of the polycarbonate, we recommend to install end-covers (not included in the polycarbonate delivery set).

Firstly, the polycarbonate must be attached on the greenhouse end-walls. Both greenhouse end-walls will require 7x2.1 and 1x2.1 m polycarbonate sheets.

For convenience, the polycarbonate must be installed on the end-wells before the full assembly of the greenhouse. Cutting and installation of the polycarbonate must be done on a level horizontal surface. The sheet must be placed on a corresponding frame part, fastened by use of the roofing screws with a rubber washer and cut along the end-wall sides as shown in picture 3.

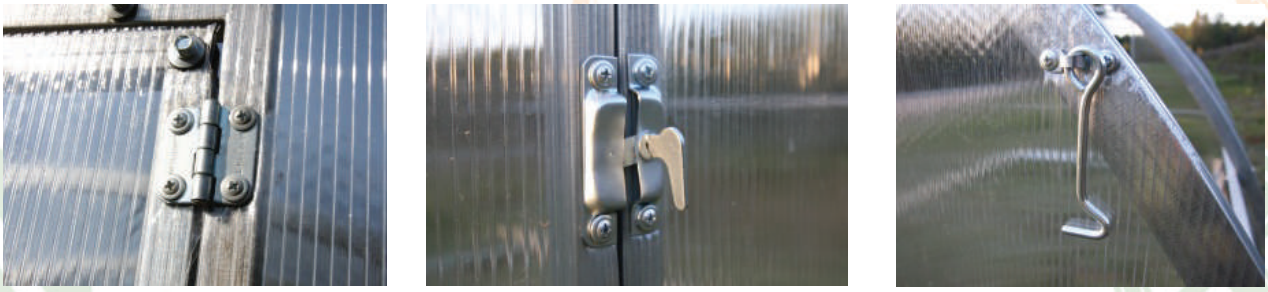
Attention! At every stage of the cutting pay attention to the dimensions of the remaining polycarbonate to ensure that you have enough of the material!

Polycarbonate must be installed on the greenhouse doors and vents in the following order. Doors and vents must be installed into the doorway when it is placed on a level horizontal surface. After equal distances of doors and vents from all sides is set by use of any additional means (wooden inserts, paper cut-outs etc.), place the polycarbonate sheet on top, as shown in picture 3. Afterwards the polycarbonate sheet must be simultaneously attached to the doors and vents by use of roofing screws and rubber gaskets.

After the polycarbonate is installed on the doors and vents, it is time to install hinges, fastenings and hooks (picture 4) by use of screws and washers (picture 5). Fastenings allow to fix the doors and vents in a closed position. The hook allows to fix the doors and vents in an open position.

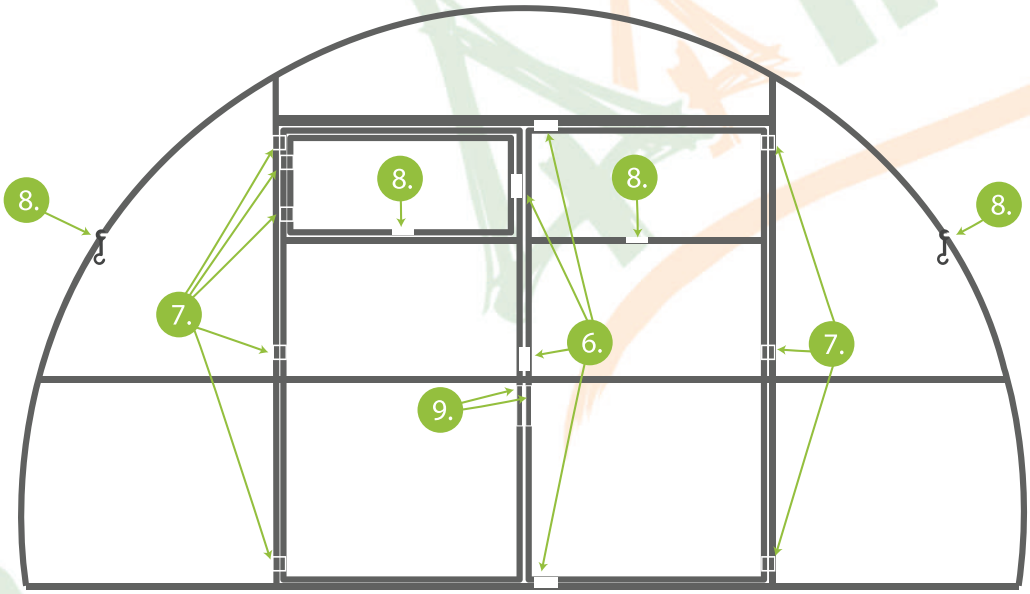
All fastening and bracket elements must be installed on the external side of the polycarbonate. Make cuts in polycarbonate for doors and vents only after the fastenings have been installed.

Attention! Cuts along the door and vent openings must be done only after the fastening elements (hinges, hooks and fastenings) have been installed on the polycarbonate. It is strictly forbidden to fasten and cut the polycarbonate along the contour of each door or vent, while the respective door or vent is not attached to the end-wall – this will cause failure of the greenhouse effect due to slits.



a) hinges b) latches c) hooks

Picture 4 – fastening of hinges, latches and hooks

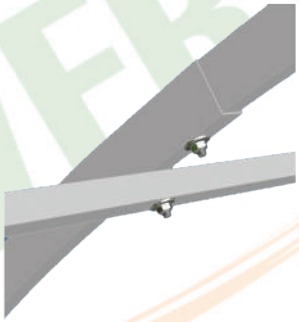


Picture 5 – placement of hinges, latches and hooks on the end-wall

Step 3. Frame assembly

Polycarbonate must be already installed on the end-walls before the frame assembly. End-walls and intermittent arcs are interconnected by the 7 rows of fastening elements (beams) by use of bolts, washers and nuts installed at the drilled openings. A No. 10 wrench is required for assembly.

Cross-beams must be installed under the beams, inside the greenhouse, and the nut must be screwed on from the inside of the greenhouse (picture 6).
Connection of the cross-beams is ensured by interconnecting the straight beams with the beams with bends on ends.



Picture 6 – View of beam and cross-beam placement after connection

Step 4. Installation of cellular polycarbonate

Installation of the polycarbonate on the greenhouse must be done after the greenhouse frame assembly is completed. The outer sheets must be installed first, followed by the middle, and the sheets must be placed in such a way that ensures the bend along the channel line. The sheets must be placed in a way that they extend for 5 cm outside. The polycarbonate sheets must be installed on each other.

The sheets must be levelled and attached by screws starting from the lower side then along the arcs, by using the pre-drilled holes.

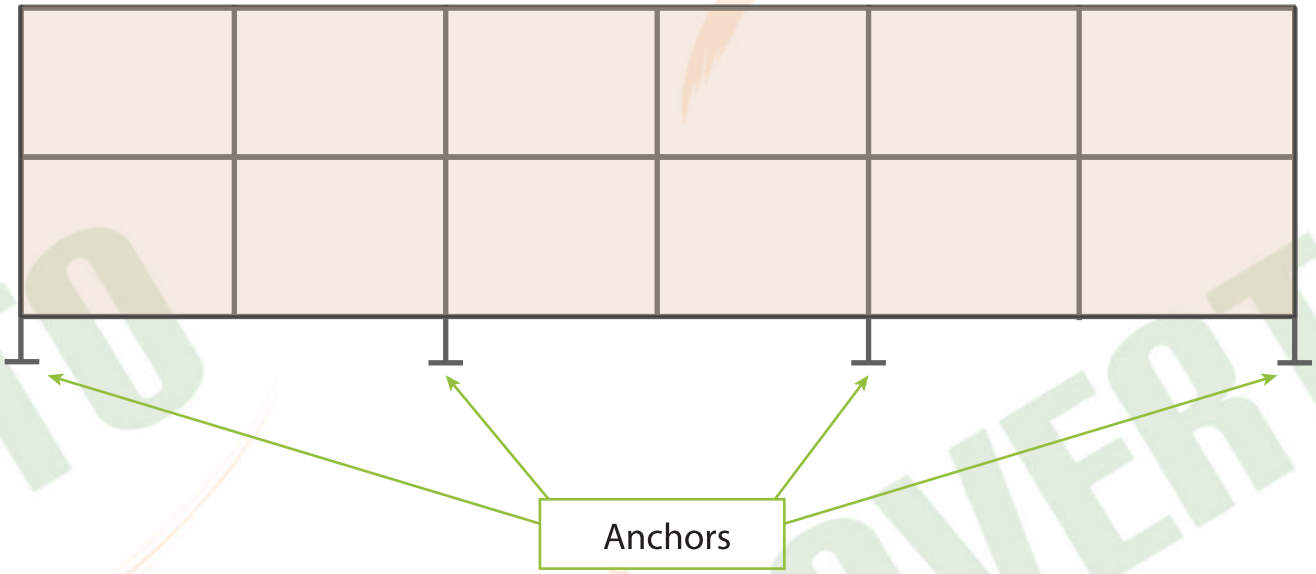
Attention! Do not forget to remove the packaging film from both sides of the polycarbonate sheet!

Step 5. Greenhouse installation

Before starting the installation lot where the greenhouse will stand must be carefully levelled. Insert the anchors into the arcs (every second arc for 1 m step, every other two arcs for 0.67 m step) and from both sides of the end-walls (picture 7).

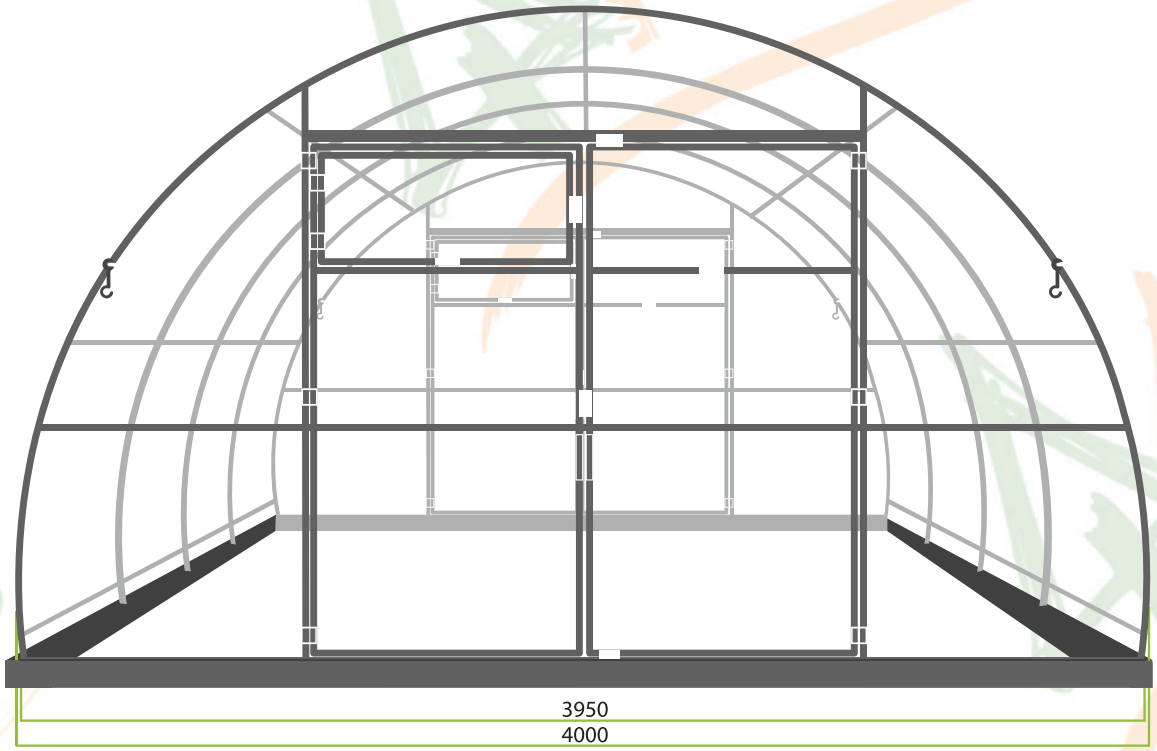
Attention! The anchors must be fixed in the arcs by use of a 4.2 x 16 mm screw and a washer.

Make holes in the ground for anchors to ensure that anchors are completely immersed. Install the assembled greenhouse in a way that the lower beam rows are at the same level as the ground, but the supports and polycarbonate sides are in the ground. Afterwards, fill holes with anchors with soil and tamper. You can use a concrete or wooden frame to install the greenhouse.



Picture 7 – Anchor installation

Attention! Greenhouse ComfortPro 4.0x4m, 40x20 mm has a non-standard shape, which must be taken into account during construction of the foundation (picture 8).



Picture 8 – foundation dimensions