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Modular STEELFOX scaffolding

DTR- Operation – design – maintenance documentation [Assembly instructions]

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1. SCAFFOLDING CHARACTERISTICS

Modular STEELFOX scaffolding are produced by OLAN Company in steel versions. The system contains basic components such as: stands, girders, handrails, braces, planks, and curbs. The system also includes many complementary elements in order to facilite the use.

Above mentioned system is the modular scaffolding allowing to divide the field into dimensions: 565mm ; 700mm ; 770mm ; 1010mm ; 1020mm ; 1050 mm ; 1250 mm ; 1550 mm; 1655 mm; 1964 mm ; 2050 mm ; 2500 mm ; 2550 mm; 3050 mm in both direction and thus we can in easy way to make a rectangular grid with the various dimensions.

The unique feature of this system is the possibility of the scaffolding extending not only from the button to the top but also from the top to the button by the application of welded bottle and protection of stand. Just in such a manner Modular scaffolding STEELFOX are used around the world on the drilling platforms where is use is a necessity going down within scaffolding below main platform.

Another benefit from the scaffolding is easy and fast assembly method in which we don't need a hammer or any other tools except wrench for torsion of braces.

Load bearing capacity of scaffolding depends on its dimensions and the length of the planks used for assembly of the particular scaffolding and can be from 2 up to 6 kN/m^2 (load class according to PN-EN 12811-1:2004).

Load bearing elements of the scaffolding are: planks, stands, girders and bases, and for stiffening of the scaffolding are braces. The elements of the safety assurance in the modular STEELFOX scaffolding are: handrails, double handrails, girders and curbs, thanks to which, maintaining of the assembly instructions included in the following instruction, shall be possible to build a set which is safe in use.

This scaffolding are used as working, protective scaffolding and supporting structure for roof constructions e.g. for the roofs assembly system COVER DB 750 and DB 500), which are produced and offered by OLAN Company and they are widely used as temporary protection in harsh weather conditions.

Users can go far beyond the guidelines and the models of the settings presented in this manual, but they must use individual projects and static calculations.

The rated load of element sets can be found in the chapter: Loads and Usable bearing load capacity the uniqueness and advantage of modular STEELFOX scaffolding of Olan Company from another solutions is on the base of application which gives a collecting node in the stands, which enables to connect cross-bars, stringers every 0,5m in 4 directions. Assembly of the elements made by putting of the catches in the cases and then by blocking girders in pawl.

Modular STEELFOX Scaffolding System it was qualified in accordance with PN EN 12810-1: 2010. The assigned classification markings are presented in the table below.

	Width	
Field	0,77m	1,05m
1,25m	Scaffolding EN 12810-6D-SW06/125-H2-B-LS	Scaffolding EN 12810-6D-SW09/125-H2-B-LS
1,65m	Scaffolding EN 12810-6D-SW06/165-H2-B-LS	Scaffolding EN 12810-5D-SW09/165-H2-B-LS
1,96m	Scaffolding EN 12810-5D-SW06/196-H2-B-LS	Scaffolding EN 12810-4D-SW09/196-H2-B-LS
2,50m	Scaffolding EN 12810-4D-SW06/250-H2-B-LS	Scaffolding EN 12810-4D-SW09/250-H2-B-LS
3,05m	Scaffolding EN 12810-4D-SW06/305-H2-B-LS	Scaffolding EN 12810-4D-SW09/3,05-H2-B-LS

2.LIST OF STANDARDS AND REGULATIONS CONCERNING SCAFFOLDING.

When designing, assembling, disassembling and operating Modular Scaffoldings of the "STEELFOX" type, shall be respected the rules and requirements contained in:

- The Regulation of the Minister of Labor and Social Policy dated 28 th of August 2003 on general data Health and Safety at work general principles. (Official Journal from 169/03 item 1650).
- The Regulation of the Minister of Economy, Labor and Social Policy, dated 30 October 2002. (Official Journal. no191/02 item 1596) this instruction,
- The Regulation of the Minister of Infrastructure dated 6th February 2003 concerning Health and Safety at work during construction works (Official Journal No 47 / 03 item 401)
- The Notice of the Minister of Economy, Labour dated 28 August 2003 concerning r. the publication of a uniform text of the Regulation of the Minister of Labor and Social Policy on the general provisions of health and safety at work " (Official Journal No 169 / 03 item 1650)
- PN-M-47900-1:1996 „Metal working scaffoldings. Definitions, division and main parameters."
- PN-M-47900-2:1996 „Metal working scaffoldings. Scaffolding made from pipes."
- PN-M-47900-3:1996 „ Metal working scaffoldings. Frame scaffoldings."
- PN-EN 12811-1:2007 „Temporary constructions used on the building site. Scaffoldings. Warunki wykonania i ogólne zasady projektowania" Conditions of the manufacturing and
- general principles of design.
- PN-EN 12810-1:2010 „Facade scaffolding of prefabricated elements. Technical specifications of products "
- PN-EN 12810-2:2010 „Facade scaffolding of prefabricated elements. Special methods of design and construction"
- PN-EN 74-1:2006 „Connections, centring bolts and bases applied in planking and scaffolding – Part 1: Connections for pipes -- Requirements and test methods "

PN-EN 39: 2003 Steel pipes for scaffolding construction - Technical delivery conditions.

3. GENERAL RULES FOR SCAFFOLDING ASSEMBLY

1. Become familiar yourself with the assembly instructions, health and safety regulations and generally applicable standards when assembling the scaffolding.
2. Check the foundation before starting with the scaffolding assembly, which should transfer loads from the scaffolding structure and vertical forces that occur on the scaffolding. The bearing capacity of the ground surfaces on which the scaffolding is to be erected cannot be less than 0,1 MPa. The load-bearing capacity of the substrate should be determined in accordance with PN-EN 1997-1. In the case of structural substrates and when reinforcing substrates, the scaffolding foundation should meet the requirements of the standard PN-M-47900-2 point 4.4.
3. Prepare the necessary tools in order to set and level properly the scaffolding structure, eg:
    - Hammer 500g
    - Spirit level
    - Spanner 19/22
4. Place wooden foundations on the substrate perpendicular to the walls and in the spacing adjusted to the planned future scaffolding sections in order to protect the structure against collapse of the ground.
5. Put on the wooden base at least 2 adjustable bases with a screw length that allows the entry of the pole pipe at a length of at least 150mm.
6. The assembly of scaffoldings may only be carried out by a person with appropriate qualifications and knowledge of assembly and use instructions for a particular type of scaffolding. The people working on assembled and commissioned scaffolding for operation do not have to have the above-mentioned rights. The user is responsible for the operation of the transferred scaffolding.

   Basic technical and operational data for facade scaffolding type "STEELFOX" in a typical setting:

    - Operational load – in the range 2-6kN/m2,(the rated quantities of the scaffolding according to PN-EN 12811-1:2007 standard);
    - number of simultaneously loaded platforms - one scaffolding platform in a given vertical level;
    - typical field width - 0,77m ; 1,05m; 1,25m ; 1,655m
    - typical field length – 0,564m; 0,77m; 1,05m; 1,25m; 1,655m; 1,964m; 2,5m; 3,05m
    - scaffolding height (height of the highest working platform)

      - As part of the B max certification 24.5 m for a scaffolding with the width of 0.77m and the field of 3.05m with the platforms on each level and anchored to the wall of the building

- max. 50.5 m for a scaffolding with a width of 0.77 m and a field of 3.05 m with one level of platforms and anchored to the wall of the building after checking of the sufficient ground durability and performing structural safety calculations.

- Maximum distance between the inner edge of the platform and the wall 0,2m
- The scaffolding should be stiffened by means of diagonal braces in the external scaffolding fields and every 4 scaffolding fields. The braces should be duplicated in the opposite direction every 2m in vertical position of the l scaffolding. Additional information concerning the bracing and anchoring of the STEELFOX modular scaffold can be found in the Assembly diagrams chapter.

The most common applied scaffolding settings are presented in the Chapter 9. They include the assembly of protective roofs, passages under the scaffolding, assembly of the transport extension arm, meshes and protective covers.

Only original, undamaged components included in the "STEELFOX" modular scaffold system should be used for assembly

Criteria for the evaluation of components

- Items with visible signs of damage can not be used. In particular can not be released to the service:
- components showing signs of corrosion in the connection zones of the elements (welds)
- load-bearing stands with visible damage in the form of pipe bends, and deformation of the cross-section
- steel bridges with the damaged sheathing or damaged and bent hooks
- aluminum-plywood platforms with damage of the plywood sheathing in the form of delamination, cracks, swellings, defects and bent beams carrying platforms,
- screw bases with damaged thread, with curved arbors or hard turning nuts

Damaged components shall be replaced within free from defects ones, and damaged to the extent that they can be repaired should be sent for repair. It is permissible to straighten the elements only in the case when there is no occurrence deformations of the circular section.

It is forbidden to make repairs to the load-bearing elements of the structure, i.e. racks, braces and base jacks.

7. Level the basic level of the scaffold properly using level – gauge and hammer.
8. The platforms can be assembled at a height every 0.5 m thanks to the special construction of the stands, nonetheless, it is important to do not exceed the permissible loads in the stands. Load tables can be found in the Load Bearing Capacity/ and Applied Load.

9. The scaffolding should be set in such a way that the distance between the scaffolding structure and the building façade does not exceed 0.2 m. In case the distance to the building is greater than 0.2 m should be installed additional handrails and longitudinal curbs to protect the platform on the inner working side.

10. The shaft of the base jack should enter the frame tube to a depth of at least 150mm.

11. During assembly it is recommended to secure the frames within : RNA-03000.4 protection of stand.
12. The following rules apply to the loading of scaffolding:

- The load on the platform should be spread evenly over its entire surface;
- Each person working on the scaffolding should be considered to weigh 80 kg (0.8 kN);
- For the purposes of structural analysis, the weight of the materials transported by the hoist should be increased by 20%;\
- It is forbidden to dynamically load the platform, e.g. by jumping, throwing loads, etc.;
- The Platforms mounted on brackets must belong to the same load class as the main scaffolding platforms

13. Facade scaffold bracing is carried out in the outer plane of the scaffolding, parallel to the wall, using large plane or tower-like brace arrangement.

14. The extreme ends of the platforms must be secured with front guardrails and toe-boards..
15. The scaffolding should be equipped with ladder bays. The ladder bays should be assembled simultaneously with the erection of the scaffolding. The horizontal distance between the ladder bays must not exceed 40 m. The furthest distance of a work space from a ladder bay must not exceed 20 m.
16. Break between stands can be made only in a situation where it is connected in each direction within the girders.
17. All connections of scaffold tubes should be made with the use of right-angle or swivel couplers conforming to the PN-EN 74- 1:2006 standard. The coupler bolts should be tighten with a torque of 50 Nm.
18. The steel platforms should be placed in such a way that the gap between two platform elements belonging to the same level does not exceed 25 mm. When mounting brackets that extend the working platforms, a gap is produced, which needs to be filled with timber.
19. It is permitted to widen the scaffolding platforms using brackets and frames supported by vertical braces. The extension of platforms can be carried out on the outer side of the scaffold, on its top level, or at any platform level, provided the platform level with the installed extension, as well as one above and one below, are all anchored to the wall.
20. The rules for facade configurations presented in this manual apply to scaffoldings of the structure greater than 10 m
21. To protect persons from objects falling from the scaffolding, protective nets or fabric sheeting are used.
22. The scaffolding can be used in all wind load zones according to the PN EN 1991-1-4; PN-EN 1990 standard. The scaffolds intended for use in the 3rd wind load zone and at elevations exceeding 1500 m above the sea level should undergo additional structural analysis for wind pressure.

23. If the scaffold is anchored, the anchors should be installed as the scaffold assembly progresses. The natural attachment point of an anchor to the scaffold are the area below the beam supporting plate.
24. Dismantling of the scaffolding can take place after the completion of the work carried out from this scaffold, and after removal of all tools and materials from the working platforms. Partial dismantling, starting at the top, as the work progresses, is permitted. When dismantling, it is not permitted to drop items from the height. After dismantling, all scaffolding components should be cleaned, inspected and segregated into those suitable for further use, and those requiring repair or replacement.
25. If the scaffold is anchored, dismantling of the anchors should be done in parallel with the dismantling of the scaffolding. It is prohibited to dismantle more than one anchor level below the scaffold level being dismantled
26. Storage and transport of the scaffolding components should be in accordance with the standard: PN-M-47900-2: 1996 "Metal standing working scaffolds. Tubular bricklayer's scaffolds".
27. Employees involved in the assembly and dismantling of scaffolding should be trained and qualified by a training center accredited by the Institute of Mechanised Construction and Rock Mining in Warsaw.
28. It is necessary to use personal protective equipment during assembly and disassembly.
29. During assembly and disassembly, a danger zone needs to be designated and secured with the use of markings and barriers of a height of at least 1.5 m. The danger zone size cannot be less than 1/10 of the height of the scaffold, and not less than 6 m, according to PN-M-47900-2:1996, item 4.10.4. In dense urban development, the size of the danger zone can be decreased, provided other safety measures are in place. The assembly, operation and dismantling of the scaffolding is forbidden:
    - After dark, if no lighting, to ensure good visibility, has been provided;
    - In dense fog, rain and snow, and when black ice is present;
    - During storms or winds exceeding 10 m/s.

30. The area where the scaffolding assembly or dismantling work is performed must be marked by placing warning signs in visible locations, at a height of up to 2.5 m above the ground level. The inscriptions on the warning signs should be visible from at least 10 m away.
31. Scaffolds located directly next to traffic should have protective fans, compliant with Section 22 of the Ordinance of the Minister of Infrastructure of 6 February 2003," (Official Journal) No. 47, item. 401
32. Frames located next to archways and underpasses through which traffic is moving should be protected with traffic separators, not connected to the scaffolding structure.
33. If during the assembly of the scaffolding traffic has been closed or obstructed (with permission from an appropriate local authority), a barrier and a red-colored sign with an inscription warning about the closure or obstruction should be placed at the location of the closure or obstruction, and at night a red light should be installed on the barrier.
34. It is not permissible to erect, dismantle or use scaffolds in the vicinity of overhead power lines if the distance of the scaffolding from the outer cables of the power line is less than:

- 3 m for lines with rated voltage not exceeding 1kV;
- 5 m for lines with rated voltage exceeding 1 kV, but not exceeding 15kV;
- 10 m for lines with rated voltage exceeding 15 kV, but not exceeding 30kV;
- 15 m for lines with rated voltage exceeding 30 kV, but not exceeding 110kV;
- 30 m for lines with rated voltage exceeding 110 kV.

If the scaffolding is erected or dismantled underneath overhead electrical networks or at distances smaller than listed above, the power must be switched off during the assembly work.

35. The scaffolding structure should be equipped with lightning protection devices, in accordance with PN-M-47900-2: 1996 "Metal standing working scaffolds. Tubular bricklayer's scaffolds".
36. The use of the scaffolding is permissible after it has been accepted for use by a technical supervisor or an authorized person. During acceptance proceedings, the scaffolding must be inspected in accordance with item 7.3. of the standard PN-M-47900-2: 1996. of the should be confirmed with a report.
37. The plate indicating the admissible platform load should be affixed to the. The scaffolding platforms with materials beyond their carrying capacity, and the gathering of workers on platforms are forbidden.
38. For transporting materials, the scaffold can be equipped with hoists, in a form of booms mounted to the scaffolding. The booms can be constructed out of tubes attached with couplers to the scaffolding. The standard boom and pulley, offered by the manufacturer, can also be used. The maximum weight of the materials to be lifted can not exceed 150 kg. When using hoists with a higher lifting capacity, mounted to the scaffolding, structural analysis for such scaffolding must be carried out. The boom must be additionally anchored in at least two points. The distance between the booms should not exceed 30 m. The distance between the lifting axis and the outermost scaffold point in the lifting plane should not be greater than 0.5 m. The elevation difference between the pulley block attachment point and the platform level cannot be less than 1.6 m. For hoisting, it is recommended to use winches with fittings allowing for mounting on scaffolds. These devices should have approval certificates issued by the Office of Technical Inspection. The winches should be installed strictly according to the instructions provided by the winch manufacturer.
39. Each time, before using the scaffold, it is necessary to check if the structure is still correct and complete, and whether there are any environmental changes that might affect its safe use. In particular, it is important to check if the foundation hasn't been disturbed. The inspection should be carried out by the foreman using the scaffold.
40. Scaffolding inspection must be carried out: after strong winds, heavy precipitation, hail, lightning, and occurrences of other similar hazards, and after working breaks exceeding 10 days, but not less often than once a month. During inspections, check:

    - condition of the foundation on which the scaffold is seated,
    - condition of protective measures (guardrails, toe-boards),
    - condition of platforms (gaps between platforms, damage, manner of subjecting platforms to loads), ladder bays (fastening of ladders, correct way of opening and closing access hatches),

- method of securing top platforms and bracket-supported platforms against falling out,
- condition of swivel couplers,
- soundness of anchors,
- condition of winches and support structures,
- condition of lighting protection devices.

The inspection is to be conducted by the site manager or other authorized person. After each inspection, a note, or possibly an entry in the construction site logbook, should be made.

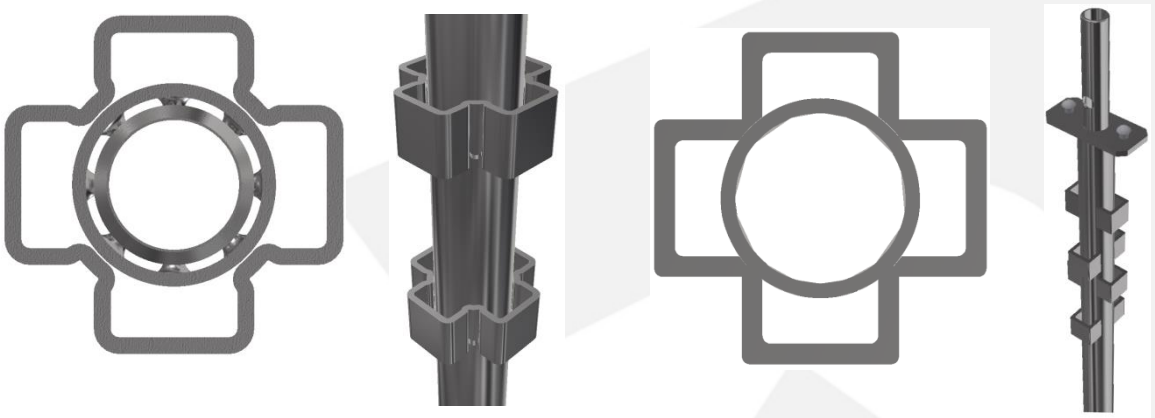
41. In winter, remove snow from the scaffolding before starting work
42. In order to protect people staying on the scaffold against the accident, one should have barriers from the girders at a height of 1m and 0.5m above the working platforms, and install 15cm high boards preventing the feet from slipping out of the scaffolding range. An alternative solution for the used girders serving as protective barriers can be used SKRV handrails. It is also important to protect the working platforms from being blown upwards.
43. The assembled scaffolding should be systematically inspected by specialized personnel to ensure that any damage is detected as soon as possible. Regularly check the tightening of the adjustable feet and the condition of the ground to prevent the scaffolding against the falling off.
44. Components of the scaffold should be inspected regularly to detect corrosion and visual inspection of welds by specialized personnel should be carried out in order to detect as soon as possible welding defects that can drastically reduce the strength of the scaffolding
45. Scaffolding elements on which welding defects and signs of damage or corrosion will be found must be strictly excluded from use and it is strictly forbidden to make any repairs on their own.
46. The elements can be repaired only by companies or personnel possessing the appropriate knowledge and qualifications as well as necessary equipment to perform repairs that will ensure that the elements recover 100% usability. It is forbidden to use elements of which the thickness of the components has decreased by more than 2% compared to the thickness of new elements due to corrosive factors.
47. It is forbidden to use long anchor switches in the passageways, including two scaffolding stands forming the communication area, so as not to limit the height of the clearance in accordance with PN EN 12811-1 point 5.3.

Elements with a weight above 30kg can be transported only by two people at the same time, and the maximum mass of transported elements can't exceed 50kg. It is forbidden to transport elements weighing more than 30kg by one person.

4.SCAFFOLDING ASSEMBLY

ASSEMBLY OF BASIC ELEMENTS OF MODULAR „STEELFOX”(SCAFFOLDING PARTIAL EXAMPLES).

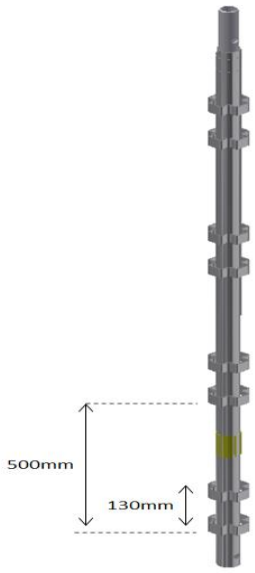
FACADE MODULAR “STEELFOX” SCAFFOLDING CONNECTION NODES

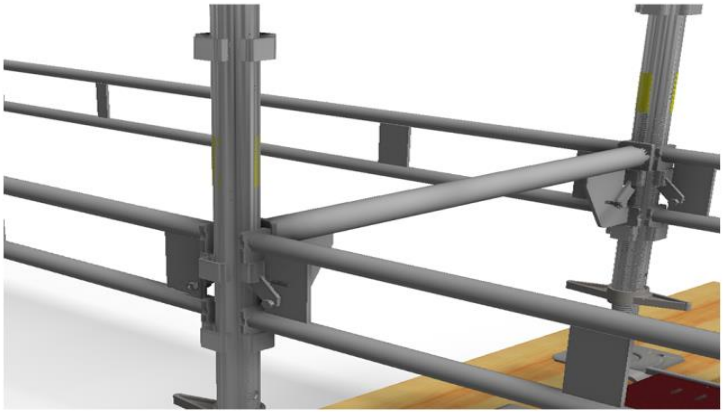


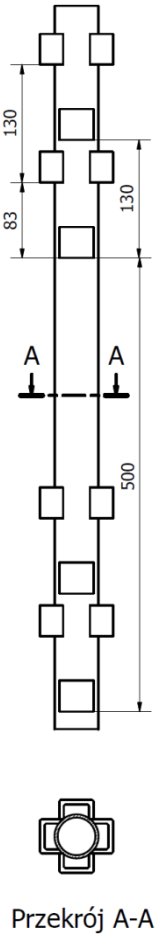
Modular STEELFOX scaffolding has three typical connection nodes;

- ✓ *In the Modular STEELFOX scaffolding system it is possible to distinguish two different types of stands that differ in the collecting node and the way of combining the stands. The collective nodes for the two above different configurations of racks are shown above in Figure 1.*
- ✓ *Version No. 1 stands of the STEELFOX modular scaffolding system visible on the left side of the Fig.1. it is characterized by a collective node built from a special profile that enables the assembly of the girders and handrails at the same level in 4 directions without the need for additional tools, eg a hammer, spanners etc. A complete collecting node consists of two "rosettes” 130mm apart and allows connection of basic system elements such as: racks, girders and handrails. The above joint was welded in a hole to the rack tube every 500mm thanks to which we can mount the scaffolding elements in an abrupt way and, consequently, we obtain an adjustable height of the working platform and the simple possibility of building auxiliary working surfaces.*

The elements are assembled by inserting the hooks into the "rosette" of the node and then locking the girders using the latch without the need for additional tools.

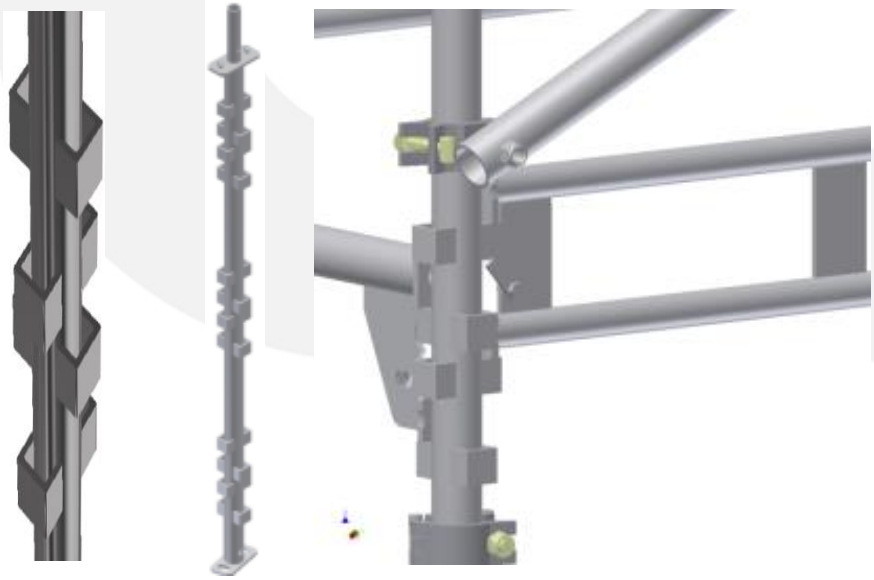




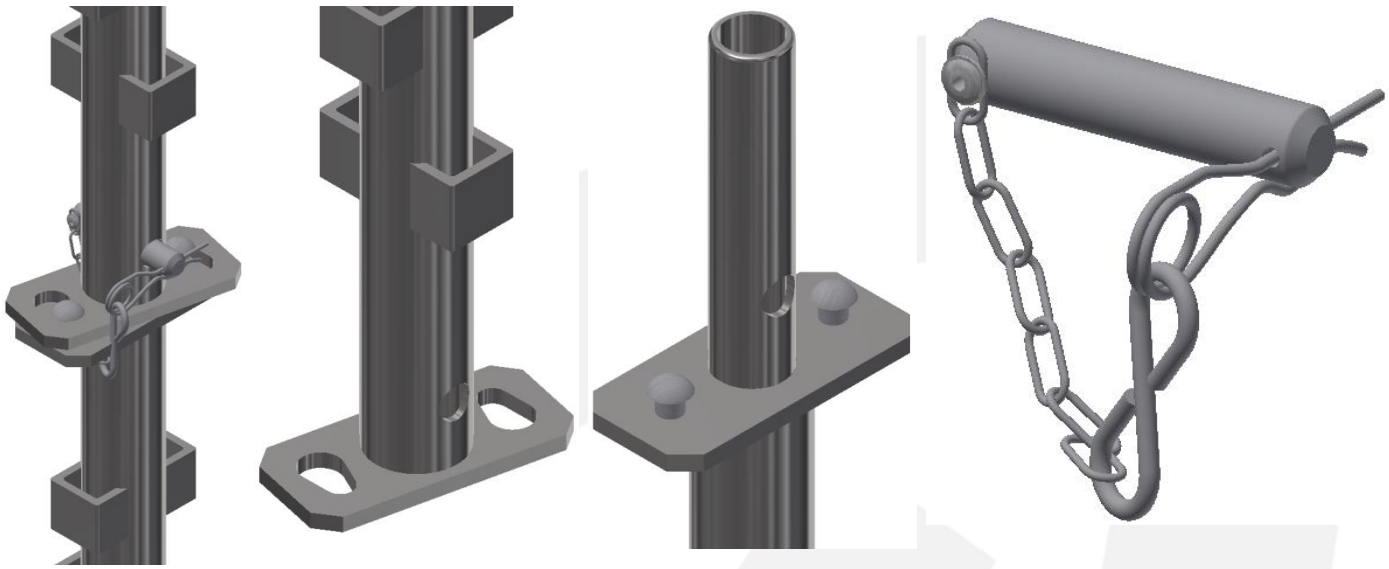


Przekrój A-A

- ✓ *Version No. 2 of the stands of the STEELFOX modular scaffolding system visible on the right side of Fig.1. is characterized by the collecting node which is made of a specially formed flat bar welded to the tube of 48.3mm against each other and the spacing similar to the version No. 1 at 130mm and the identical arrangement of "cassettes" shifted by 83mm and 90 degrees. The full connector allows you to connect the basic elements of the system: racks, girders and handrails. The above connector was welded to the stand tube every 500mm thanks to which we get the possibility of assembling the scaffolding elements in a stepwise manner and therefore we obtain an adjustable height of the working platform position and a simple possibility of building auxiliary working surfaces. Assembly of elements takes place by inserting the catches into the cassettes and then blocking girder latch.*



The additional unique feature of the above version of the stands is to have additional connecting plates whose insertion will allow free mounting of the scaffolding from top to the bottom. The above feature is very useful, eg on drilling platforms where there is often a need to build scaffolding below the main level.

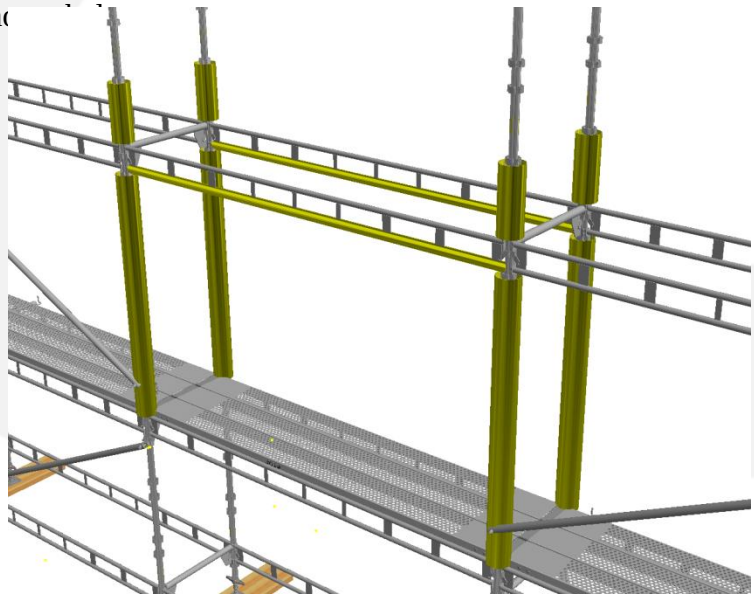


• The latch mounted in the supporting plates of the girders and the handrail protects the longitudinal elements against being pulled out.
• The hole 18mm in the bottle connecting the stands and in the external pipe 48.3mm, which allows them to be secured with a bolt steel set steel fi 16mm RNA-03000.4

ASSEMBLY GUIDELINES FOR INCREASED OPERATION SAFETY

During assembly, disassembly, and use of the scaffolding, it is required to use personal protective equipment.

For increased safety, some examples for personal protective equipment anchor points are given below.in order to protect against the fall. The minimum protective equipment that must have appropriate approvals is also sh

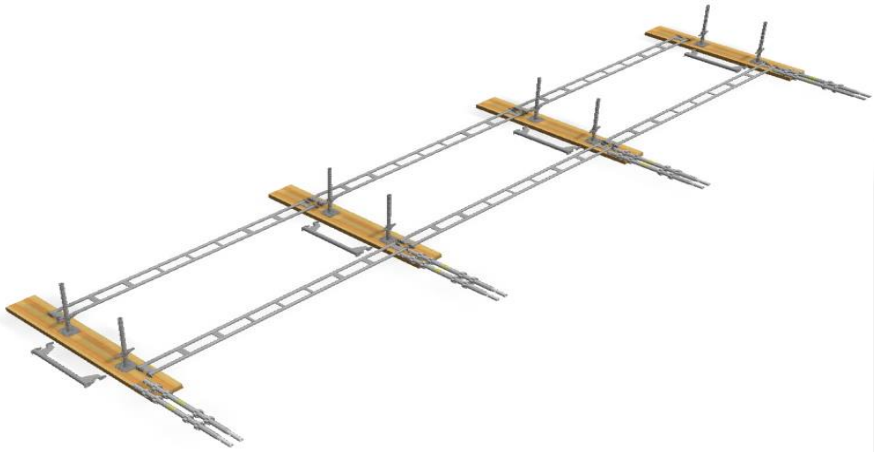


According to the above-mentioned drawing it is allowed to fasten the fall protection equipment in the area of the stands between the girders and on the girders tubes between the reinforcement plates. Alternatively, it is possible to attach the protection to a single girder tube with a maximum length of 1.96 m and on the last free stand, but only up to 30cm from the last girder. It is forbidden to use other attachment points than indicated in the above instructions.

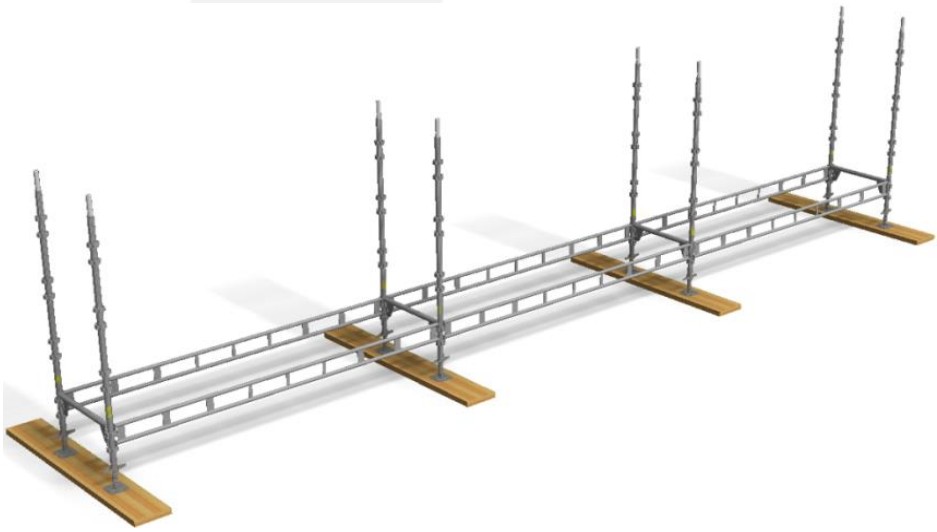
STEELFOX SCAFFOLDING ASSEMBLY IN THE FACADE CONFIGURATION

1.The assembly of the scaffolding should be started with laying wooden washers under the adjustable base [min. 2 bases on one washer] in the highest point of the ground at a distance corresponding to the future position of the racks and then the distribution of components of the future scaffolding such as bases, girders, stands, etc. The future spacing of the stands can be measured on the ground using scaffolding girders 1b.

Note: The scaffolding should be set in such a way that the distance between the scaffolding structure and the building façade does not exceed 0,2m.

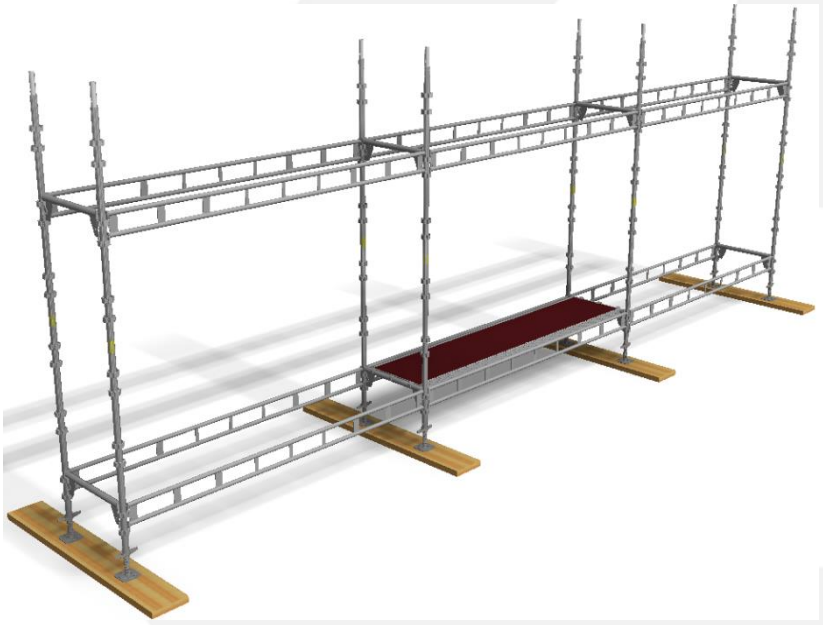


2. Put adjustable on the bases the adjustable stands and connect them with each other using girders, assembling them in the cassettes on the lowest level.
Note: The installation of stands on adjustable bases always starts from the highest point.



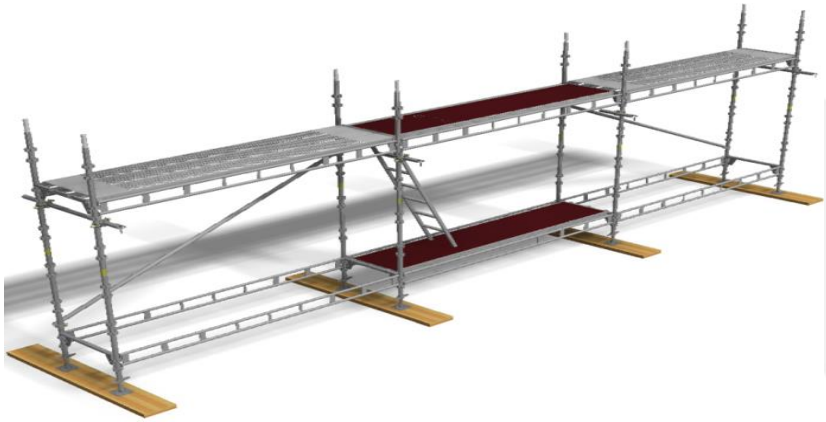
3.Secure the girder from falling out of the rack cassettes using the latch in the girder located on its both sides

4. Level the scaffolding with a spirit level by adjusting the nuts in the sockets. Correct leveling is very important because it facilitates further assembly.
5.Continue assembling the scaffolding along the wall duplicating activities from 1 to 4 with the area instructions.
6. When you finish the first level assembly and will make sure that the girders are properly leveled and secured, you can start assembling the platforms on the first level.
7. Begin the assembly from the next level of girders at a height of 2m by performing steps analogous to points 2-5.



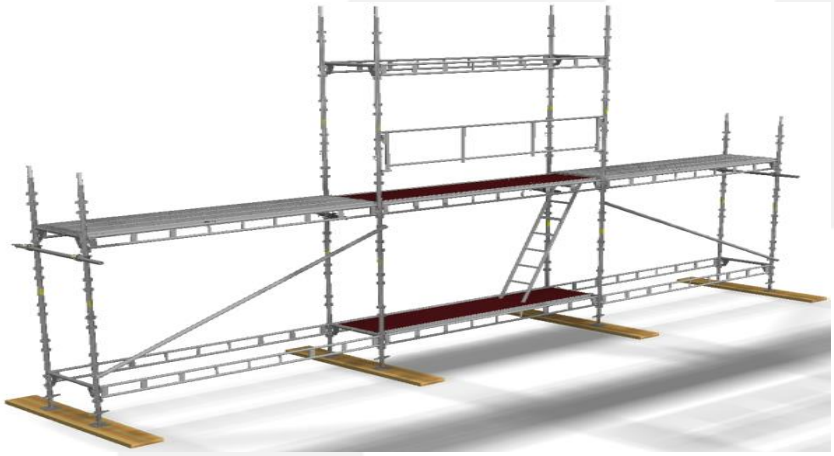
8. Put a pedestrian bridge into the communication field with a ladder to the girders.
9.Mount the scaffolding concentrations on each external field and every 4 scaffolding fields according to the concentration diagram from the above instructions.
10. After finishing of the new level assembly, start assembling the remaining platforms on the scaffolding.

11. Anchor the scaffolding to the wall according to the rules described in the "General principles of scaffolding assembly" .



12. Installation of the next storey should be started from the application of racks, SKRV handrails and girders in the communication vertical, being equipped with personal protective equipment to prevent against the falling from a height.

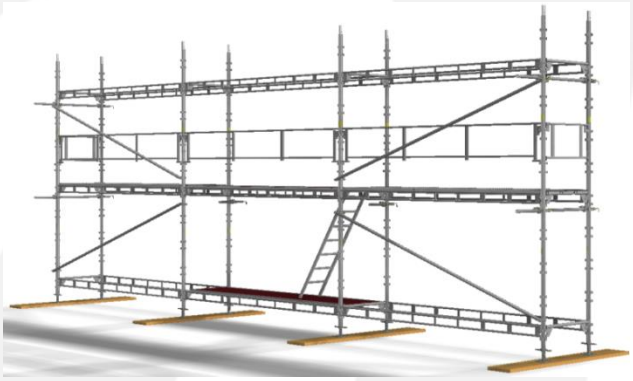
Note: You can also use single girders at the height of 0.5 m and 1.0 m instead of SKRV handrails. Remember to secure the barriers within the latch.



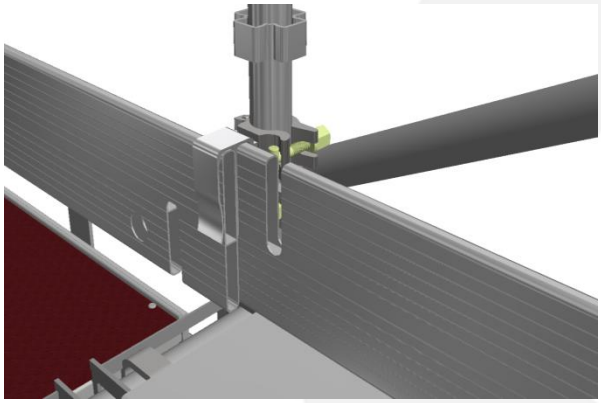
13. Protect the stands of the "STEELFOX" system by fixing in the holes fi 18 mm the steel bolts set and fi 16mm RNA-03000.4.

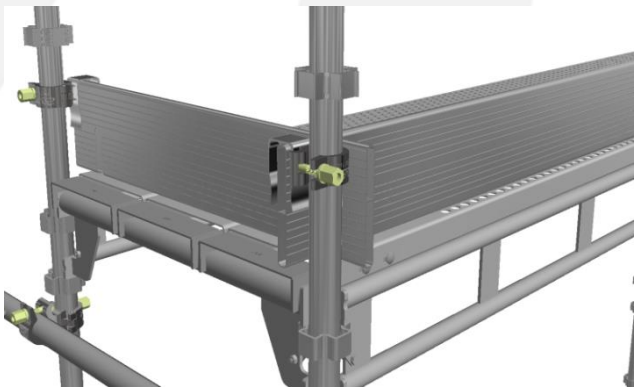
14. Starting from the communication section, assembly the stands in both directions, and then install the single handrails in the stand cassettes at the height of 0.5 and 1.0 m from the height of the platforms.
    Note:
    a) You can also use SKRV handrails instead of the individual girders as in the point 12.
    b) Remember to secure the barriers with the latch.
    c) Remember about mounting the pins from RNA-03000.4 in all racks in order to protect them.
15. Starting from the communication section, mount the girders in the two directions at a height of 2.0 from the height of the last bridges, remembering to secure the catch.

16. Secure the work area with the use of SKRV handrails or EB, TB beams at both opposite ends of the scaffolding.

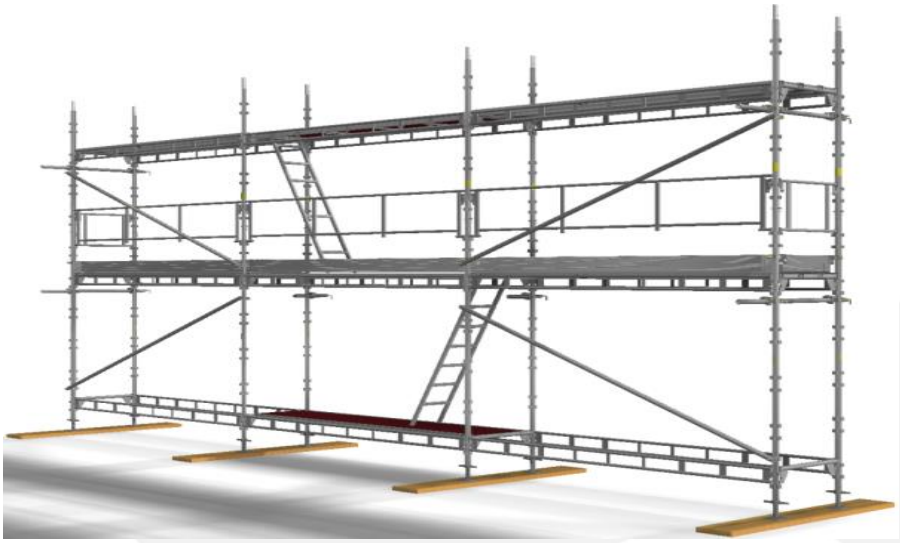


17. All scaffolding levels from 2 m should be secured by installing protective shields and their protection by preventing against slipping of the leg outside the working platform.

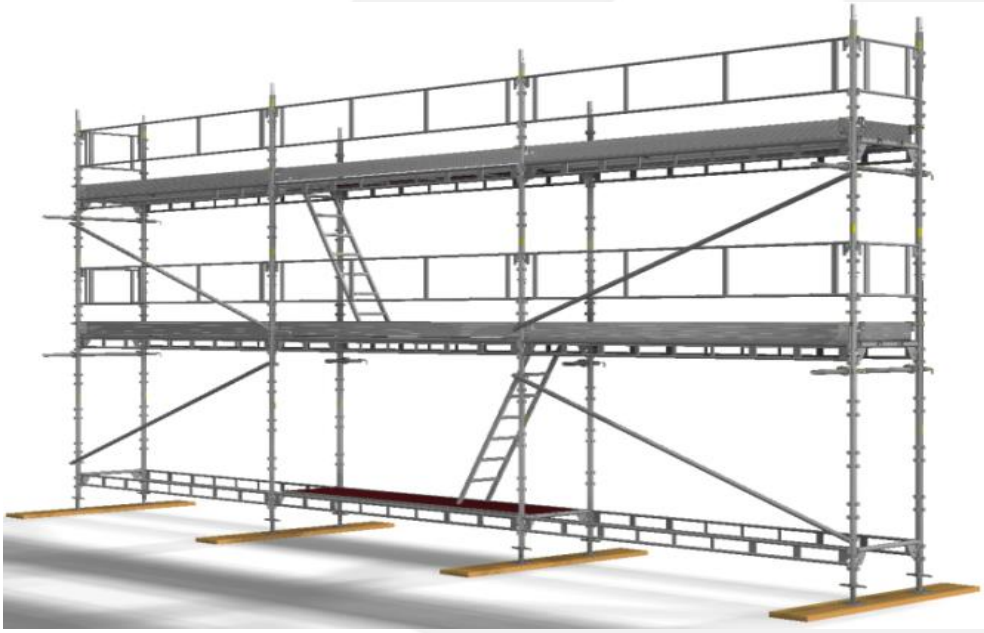




18. Attach the platforms on the 2nd level of the scaffolding to the girders.
    Note: Transition platforms with a ladder are arranged alternately in the communication vertical. The damper has protection against opening. The flap can be opened only when passing between the scaffolding floors. After entering or leaving the platform, the flap must be closed.
19. Anchor the second scaffolding level to the wall, following the rules described in the section "General rules for scaffolding assembly"



20. For the construction of the subsequent levels of the scaffolding, the steps from the previous points above the instructions should be reproduced.
21. When installing the last scaffolding level it should be supplemented within the protective barriers so that the girders or handrails can protect the employee at the height of 0.5 m to 1,0 m above the platform surface. The assembly should be started analogously from the placement of the racks from the communication section.
22. Mount into the stand cassettes with SKRV handrails or single girders in analogy to the point 12,14,15,16.
23. Secure the scaffolding using the sideboards in the same way in point 17.
24. Before using the scaffolding, it is necessary to check its proper assembly, in particular anchoring, bracing and blocking the protections. The scaffolding is dismantled in reverse order



Note: When installing the scaffolding, the following rules must be observed:

- Every consecutive level of the scaffolding requires leveling with the use of a spirit level. Leveling should be carried out in the bays equipped with vertical braces. The leveling of the scaffolding is carried out by adjusting the position of the lower joint of the brace with respect to the vertical tube of the frame.
- Installation of the anchors should be carried out successively alongside the assembly of the entire scaffolding according to the anchor grid specified for the given configuration variant of the scaffolding.

Disassembly of the scaffolding is carried out in the reverse order.

LEVELING OF THE MODULAR STEELFOX SCAFFOLDING

The assembly of the scaffolding should always be carried out starting with the highest level, with the nuts on the base jacks fully lowered. Align the frames by appropriately rotating the nuts on the base jacks. In the case of soil foundation, wooden sole boards must be used under the base plates, to spread the load throughout a larger surface area. Using sole boards is also recommended when erecting the scaffolding on a construction foundation. At least two base jacks should be placed on one wooden sole board. If the unevenness of the ground is significant, compensating frames of heights of 0.6m, 1m, or 1.5m should be used. If the slope of the terrain the scaffolding is to be erected on exceeds 10º, swivel base plates should be used and the scaffolding should be reinforced with tubes affixed to it with couplers. The tubes should be mounted 20cm above the ground surface, parallel to the slope.

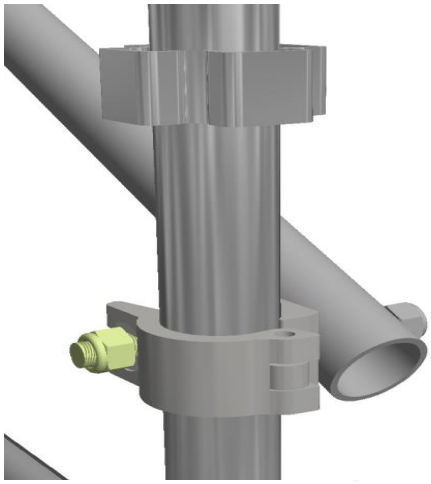
BRACING OF THE MODULAR STEELFOX SCAFFOLDING

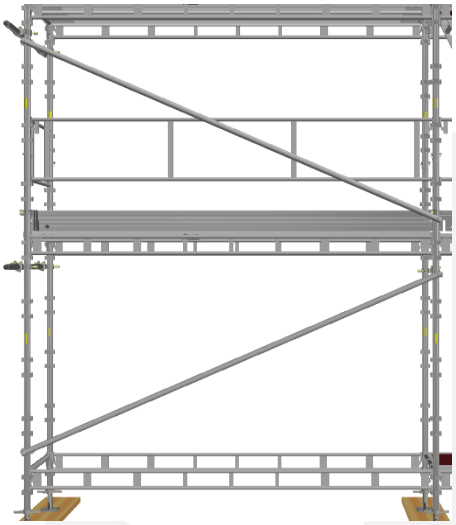
The brace system of the scaffolding should ensure full stability of the structure, providing it with kinetic stability under external forces. The lowest node of the bracing should be located right above the ground.

The diagonal braces should be placed symmetrically, and the number of the braces should not be lower than 2 per every lift of the scaffolding. The distance between the brace-equipped bays should not be greater than 10 m (for bays of length 3.05 m, braces may be located every fourth bay, at a maximum, while for bays of length 2 m – every fifth bay).

Braces should be duplicated in the opposite direction every 2m in vertical scaffolding. Oblique braces are equipped with connectors for 48.3 mm pipes, by means of which they are mounted to the stands. An alternative solution in relation to DSLB braces are 48.3x.23 pipes

and rotary joints for pipes of 48.3 according to EN 74-1. In addition, horizontal braces should be fixed horizontally every 10 m vertically. Examples of scaffolding braces can be found in chapter 9 entitled assembly diagrams.





RULES FOR THE ANCHORING MODULAR STEELFOX SCAFFOLDING

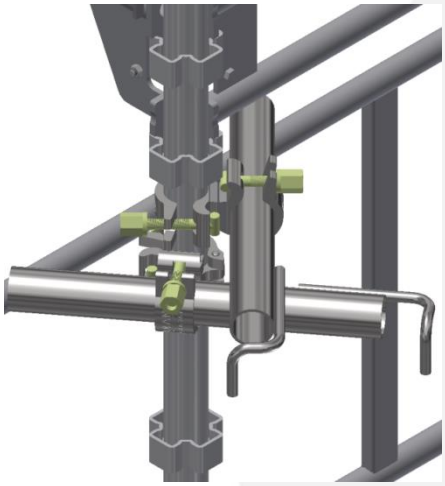
The anchoring of the modular scaffolding should be carried out by means of anchor connectors, attached to facade frame tubes inside the openings of the gusset plates with right-angle or swivel couplers. The hooks of the anchor connectors should be attached to the eyes of the anchor bolts installed in the wall of the building. The hooks of the anchor connectors should be positioned in such a way that only horizontal forces are transmitted, since anchor connectors cannot transmit vertical forces. It is allowed to use either short anchor connectors (e.g. 0.4 m long), fastened to the inner frame standards, or long ones (e.g. 1.3 m long), fastened to both frame standards, depending on the scaffolding configuration (e.g. presence of additional elements, such as brackets, passage frames, scaffold covering, e.g. with nets).

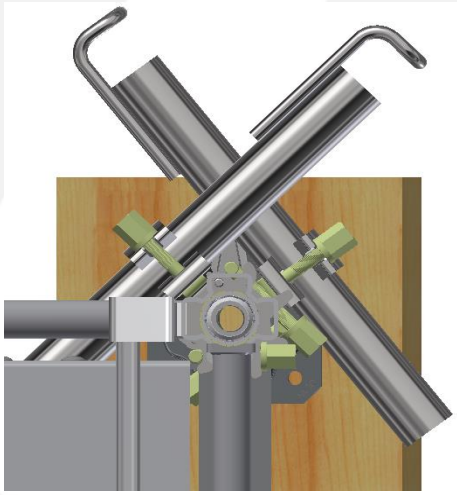
Note: It is forbidden to use long anchor connectors in the passageways, including two scaffolding stands forming the communication area, so as not to limit the height of the clearance in accordance with PN EN 12811-1 point 5.3.

- The following are some basic rules for anchoring a scaffold:
  ¬ start anchoring from 2 m on the second level using anchor connectors and normal joints
- anchorages should be placed symmetrically on the entire scaffolding in each field, and the distance between anchors horizontally should not exceed 4m. (for dimensions 1.96 m and 1.65 m, anchor every other field),
- the distance between the rows of vertical anchorages should not exceed 4 m (anchor every other level), in the case when anchors are made, every second anchor scaffolding field in rows should be offset horizontally in relation to each other,
- It should be remembered that external scaffolding stands must be anchored every 2 m vertically and each row of anchors should end at the edge of the scaffolding,
- in the fields where there are traffic routes, additionally anchor the field on both sides in a given row of anchors,
- it is permissible to make anchoring 10 cm below or above the collecting node in which the girders are installed in both directions.

In the case of scaffolds with additional elements, such as tarpaulin or mesh screens, scaffolds with fitted archway girders, passage frames and protective fans, additional anchoring to the building wall is required For scaffolds with the bracket attached on the inner side of the scaffolding, when anchoring the scaffold by means of one connector to the internal standard, 20% of the total number of ties should be made as double ties.

These ties should be evenly distributed over the entire surface, while maintaining the principle of fitting a minimum of two ties in V-configuration at each anchored level.





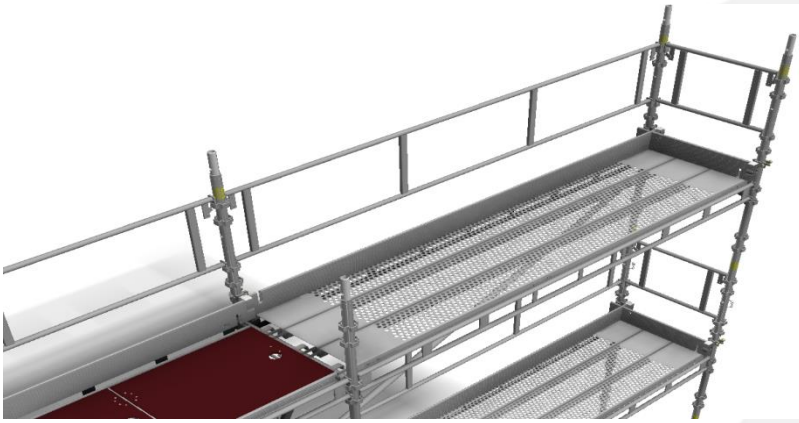
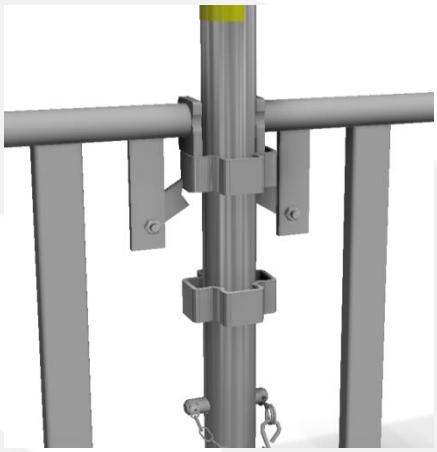
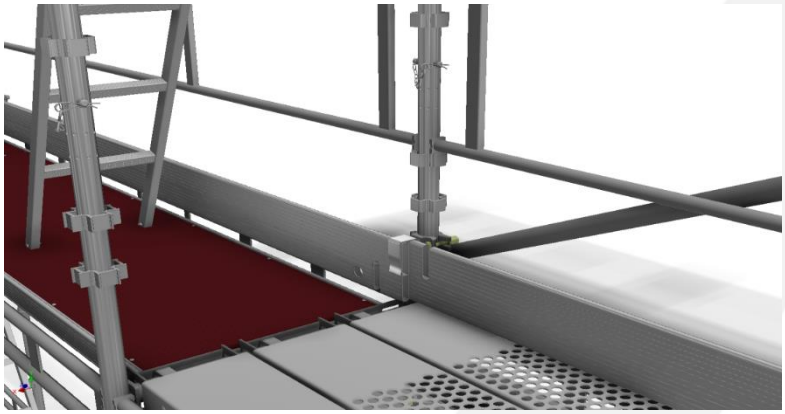
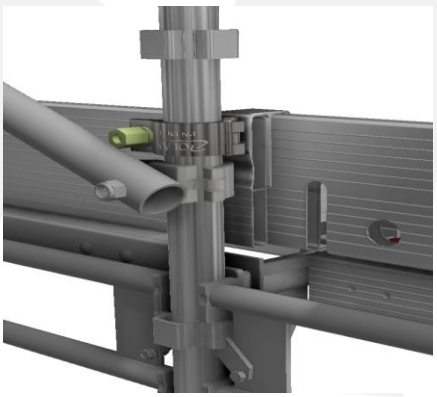
SIDE PROTECTION OF MODULAR STEELFOX SCAFFOLDING

Modular scaffolding type "STEELFOX" has the following side protection:

- SKRV handrails;
- Single girders;
- Double girders;
- Toe-Boards;

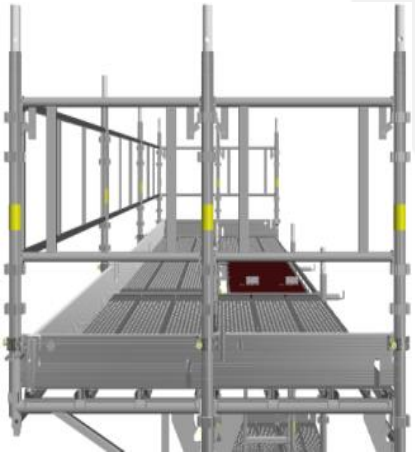
Each bay that is equipped with working platforms should be protected with toe-boards, the upper edge of which must be located at least 150 mm above the platform level.

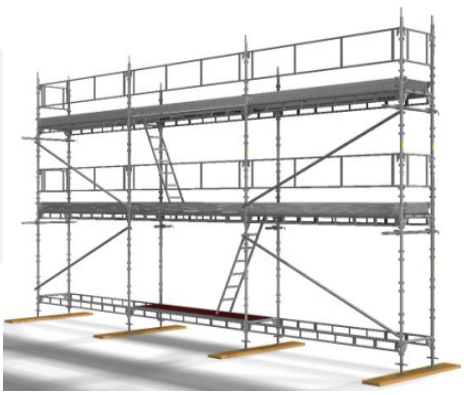
Guardrails should be inserted into facade frame sockets, and then secured by driving wedges. If the distance between the work platforms and the wall is more than 0.2 m, a full set of protective measures must be used on the inner side of the scaffold. The wall-side toe-boards should be assembled from 150mm x 30mm boards, mounted with toe-board hooks, or by using ALUFOX system toe-boards, and 200-400mm overhangs beyond the span of the bay should be kept.

PROTECTION OF THE MODULAR STEELFOX SCAFFOLDING

Terminal frames of the scaffold should be protected within SKRV handrails of the working at on both opposite ends of the working area of the scaffolding. The handrail is fixed by inserting the ends of the handrails into the cassette and then securing by the latch.





STANDARD WAY OF MOVING BETWEEN THE LEVELS OF MODULAR STEELFOX SCAFFOLDING

For the purpose of movement of persons between the scaffolding levels, typically access bays equipped with ladders are used, but there is also a possibility of using a staircase, for better work ergonomics.
Note: It is absolutely crucial that the hatch is closed after each passage between the scaffolding levels, to prevent a person falling into the platform opening

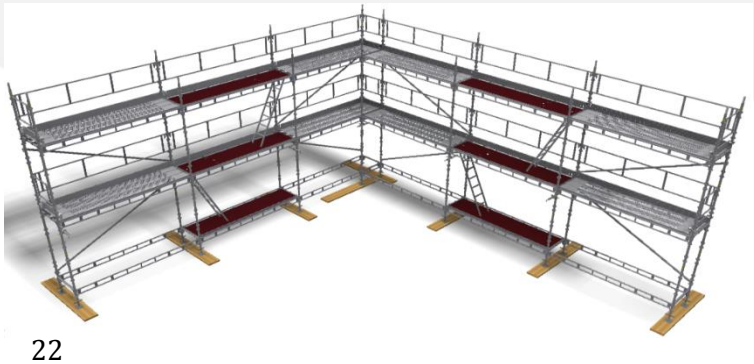
.

STEELFOX MODULE SCAFFOLDING PROTECTION ROOF

While carrying out of construction and renovation works along municipal walkways it is necessary to make safe communication route for pedestrians. from protection against falling elements from scaffolding for this purpose, use a protection roof which is mounted on the console. An example of such solutions are shown next on the sketch. Canopies can be additionally separated within balustrades (handrails and sideboards) from the entire scaffolding, as they do not constitute the working area and are also it is prohibited to collecting materials on them.

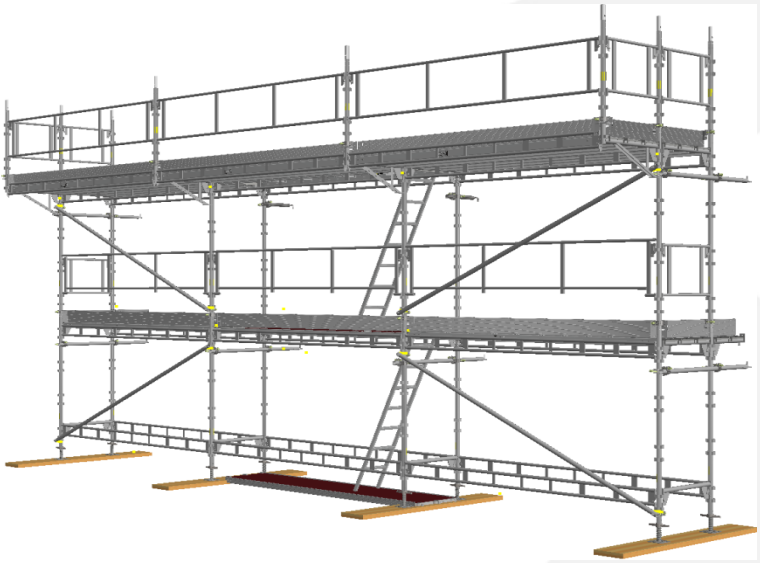
CORNER CONNECTIONS OF MODULAR STEELFOX SCAFFOLDING

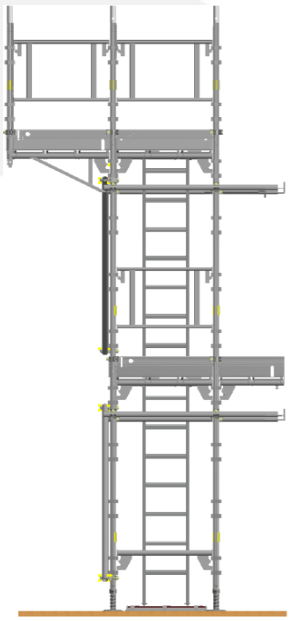
Thanks to the unique STEELFOX node in the stands that allows you to build the scaffolding in 4 directions at the same time the construction of the corner is very simple, it is enough to connect the scaffolding racks with girders. The following is an example of the most-built scaffolding corner



ZWIĘKSZENIE OBSZARU ROBOCZEGO RUSZTOWANIA MODUŁOWEGO STEELFOX

In situations when it is necessary to enlarge the working area, should be mounted consoles 0.7m: 0.5m: 0.36m and 0.24m are mounted in the rack "cassettes". When using 0.7m brackets, it must be supported with a fi8,48,3x3 and rotary connectors.

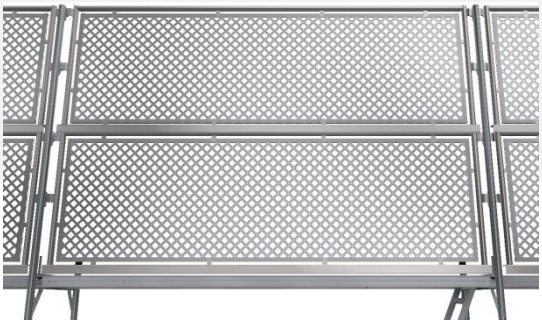




The load of the working area increased by the use of consoles may not exceed the permissible loads for the main platform. The 0.7m bracket can be mounted on the last floor space on the outside of the scaffolding or any floor provided an additional anchorage to the wall of the field with mounted bracket and a field above and below.

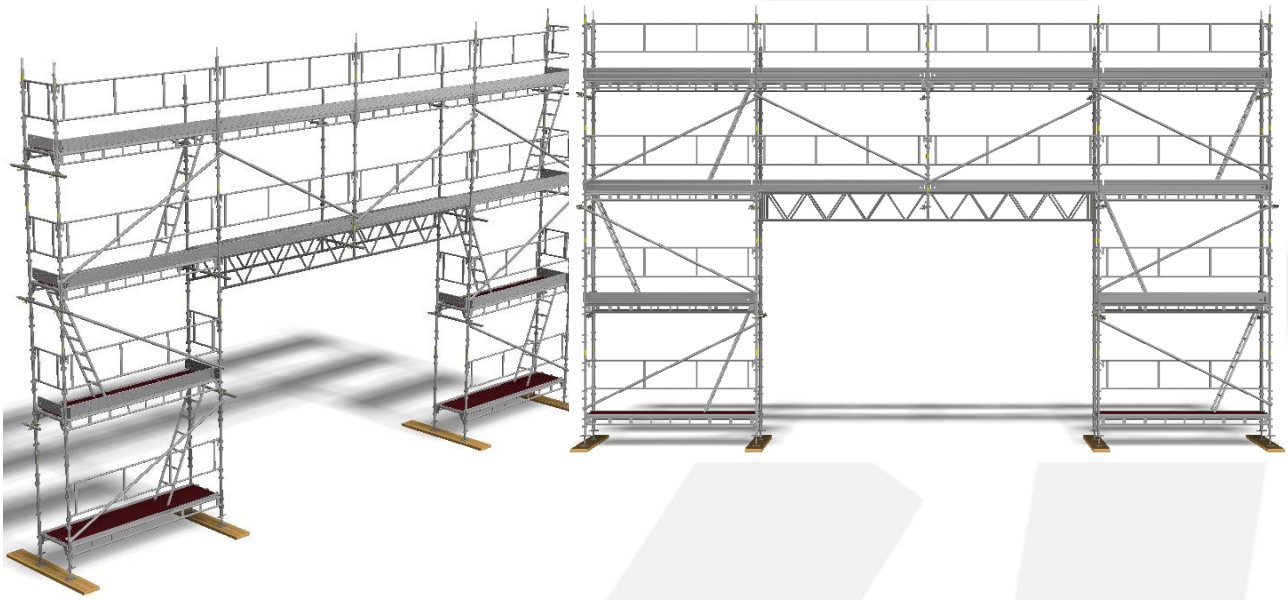
PROTECTION IN CASE OF ROOF WORK FOR STEELFOX MODULE SCAFFOLDING

In order to protect works carried out on the roof of the building, mesh covers should be installed on the upper level of the scaffolding in the stand cassettes. In this case, longitudinal curbs are not used in places of use of mesh screens because the mesh guards protect the scaffolding working area.

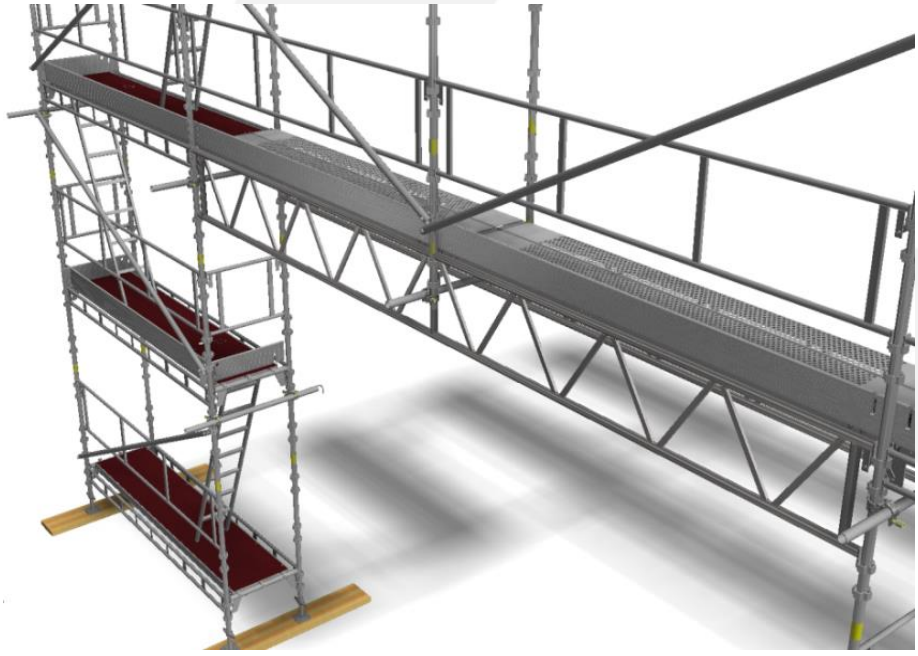


GATE CROSSING FOR STEELFOX MODULE SCAFFOLDING.

Often it happens that it is necessary to make crossing trips inside the buildings during renovation. The solution of the problem is presented in the sketches below. The sketch does not show the protective roof required for making journeys. The scaffolding must be anchored at the level of platforms located below and above the protection canopy.

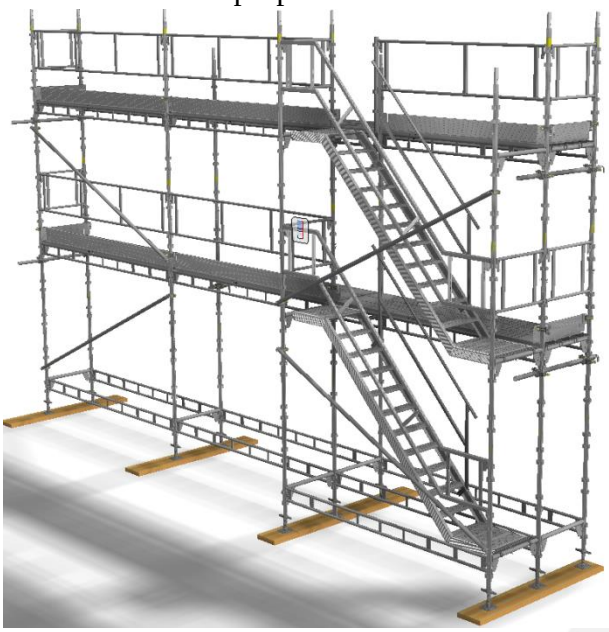


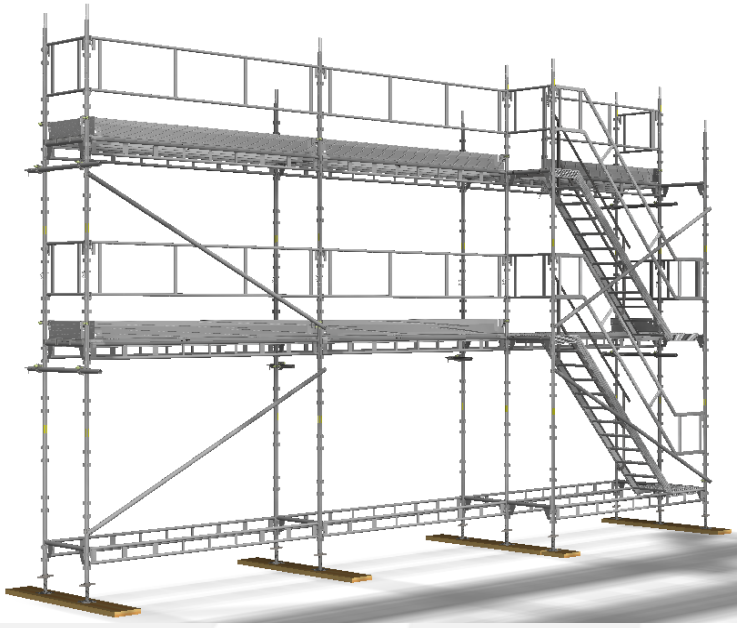
In order to make a movement under the scaffolding according to the enclosed drawing, it is necessary to use FBB 6050 lattice girders, which are designed to transfer loads from the scaffolding resting on them. The assembly of the structure should be started by attaching the girders to the neighboring stands. The space between the cranes should be joined with a crane and platforms with a length of 2.50 m or 3.05 m depending on the applied girder. When mounting a passage under scaffolding with the FBB beam, it can't be replaced by more than two scaffolding areas. In order to reinforce the construction of the scaffolding all the fields above the passage must be additionally braced and additional anchors must be applied to each stand on which the passage has been built.



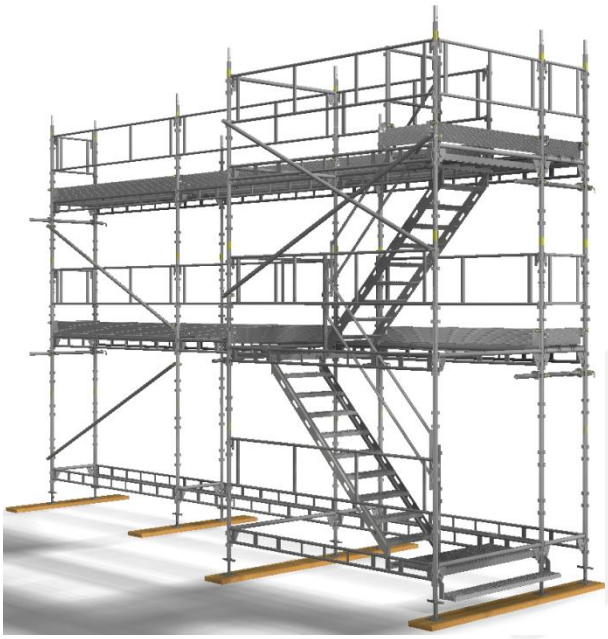
EXTERNAL STEELFOX MODULE SCAFFOLD STAIRCASE

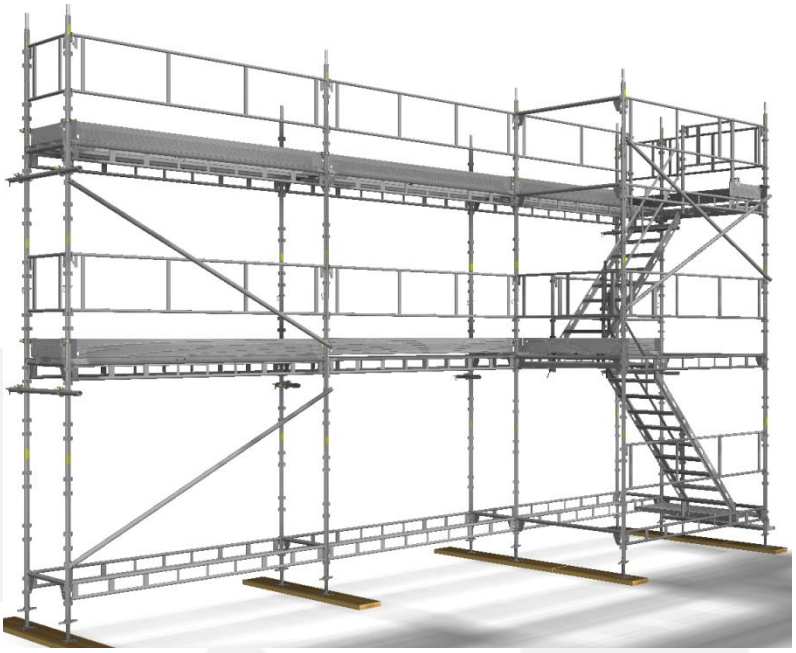
In order to ensure comfortable communication between the levels on the scaffolding, external staircases are installed. Typically to the external staircase is installed in a field of 3.05 m or 2.5 m according to one of the two diagrams shown. The staircase should be equipped with internal and external stair handrails and SKRV handrails to secure the working area. In areas where staircases have been assembled, anchors and braces should be additionally attached in order to ensure proper stiffness of the structure.

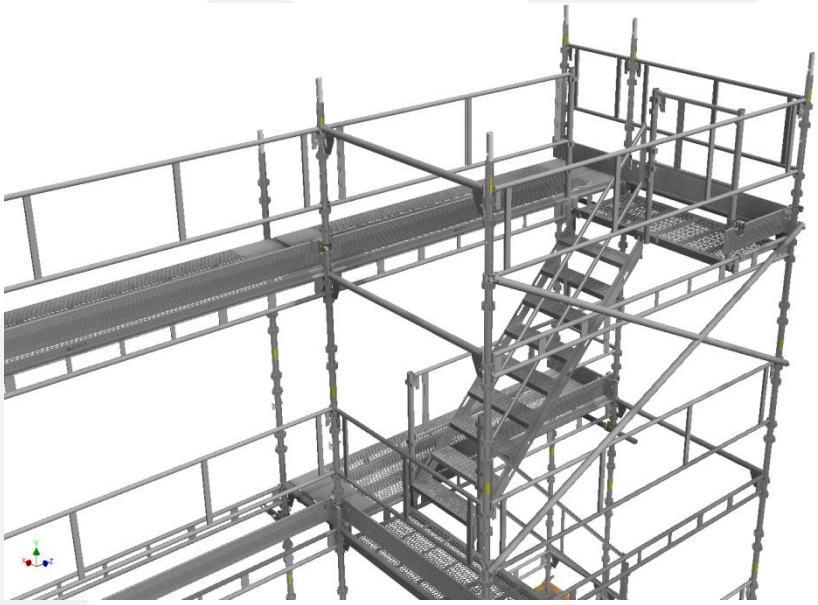


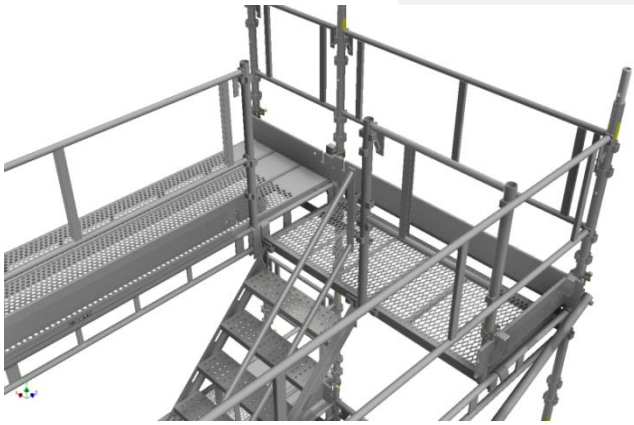


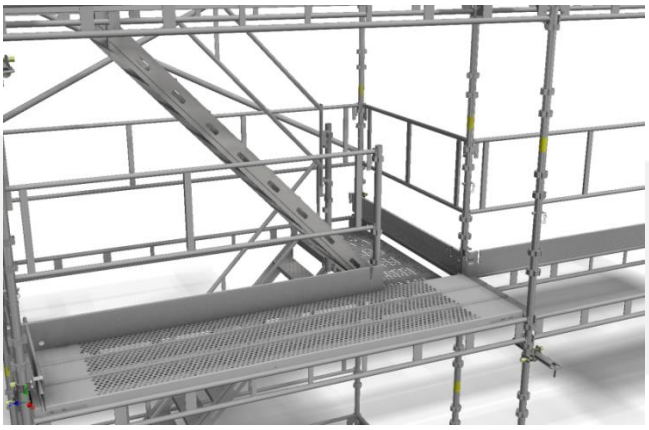
Below is was shown the second way of mounting the staircase of an external scaffolding on an additional field with dimensions of 3.05x1.65 m using "Landing" platforms and stairs driven in both directions.











TRANSPORT OF MATERIALS FOR MODULAR STEELFOX SCAFFOLDING

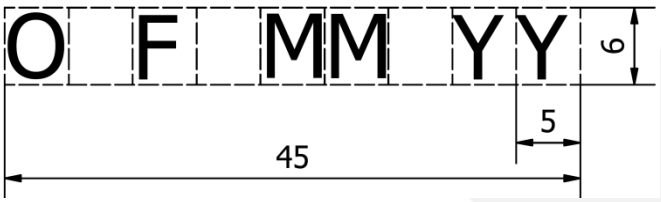
For transporting materials weighing no more than 150 kg, install scaffold hoist booms at designated locations, by attaching them to the scaffolding with couplers. The structure should be capable of carrying vertical static loads equal to 1.4 of the nominal load, and the horizontal loads caused by rope tension. The position of the winch, or of the man pulling the rope passing through the pulley block, should be at a minimum distance of 4.0m from the vertical axis of the pulley. At the hoist mounting locations, the scaffold should be additionally anchored to the wall in at least two points. The spacing between the hoists should not exceed 30m, and the distance from the hoist to the closer end of the scaffold – 15m. The height difference between the pulley block attachment point and the platform level cannot be greater than 1.6 m. At the material hoisting locations, the middle guardrails should be spread apart to allow the transfer of the load onto the platform, but not more than by 0.74 m.

NON-STANDARD CONFIGURATIONS OF THE MODULAR STEELFOX SCAFFOLDING SETTINGS

In the case of non-standard configurations of the scaffolding, additional structural analysis is required, to determine the safety of the structure. At customer's request, Olan Sp. z o.o. can commission an external design office to perform such structural analysis, at additional cost. It is the responsibility of the user to perform structural analysis for non-standard configurations of the scaffolding.

5.LABELING SYSTEM FOR MODULAR STEELFOX SCAFFOLDING

For the purposes of identification during use, OLAN Sp. z o.o. permanently marks all manufactured products [by 0.7mm-deep stamping], and, additionally, manufacturer's or customer's labels are affixed to the products, according to individual agreements. The marking scheme is shown below.



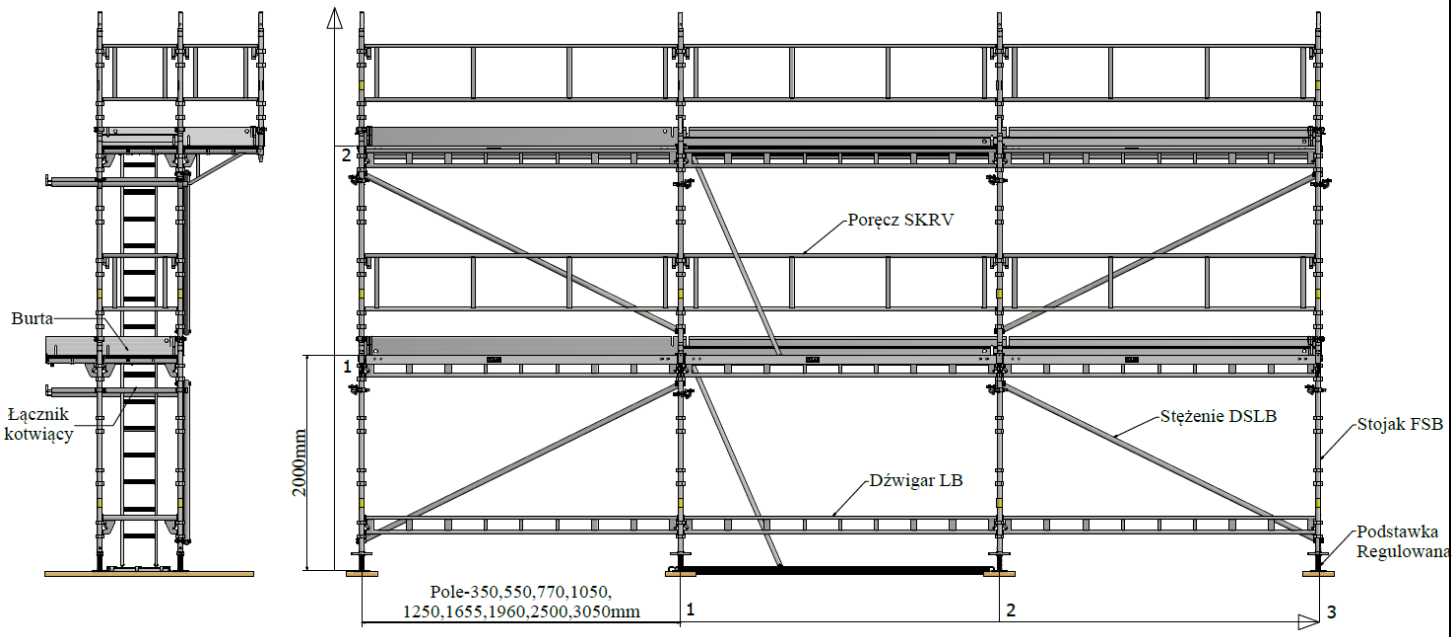
„O" – manufacturer's identification: OLAN Sp. z o.o. in Żabokliki

„F+" – – marking for the MODULAR STEELFOX scaffolding system

„MM" – month number

„YY" – last two digits of the calendar year

6.LOADS AND CARRYING CAPACITIES



	The load equally distributed		Load focused on the surface 500x500mm		Load focused on the surface 200 mm x 200		Partial load on the surface		Surface factor
Class	kN/m^2	(kg/m^2)	kN	(kg)	kN	(kg)	kN/m^2	(kg/m^2)	m 2
1	0.75	(75)	1.50	(150)	1.0	(100)	Impermissible		
2	1.50	(150)	1.50	(150)	1.0	(100)	Impermissible		
3	2.00	(200)	1.50	(150)	1.0	(100)	Impermissible		
4	3.00	(300)	3.00	(300)	1.0	(100)	5.00	(500)	0.4
5	4.50	(450)	3.00	(300)	1.0	(100)	7.50	(750)	0.4
6	6.0	(600)	3.00	(300)	1.0	(100)	10.00	(1 000)	0.5

The table below shows the maximum permissible work loads created by working people, materials and tools for each scaffolding suspension for different classes. The table shows the permissible loads for racks, girders and platforms.

Scaffolding class	Allowed working load kN/m^2 (Kg/m^2)					
	Floor		Stands and girders		Platforms on the supports	
3	2.00	(200)	1.50	(150)	2.00	(200)
5	4.50	(450)	3.75	(375)	2.00	(200)

Note: The sum of the loads from all platforms in a particuliar vertical scaffolding can not exceed the total product of the suspended platforms in one field with the maximum load according to the bridge class. This load can be evenly distributed on one level in a given vertical or divided into several storeys. It should be remembered that simultaneous execution of works at various levels of the scaffolding is permissible only on the condition that the spaces between workplaces are maintained. A safe distance of at least 5 m horizontally and at least one airtight bridge, not counting the platform on which works are carried out. It is also important to ensure a minimum of 20cm of passage in the communication path in which the material will be placed.

The table below shows the change in the allowed load of scaffold working surfaces depending on the height change between the installed platforms.

Height between scaffolding levels	Permissible working load	
	kN/m^2	(Kg/m^2)
2.0m	20	(2 000)
2.5m	12.8	(1 280)
3.0m	8.9	(890)

The maximum permissible load 20kN (2000kg) is allowed for the platforms located at a height of 2.0m or lower. For the bridges at bigger height, the permissible load drops and the results are shown in the table above.

The width of the scaffolding depends from the type of work carried out on the scaffolding. The table shows the floor dimensions for different working widths. The working width is based on the space requirement for materials and transport.

Type of surface application.	Recommended width of the working field	Type of element	
		Girders	Platforms
A small amount of materials to store in a short time and no transport	0,7m	EB 0.7 TB 0.7	3x0.23m 4x0.17m 1x0.63m 0,23x0,72m 0,17x0,72m
transport or storage of materials	1.2m	EB 1.2 TB 1.2	5x0.23m 10x0.17m Double platform 0.5m Double platform 0.6m 1x0.63+2x0.17+1x0.23m 0,23x1,2m 0.17x1.2m
Both for transporting and storing materials	1.6m	EB 1.6 LB 1.6 TB 1.6	0,23x1,6m 0.17x1.6m 5x0.23m+2x0.17m

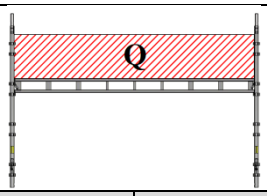
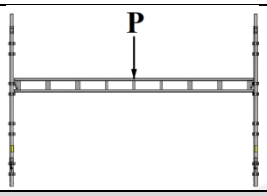
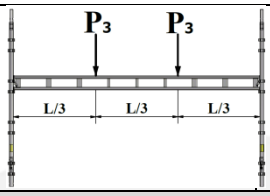
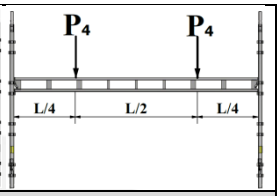
The operational charges occurring during the certain types of work are presented below.

Load class	Example of construction works	Uniformly distributed load q1 kN / m2
1	Inspection, checks, measurements	0,75
2	Works that do not require storage of building materials	1,50
3	Works on insulation, roofing, plastering	2,00
4	Depending on the weight of the materials: mural and stonework	3,00
5		4,50
6		6,00

The permissible loads of consoles are shown below.

Name	SK 0,245	SK 0,36	SK 0,47	SK 0,5	SK 0,7
Console SK	Kl.6 $6KN/m^2$	Kl.5 $4,5KN/m^2$	Kl.4 $3KN/m^2$	Kl.3 $2KN/m^2$	Kl.3 $2KN/m^2$

The table below shows the permitted loads of girders in typical force cases.

Method of load					
Girder	q [kN/m]	Q [kN]	Load focused in the middle of th]	Point focused load	
				P_3 [kN]	P_4 [kN]
Double girders LB					
LB 3,00	4,7	14,1	7,1	5,3	7,1
LB 2,50	6,3	15,8	7,5	5,8	7,5
LB 1,96	10,3	19,6	9,5	7,2	9,5
LB 1,65	14,6	23,4	10,3	8,5	10,3
Double girders TB					
TB 1,65	9,4	13,2	4,9	3,7	1,9
TB 1,25	12,5	14,9	5,1	4,3	5,1
TB 1,05	18,5	18,5	8,7	6,5	8,7
TB 0,77	23,9	16,7	9,3	6,9	9,3
Double EB girders					
EB 3,00	3,0	9,0	4,5	3,4	4,5
EB 2,50	3,8	9,3	4,7	3,5	4,7
EB 1,96	7,7	14,8	7,7	5,8	7,7
EB 1,65	21,7	26,0	10,0	7,5	10,0
EB 1,25	25,4	26,0	13,0	9,8	13,0
EB 1,05	26	26	13,0	9,8	13,0
EB 0,77	37,1	26	13,0	9,8	13,0
Transistory FBB girder					
FBB 6,05	2,93	17,7	12,3	-	-

The table below shows the permitted loads on the stands depending on the anchoring, the distance between the girders and the length of the stand.

Distance of scaffolding levels] [m]	Distance of scaffolding levels [m]	Permissible load on racks depending on the type [kN]		
		Stand 3,0	Stand 3,0	Stand 2,0
		The adjustable base will fill unscrewed	Adjustable base nut unscrewed for max 250mm	
1,5	1,5	36,8	40,3	30,5
	3,0	21,6	23,9	18,0
2,0	2	29,9	32,9	24,7
	4	16,8	18,7	14,0
2,5	2,5	21,6	23,7	17,7
	5	12,2	13,4	10,1
3,0	3	19,6	21,4	16,2
	6	8,9	9,9	7,5

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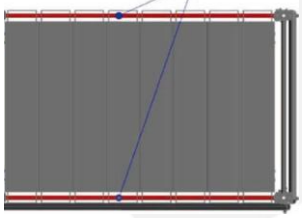
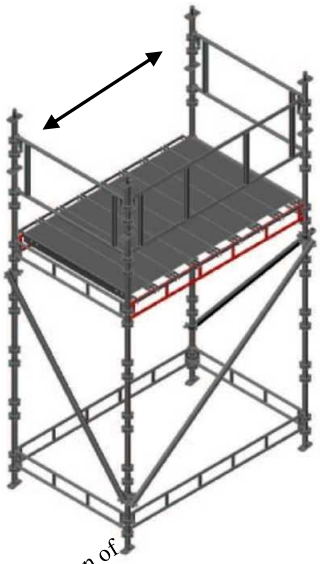
Permissible load of LB / TB girders depending from the size of the field and the direction of laying of the working platforms

	The length of the platform						
Kg/m^2	0,77m	1,05m	1,25m	1,65m	1,96m	2,5m	3,0m
LB 3,00	450	450	450	450	300	200	200
LB 2,50	450	450	450	450	450	300	300
LB 1,96	600	600	450	450	450	450	450
LB 1,65	600	600	600	450	450	450	450

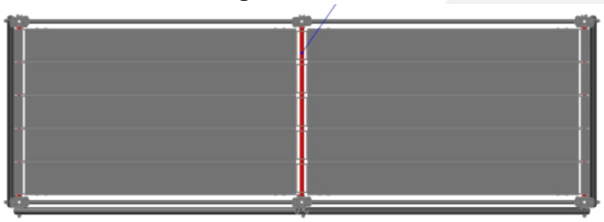
Loaded LB girders

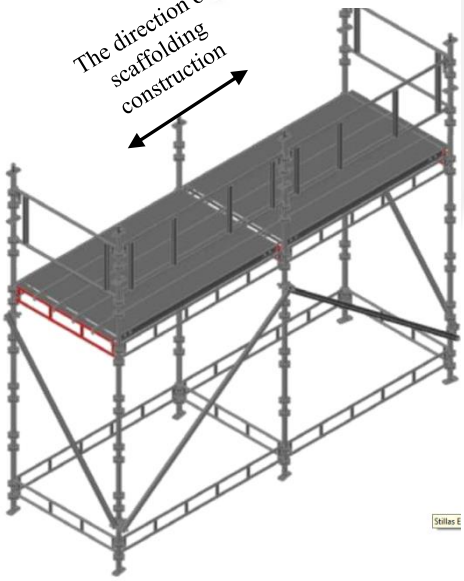




	The length of the platform						
Kg/m^2	0,77m	1,05m	1,25m	1,65m	1,96m	2,5m	3,0m
LB 3,00	450	450	450	200	200	200	200
LB 2,50	450	450	450	450	300	200	200
LB 1,96	600	450	450	450	450	450	300
LB 1,65	600	600	450	450	450	450	450
TB 1,65	600	600	600	450	450	450	300
TB 1,25	600	600	600	600	450	450	450
TB 1,05	600	600	600	600	450	450	450
TB 0,77	600	600	600	600	450	450	450

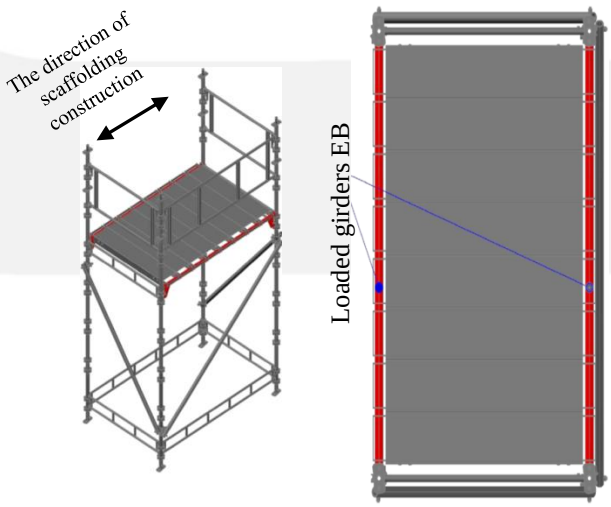
Loaded girders LB/TB



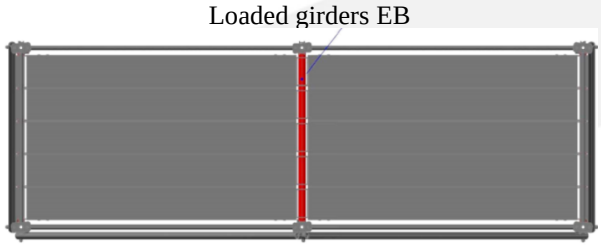


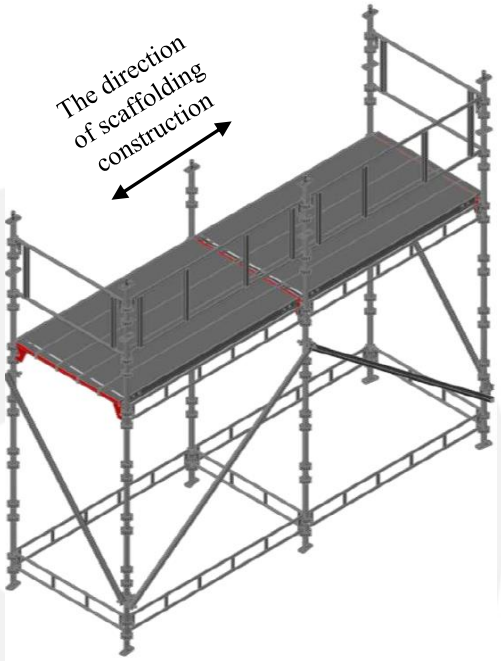
Permissible load of single girders EB of STEEL-FOX system depending from the size of field and direction of laying of the working platforms

	The length of the platform						
Kg/m^2	0,77m	1,05m	1,25m	1,65m	1,96m	2,5m	3,0m
EB 3,00	300	300	300	200	-	-	-
EB 2,50	300	300	300	200	150	-	-
EB 1,96	600	600	600	450	200	150	-
EB 1,65	600	600	600	600	450	450	300
EB 1,25	600	600	600	600	450	450	450
EB 1,05	600	600	600	600	450	450	450
EB 0,77	600	600	600	600	450	450	450



	The length of the platform						
Kg/m^2	0,77m	1,05m	1,25m	1,65m	1,96m	2,5m	3,0m
EB 3,00	300	150	150	-	-	-	-
EB 2,50	450	200	150	-	-	-	-
EB 1,96	450	300	200	150	-	-	-
EB 1,65	450	450	200	200	150	200	150
EB 1,25	450	450	450	300	300	150	200
EB 1,05	450	450	450	450	450	300	200
EB 0,77	450	450	450	450	450	450	300





Maximum loads of platforms and bases in the spatial structure of the scaffolding.

Load of platforms according to EN 12811							
Type of platform	3,05m	2,50m	1,96m	1,65m	1,25m	1,05m	0,77m
Aluminium Platform 0,23/0,17m	Kl.5 4,5KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2
Steel Platform 0,23/0,17m	Kl.5 4,5KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2	Kl.6 6KN/m^2
Aluminium Plywood 0,61	Kl.3 2,0KN/m^2	Kl.3 2,0KN/m^2	Kl.3 2,0KN/m^2	Kl.3 2,0KN/m^2	Kl.3 2,0KN/m^2	Kl.3 2,0KN/m^2	Kl.3 2,0KN/m^2
Aluminium Platform 0,5m	-	-	-	Kl.6 6KN/m^2	Kl.6 6KN/m^2	-	-
Aluminium Platform Alu 0,6m	-	-	-	Kl.6 6KN/m^2	Kl.6 6KN/m^2	-	-

Coupler working loads.

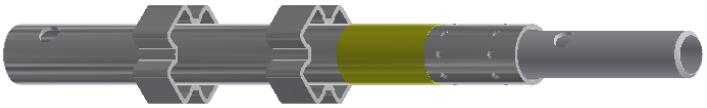
Index	Name	Permisible load connection
ZNN-ZB02CH	CROSS CONNECTION SET	F<9,1kN
ZNN-ZB01	CROSS CONNECTION SET	F<5,9kN

Base jacks load-carrying capacities

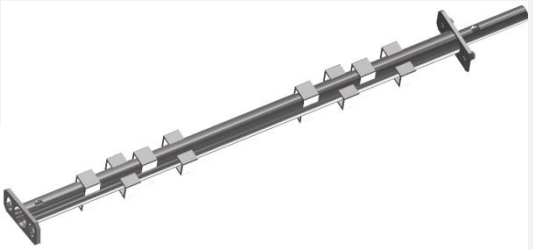
	Base jack height	Admissible undo a nut from the base steel plate				
		20cm	30cm	40cm	50cm	60cm
Admissible vertical load	0,4m	40kN	-	-	-	-
	0,6m	40kN	29kN	22kN	-	-
	0,8m	40kN	29kN	22kN	17kN	15kN

7. LIST OF PARTS OF „STEEFOX" SCAFFOLDING

Tube profile SH		
Index	Dimension [m]	Weight [kg]
RNS-04300	3,0	16,5
RNS-04200	2,0	11,2
RNS-04150	1,5	8,3
RNS-04100	1,0	6,0
RNS-04050	0,5	3,1



Tube normal SB		
Indeks	Dimension [m]	Masa [kg]
RNS-04011	3,0	17,4
RNS-04012	2,0	12,0
RNS-04013	1,5	9,4
RNS-04014	1,0	6,5
RNS-04015	0,5	4,0

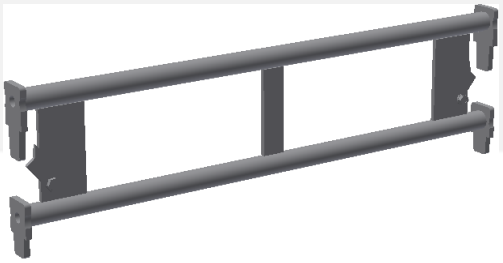


Adjustable bace – jack		
Index	Dimension [m]	Weight [kg]
RFS-12160	0,6	5,26

Rack bolt Set		
Index	Dimension [mm]	[kg]
RNA-03000.4	Fi16	0,2

Girders LB		
Index	Dimension [m]	Weight [kg]
RNS-02300	3,05	18,5
RNS-02245	2,5	15,6
RNS-02190	1,96	11,6
RNS-02161	1,65	9,3

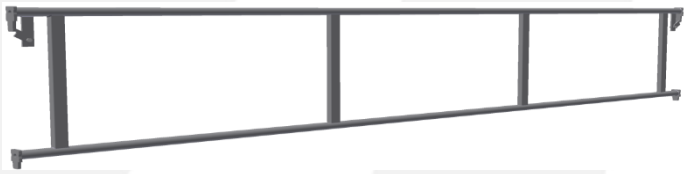
Girders TB		
Index	Dimension [m]	Weight [kg]
RNS-02160	1,65	7,3
RNS-02120	1,25	5,6
RNS-02100	1,05	5,0
RNS-02070	0,77	3,9
RNS-02050	0,564	2,9
RNS-02030	0,35	2,1



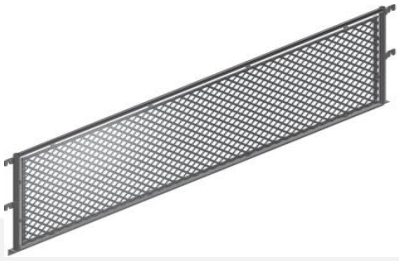
EB Girders		
Index	Dimension [m]	Weight [kg]
RNS-02008	3,05	14,9
RNS-02007	2,5	12,3
RNS-02006	1,96	10,1
RNS-02005	1,65	7,9
RNS-02004	1,25	7,0
RNS-02003	1,05	5,5
RNS-02002	0,77	5,0
RNS-02001	0,564	4,1

SKRV Handrails		
Index	Dimension [m]	Weight [kg]
RNS-03300	3,05	14,1
RNS-03245	2,5	12,5
RNS-03230	2,35	11,9
RNS-03196	1,96	11,2
RNS-03160	1,65	9,7
RNS-03120	1,25	8,4
RNS-03100	1,05	7,8
RNS-03072	0,77	5,1
RNS-03050	0,564	4,2

SKRH handrails for SH racks		
Index	Dimension [m]	Weight [kg]
RNS-03301	3,05	14,6
RNS-03246	2,5	12,9
RNS-03231	2,35	12,3
RNS-03197	1,96	11,5
RNS-03161	1,65	9,9
RNS-03121	1,25	8,6
RNS-03101	1,05	7,9
RNS-03073	0,77	5,1
RNS-03051	0,564	4,2



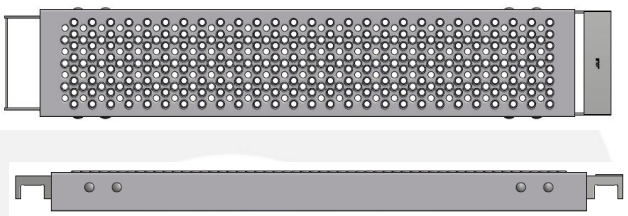
Brick guard SGF		
Index	Dimension [m]	Weight [kg]
RNS-13300	3,05	14,6
RNS-13245	2,5	12,9
RNS-13190	1,96	11,5
RNS-13160	1,65	9,9
RNS-13120	1,25	8,6
RNS-13100	1,05	7,9
RNS-13070	0,77	5,1



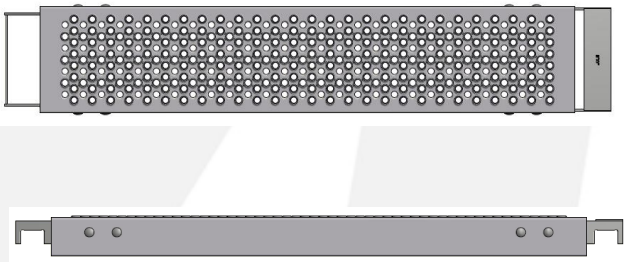
Bracing of the Scaffolding		
Index	Dimension [m]	Weight [kg]
RNS-05300	3,05x2,0	14,2
RNS-05245	2,50x2,0	12,2
RNS-05190	1,96x2,0	10,5
RNS-05160	1,65x2,0	10,0
RNS-05120	1,25x2,0	9,1
RNS-05100	1,05x2,0	8,5
RNS-05070	0,77x2,0	6,7

Connectors anchoring with the hook		
Index	Dimension [m]	Weight [kg]
RFS-17300	3,0	9,3
RFS-17130	1,3	4,1
RFS-17085	0,85	2,8
RFS-17040	0,4	1,45
Permisssible load: 2,5kN		

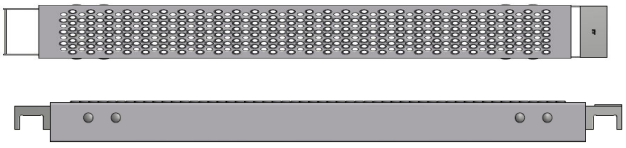
Aluminium platform 0,23m		
Index	Dimension [m]	Weight [kg]
RNA-05305	3,05	13,02
RNA-05250	2,50	11,09
RNA-05196	1,96	9,2
RNA-05165	1,65	8,12
RNA-05125	1,25	6,69
RNA-05105	1,05	5,99
RNA-05077	0,77	5,01
RNA-05055	0,564	4,76
Permisssible load: L=0,56-2,50 = class 6 6kN/m^2 L=3,05 = class 5 4,5kN/m^2		



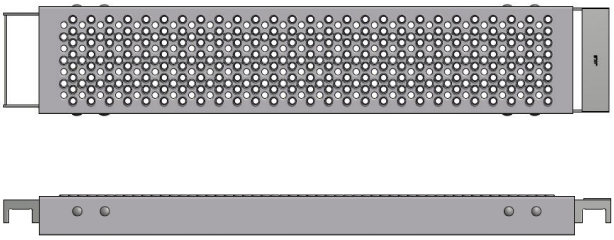
Aluminium platform 0,17m		
Index	Dimension [m]	Weight [kg]
RNA-06305	3,05	11,00
RNA-06250	2,50	8,95
RNA-06196	1,96	8,3
RNA-06165	1,65	5,9
RNA-06125	1,25	5,2
RNA-06105	1,05	4,4
RNA-06077	0,77	3,9
RNA-06055	0,564	3,4
Permisssible load: L=0,56-2,50 = class 6 6kN/m^2 L=3,05 = class 5 4,5kN/m^2		



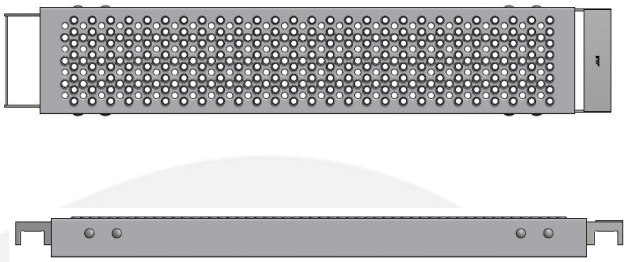
Aluminium platform 0,10m		
Index	Dimension [m]	Weight [kg]
RNA-10305	3,05	9,87
RNA-10250	2,50	8,12
RNA-10196	1,96	7,63
RNA-10165	1,65	5,4
RNA-10125	1,25	4,95
RNA-10105	1,05	4,1
RNA-10077	0,77	3,6
RNA-10055	0,564	3,3
Permissible load: class 6 6kN/m^2		



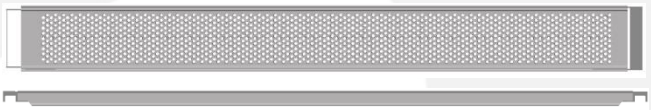
Steel platform 0,23 m		
Index	Dimension [m]	Weight [kg]
RNS-08305	3,05	22,5
RNS-08250	2,50	17,4
RNS-08196	1,96	15,3
RNS-08165	1,65	12,9
RNS-08125	1,25	10,5
RNS-08105	1,05	9,0
RNS-08077	0,77	7,6
RNS-08055	0,564	5,8
Permissible load: L=0,56-2,50 = class 6 6kN/m^2 L=3,05 = class 5 4,5kN/m^2		

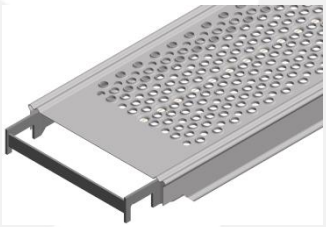


Steel platform 0,17m		
Index	Dimension [m]	Weight [kg]
RNS-09305	3,05	19,6
RNS-09250	2,50	16,2
RNS-09196	1,96	13,5
RNS-09165	1,65	11,6
RNS-09125	1,25	9,3
RNS-09105	1,05	8,1
RNS-09077	0,77	6,5
RNS-09055	0,564	5,5
Permissible load: L=0,56-2,50 = class 6 6kN/m^2 L=3,05 =class 5 4,5kN/m^2		



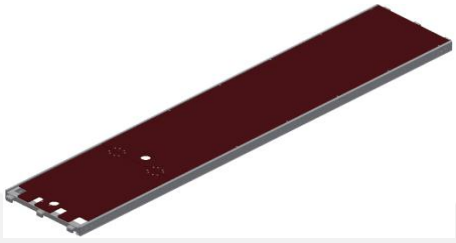
Steel platform 0,32m		
Index	Dimension [m]	Weight [kg]
RNS-33305	3,05	
RNS-33250	2,50	
RNS-33196	1,96	
RNS-33165	1,65	
RNS-33125	1,25	
RNS-33105	1,05	
RNS-33077	0,77	
RNS-33055	0,564	
Permissible load: L=0,56-1,96 = class 6 6,0kN/m^2 L=2,50 = class 5 4,5kN/m^2 L=3,05 = class 4 3,0kN/m^2		



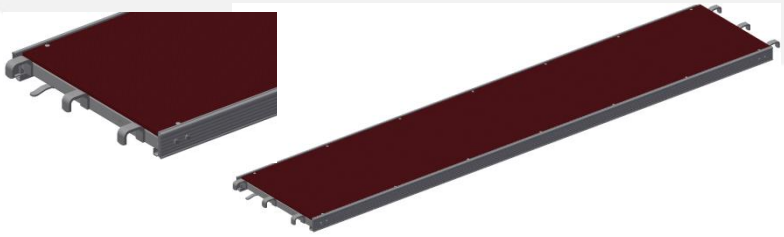


Aluminum transitory plywood platform with the 0,61m ladder with catches for pipe		
Index	Dimension [m]	Weight [kg]
RNA-60305	3,05	29,7
RNA-60250	2,50	26,8
Permissible load: class 3 2kN		

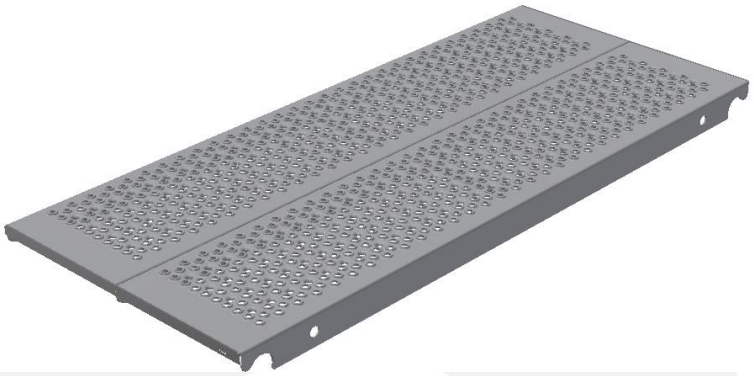
Aluminum transitory plywood platform with the 0,61m ladder with catches for pipe		
Index	Dimension [m]	Weight [kg]
RNA-62305	3,05	25,4
RNA-62250	2,50	22,4
RNA-62196	1,96	19,5
RNA-62165	1,65	16,3
Permissible load: class 3 2kN/m^2		



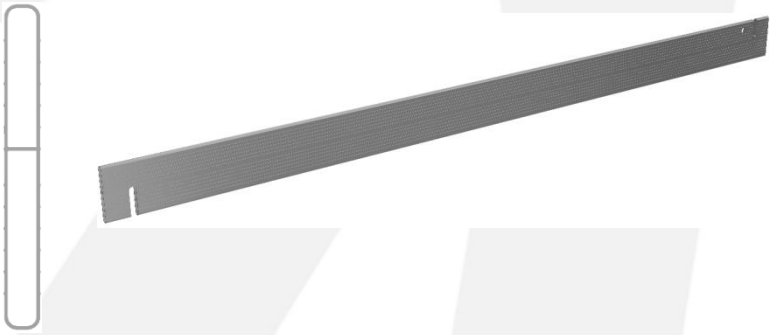
Aluminium transitory plywood platform with the 0,61m ladder with catches for pipe		
Index	Dimension [m]	Weight [kg]
RNA-61305	3,05	23,7
RNA-61250	2,50	20,5
RNA-61196	1,96	16,0
RNA-61165	1,65	15,1
Permissible load: class 3 2kN/m^2		



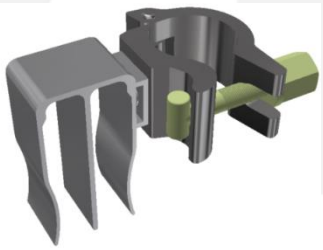
Double aluminium platform 0,495m		
Index	Dimension [m]	Weight [kg]
RNA-16495/3,0	1,65x0,495	10,2
RNA-12495/3,0	1,25x0,495	7,7
RNA-16495/2,5	1,65x0,495	9,1
RNA-12495/2,5	1,25x0,495	7,0
Double aluminium platform 0,595m		
RNA-16595/3,0	1,65x0,595	13,1
RNA-12595/3,0	1,25x0,595	9,8
RNA-16595/2,5	1,25x0,595	10,82
RNA-12595/2,5	1,25x0,595	8,2
Permissible load: class 3 2kN/m2 6 6,0kN/m^2		



Aluminium sides		
Index	Dimension [m]	Weight [kg]
RNA-07030	3,050	6,63
RNA-07025	2,500	5,45
RNA-07019	1,964	4,31
RNA-07016	1,655	3,64
RNA-07012	1,250	2,78
RNA-07010	1,050	2,35
RNA-07007	0,770	1,75
RNA-07005	0,564	0,84



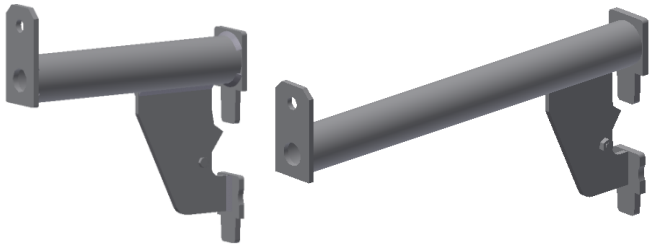
Protection of aluminium side		
Index	Dimension [m]	Weight [kg]
RNA-07000	--	0,84



Steel stairs 2,0m		
Index	Dimension [m]	Weight [kg]
RNS-01002	1,2	30,9
RNS-01006	1,6	34,5

Protection of the platforms		
Index	Dimension [m]	Weight [kg]
RNS-00300	3,050	3,9
RNS-00250	2,500	3,2
RNS-00190	1,964	2,6
RNS-00160	1,655	2,2
RNS-00120	1,250	1,7
RNS-00100	1,050	1,5
RNS-00070	0,770	1,1

Konsola wsporcza SK			
Index	Dimension [m]	Weight [kg]	Class
RNS-06008	0,245	2,1	6
RNS-06009	0,36	2,9	5
RNS-06006	0,47	3,0	3



Supporting reinforced SK console			
Index	Dimension [m]	Weight [kg]	Class
RNS-06004	0,5	6,3	3
RNS-06005	0,7	7,5	3

Roof protecion console		
Index	Dimension [m]	Weight [kg]
RNS-14070	0,7	5,9

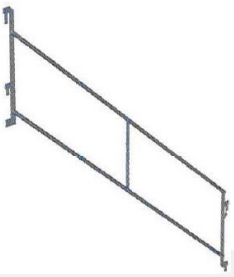
Steel ladder		
Index	Dimension [m]	Weight [kg]
RNS-01021	0,34x2,15	9,85

Entrace step stair		
Index	Dimension [m]	Weight [kg]
RNS-00002	1,6	1,7

Rest platform		
Index	Dimension [m]	Weight [kg]
RNS-00001	2,0x0,65	23,5

Steel stairs		
Index	Dimension [m]	Weight [kg]
RNS-01200	2,0	43,9
RNS-01150	1,5	34

Stairs handrails		
Index	Dimension [m]	Weight [kg]
RNS-03001	2,0	10,3
RNS-03002	1,5	9,0



Stairs handrail rack		
Index	Dimension [m]	Weight [kg]
RNS-04002	1,0	5,3

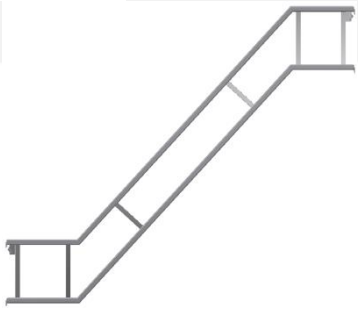
Final Stairs Handrail		
Index	Dimension [m]	Weight [kg]
RNS-04003	---	7,7

Runed rack		
Index	Dimension [m]	Weight [kg]
RNS-04001	1,0	5,8

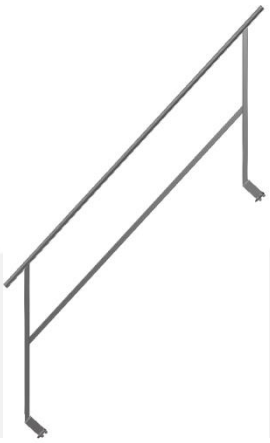
Perforated stairs 2,0		
Index	Dimension [m]	Weight [kg]
RNA-30305	3,05	31,5
RNA-30250	2,5	28

Profile special stairs 2,0		
Indeks	Wymiar [m]	Masa [kg]
RNA-35305	3,05	30
RNA-35250	2,5	27,5

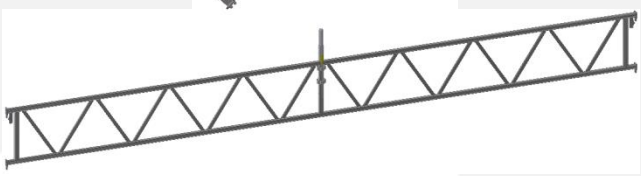
Stairs handrail		
Index	Dimension [m]	Weight [kg]
RNA-31305	3,05	11,5
RNA-31250	2,5	10,2



Stairs handrail		
Index	Dimension [m]	Weight [kg]
RFS-32001	----	12

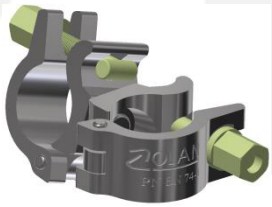


Gate girder FBB		
Index	Dimension [m]	Weight [kg]
RNS-406100	6100	59,1

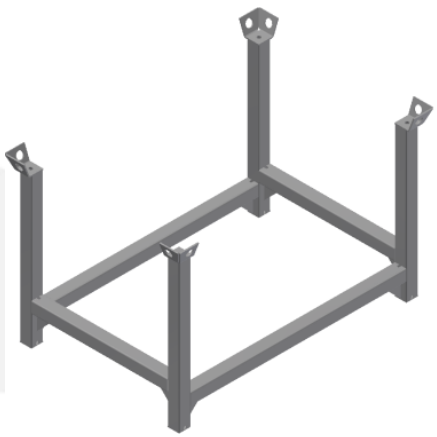


Cross connection set		
Index	Dimension [m]	Weight [kg]
ZNN-ZB02CH	---	0,8

Rotary joint set		
Index	Dimension [m]	Weighta [kg]
ZNN-ZB01CH	---	1,0



Storage Pallet		
Index	Dimension [m]	Weight [kg]
RFS-61280	0,8 x 1,2m	38
RFS-61281	0,8 x 1,2m	With mesh
RFS-60567		Basket
RFS-61580	1,5x0,8x0,75m	On the support
RFS-61581	1,5x0,8x0,75m	On the support light



Note: items which weight exceeds 30kg can be transported only by two employees at the same time, and the maximum weight of transported elements can't exceed 50kg. It is forbidden to transport elements weighing more than 30kg by one person.

8.SCAFFOLDING ACCEPTANCE REPORT

…… place, date

SCAFFOLDING ACCEPTANCE REPORT

Scaffolding specification			
Scaffolding type:			
Construction site address:		Scaffolding location:	
Scaffolding dimensions:			
Scaffolding purpose:			
Admissible load of scaffolding working platforms [kN/m^2]			
Scaffolding user:			
Scaffolding assembly			
Name of company performing installation:			
Installer's name and surname:			
Installer's license number:		Installer's phone number:	
Installation performed in accordance with:	□ Operation and Maintenance Manual	□ Bespoke design	
Earthing test results			
Acceptance and commissioning			
Name and surname of the person authorized to give acceptance:			
Company:		Chamber of Civil Engineers membership number:	
Scaffolding commissioning date:			

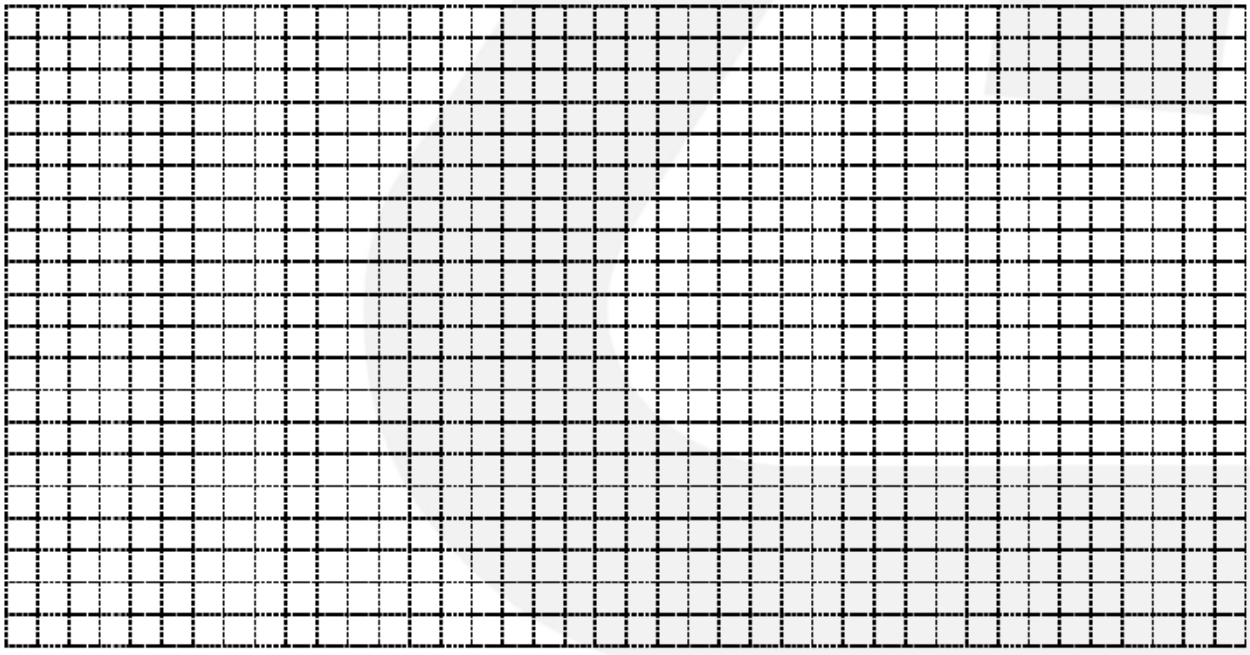
The undersigned confirm that the scaffolding has been assembled in accordance with all requirements of the law and of the Polish Standards

Installer	Accepting person

Scaffolding inspection form*:

No.	Date	Inspection type	Signature

Sketch of the scaffolding location:

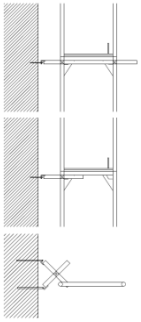


*The Ordinance of the Minister of Infrastructure of 6 February 2003 concerning occupational safety and health in performing construction works, § 127: 1. Scaffolding and mobile working platforms shall be inspected by the construction manager or an authorized person after strong winds, atmospheric precipitation, or occurrence of other factors posing safety risk to performed works, after works being stopped for longer than 10 days, and periodically, at least once a month. 2. The scope of the activities covered by the inspection referred to in item 1 is specified by the manufacturer's instructions or by a bespoke design.

9. ASSEMBLY DIAGRAM OF „STEELFOX” SCAFFOLDING

ANCHOR AND BRACE CONFIGURATION FOR OF „STEELFOX” SCAFFOLDING

Non-covered scaffold, partially close facade, with mesh covering Base variant with platforms at each level



- Anchor connecting to two frame tubes

- Anchor connecting to one frame tube

- Double anchor in V configuration

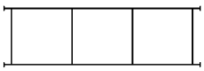
- Single anchor

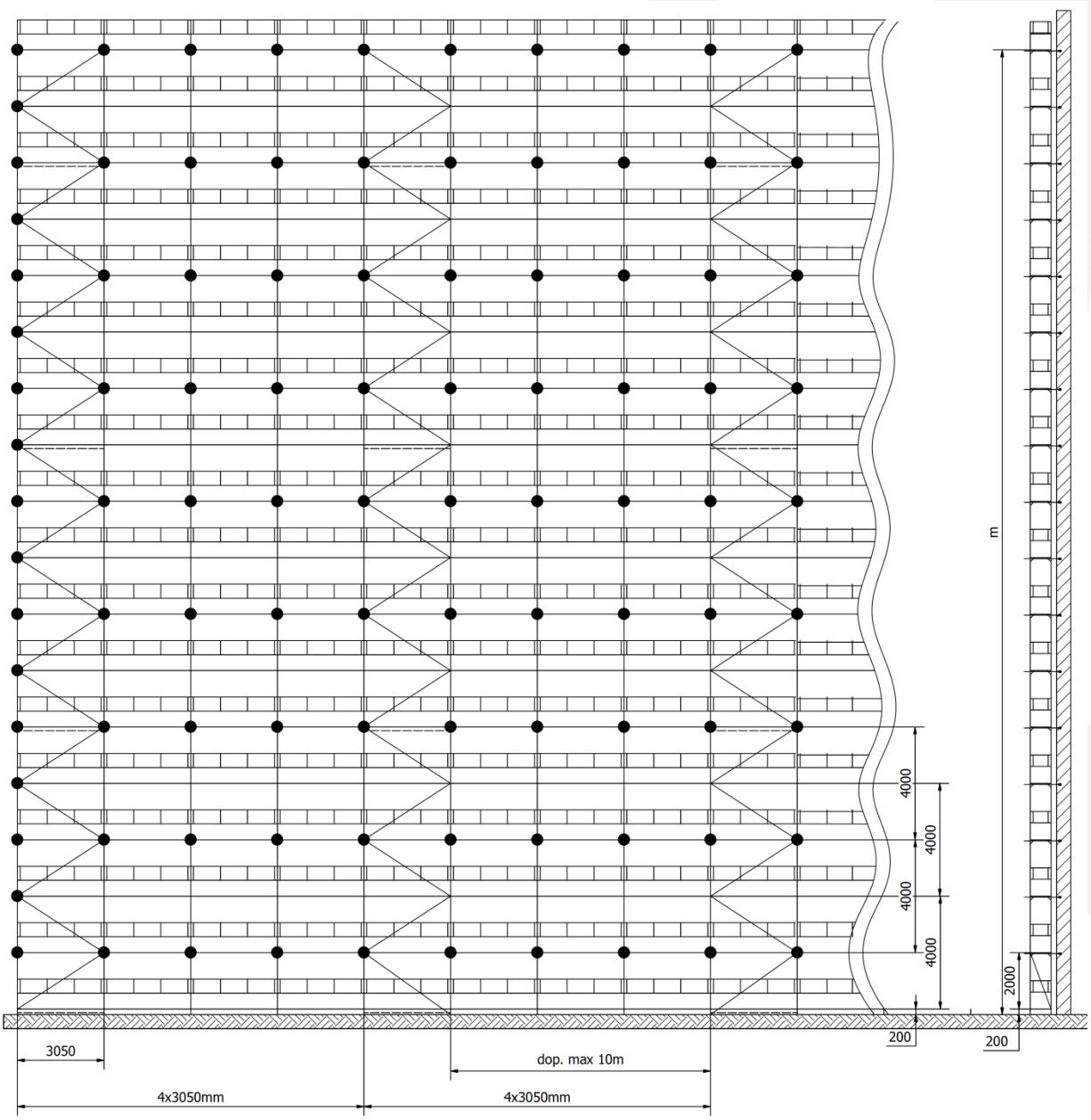
- Vertical brace

- Wall side vertical brace

- Horizontal brace

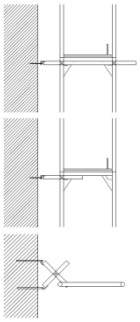
- SKRV Handrails





Non-covered scaffold, partially close facade, with mesh covering Base variant with platforms at 1 level

- Single anchor
- Vertical brace



- Anchor connecting to two frame tubes

- Wall – side vertical brace

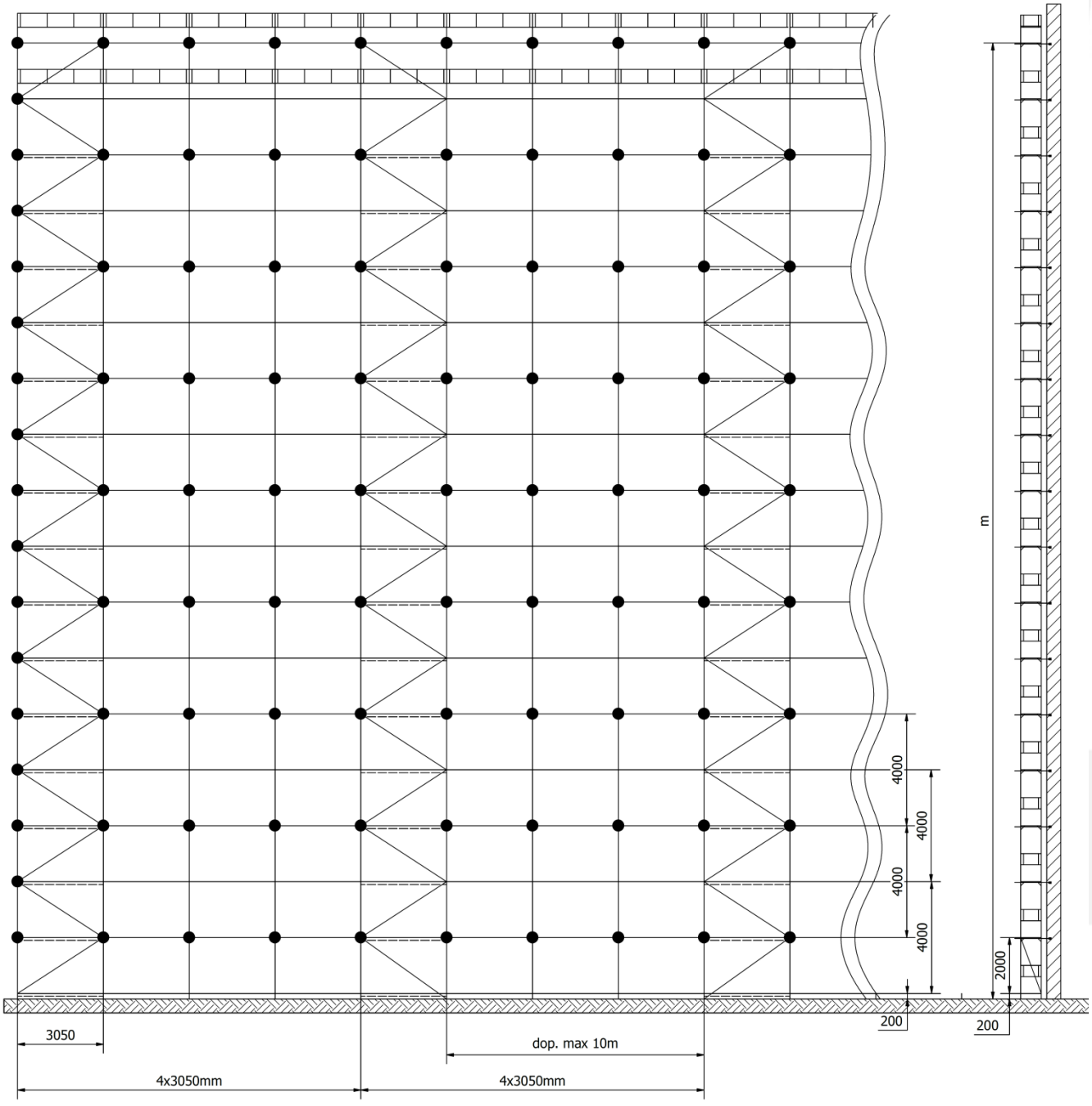
- Anchor connecting to one frame tube

- Horizontal brace

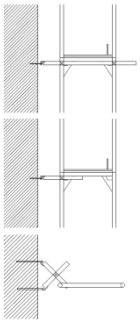
- Double anchor in V configuration

- SKRV Handrails

Note: *In order to secure the area under the working platforms, remember to always mount an additional level of platforms protecting against falling of the elements. The additional level of platforms should be completed within safety elements such as handrails and curbs. In the scaffolding with one working level, the platforms should be additionally assembled in horizontal bracing fields in the places where there are no platforms.*



Anchoring and bracing gate passage in the scaffolding



- Anchor connecting to two frame tubes

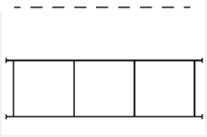
- Anchor connecting to one frame tube

Double anchor in V configuration

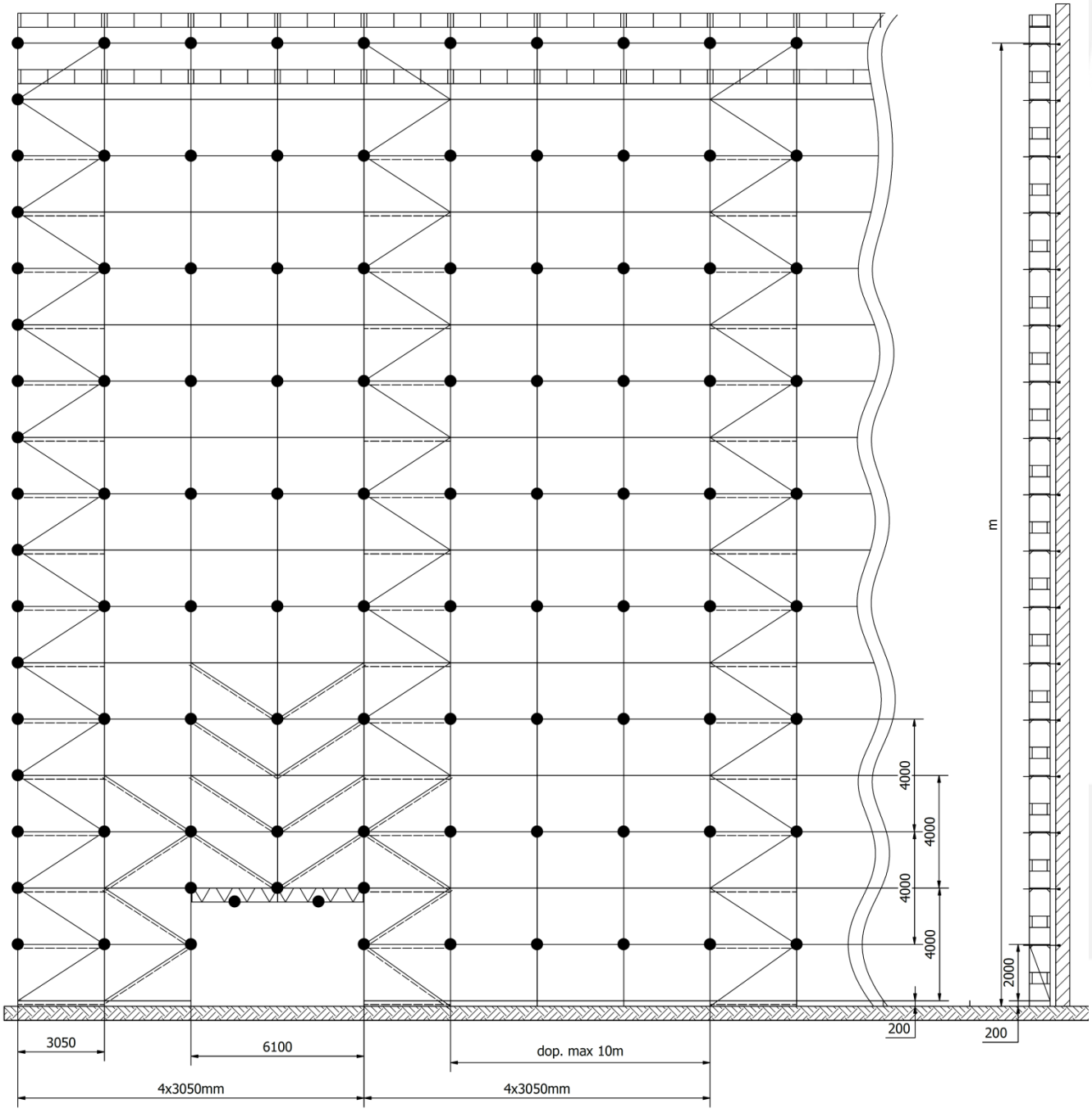
- Single anchor

- Vertical brace

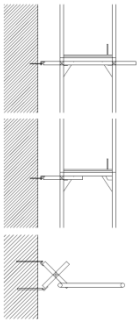
- Wall – side vertical brace



- Horizontal brace



Anchoring diagram and bracing of communication line



- Anchor connecting to frame tube

- Anchor connecting to one frame tube

- Double anchor in V configuration

- Single anchor

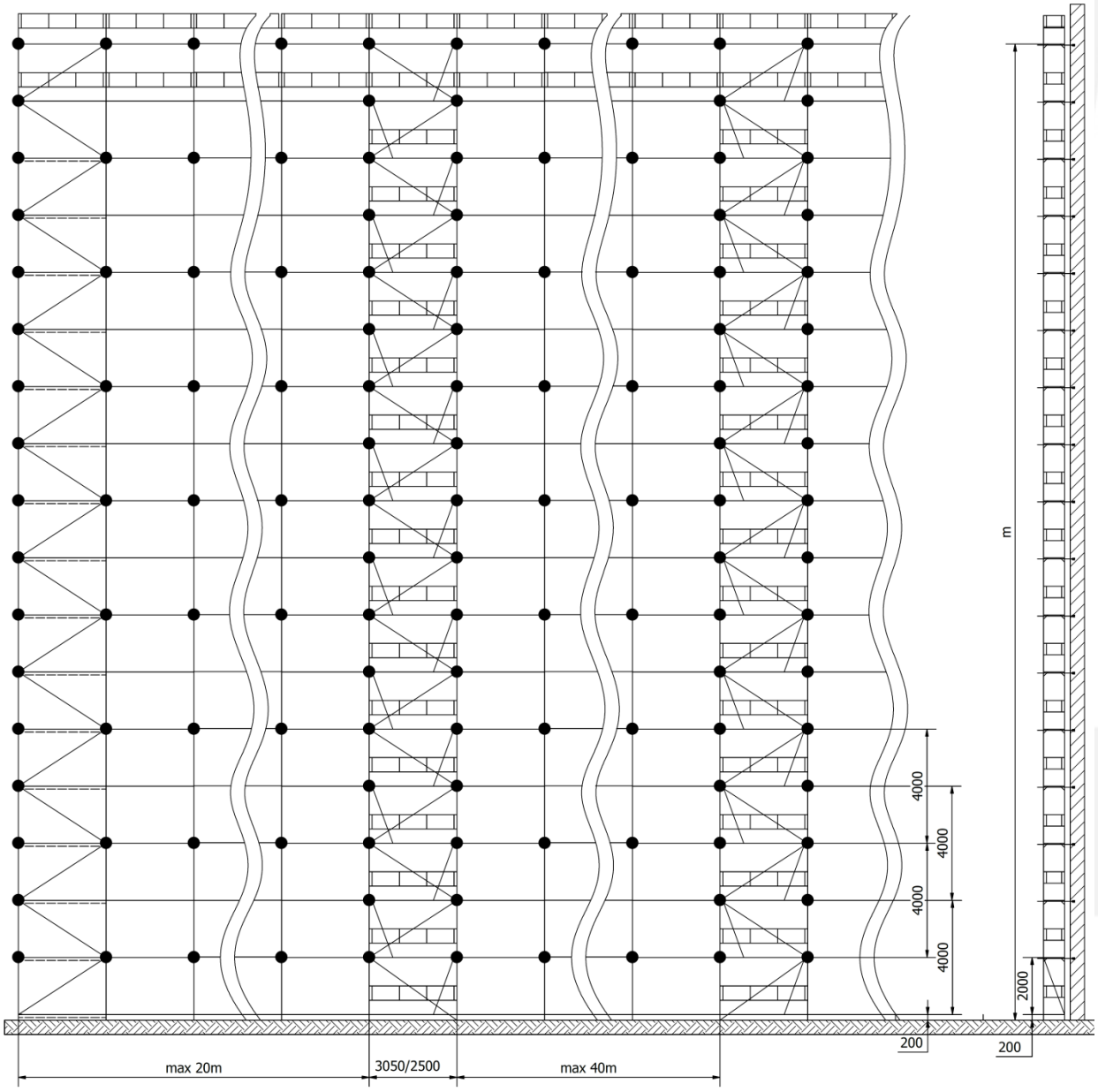
- Vertical brace

- Wall-side vertical brace

- Horizontal brace

- SKRV Handrails

The distance between the communication lines can't exceed 40 m. The distance of the work place located the farthest away from the communication section can't exceed 20 m. The communication lines should be additionally braced and anchored to the building wall.



Notes

Notes

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