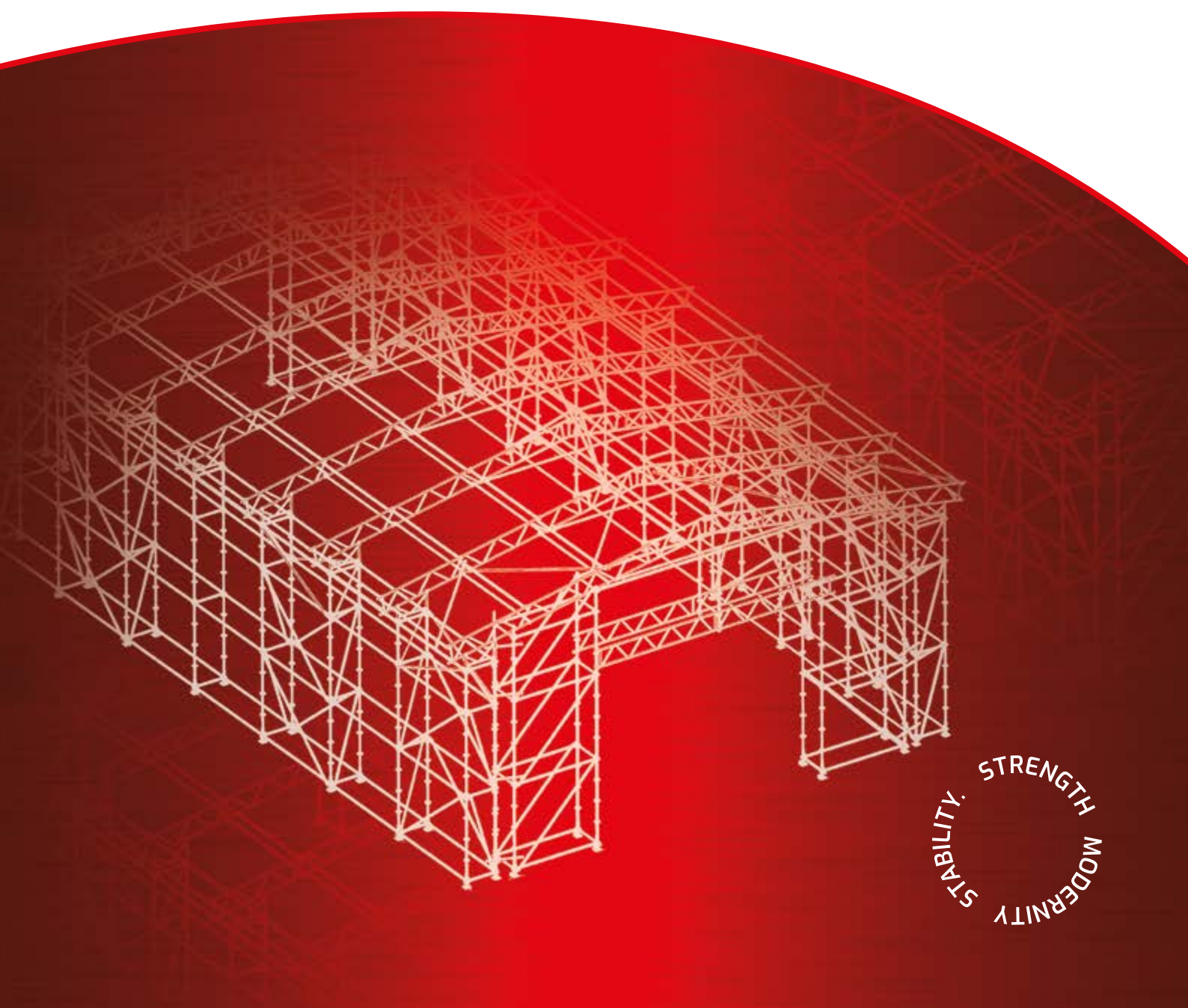




MOSTOSTAL  
SCAFFOLDING  
FORMWORK

# ROOF SYSTEM ALU-SKY

CATALOGUE AND INSTALLATION INSTRUCTIONS



STABILITY  
STRENGTH  
MODERNITY





MOSTOSTAL  
SCAFFOLDING  
FORMWORK

# ROOF SYSTEM ALU-SKY

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CATALOGUE

[www.altrad-mostostal.pl](http://www.altrad-mostostal.pl)

STABILITY. STRENGTH  
MODERNITY



# TABLE OF CONTENTS

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## I Roof System ALU-SKY

1. Introduction	4
-----------------	---

## II Components – catalogue

2. Ridge Girder	4
3. Eaves Girder	4
4. Roof Girder 0.6 m	4
5. Roof Girder 0.8 m	5
6. Transverse Transom 0.4 m	5
7. Ridge Transom	5
8. Horizontal Brace	5
9. Aluminium Roof Support 18°	5
10. Swivel Connector Ø48.3/Ø60	6
11. Aluminium Top Bracket – 18°	6
12. Front Grip	6
13. Cotter Pin	6
14. Girder Connector	6
15. Aluminium Standard Pipe	6
16. Canvas	7
17. Aluminium Crate Girder	7

## III Specifications

1. List of Standards Used when Designing Roofs	7
2. Roof Properties and Installation Assumptions	8
3. Roof Span Table	9

## IV Installation

1. Supporting Scaffold Installation	10
2. Roof Installation	12
3. Installing Guards on Side Walls	17

V Removal	18
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VI Localization of Altrad-Mostostal	19
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# I ROOF SYSTEM ALU-SKY

## 1. Introduction

"AluSky" is an aluminium modular roof system. The system is based on 0.6 m and 0.8 m high aluminium girders. The girders are fitted with an upper band in the form of a special profile to install the roof canvas. The components are connected with the wedge connections used in the modular scaffolds manufactured by Altrad-Mostostal.

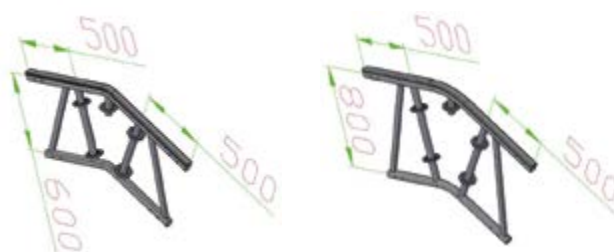
The ALUSky roof may be supported on the steel modular scaffold systems – Rotax Plus and aluminium modular scaffold systems – Alurotax. The roof may be designed with two roof girder spacings: 2.572 m and 2.072 m. and with two roof girder height modules: 0.60 m and 0.80 m.

## II COMPONENTS – CATALOGUE

### 2. Ridge Girder

Aluminium component installed in the roof structure ridge.  
Inclination: 18°

Index	Dimension (m)	Weight (kg)
E400101	0.6x1.6	12.31
E400201	0.8x1.72	13.67



### 3. Eaves Girder

Aluminium component installed in the roof structure eaves. Inclination of 18°

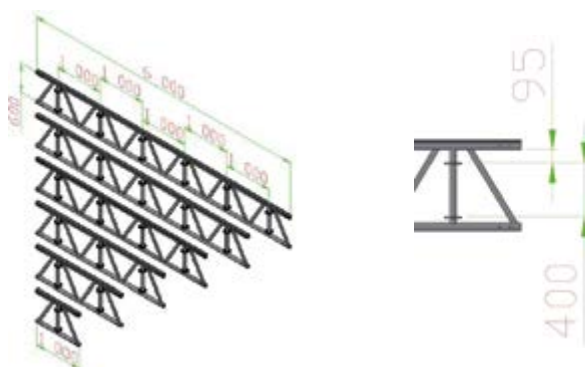
Index	Dimension (m)	Weight (kg)
E400102	0.6x1.2	9.39
E400202	0.8x1.3	11.25



### 4. Roof Girder 0.6 m

Aluminium crate component acting as the main roof load bearing component. The axial girder band spacing: 0.6 m.

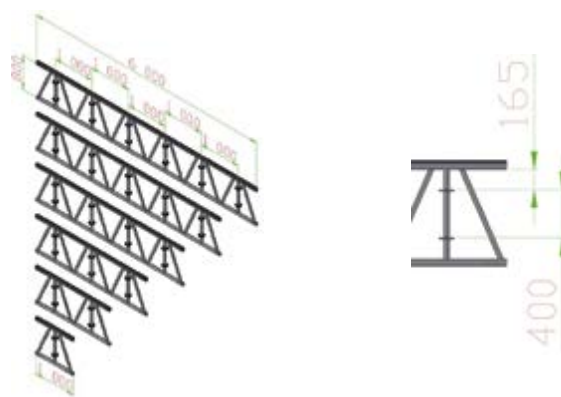
Index	Dimension (m)	Weight (kg)
E400110	0.6x1.0	7.84
E400120	0.6x2.0	15.70
E400130	0.6x3.0	23.57
E400140	0.6x4.0	31.46
E400150	0.6x5.0	39.32
E400160	0.6x6.0	47.20



## 5. Roof Girder 0.8 m

Aluminium crate component acting as the main roof load bearing component. The axial girder band spacing: 0.8 m.

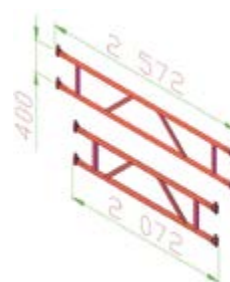
Index	Dimension (m)	Weight (kg)
E400210	0.8x1.0	8.45
E400220	0.8x2.0	16.92
E400230	0.8x3.0	25.40
E400240	0.8x4.0	33.89
E400250	0.8x5.0	42.37
E400260	0.8x6.0	50.86



## 6. Transverse Transom 0.4 m

Aluminium component that ensures the transverse connection of roof, eaves and ridge girders. Ensures the roof plane is rigid.

Index	Dimension (m)	Weight (kg)
E400520	0.4x2.07	11.14
E400525	0.4x2.57	12.64



## 7. Ridge Transom

Aluminium component that ensures the transverse connection of ridge girders. Supports the canvas at the roof ridge.

Index	Dimension (m)	Weight (kg)
E400620	2.07	6.38
E400625	2.57	7.61



## 8. Horizontal Brace

Aluminium component that ensures the roof plane is rigid. Fitted with swivel wedge heads on both ends that are hammered into the girder hole discs.

Index	Dimension (m)	Weight (kg)
E400720	1.0x2.07	4.76
E400725	1.0x2.57	5.41



## 9. Aluminium Roof Support 18°

Aluminium component that connects the roof with the supporting part from the system scaffolds.

Index	Dimension (m)	Weight (kg)
E401501	0.73/1.09	6.59



## 10. Swivel Connector Ø48.3/Ø60

Component used to connect the roof support with the bottom band of the roof and eaves girders.

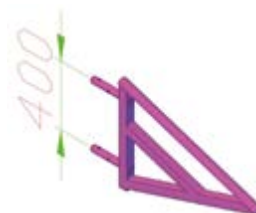
Index	Dimension [cm]	Weight [kg]
E501321	Ø48.3/Ø60	1.50



## 11. Aluminium Top Bracket - 18°

Aluminium component used to install the reinforcement collar beam (crate girder). The bracket is connected with the bottom band of the roof girders using the connector Ø48.3/Ø60.

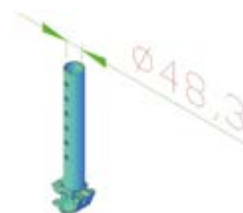
Index	Dimension [m]	Weight [kg]
E401504	0.4	5.78



## 12. Front Grip

Steel galvanized component fastened to the eaves girder. The grip is used to stretch the roof canvas.

Index	Dimension [m]	Weight [kg]
E401505	0.32	1.72



## 13. Cotter Pin

Steel galvanized component. Required when connecting girders and installing front grips.

Index	Dimension [cm]	Weight [kg]
E401507	Ø10	0.085



## 14. Girder Connector

Aluminium component used to connect roof, eaves and ridge girders.

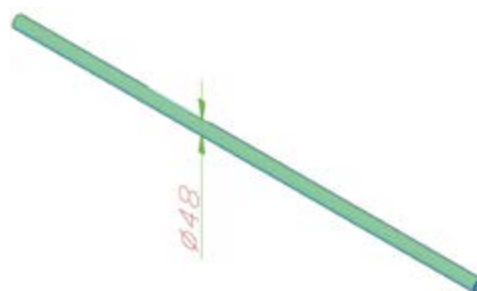
Index	Dimension [m]	Weight [kg]
E401508	0.41	0.76



## 15. Aluminium Standard Pipe

Aluminium component that works with the front grip. Used to stretch the canvas in the eaves part.

Index	Dimension [m]	Weight [kg]
E400110	0.6x1.0	7.84
E400120	0.6x2.0	15.70
E400130	0.6x3.0	23.57
E400140	0.6x4.0	31.46

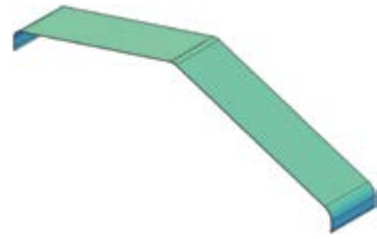




## 16. Canvas

Double-coated material. The edges of the canvas band provide for installation to the upper band of roof, ridge and eaves girders.

Index	Dimension (m)	Weight (kg)
E4011..	2.57xL	---
E4012..	2.07xL	---



## 17. Aluminium Crate Girder

Aluminium component that works with the top bracket. They form a collar beam.

Index	Dimension (m)	Weight (kg)
E501240	0.4x4.0	17.00
E501260	0.4x6.0	24.70
E501280	0.4x8.0	32.40



Apart from the above components, when building a supporting structure you should use the standard Rotax Plus or Alurotax scaffold system components. Follow the installation instructions for these systems.

## III SPECIFICATIONS

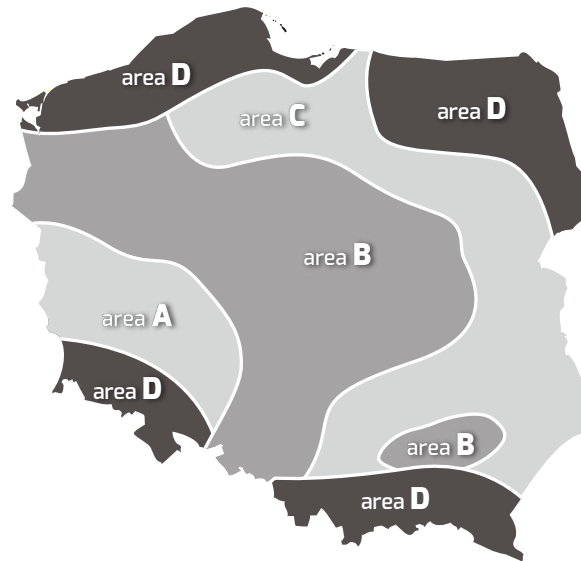
### 1. List of Standards Used when Designing Roofs:

- PN 1990:2010: Eurocode – Basis of Structural Design.
- PN-EN 1991-1-4: Eurocode 1: Actions on Structures - Part 1-4: General Actions. Wind Actions.
- PN-EN 1991-1-3: Eurocode 1: Actions on Structures. Part 1-3: General Actions. Snow Loads.
- PN-EN 1999-1-1: Design of Aluminium Structures. Part 1-1: General Structural Rules.
- PN-EN 1993-1-1: Design of Steel Structures. Part 1-1: General Rules and Rules for Buildings.
- PN-EN 12811-1: Temporary Works Equipment. Part 1: Scaffolds – Performance Requirements and General Design.
- PN-EN 12811-2: Temporary Works Equipment. Part 2: Information on Materials.

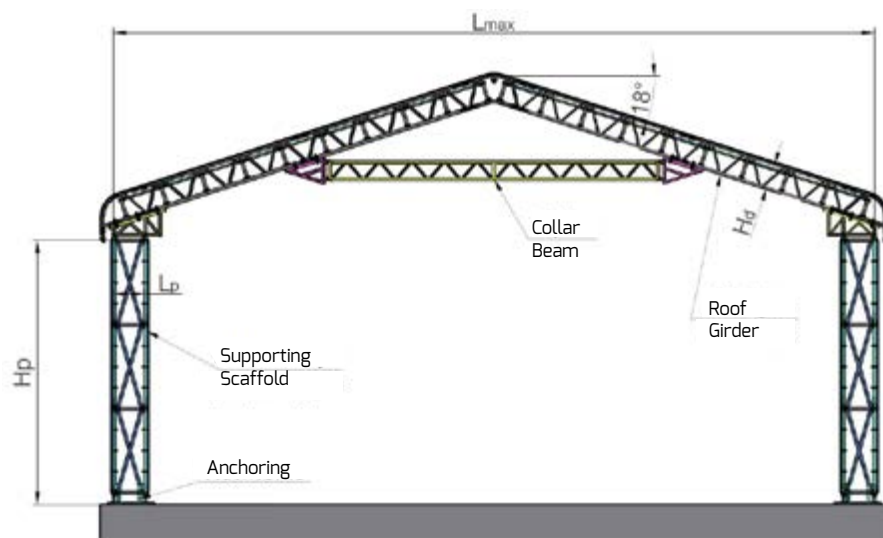


## 2. Roof Properties and Installation Assumptions

Figure showing division of AluSky roof placement zones including the wind and snow load zones.



- A roof is a temporary structure installed in various wind and snow load zones. These are zones A, B, C and D. For the zone D installation please consult the manufacturer.
- The roof is installed with the single or double segments (spans). The segments are erected on the ground level and then moved on the supporting scaffold with a crane.
- The roof supporting scaffold must be rigid and stable enough so that the roof can be safely installed.
- Make the supporting scaffolds of the Rotax Plus or Alurotax scaffolds (systems manufactured by Altrad Mostostal) with the bay width of 0.732 m or 1.088 m.
- The supporting scaffold must be anchored in the ground or ballasted. If possible, you must anchor the supporting scaffold to the adjacent load-bearing building members (use anchoring connectors E2865...). Stays are permitted.
- Install the ground anchors as close to the threaded stands as possible. Use standard steel pipes (E4405...) and regular connectors (E581119) for anchoring
- Maximum roof width as per section 3.
- The roof is covered with a canvas with silicone core edges inserted into the keder roof girder groove.
- You can use the roof structural net with the bay length of 2.572 m or 2.072 m.
- Roof girders height of 0.6 m or 0.8 m.



- For large roof spans use collar beams made of aluminium crate girders with the height of 0.4 m. The collar beam reinforces the roof ridge. The larger the proof span the longer girder must be used.
- Roof slope inclination of 18°.
- No roof length limitations.
- Use roof plane braces in every other bay.
- Use braces in all eaves part bays.
- Move the segments with four slings.
- You can move single or double modules.
- For modules with the width of 12 m above the distance between the sling attachment points should be about 6.3 m.
- Select the sling length so that the angle relative to the horizontal plane is between 40° and 50°.
- Single sling load-bearing capacity of 10 kN with the roof module width of up to 12 m and 15 kN with the span of more than 12 m.
- Do not lift the roof parts when the wind speed exceeds 1 m/s.
- When erecting closed halls make the gable walls of the system scaffolds. Secure the canvas to the scaffold columns.
- You can build shed roofs with the inclination of 18°.
- Avoid snow build-up on the roof slopes.

### 3. Roof Span Table

Table shows the maximum roof outer widths  $L_{max}$  excluding the supporting scaffold.

Structure Type Number	Roof Girder Transverse Spacing [m]	Collar Beam	Lp – Supporting Structure Support Spacing [m]	Hd – Roof Load-Bearing Girder Height [m]	L <sub>max</sub> – Roof Width with Flow Lock* [m]			L <sub>max</sub> – Roof Width without Flow Lock** [m]		
					Obszar			Obszar		
					A	B	C	A	B	C
1	2.072	No collar beam	0.732	0.6	20	20	18	24	22	18
2				0.8	22	22	20	26	24	20
3			1.088	0.6	20	20	18	24	20	18
4				0.8	20	20	18	24	22	18
5		Reinforced with collar beam	0.732	0.6	24	22	18	26	22	18
6				0.8	24	24	18	28	24	18
7			1.088	0.6	24	20	16	26	20	16
8				0.8	22	22	18	26	22	18
9	2.572	No collar beam	0.732	0.6	18	18	16	22	18	16
10				0.8	20	20	16	22	20	16
11			1.088	0.6	16	16	14	20	18	14
12				0.8	18	18	14	22	18	14
13		Reinforced with collar beam	0.732	0.6	20	18	16	22	18	16
14				0.8	20	20	16	22	20	16
15			1.088	0.6	18	18	16	20	18	14
16				0.8	20	18	14	22	18	14

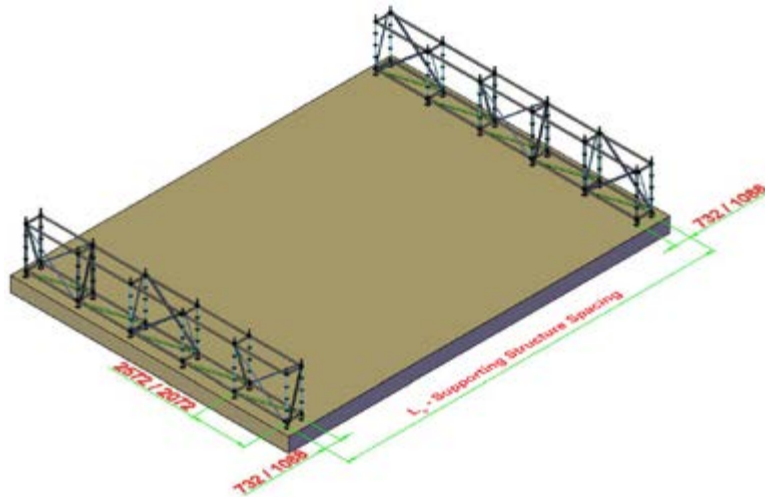
\*Roof with flow lock – uncovered area and covered gable and side walls

\*\*Roof without flow lock – uncovered area and gable and side walls

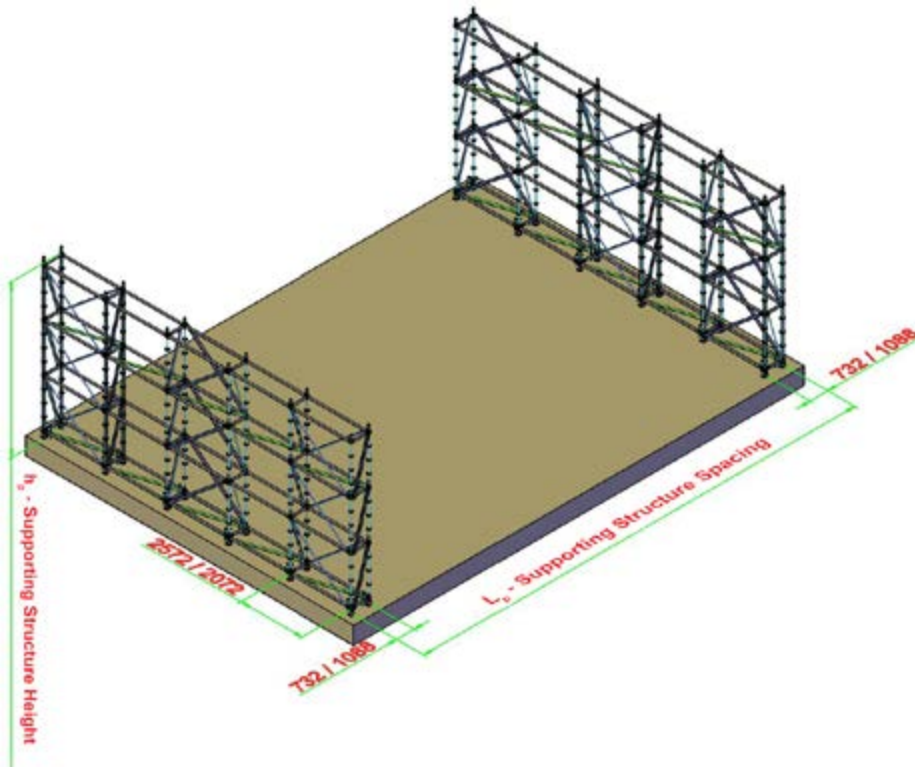
## IV INSTALLATION

### 1. Supporting Scaffold Installation.

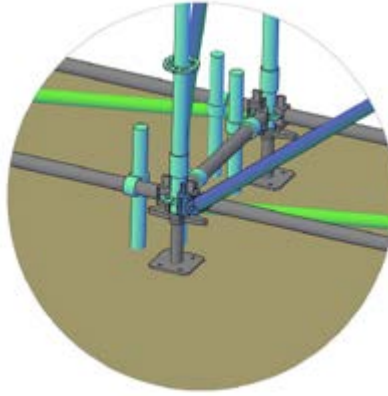
- 1. Start the ALUsky roof installation with installing the supporting scaffold. Select the scaffold component spacing according to the assumptions and roof design. You can select from the bay lengths of 2.072 mm or 2.572 mm. The supporting structure width can be 732 mm or 1.088 mm. The roof is supported with the Rotax Plus or Alurotax scaffold system components and according to the respective installation instructions.



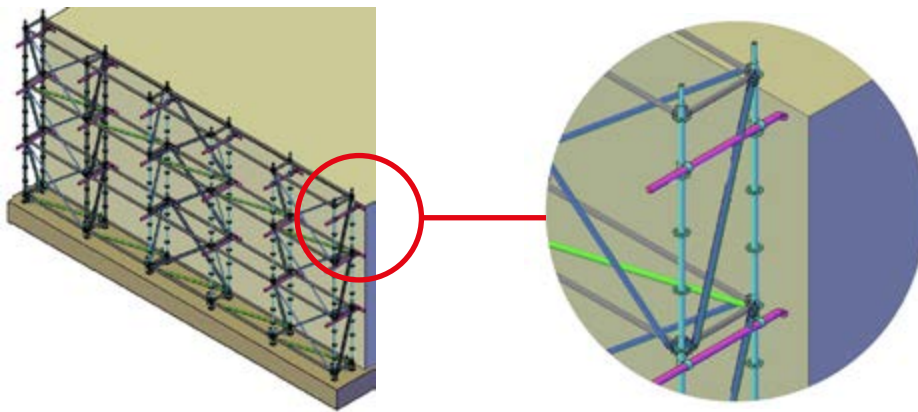
The supporting scaffold braces should be installed in every other bay. Erect the supporting scaffold up to the  $h_p$  height specified in the design. The height is similar to the roof eaves height.



Anchor the supporting structure to the ground or building walls to stabilize the structure and lower the risk of lifting the roof by wind. Use standard pipes (E4405...) and regular connectors (E581119) for anchoring. You can also use ballasting or stays for stabilization.



The most effective way to make the supporting scaffold and the roof rigid and safe is to anchor the scaffold to the load-bearing structure of the building you want to surround with the roof. Anchoring each scaffold node is recommended. Anchoring is performed with the anchoring connectors (E2865...) of the adequate length and the regular connectors (E581119).

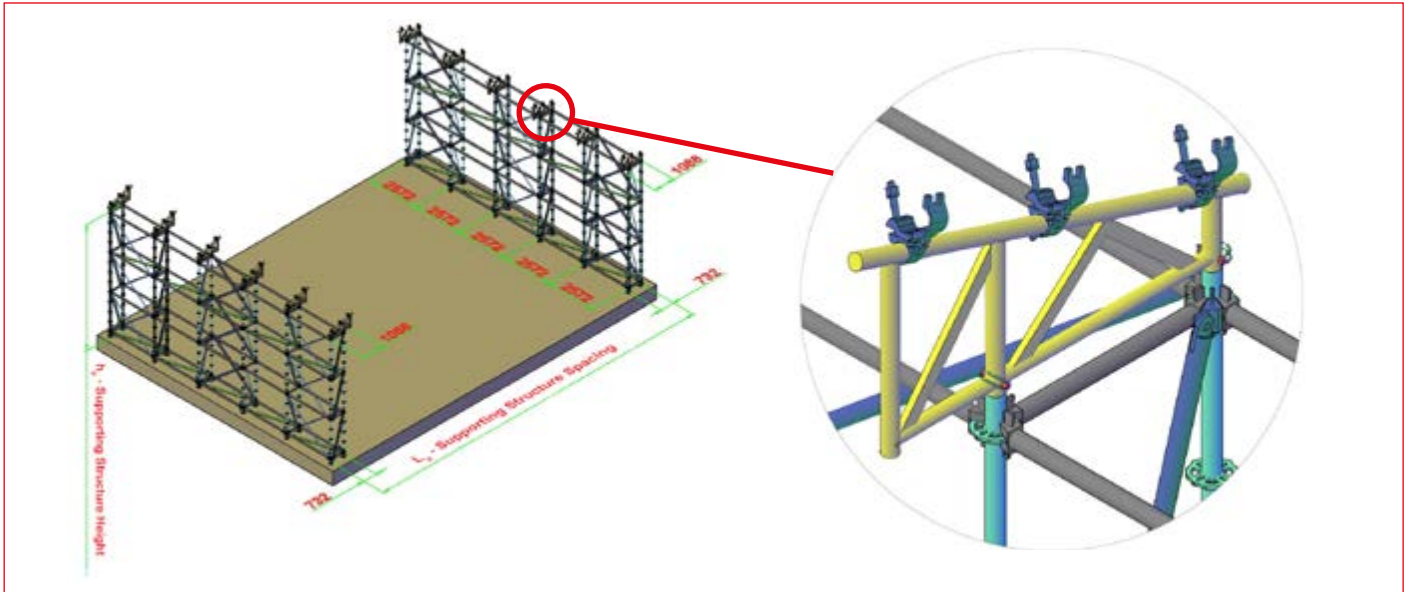


The supporting scaffold must be assembled so that it can transfer the loads from the roof structure and the loads acting on it during its use.





- 2. Install the aluminium roof brackets (E401501) at the top of the supporting scaffold and secure them with the cotter pins (E401507). The bracket is designed to be installed on the scaffold with the width of 732 mm and 1.088 mm.



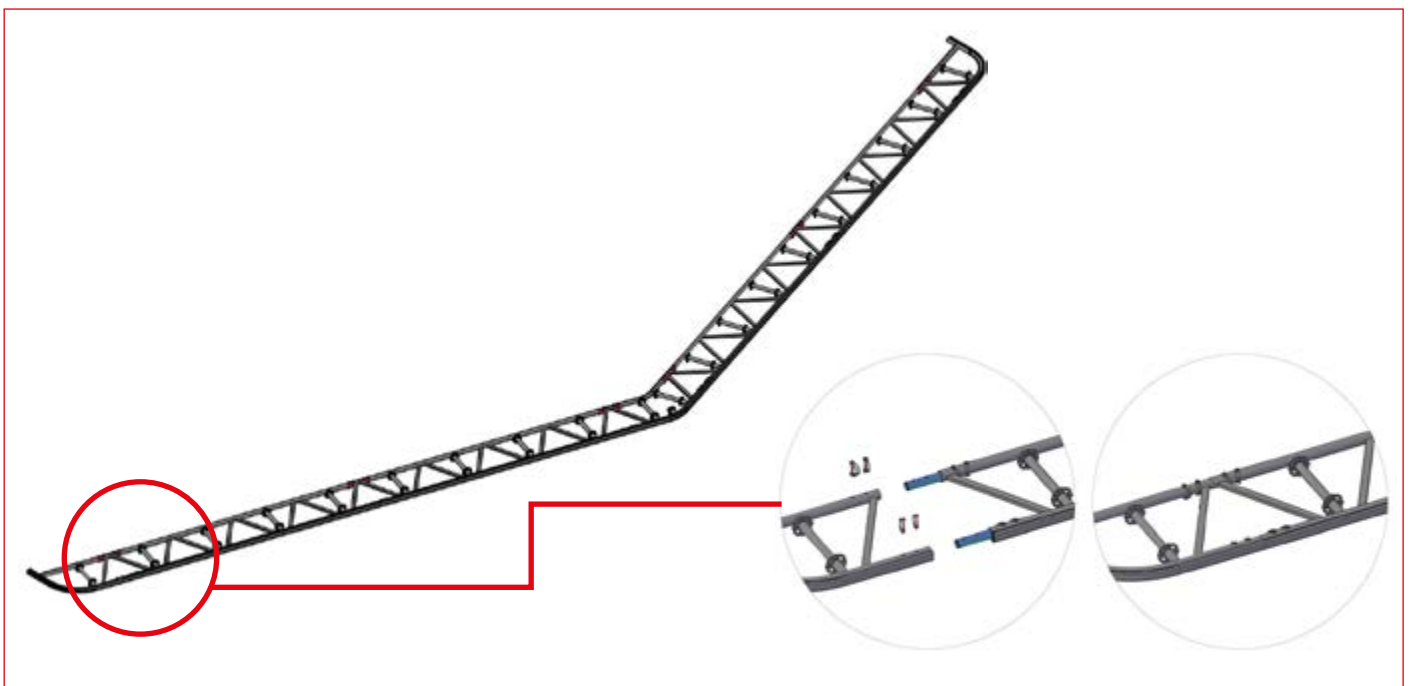
Pre-install three Ø48/Ø60 (E501321) connectors on the upper bracket pipe. The connectors will be positioned precisely when the first roof segment is installed. The roof girder crating layout impacts the connector positions.

**The above actions with the Rotax Plus or Alurotax scaffold installation instructions allow you to easily assemble the scaffold supporting set.**

## 2. Roof Installation

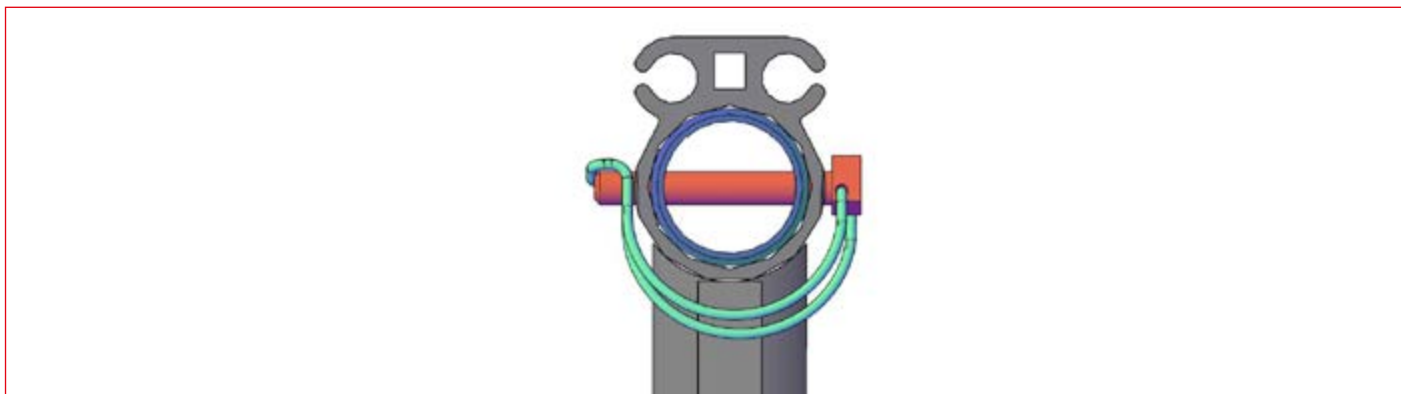
The braced segments are assembled on the ground and then moved with a crane and installed on the supporting scaffold. The roof segments are made of roof, eaves and ridge girders with the height of 600 mm or 800 mm and transverse, ridge girders and braces with the module length of 2.072 mm or 2.572 mm

- 1. Place the roof girders (E4001... or E4002...), ridge girder (E400101 or E400201) and eaves girders (E400102 or E400202) horizontally next to each other on a flat and level surface. Connect all components according to the respective configuration using the girder connectors (E401508) and cotter pins (E401507).

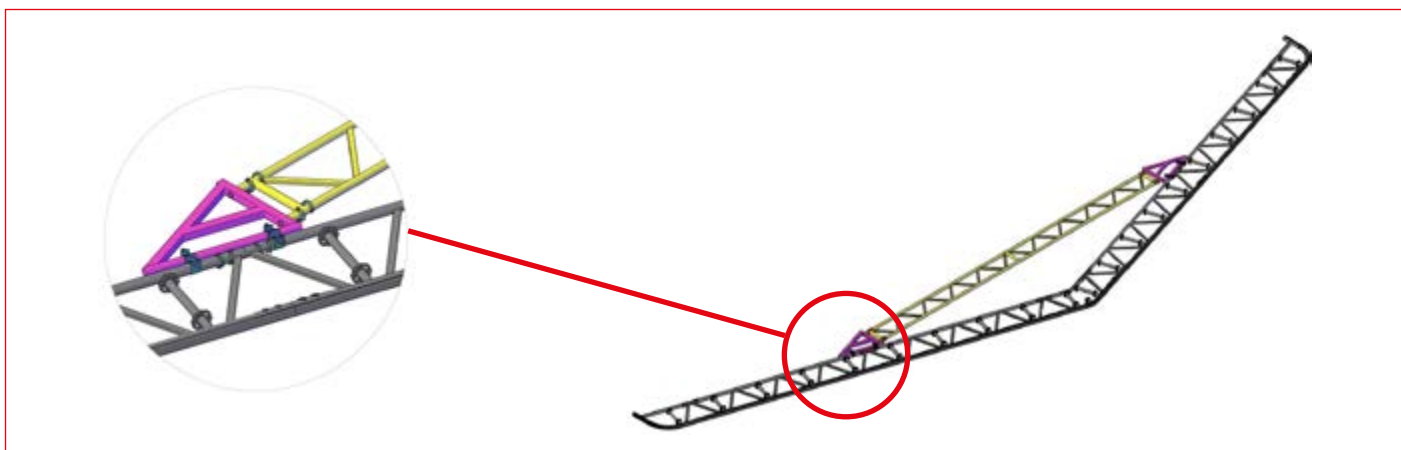




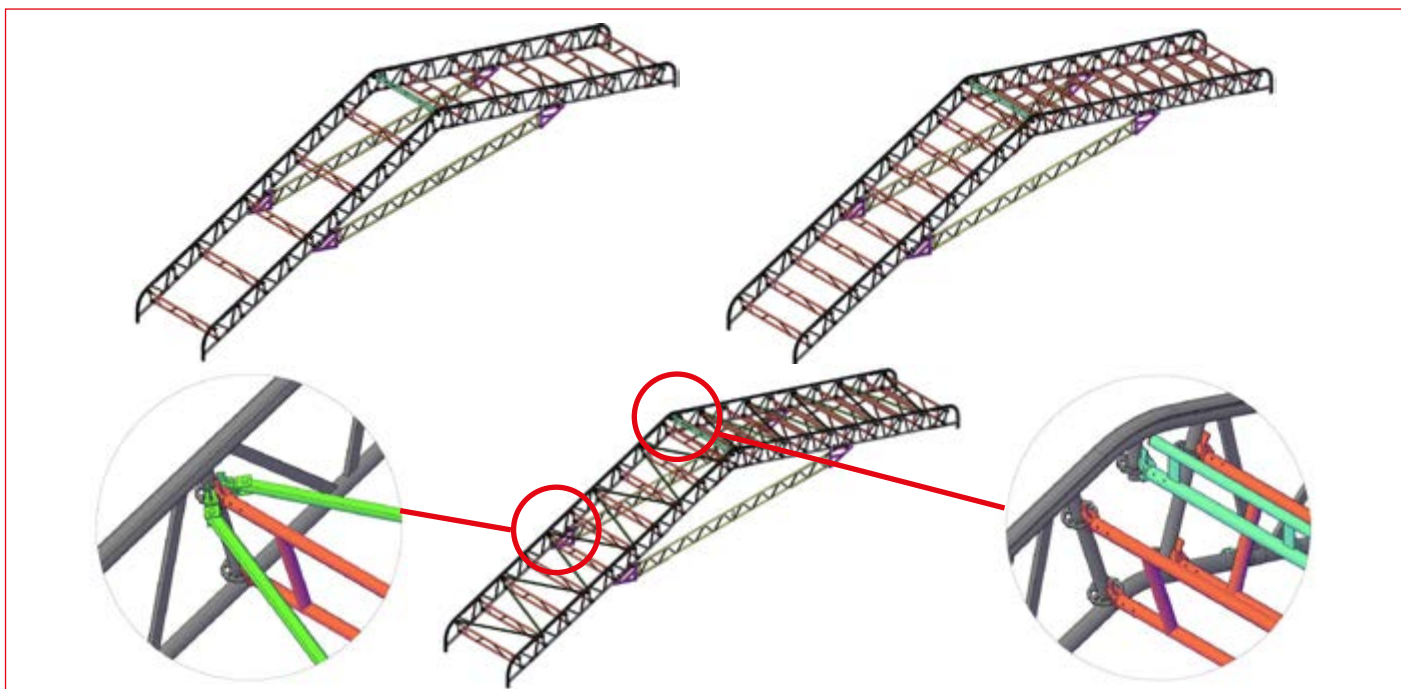
Install the cotter pins on the upper roof girder band so that the cotter pin safety parts do not cover the “groove” which the canvas will be inserted into.



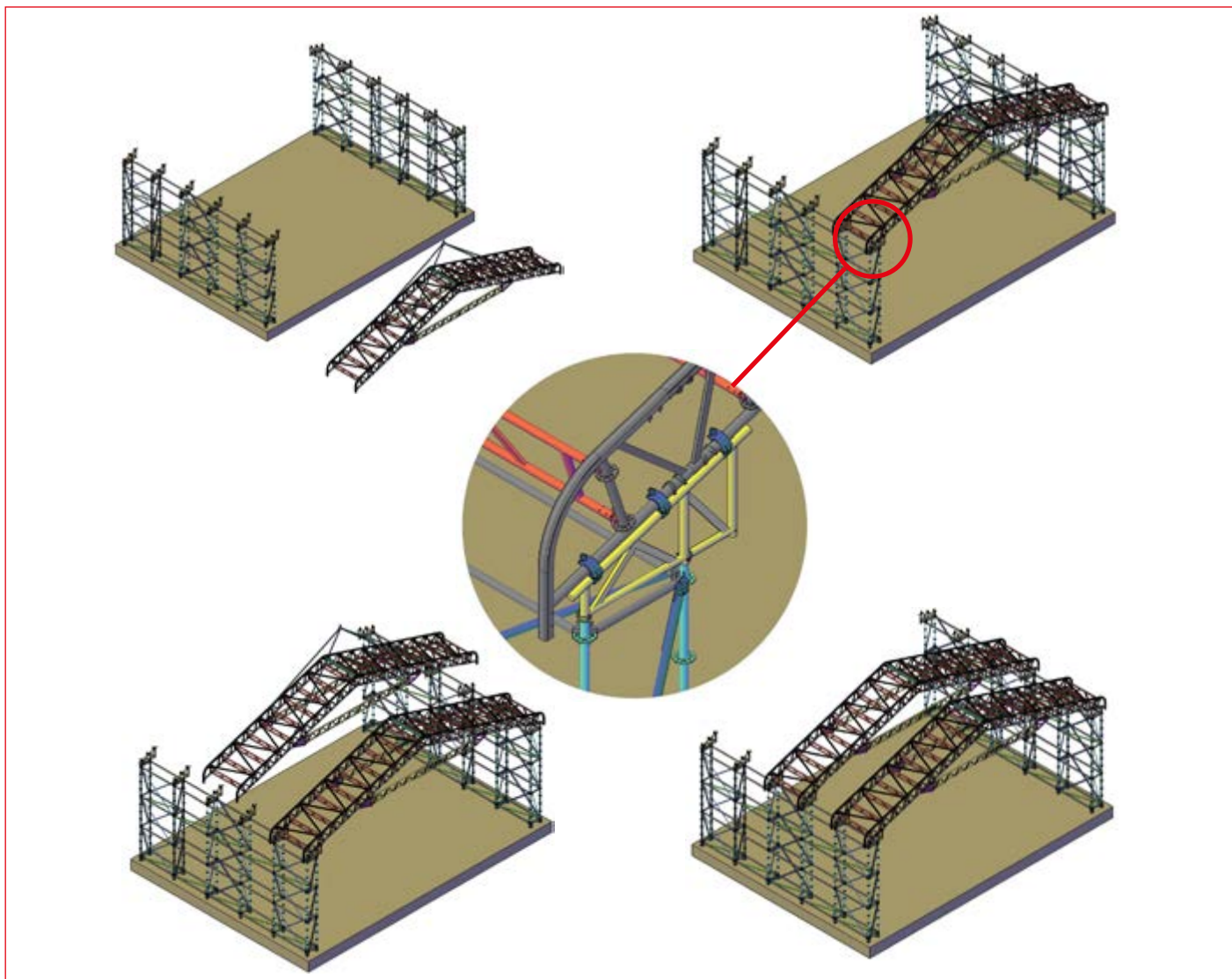
■ 2. For large roof spans reinforce the girder plane with a collar beam. The collar beam is made of the aluminium crate girder used in the Alurotax and Rotax Plus scaffold system (E5012...). The crate girder with the appropriate length (4.0 m, 6.0 m or 8.0 m) is connected with the aluminium top bracket – 180 (E401504) using the cotter pins (E401507). The next step is to secure the collar beam to the bottom roof girder band using four Ø48/Ø60 connectors (E501321).



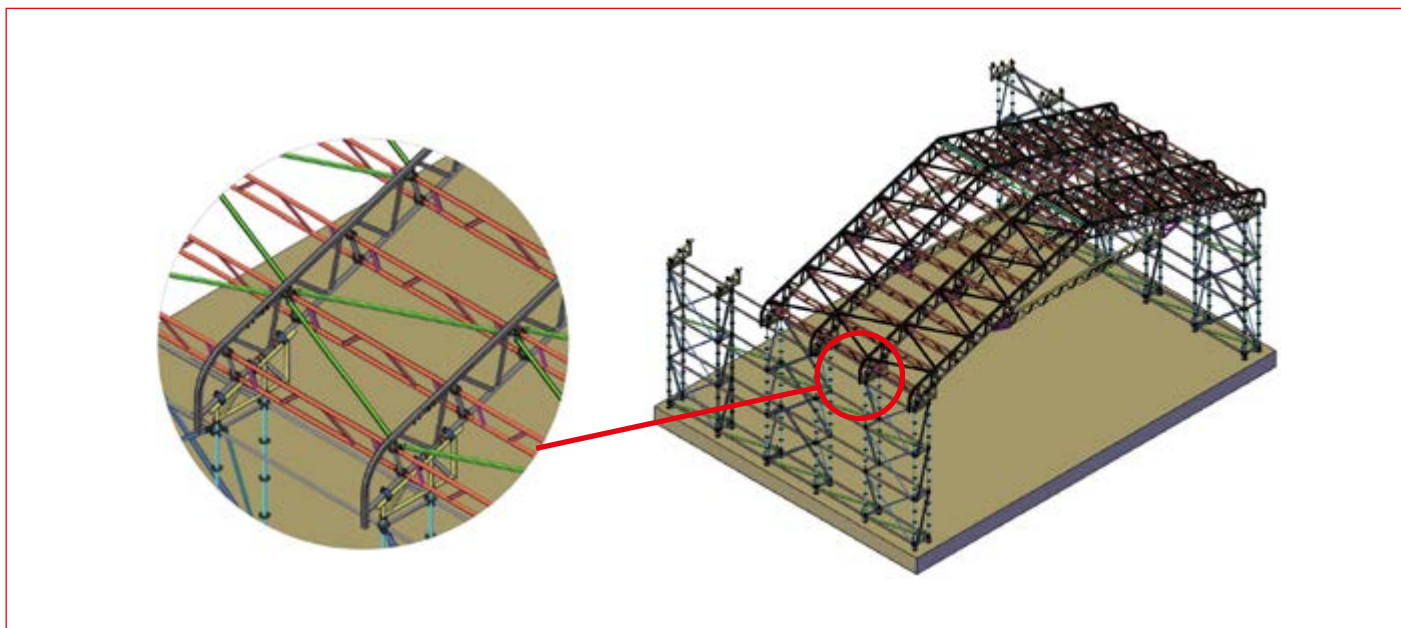
■ 3. Make a single braced roof segment by connecting two roof girder sets with (or without) the collar beam using the transverse girders (E400520 or E400525) and the ridge transom (E400620 or E400625). Then, fill the planes with the braces (E400720 or E400725).



- 4. Move the complete braced roof segment on the supporting scaffold with a crane and install it using the Ø48/Ø60 connectors (E501321). Use four rope slings and crane with the sufficient load-bearing capacity for transport.

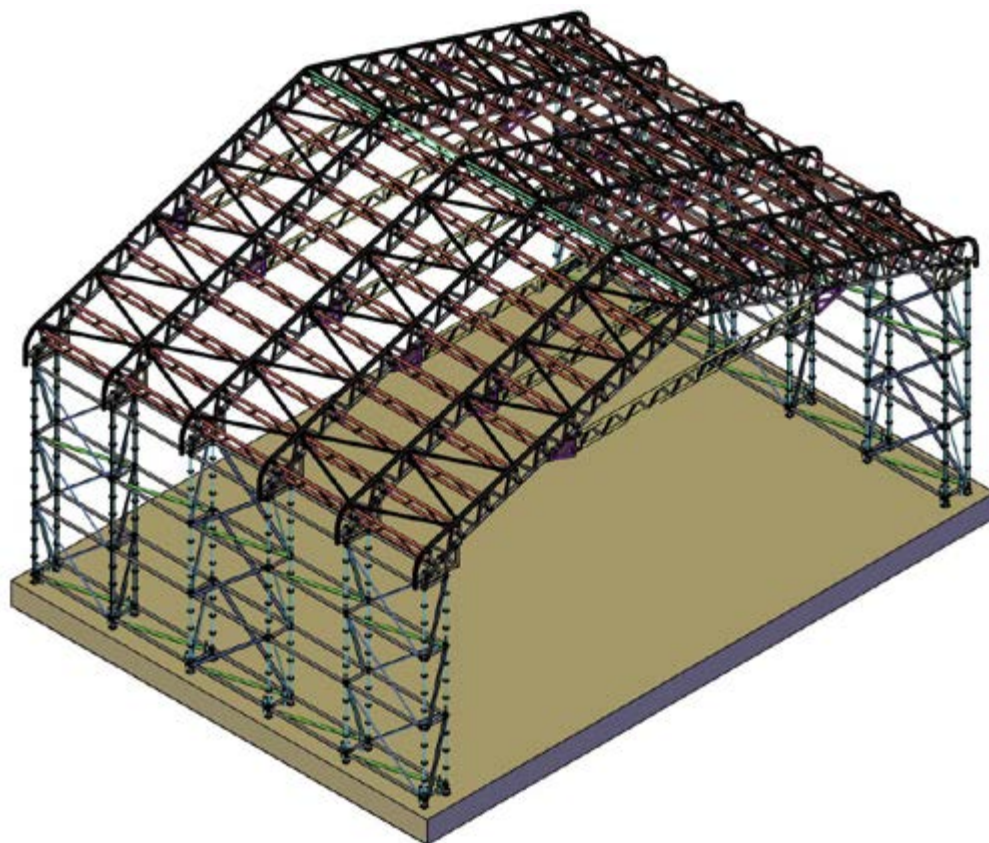


- 5. Fill the two adjacent segments with the transverse girders (E400520 or E400525) and the ridge transom (E400620 or E400625). Additionally, install two horizontal braces (E400720 or E400725) in the eaves part.

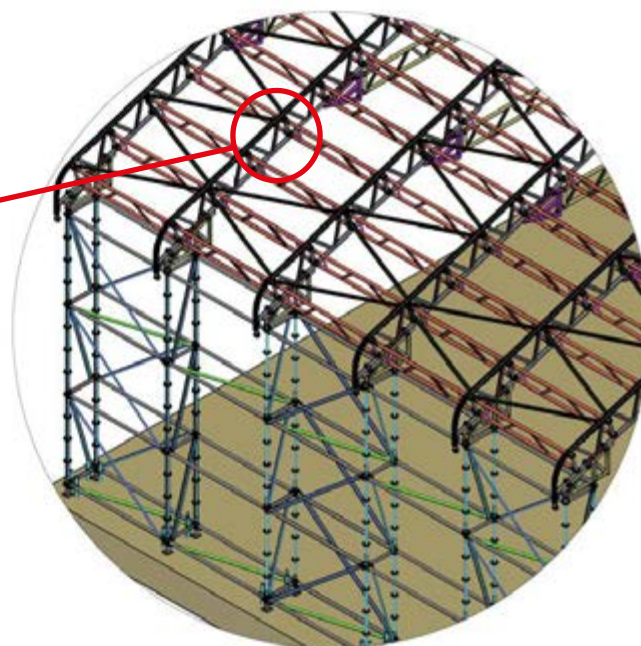
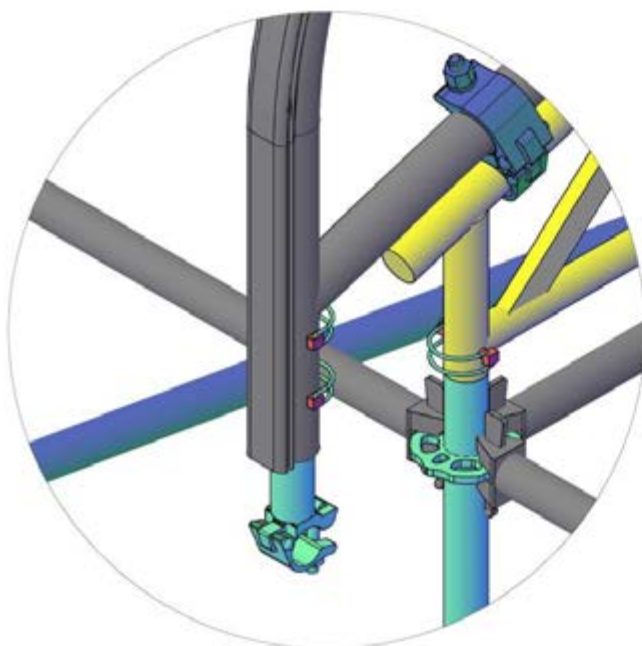




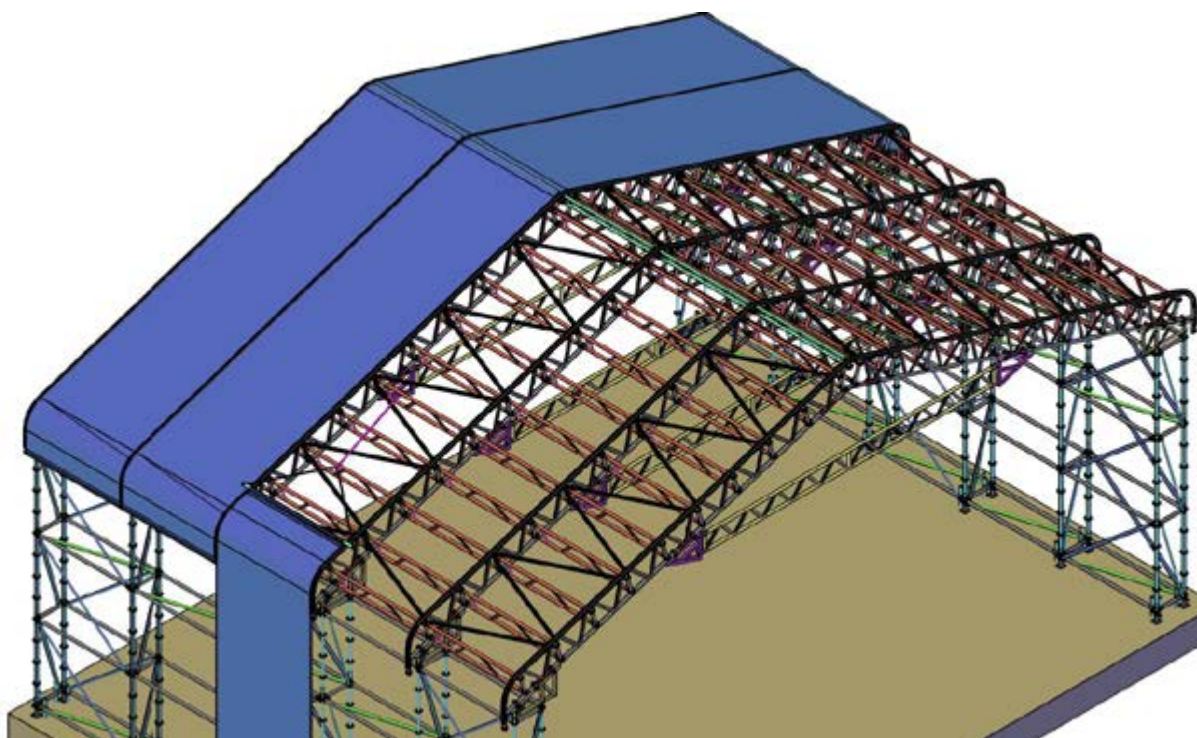
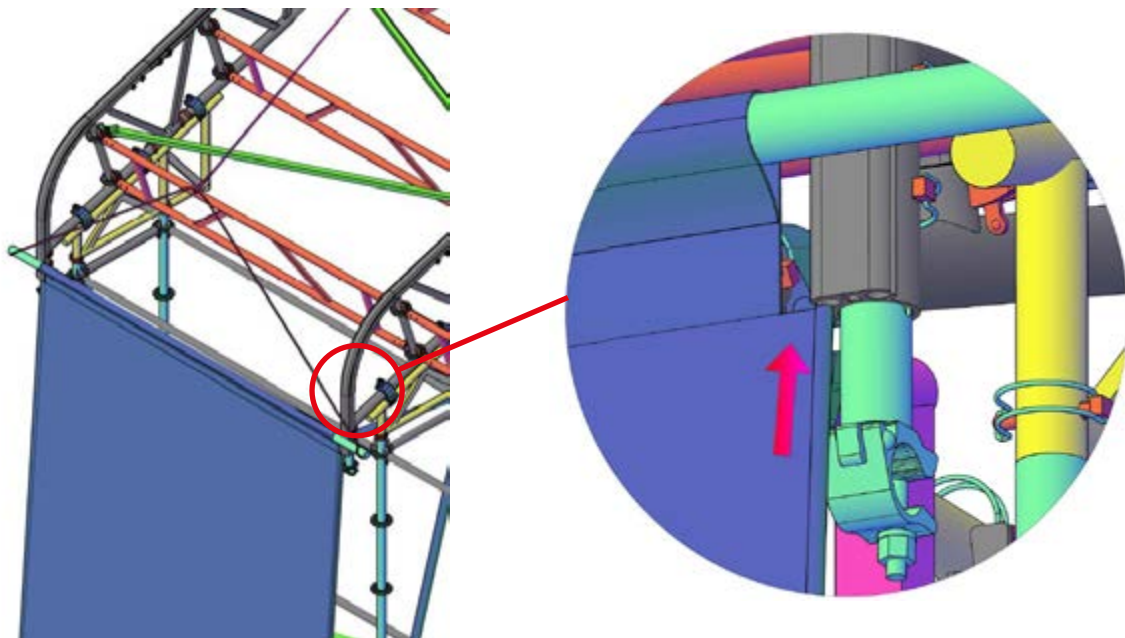
- Repeat the above actions until you install and connect all braced segments.



- 7. Pre-install the eaves grips (E401505) fastening them to the eaves girders (E400102 or E400202) using the cotter pins (E401507).

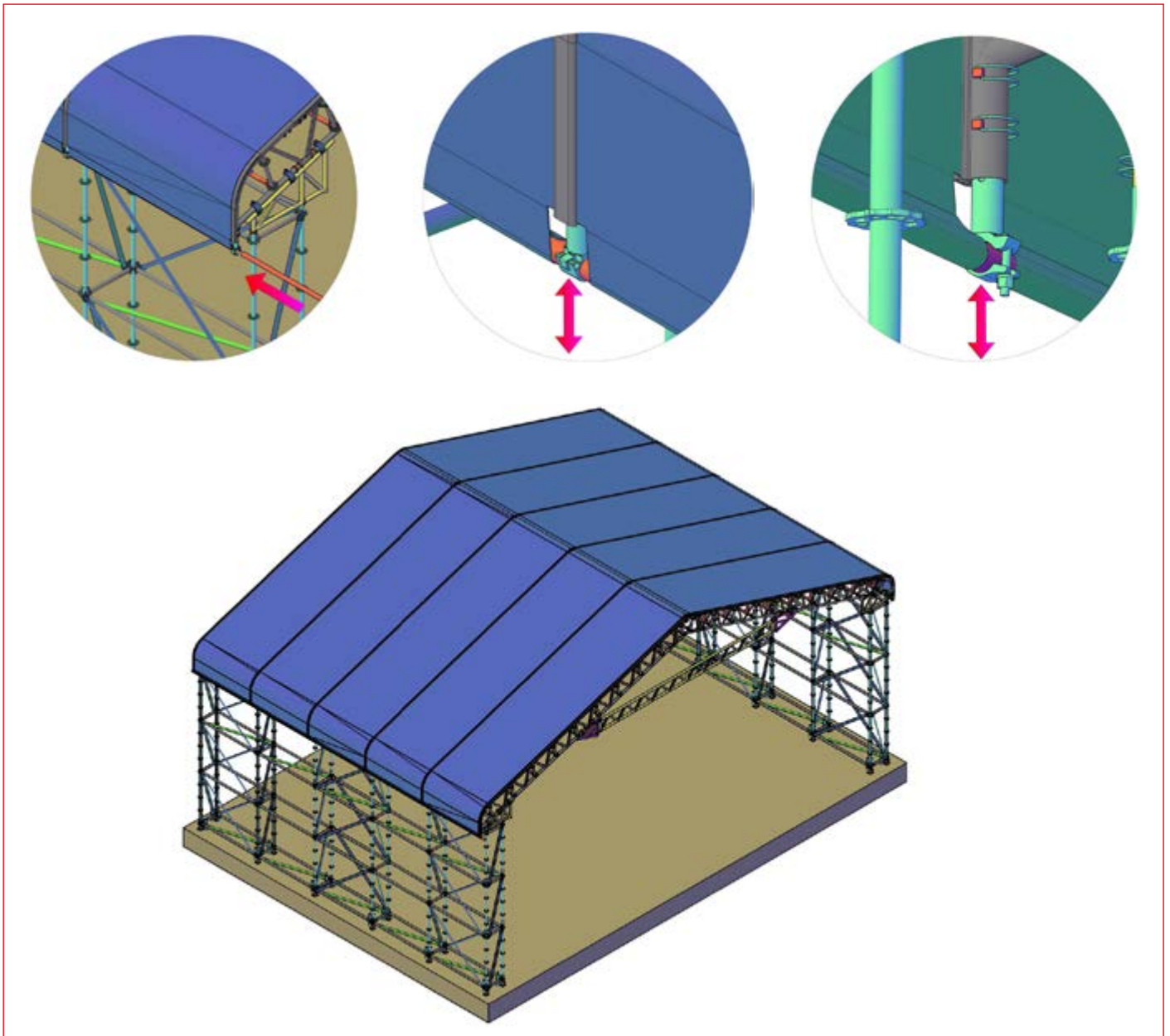


- 8. The next step is to install the canvas (E4011... or E4012...) inserting its end in the keder profile "grooves" of the eaves girder. You can find the keder grooves in the upper roof, eaves and ridge girder bands. The canvas is fitted with holders on both ends to stretch and reinforce its eaves edge. You can use the standard pipe and attach the auxiliary rope to its ends to facilitate pulling the canvas along the entire roof slope.



- 9. When the canvas is pulled into the individual segments stretch and make its eaves edges rigid. Stretch the canvas manually. Insert the aluminium standard pipes (E4406..) into the holders and connect them with the roof using the eaves holder (E401505). The eaves holder has a few holes with a pitch of 40 mm to stretch the canvas.



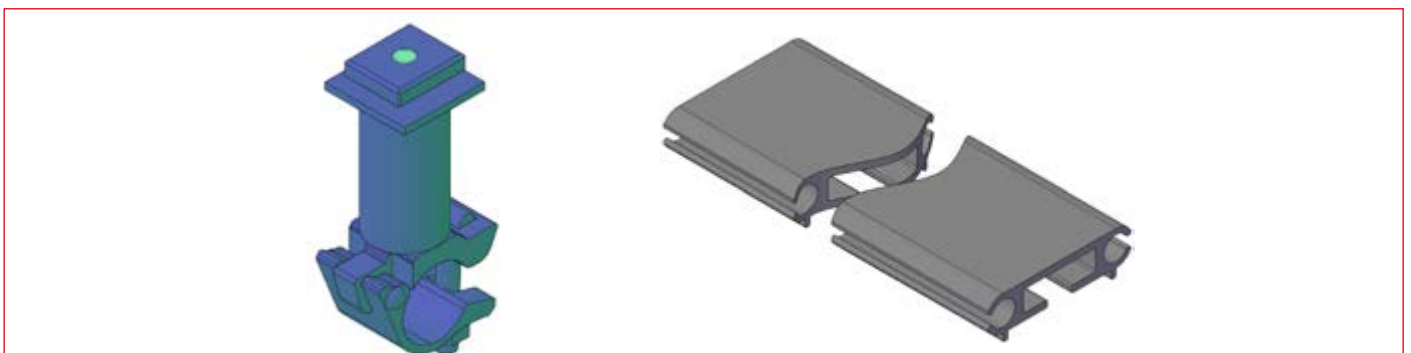


### 3. Installing Guards on Side Walls.

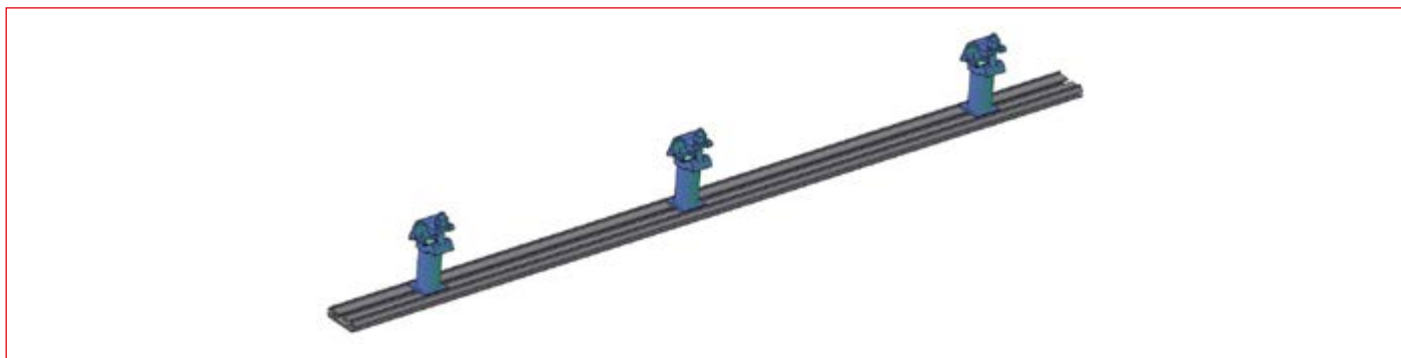
You can expand the roof structure with side and gable walls. The gable walls should be made of the Rotax or Alurotax system scaffolds. Use the customized canvas selected according to the structure size to cover the walls. Fasten the canvas to the vertical scaffold columns.

You can use the following components to facilitate the wall erection:

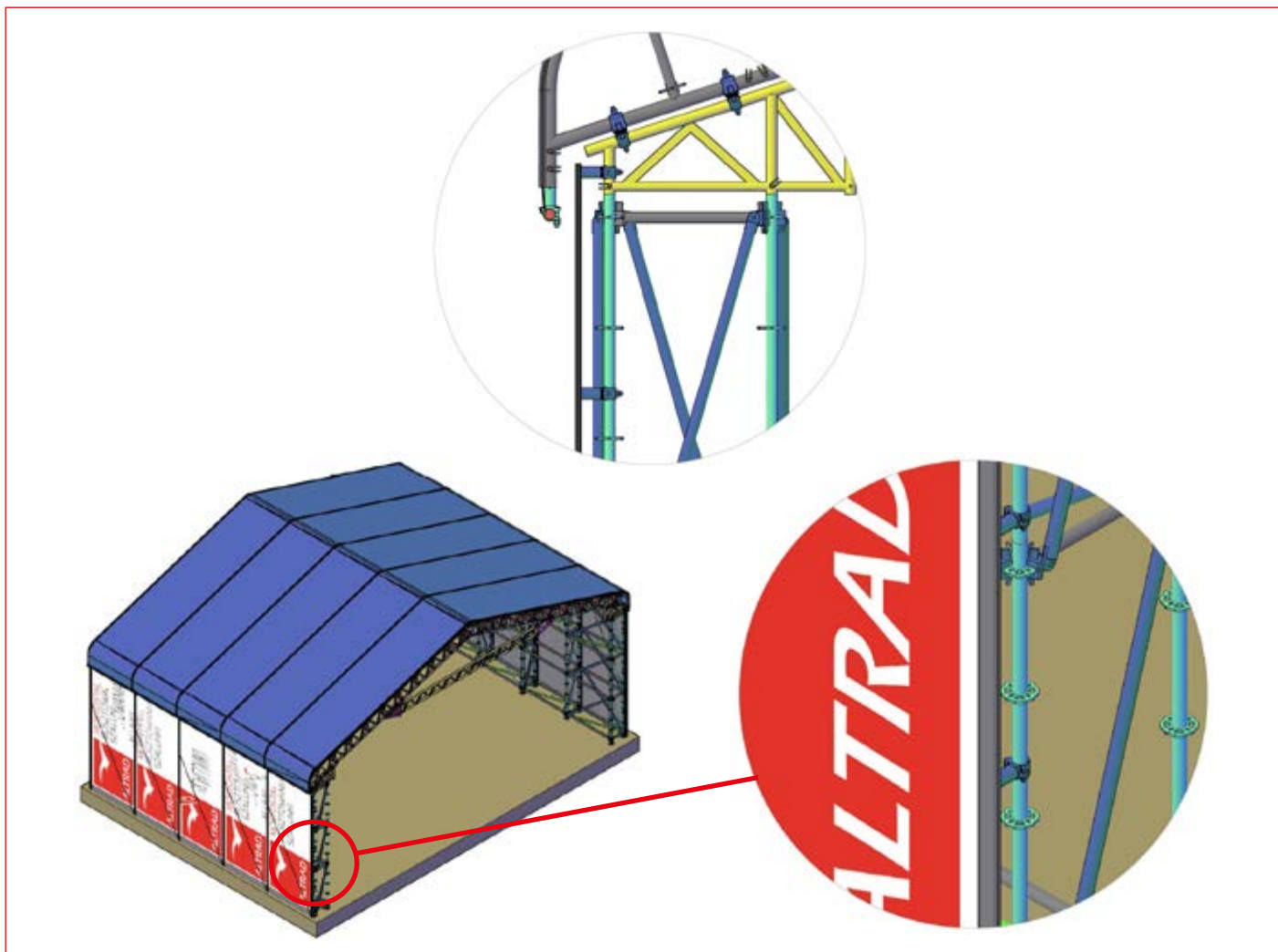
- Keder grip: ZZA046
- Keder profile l=6 m: ZZA047 (cut to length)



Install the keder grip, keder profile and canvas on the walls by cutting the profile to the appropriate length and inserting it into the centre grip groove. The grip spacing should not exceed 1 m. Tighten the grip screws so that the profile securely touches the grip plane.



Secure the above set to the supporting scaffold columns or the gable wall columns. Then pull in the appropriately sized canvas. Select the customized canvases for the side and gable walls.



## V REMOVAL

The roof removal procedure is the opposite of the installation procedure. Please note you do not need to disassemble the braced segments completely after removing them from the supporting scaffold if the adjacent roof with the same span is to be installed again.



## VI LOCALIZATION OF ALTRAD-MOSTOSTAL



### SALE

- **Altrad-Mostostal Sp. z o.o. (Siedlce)**  
+48 25 644 72 84

### RENT

- **Altrad Montaż Sp. z o.o. (Polaki)**  
GSM 694 461 182
- **Altrad - Prymat Sp. z o.o. (Świdnica)**  
GSM 608 383 497
- **Altrad - Końskie Sp. z o.o. (Końskie)**  
GSM 608 362 364
- **Altrad - Pozmorze Sp. z o.o. (Szczecin)**  
GSM 601 711 584

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04.2022

