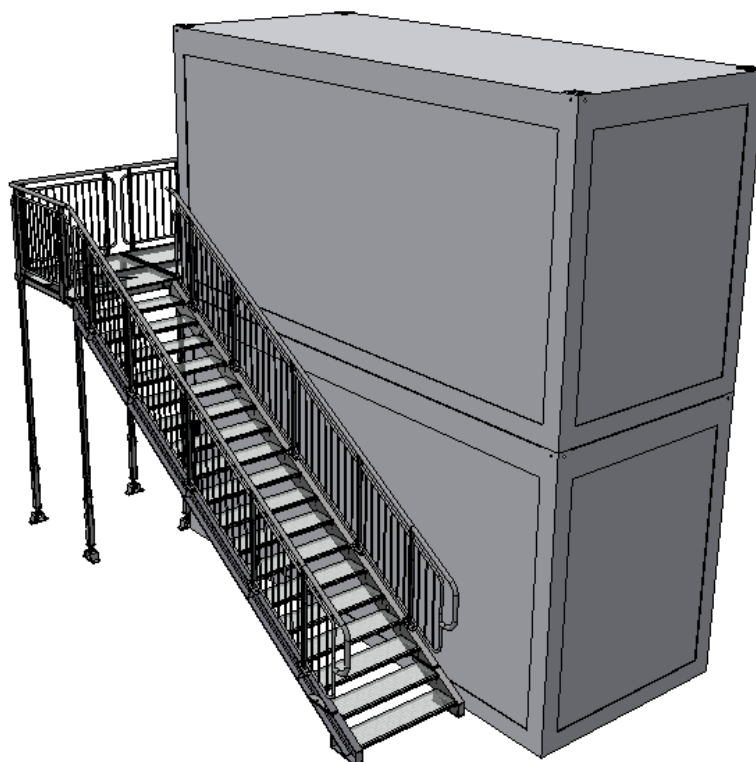

Attachment no. 1

Assembly Manual for

Container Stairs System P-SK7 PLUS LINE



Robert Cieśla



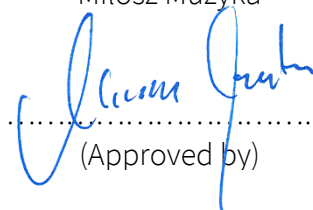
(Prepared by)

Piotr Abram



(Checked by)

Miłosz Muzyka



(Approved by)

Issue 1.0, March 2023

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Table of changes

No	FULL NAME	DEPT	DATE OF CHANGE	SCOPE OF CHANGE	NOTES
1	Robert Cieśla	R&D	27.03.2023	Variants for Plus Line containers	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					



1. Assembly manual

The assembly manual is an attachment to the operation and maintenance documentation of the TLC container stair system.

Container stairs consist of individual elements according to specification attached with the delivery. The system includes fasteners. The system is delivered in the form of separate elements, such as platforms, railings, steps, fasteners, stairs, posts. The elements are assembled in a specific order.

Container stairs as a modular structure can be freely configured (within the scope specified by the manufacturer) depending on the needs. The setting of individual configurations should be in accordance with the operation and maintenance documentation. Basic configurations of container stairs are presented below.

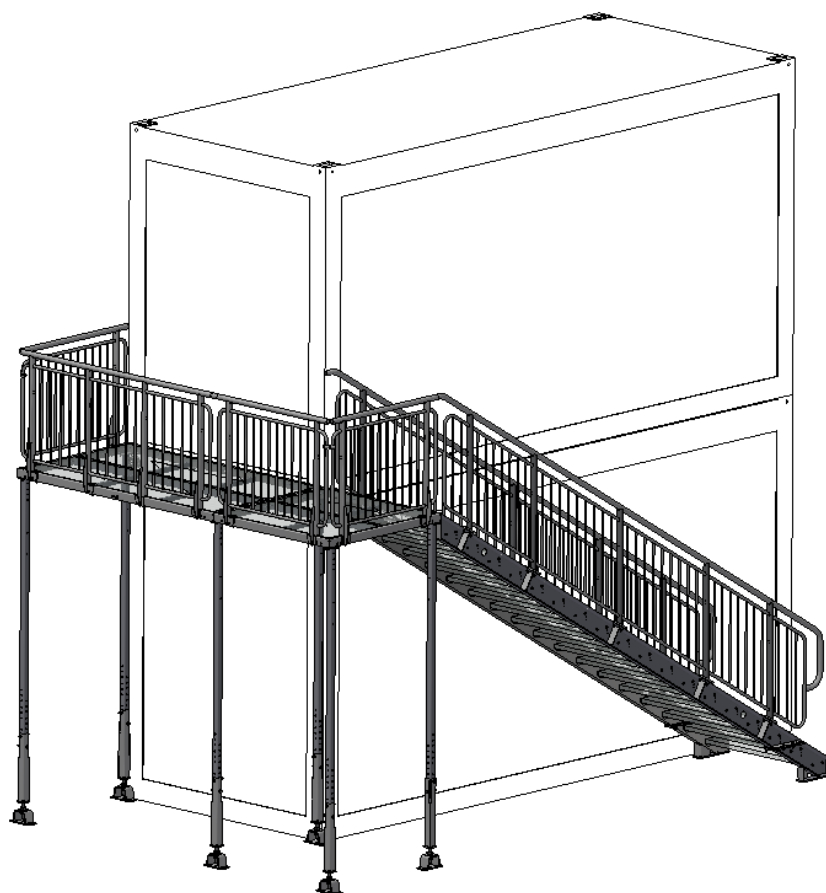


Figure 1. Variant 3

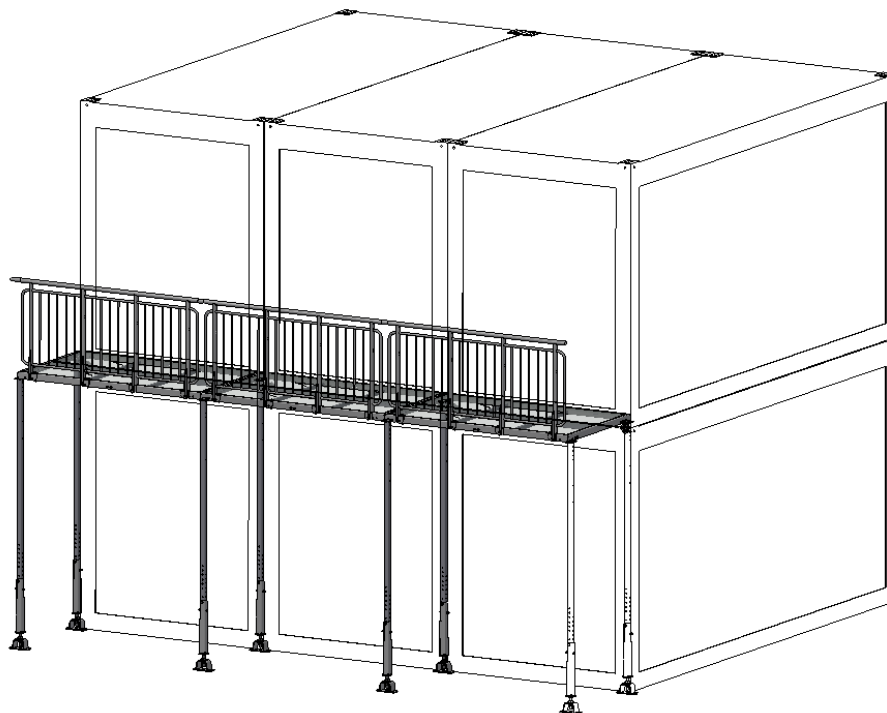


Figure 2. Variant 5

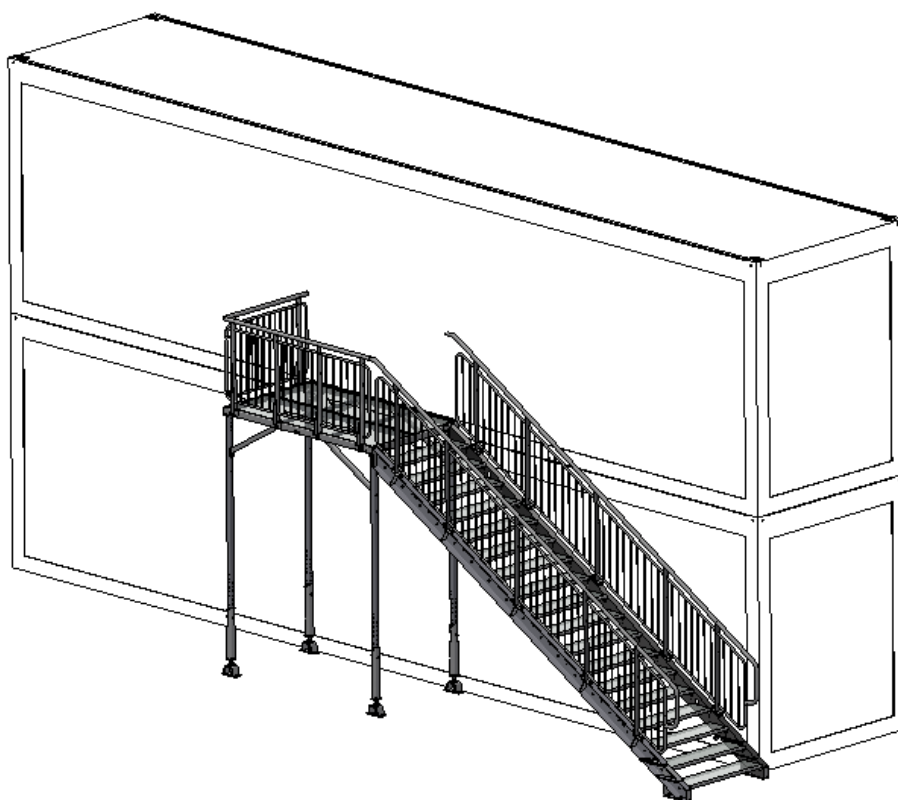
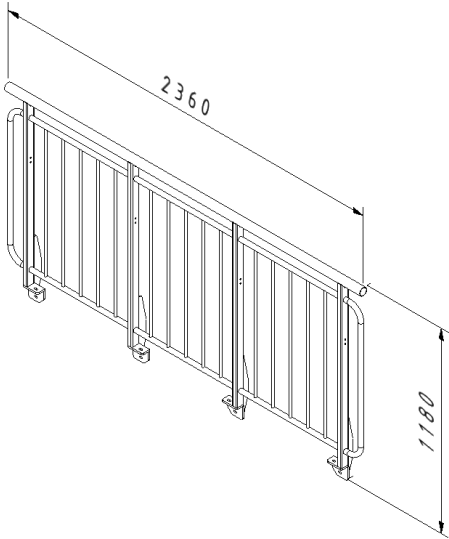
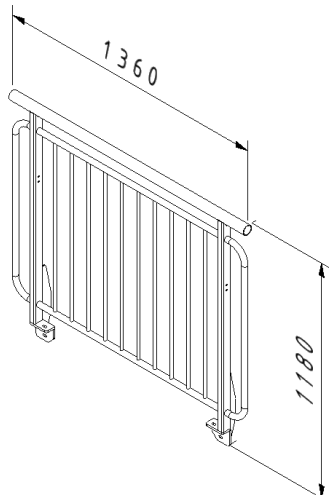
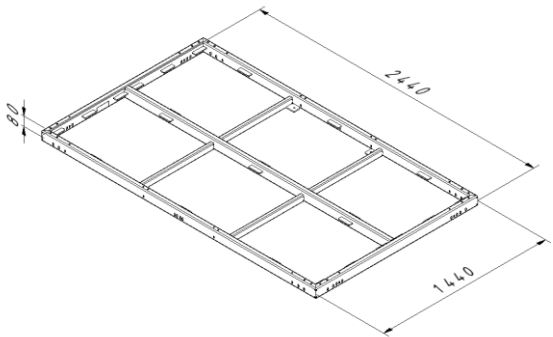
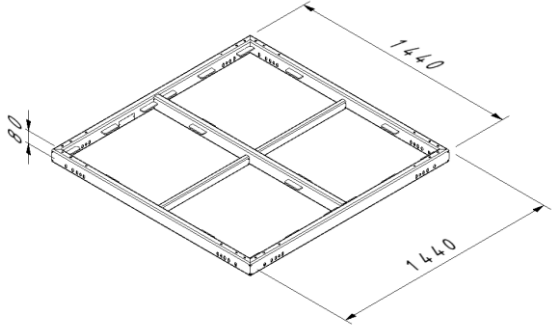


Figure 3. Variant 10

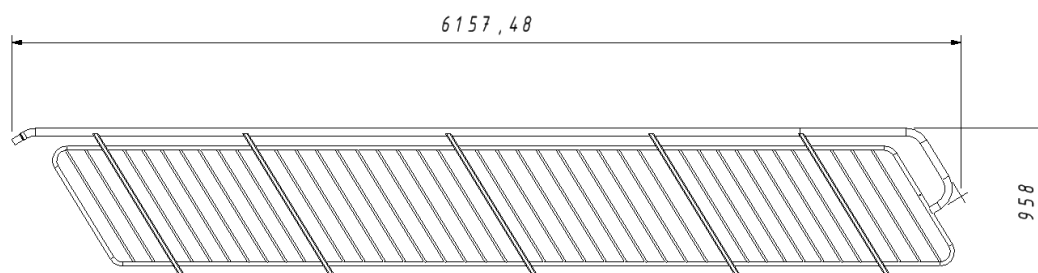
2. Components of the container stair system

The list of components in table 1 presents the components of the container stair system, their quantity depending on the configuration, and the type of the system ordered by the customer (to be selected from the ID, component description columns).

Tab 1. Components of the container stair system.

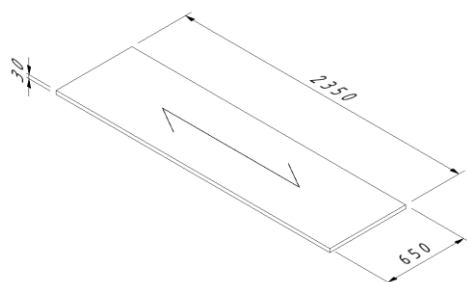
SK4-BP12  Mass: 39,6 kg	SK4-BP11  Mass: 22,6 kg
SK4-PD11  Mass: 78,8 kg	SK4-PD12  Mass: 53 kg

SK4-BS8



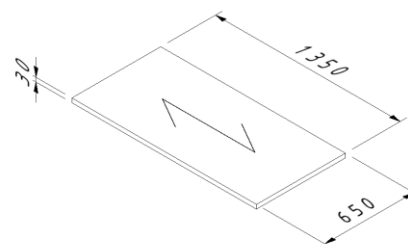
Mass: 68,6 kg

SK4-KR12



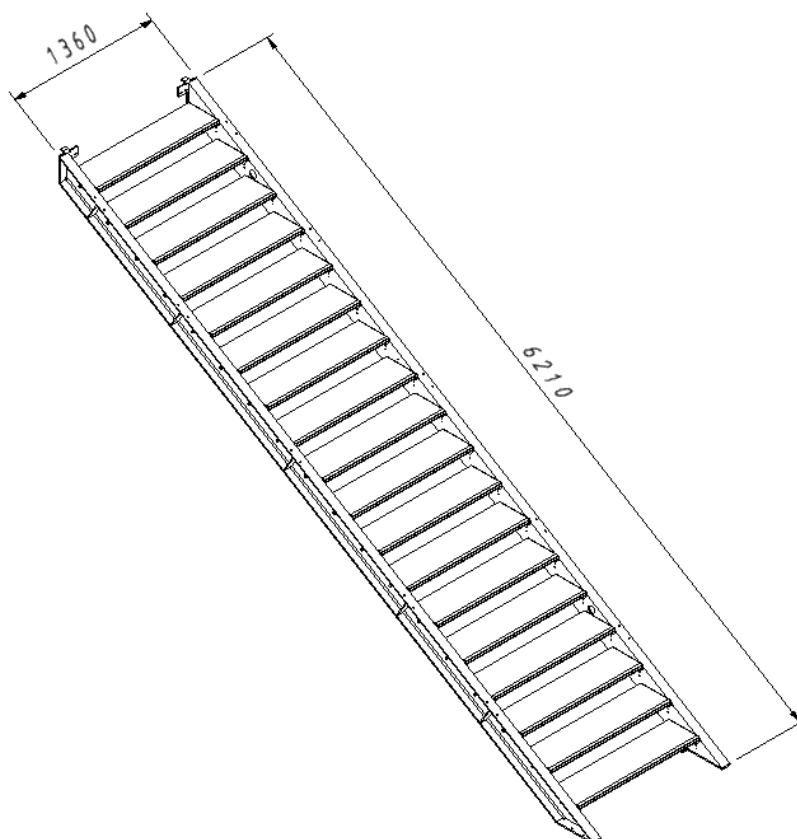
Mass: 28,6 kg

SK4-KR11



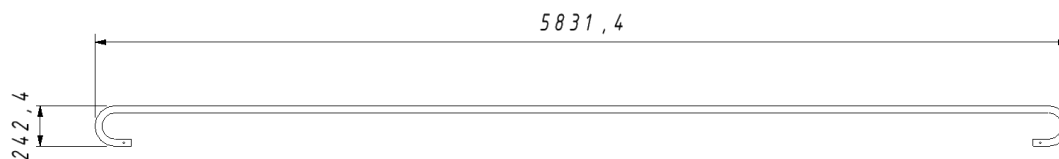
Mass: 16,4 kg

SK4-SB4



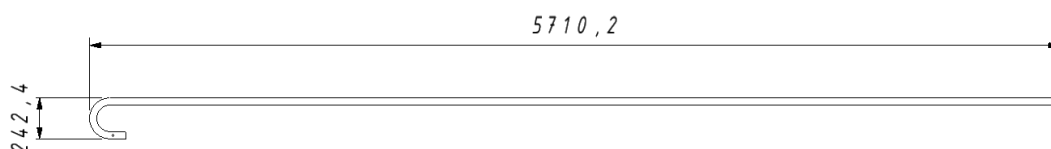
Mass: 512 kg

SK4-SP1



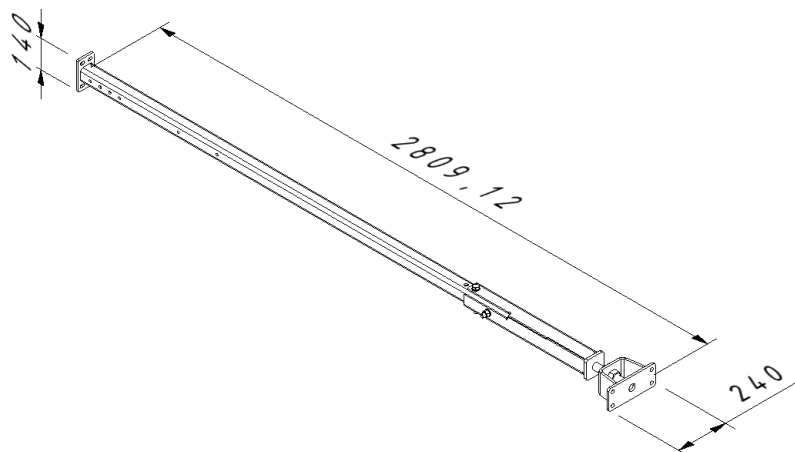
Mass: 12,8 kg

SK4-SP2



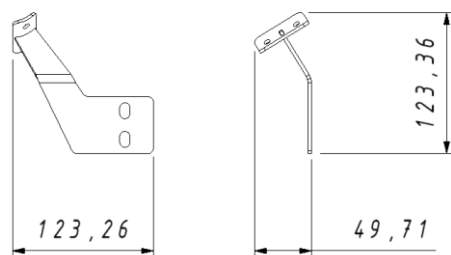
Mass: 12 kg

SK4-PS9



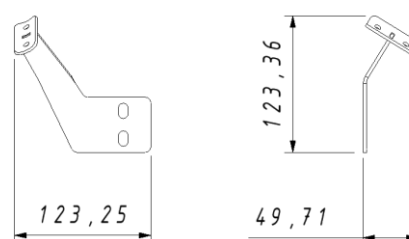
Mass: 38,8 kg

SK4-L17

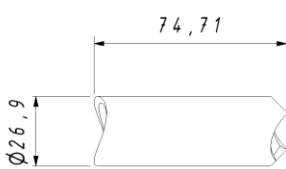
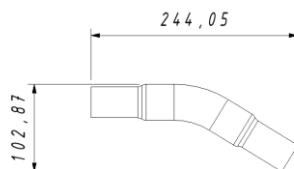
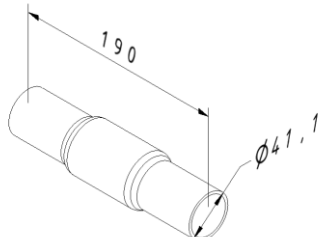
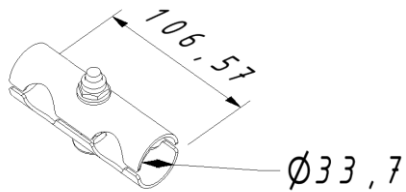
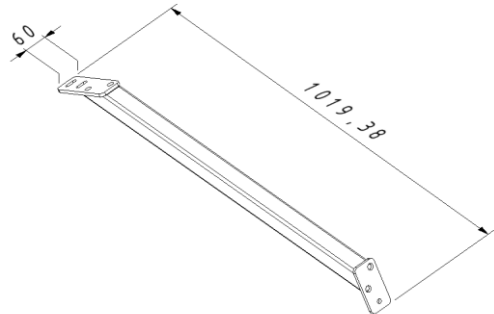
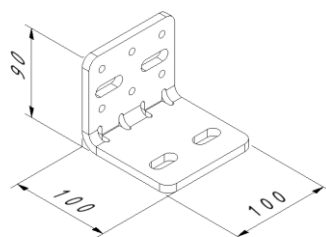
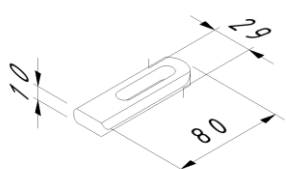


Mass: 0,2 kg

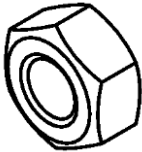
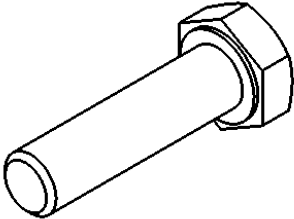
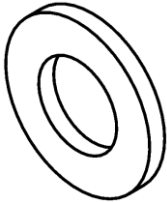
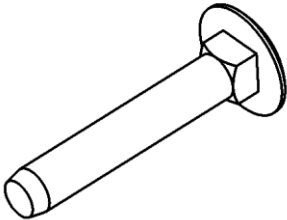
SK4-L18



Mass: 0,2 kg

SK4-L20  Mass: 0,11 kg	SK4-L19  Mass: 0,5 kg
SK4-L16  Mass: 0,5 kg	SK4-L14  Mass: 0,2 kg
SK4-X3  Mass: 4,7 kg	SK4-L22  Mass: 1kg
SK4-L10  Mass: 0,2 kg	

3. Graphical presentation of P-SK7 system fasteners

 M10 M12	 M10x70 M10x90 M10x110 M12x40 M12x50 M12x80 M12x100 M12x120	 W10 W12
 MZ 10X60		



4. List of P-SK7 system components

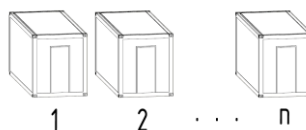
The list of components in table 2 presents the components of the container stair system, their quantity depending on the configuration, and the type of the system ordered by the customer (to be selected from the ID, component description columns).

Variant	Var 3	Var 5	Var 10
Height	3265	3265	3265
Index	Amount		
SK4-BP11	3	0	1
SK4-BP12	1	1	1
SK4-BS8	2	0	2
SK4-KR11	2	0	0
SK4-KR12	2	2	2
SK4-L10	2	2	2
SK4-L14	2	0	1
SK4-L16	1	1	0
SK4-L22	2	2	2
SK4-PD11	1	1	1
SK4-PD12	1	0	0
SK4-PS9	6	2*	4
SK4-SB4	1	0	1
SK4-X3	0	0	4
SK4-EZ-V3	1	0	0
SK4-EZ-V5	0	1	0
SK4-EZ-V10	0	0	1

Tab. 2. Variant kits depending on the height

(*) – in case using only Var 5 without Var 3 amount of columns SK4-PS9 must be increased by 2 pcs. as described below:

$P = n + 2$ – number of columns
 n – number of joined containers



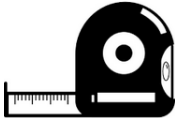
Name	Index	Amount
Fasteners for P-SK7-Var3 PlusLine	SK4-EZ-V3	-
PVC end cap for pipe ø40	M-PVC-ZW-40	1
PVC end cap for pipe ø 48,3	M-PVC-ZW-48,3	3
Washer ISO 7089 8-ZO-10 - 200 HV	M-Z-P-Z-10-8-ZO	64
Bolt ISO 4014 8-ZO - M10 x 110	M-Z-S-SZ-10x110-8-ZO	21
Nut ISO 4032 8-ZO - M10	M-Z-N-SZ-10-8-ZO	33
Bolt ISO 4014 8-ZO - M10 x 70	M-Z-S-SZ-10x70-8-ZO	10
Washer ISO 7089 8-ZO-12 - 200 HV	M-Z-P-Z-12-8-ZO	60
Bolt ISO 4014 8-ZO - M12 x 110	M-Z-S-SZ-12x110-8-ZO	2
Nut ISO 4032 8-ZO - M12	M-Z-N-SZ-12-8-ZO	30
Bolt ISO 4017 8-ZO - M12 x 50	M-Z-S-SZ-12x50-8-ZO	20
Bolt ISO 4014 8-ZO - M12 x 80	M-Z-S-SZ-12x80-8-ZO	4
Bolt ISO 4014 8-ZO - M12 x 100	M-Z-S-SZ-12x100-8-ZO	4
Neck bolt DIN 603 - M10 x 60 8-ZO	M-Z-S-ZM-10x60-8-ZO	2
Clamp for grating 34x38	M-KR-UK-G01-34x38	20

Name	Index	Amount
Fasteners for P-SK7-Var5 PlusLine	SK4-EZ-V5	-
Washer ISO 7089 8-ZO-10 - 200 HV	M-Z-P-Z-10-8-ZO	30
Bolt ISO 4014 8-ZO - M10 x 110	M-Z-S-SZ-10x110-8-ZO	10
Nut ISO 4032 8-ZO - M10	M-Z-N-SZ-10-8-ZO	16
Bolt ISO 4014 8-ZO - M10 x 70	M-Z-S-SZ-10x70-8-ZO	4
Washer ISO 7089 8-ZO-12 - 200 HV	M-Z-P-Z-12-8-ZO	12
Bolt ISO 4014 8-ZO - M12 x 90	M-Z-S-SZ-12x90-8-ZO	4
Nut ISO 4032 8-ZO - M12	M-Z-N-SZ-12-8-ZO	6
Bolt ISO 4014 8-ZO - M12 x 110	M-Z-S-SZ-12x110-8-ZO	2
Neck bolt DIN 603 - M10 x 60 8-ZO	M-Z-S-ZM-10x60-8-ZO	2
Clamp for grating 34x38	M-KR-UK-G01-34x38	12

Name	Index	Amount
Fasteners for P-SK7-Var10 PlusLine	SK4-EZ-V10	-
Washer ISO 7089 8-ZO-10 - 200 HV	M-Z-P-Z-10-8-ZO	42
Nut ISO 4032 8-ZO - M10	M-Z-N-SZ-10-8-ZO	22
PVC end cap for pipe ø40	M-PVC-ZW-40	1
PVC end cap for pipe ø48,3	M-PVC-ZW-48,3	3
Bolt ISO 4017 8-ZO - M10 x 35	M-Z-S-SZ-10x35-8-ZO	4
Washer ISO 7089 8-ZO-12 - 200 HV	M-Z-P-Z-12-8-ZO	72
Bolt ISO 4017 8-ZO - M12 x 50	M-Z-S-SZ-12x50-8-ZO	20
Nut ISO 4032 8-ZO - M12	M-Z-N-SZ-12-8-ZO	36
Bolt ISO 4014 8-ZO - M12 x 80	M-Z-S-SZ-12x80-8-ZO	4
Bolt ISO 4014 8-ZO - M12 x 120	M-Z-S-SZ-12x120-8-ZO	8
Bolt ISO 4014 8-ZO - M10 x 70	M-Z-S-SZ-10x70-8-ZO	6
Bolt ISO 4014 8-ZO - M10 x 110	M-Z-S-SZ-10x110-8-ZO	6
Bolt ISO 4014 8-ZO - M10 x 90	M-Z-S-SZ-10x90-8-ZO	4
Bolt ISO 4014 8-ZO - M12 x 100	M-Z-S-SZ-12x100-8-ZO	4
Neck bolt DIN 603 - M10 x 60 8-ZO	M-Z-S-ZM-10x60-8-ZO	2
Clamp for grating 34x38	M-KR-UK-G01-34x38	12

Tab. 3 Fastener Kits

5. List of tools required for the container stair assembly

	Wrenches: 22,19,18,17,16,13,10
	Level tools
	Tape measure
	Lifter with a lifting capacity of min. 1 [t]

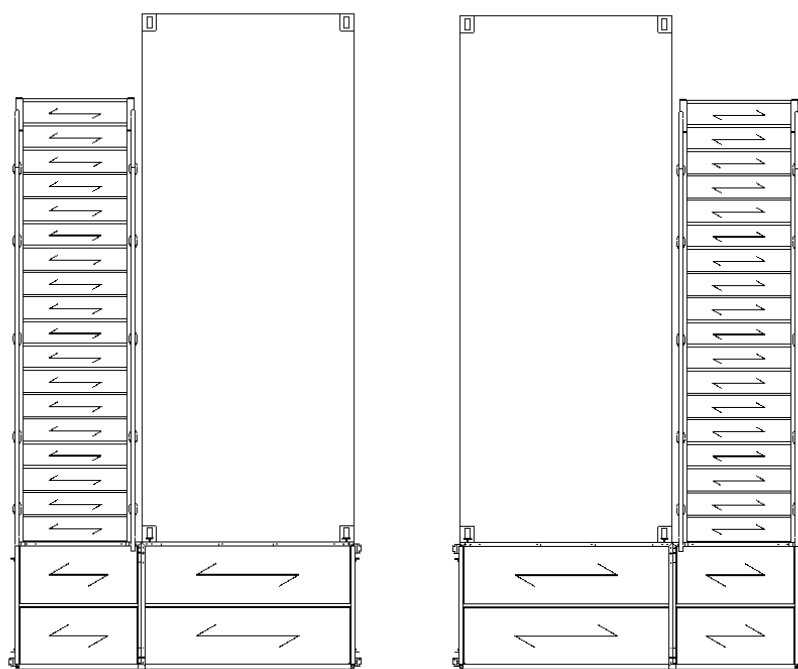
Tab. 4 List of tools

6. Assembly operations of the container stair system

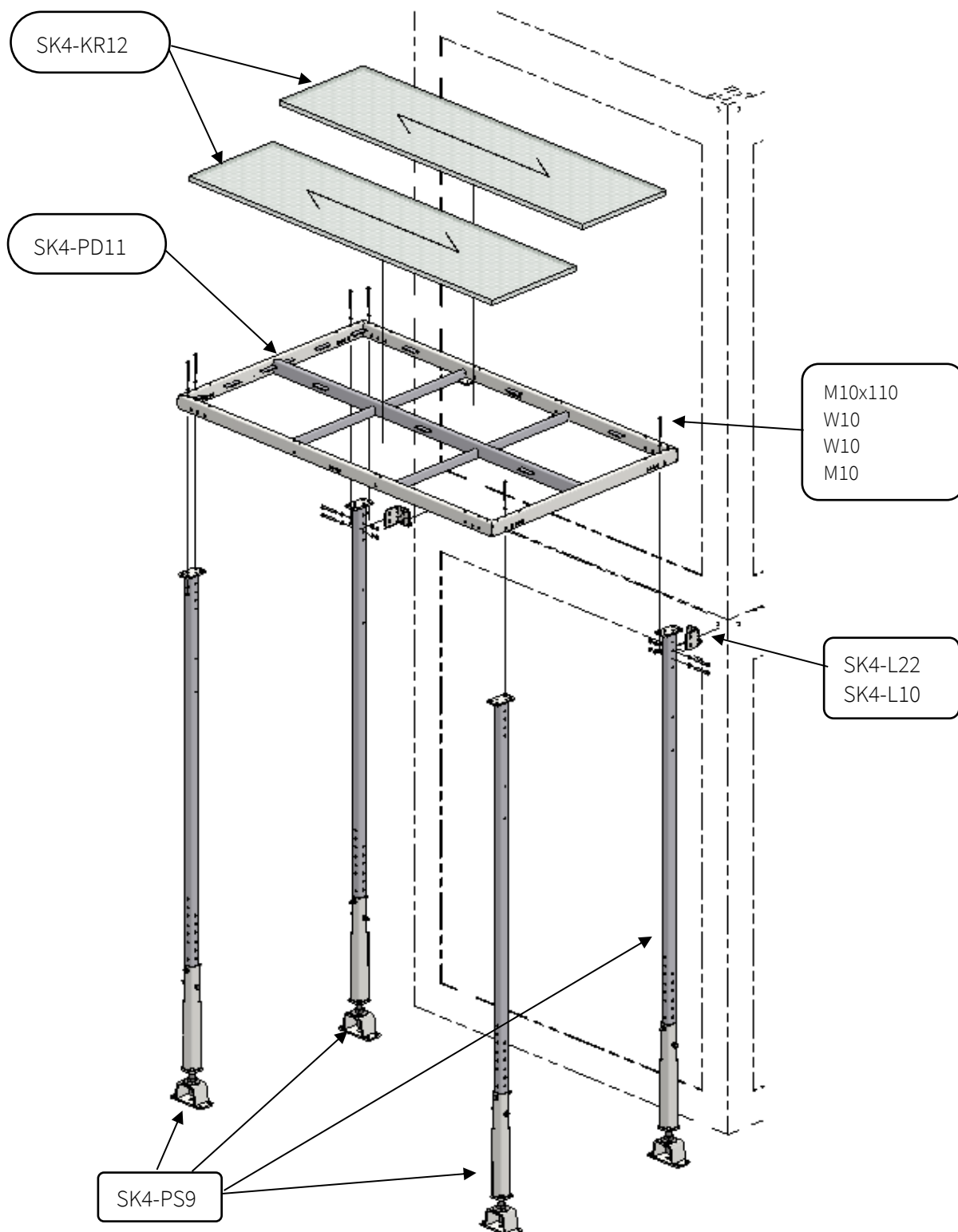
The assembly manual shows how to assemble the individual components of the container stair system.

6.1. Before starting the assembly, check if no components are missing according to lists for a given variant and container height. Plan the location of the platform and the stairs.

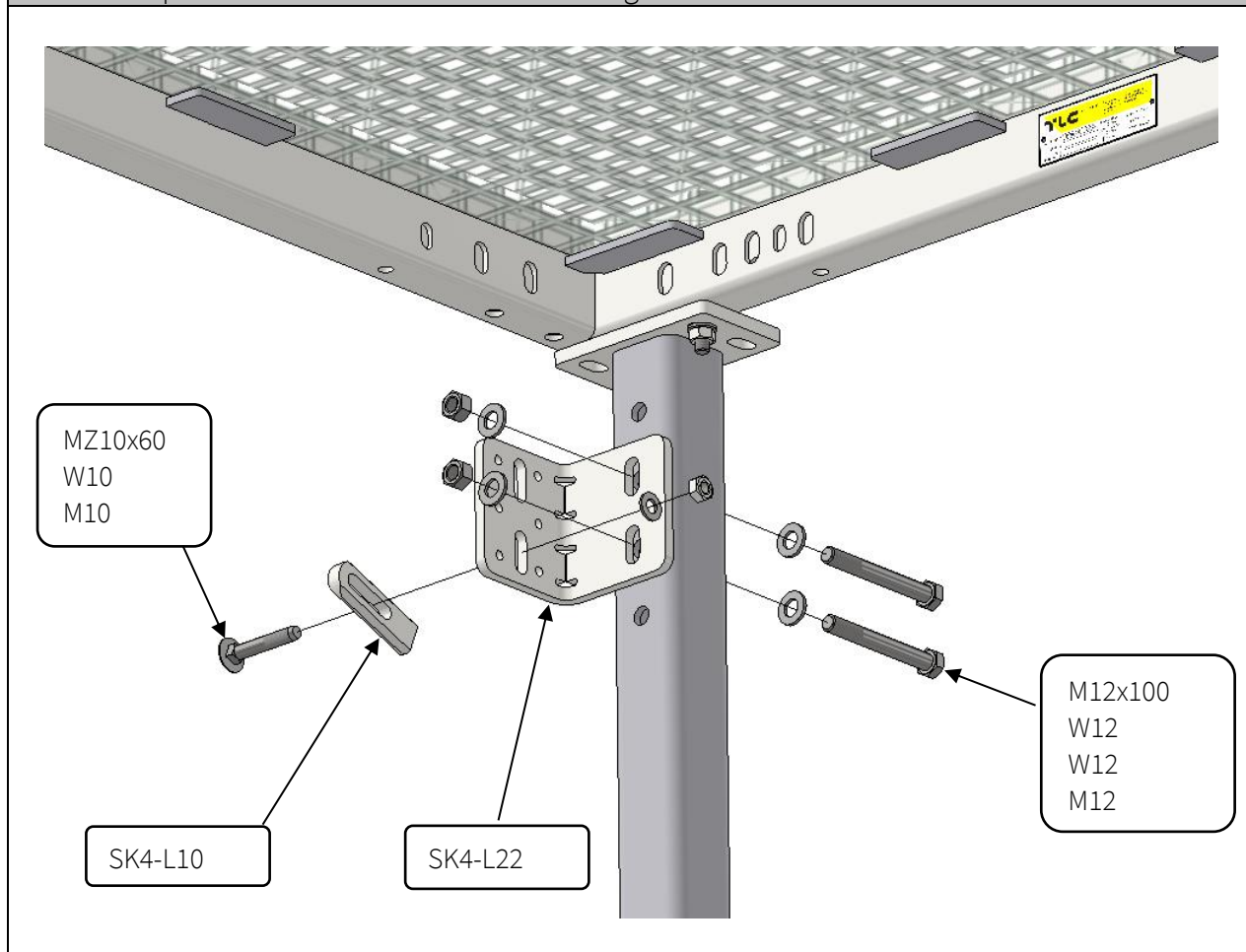
6.2 VAR 3 stair assembly options



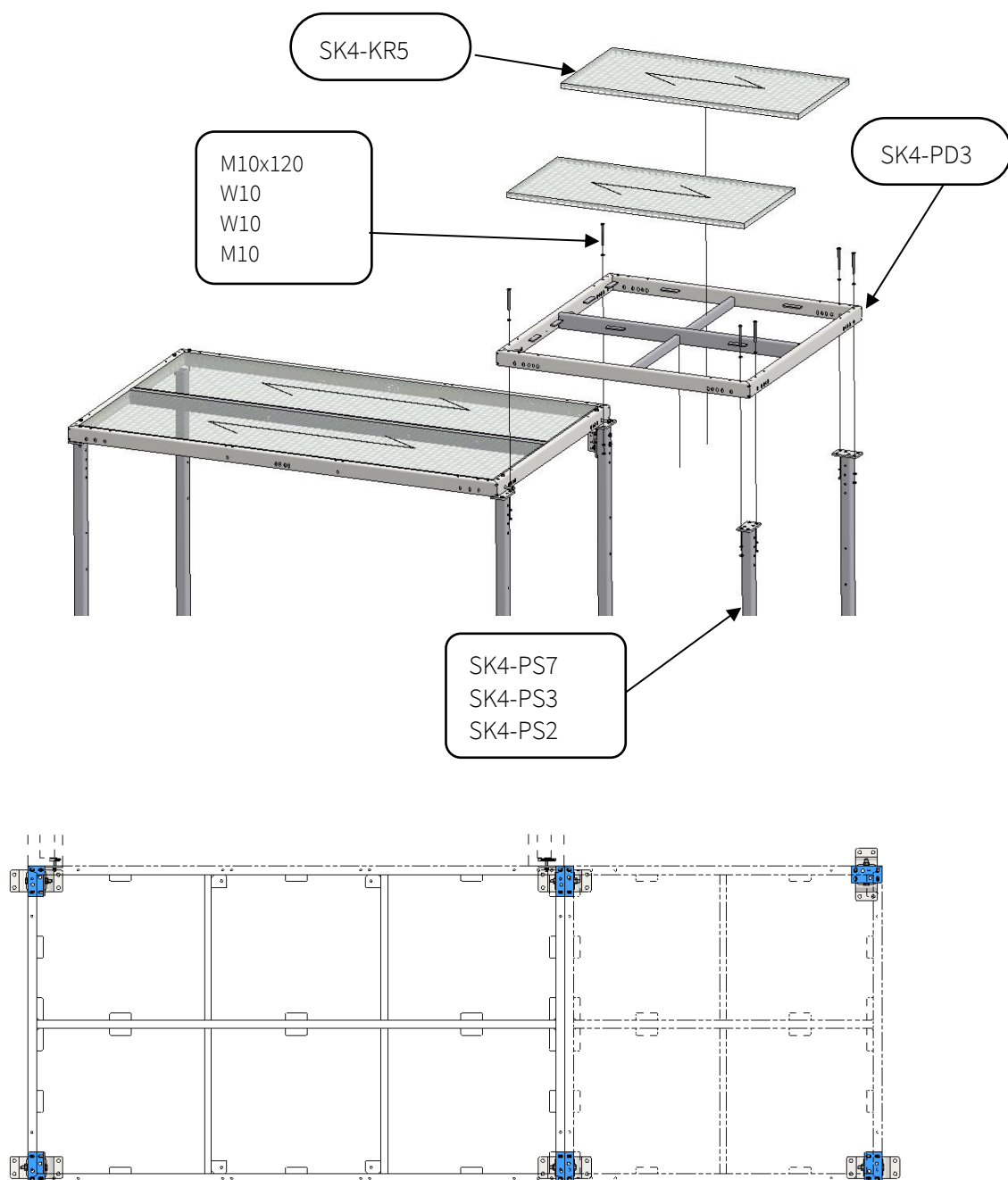
6.3. Place the platform frame on the posts, fix it together with the set of a bolt, washers and nut. Assemble the filling in the form of platform gratings using the grating clamps.



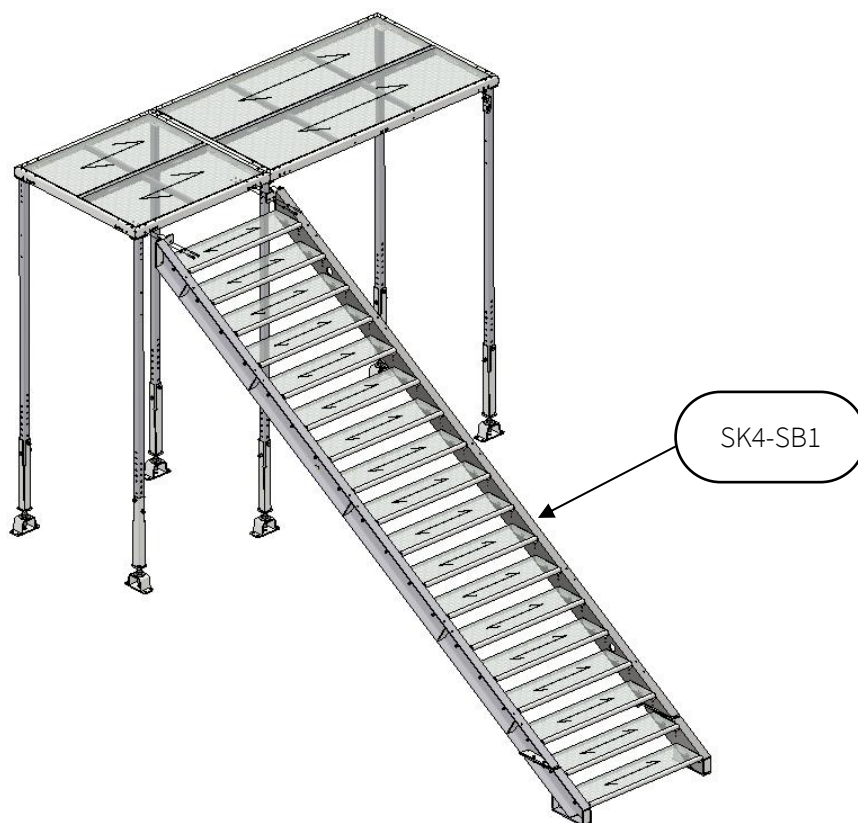
6.4. Fix the platform frame to the container using the SK4-L22 and SK4-L10 fasteners



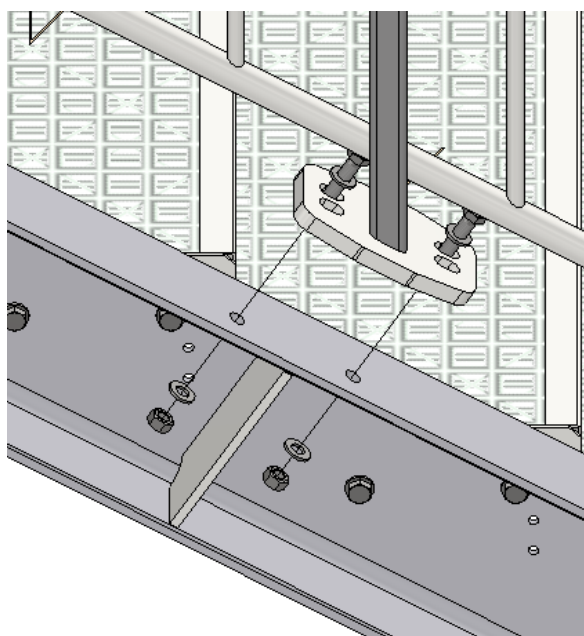
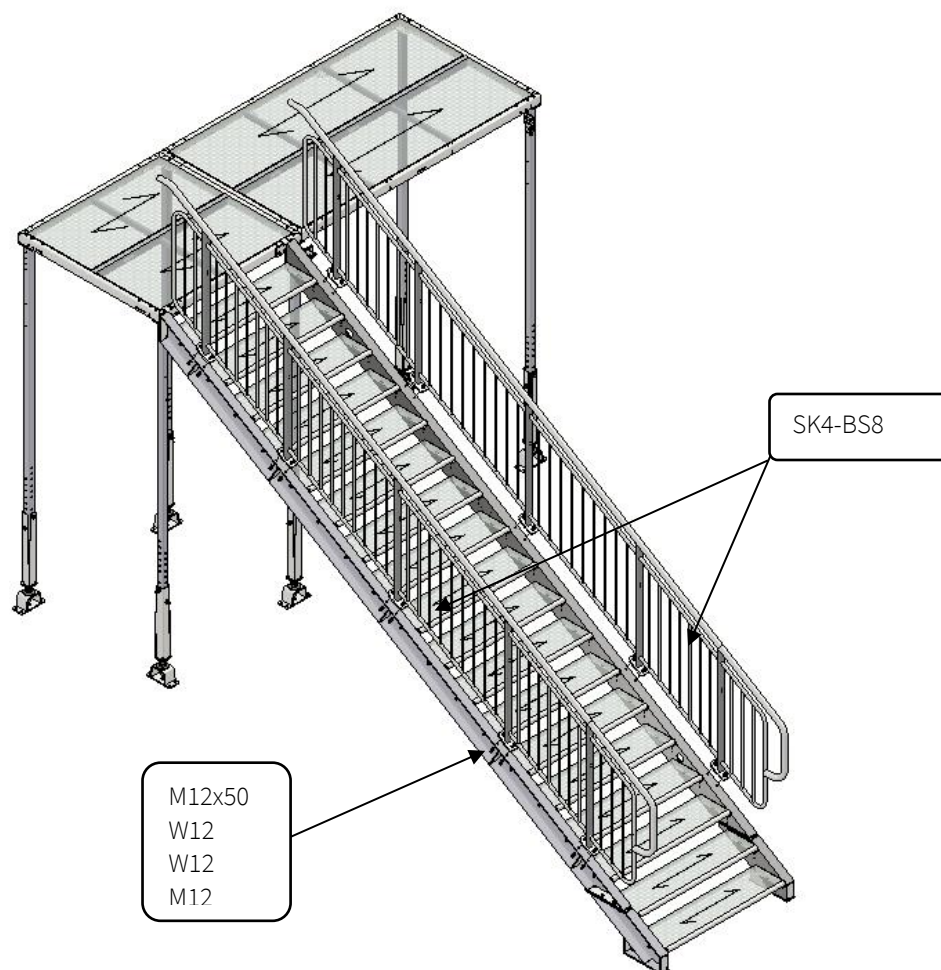
6.5. Place the frame of the next platform on the posts according to the diagram below. Screw with the set of a bolt, washers and nut. Assemble the filling in the form of platform gratings using the grating clamps.



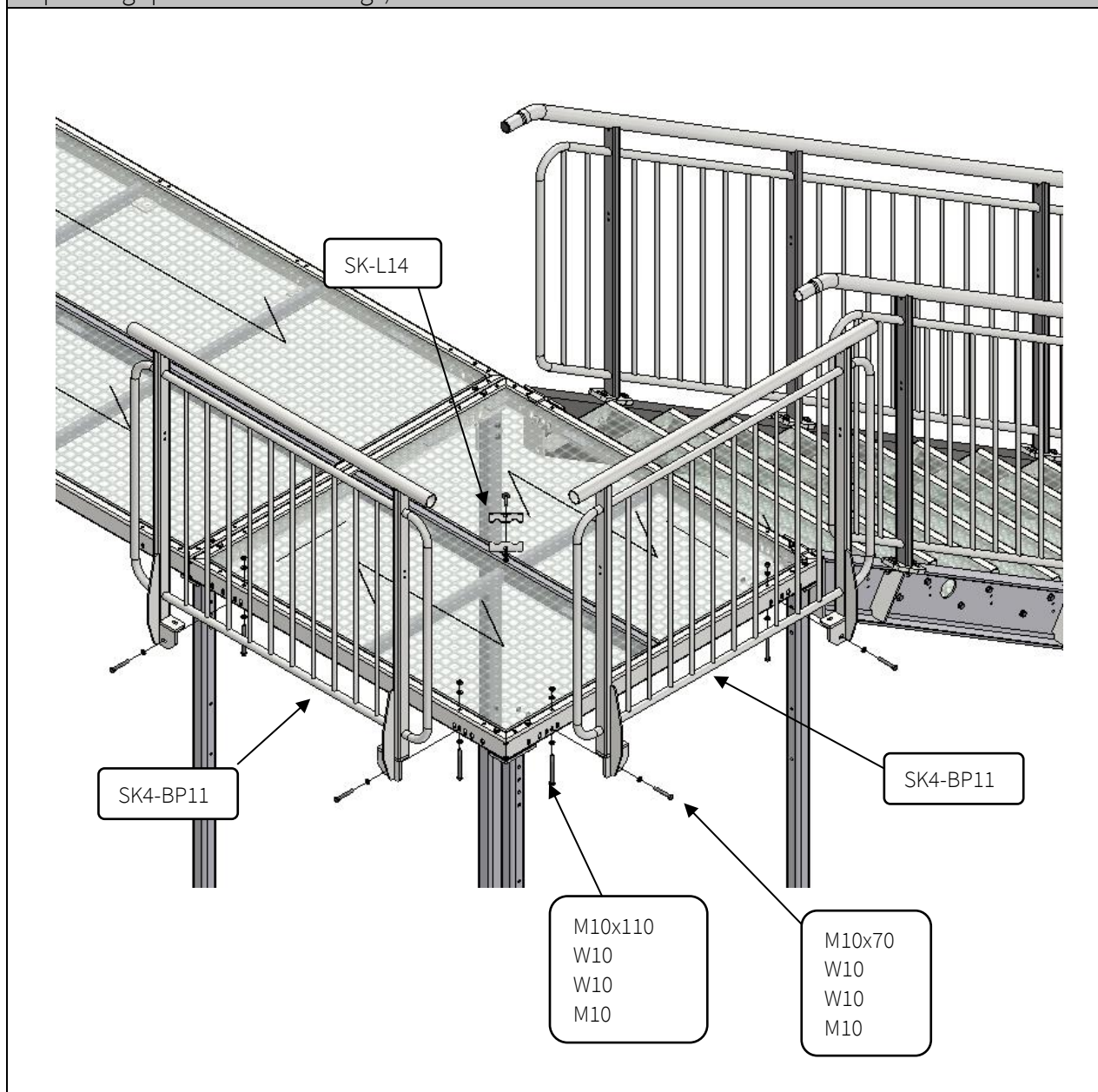
6.6. Raise the stair flight, move it to the platform, base it on the platform and fix them with the set of a bolt, washers, nut

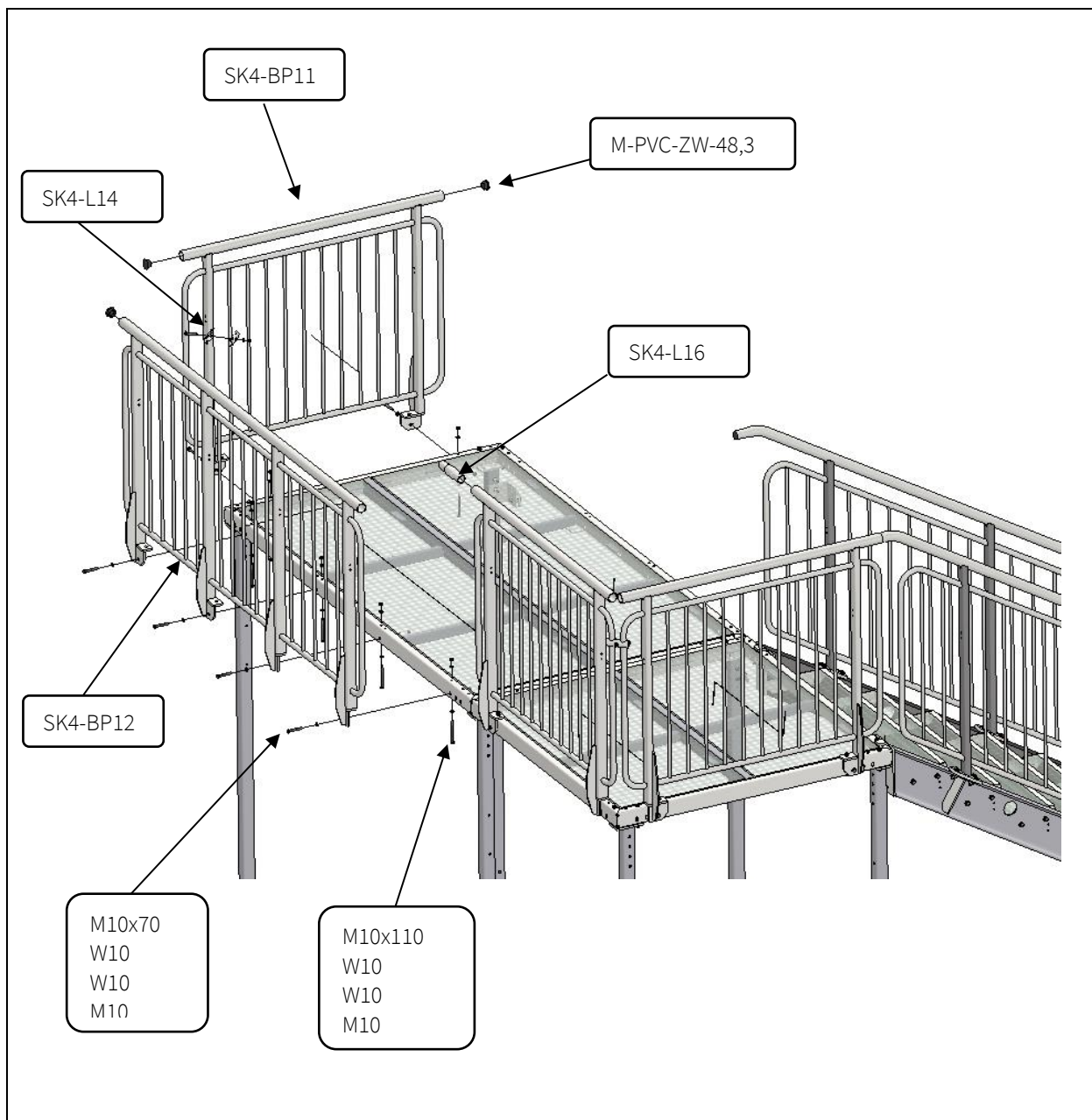


6.7. Fix the railings to stair flight with the set of a bolt, washers, nut.

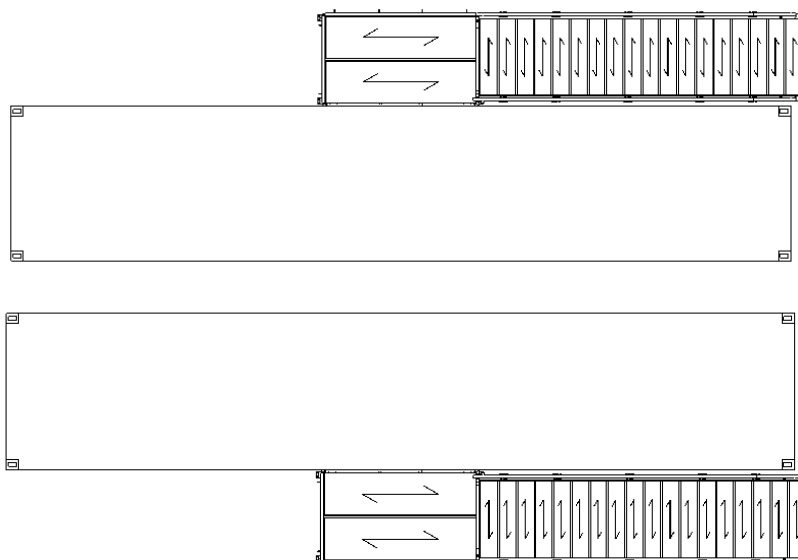


6.8. Fix the railings to platform with the set of a bolt, washers, nut.
Railings should be fixed together using SK4-L14 (fixing in the corner) and SK4-L16 (connection of top handgrips in a line of railings).

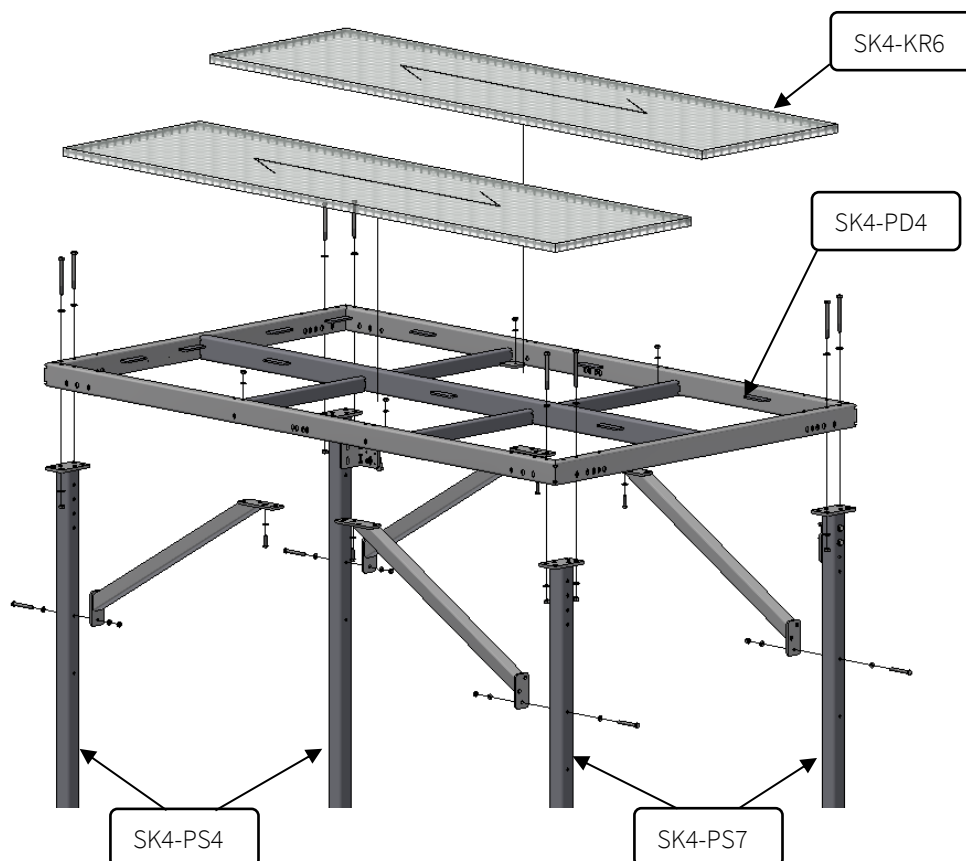


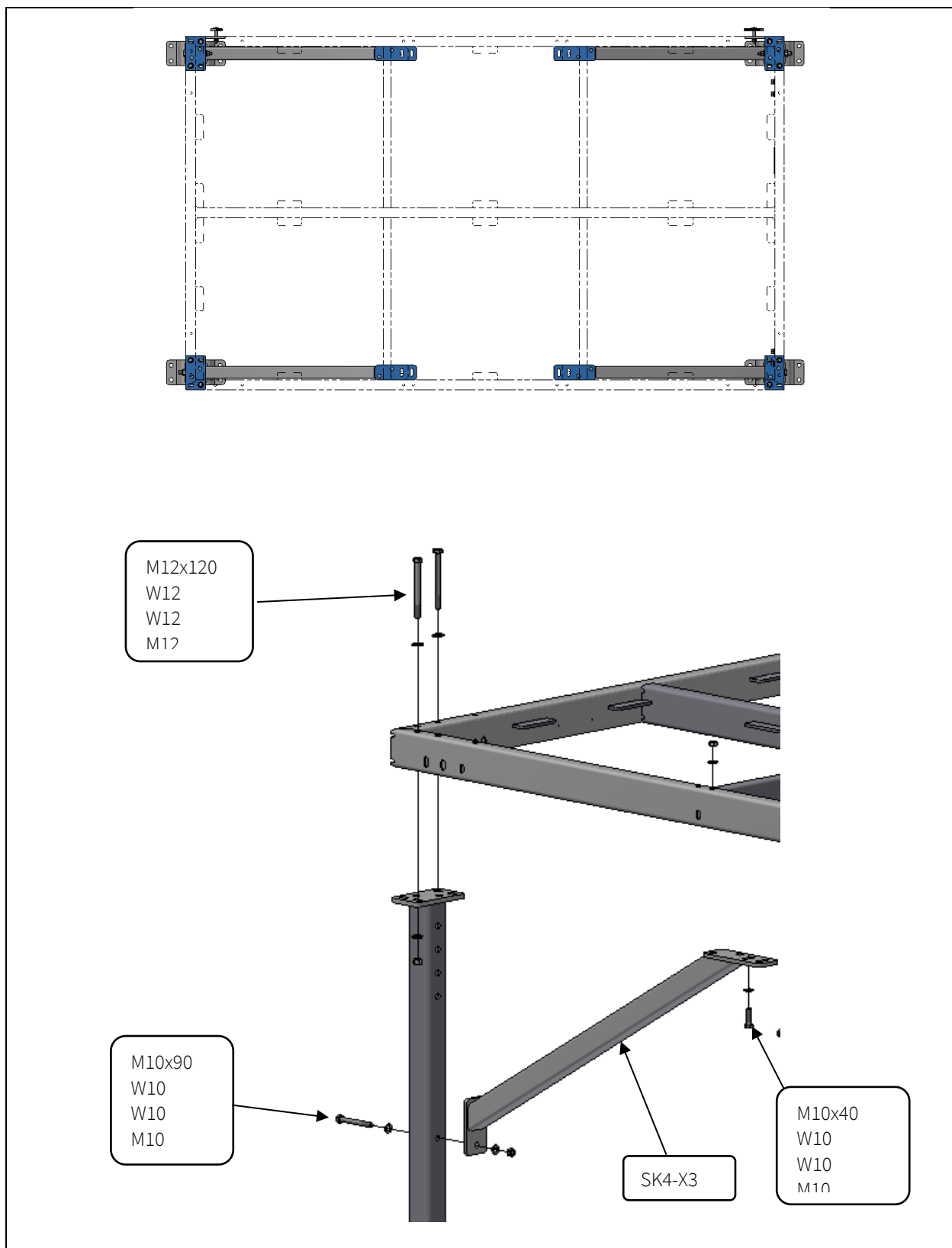


6.9. Var 10 stairs assembly options

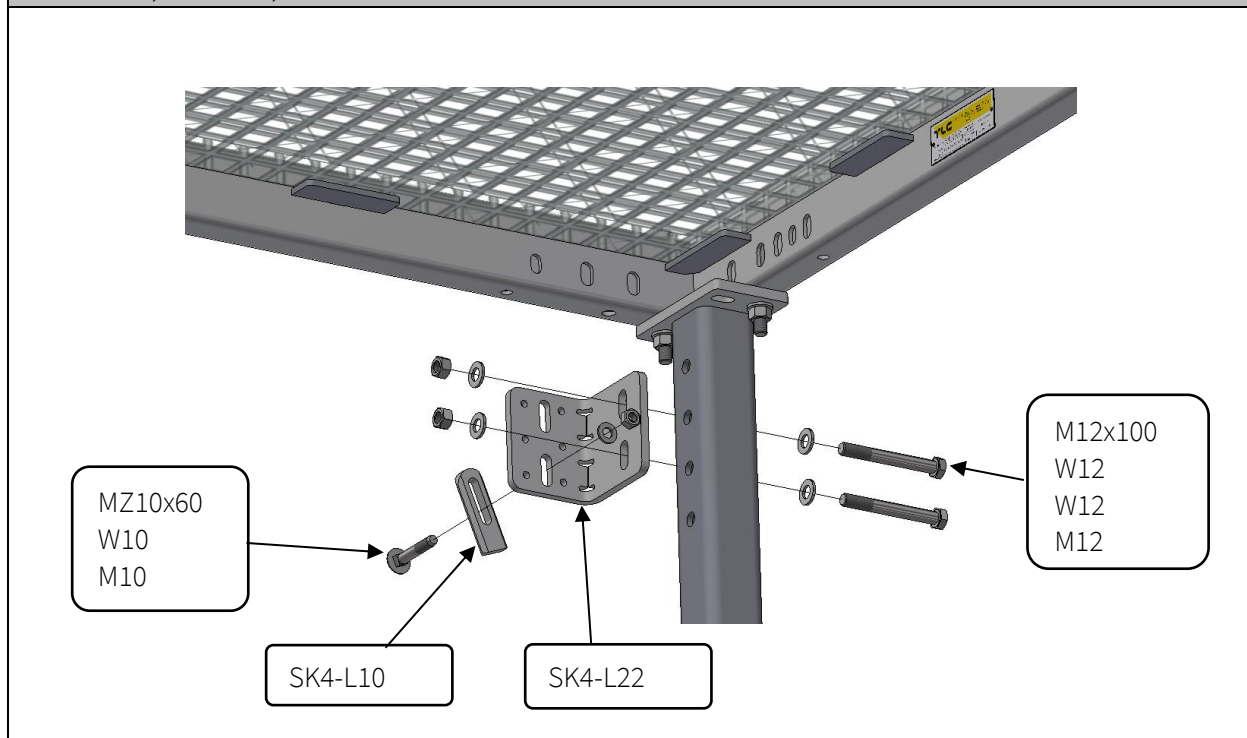


6.10. Place the platform's frame on the posts, fix it together with the set of a bolt, washers and nut. Assemble the filling in the form of platform gratings using the grating holders. Assemble the SK4-X3 bracing with the sets of bolts, washers and nuts.





6.11. Attach the platform frame to the container using the SK4-L22 and SK4-L10 fasteners and set of bolt, washers, nut.

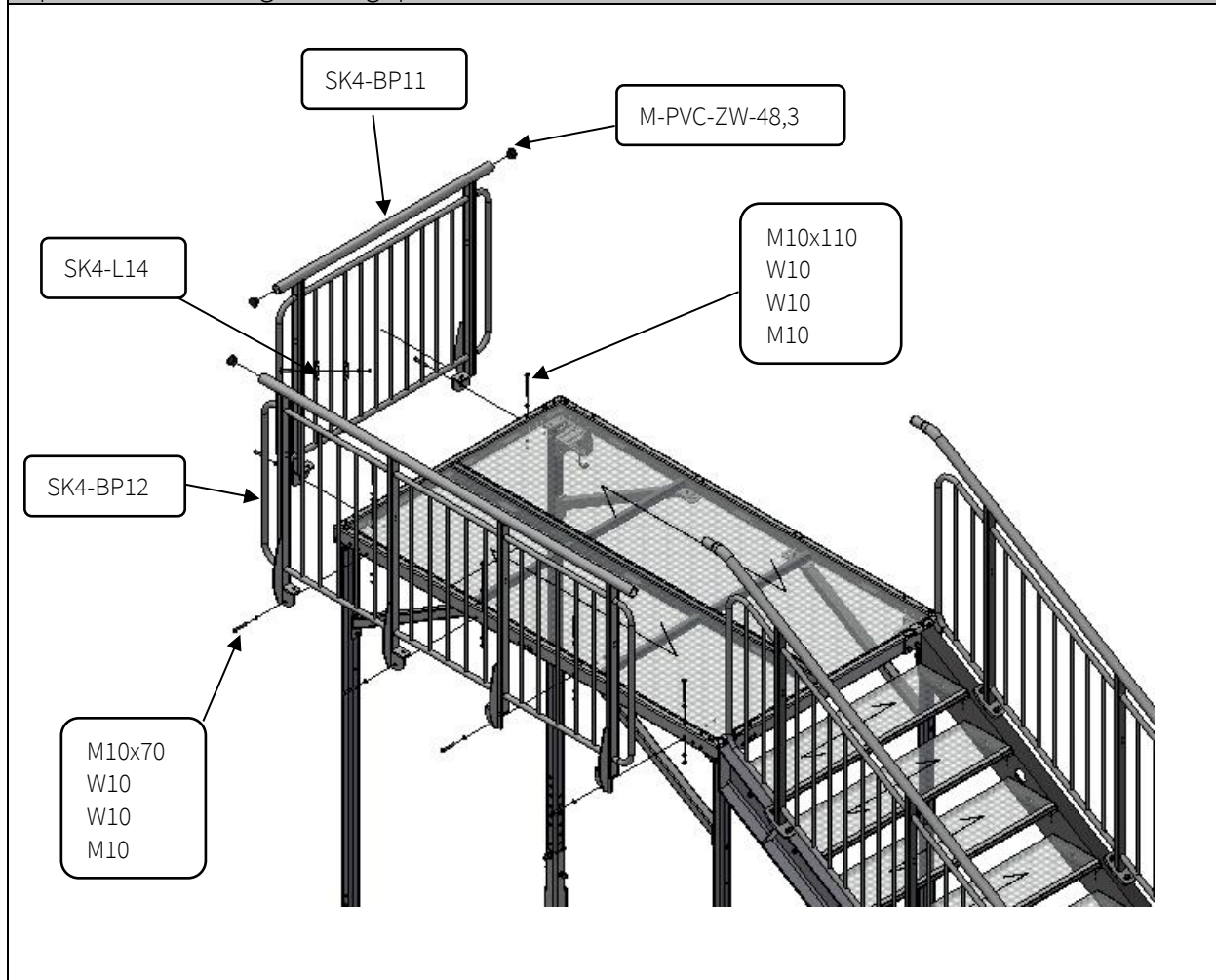


6.12. Assemble stair flight as described in points 6.6 i 6.7

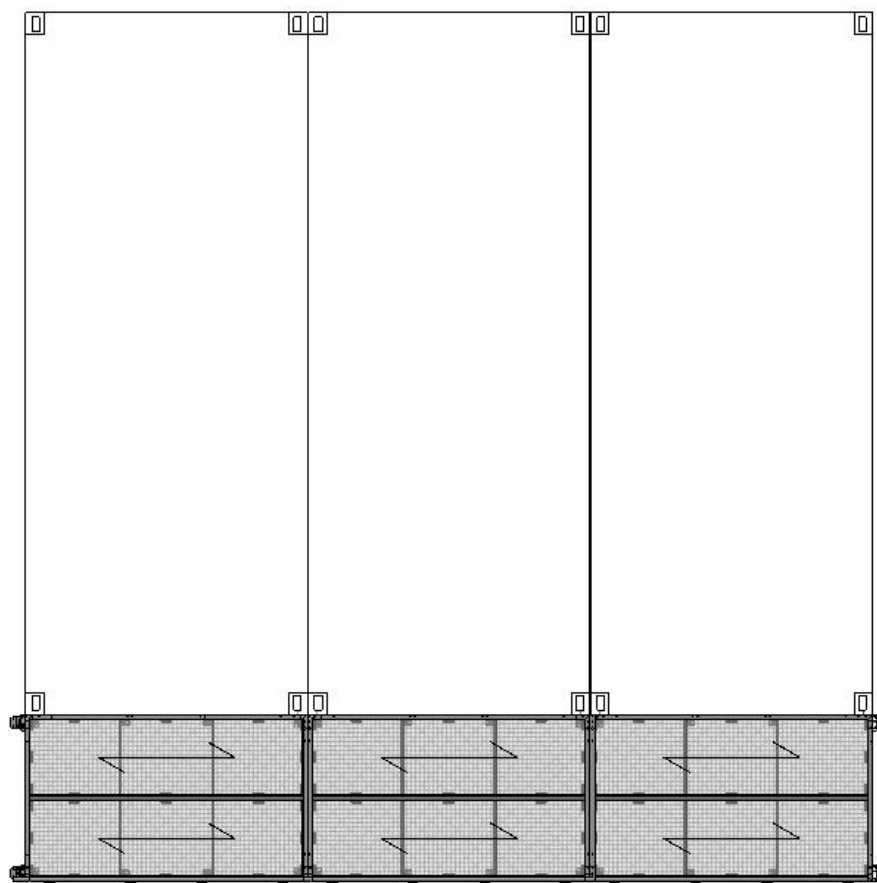
6.13. Assemble the railings as described in point 6.8.

6.14. Fix the railings to platform with the set of a bolt, washers, nut.

Railings should be fixed together using SK4-L14 (fixing in the corner). Fit cap ends to close open sides of railing's handgrip.



6.15. Assembly of platforms in variant Var 5



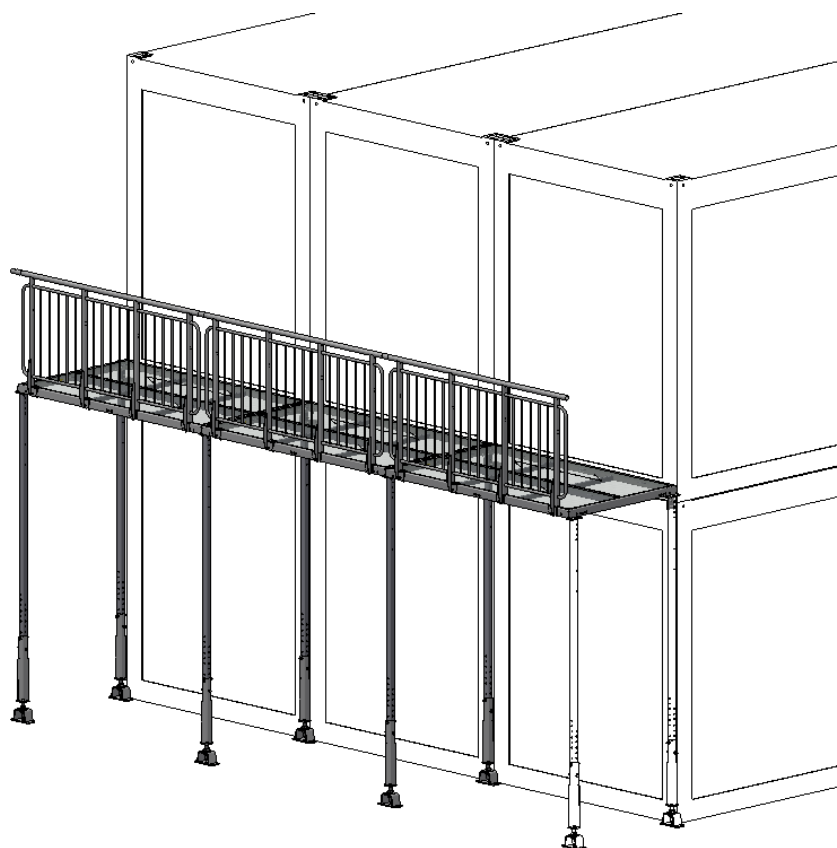
6.16. Assemble first platform as described in point 6.3.

6.17. Assemble next platforms as described in point 6.5.

6.18. Assemble the platform to container frame as described in point 6.4

6.19. Assemble the railings as described in point 6.15.

6.19. Correct amount of columns should be calculated basing on amount of platforms to be installed



$P = n + 2$ – number of columns
 n – number of joined containers

