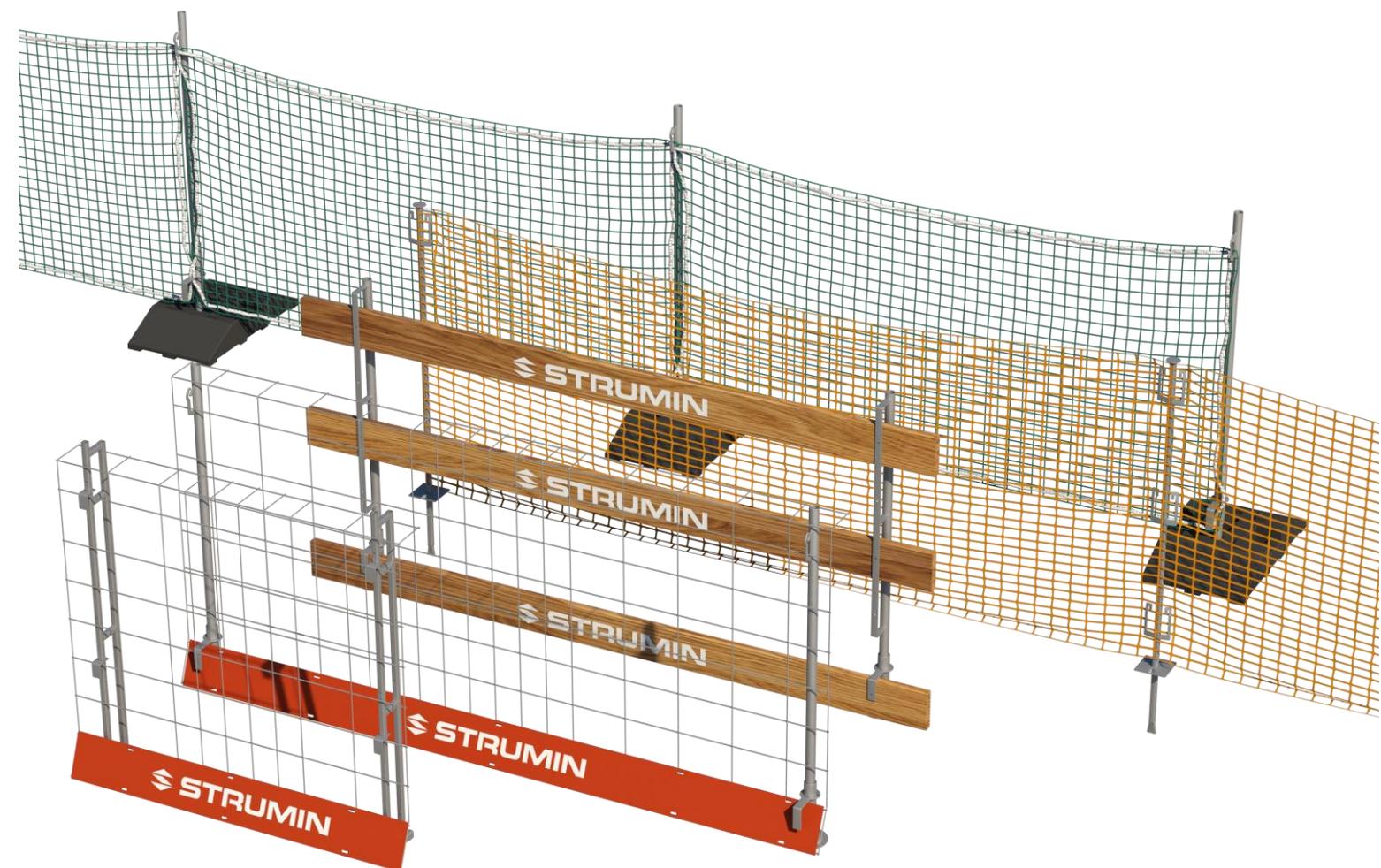


## SYSTEMIC EDGE PROTECTION

SAFE WORK AT HEIGHTS



## TECHNICAL DOCUMENTATION

ATTENTION !

BEFORE EVERY USE OF THE EDGE PROTECTION SYSTEM, THE USER SHALL READ THIS TECHNICAL DOCUMENTATION AND ALWAYS STRICTLY FOLLOW THE RULES DESCRIBED HEREIN. THESE INSTRUCTIONS WERE PREPARED FOR ALL WORKERS AND PEOPLE THAT WILL WORK ON TRANSPORTING, UNLOADING, ASSEMBLING, DISASSEMBLING, STORING, CHECKING AND ANY OTHER WORKS CONNECTED TO THE DEVICE. EVERY USER IS OBLIGED TO READ AND GET FAMILIAR WITH THE SYSTEM'S TECHNICAL DOCUMENTATION!

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## INTRODUCTION

This technical documentation contains the guidelines concerning the proper use of THE EDGE PROTECTION SYSTEM. Workers and other people using the system shall always observe the guidelines contained herein. In case of any events not described in this document, the occupational safety and health regulations and other regulations, appropriate to the specific situation, shall be observed.

It is forbidden to modify the system in any other way than described in the Technical Documentation. The manufacturer is not liable for any modifications in the system in a way that is not described in the technical documentation.

### 1. MANUFACTURING BASIS

THE EDGE PROTECTION SYSTEM is aimed at increasing the safety of works performed at heights. The project of the edge protection system was prepared in accordance with the current laws and technical standards:

- |                          |   |
|--------------------------|---|
| EN-13374<br>+A1_2019-02E | – Temporary edge protection system  |
| EN 1090                  | – Technical requirements for the execution of steel and aluminium structures. |
| PN-EN ISO 3834-2         | – Quality requirements for the welding of metal materials                     |



## 2.0 OPERATING MANUAL

### 2.1 TERMINOLOGY AND DEFINITIONS

The edge protection system:

A set of elements used to protect workers from a fall and to catch falling materials.

Main railing:

A railing or an element which makes the upper edge / surface of the edge protection system.

A protection / intermediate barrier:

A protecting barrier (made of a net or a set of other elements) between the main railing and a working surface.

A toe board:

A standing / vertical element used to stop materials and protect people from falling or sliding down from the working surface.

A pole:

The main element of the edge protection system to which the main railing and the toe board are assembled.

A holder:

An element used to assemble the pole to a given working surface.

The height of the edge protection system:

The distance from the highest point of the main railing to the working surface, measured perpendicularly to the working surface.

A working surface:

The surface on which a worker stands, walks or works.



## 2.2 PURPOSE AND SCOPE OF USAGE

The edge protection system is aimed at securing the outer edges of buildings and used as a protection measure while performing works on lower levels and to secure communication strings. The edge protection system is used while performing constructional works for, primarily, protecting and preventing from the falls of people and objects onto the lower working levels. The protection system encompasses areas near the floor's edge and other areas that demand protection. The EN-13374+A1\_2019-02E standard defines three security areas between the floor and the ceiling;

Ca1 (from the floor to min. 1 m above the floor), Ca2 (from 1 m to 2 m above the floor),

Ca3 (from 2 m to the ceiling).

This definition includes in particular the security range of the Ca1 area.

The protection system (for all three classes: Ca1, Ca2 and Ca3) was also designed on the basis of the requirements concerning the protection from objects carrier by wind (EN-13374+A1\_2019-02E, point 6.3.4).

The system was designed on the basis of the "Class A" requirements, described in the 5.2.1 of the abovementioned standard.

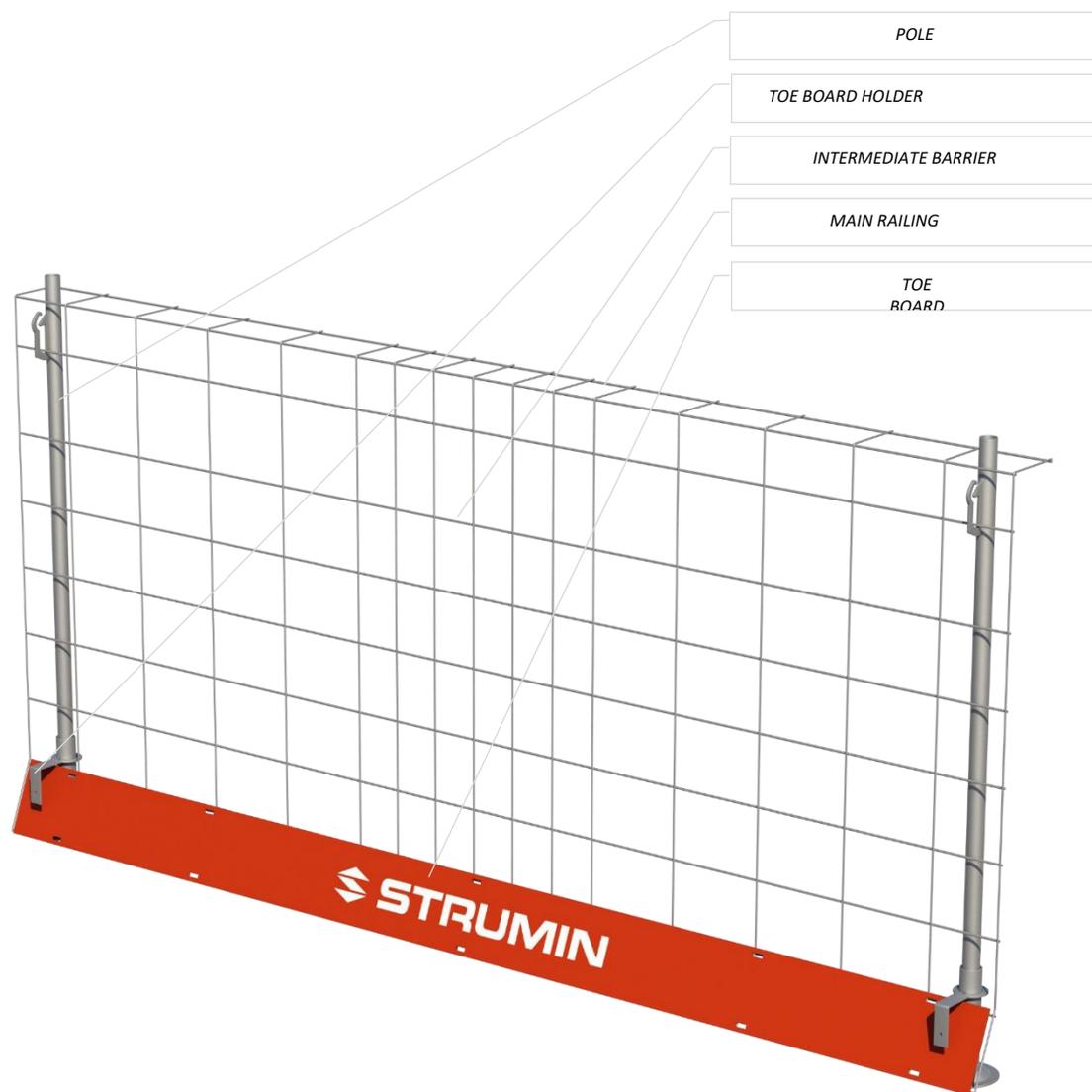
The system is characterised by an easy, universal and quick assembly to the front and the upper part of a floor, as well as to a wall. Thanks to the lightness and flexibility of the system, it is possible to adjust it to all building conditions.

The edge protection system is an affordable and quick way to secure working areas where there is the need to increase the level of safety.

The use of the edge protection system is allowed only on condition that the user adheres to this Technical Documentation, as well as the proper occupational safety and health regulations.



## 2.3 TECHNICAL CHARACTERISTICS AND CONSTRUCTION OF THE SYSTEM



The edge protection system is a steel construction (or metal-wooden) consisting of three main parts: an assembly holder, a pole and an intermediate barrier.

The intermediate barrier can be set in three different options, e.g. as horizontal balk, a steel panel net or a polypropylene net with an edge line.

The system's module consists of a pole with a holder and a proper barrier, according to the above description.

Each module of the system contains also optional holders or adapters for different assemblies, e.g. upper assembly, side assembly, assembly to stairs etc.



### 2.3.1 TECHNICAL SPECIFICATION – INTERMEDIATE BARRIER

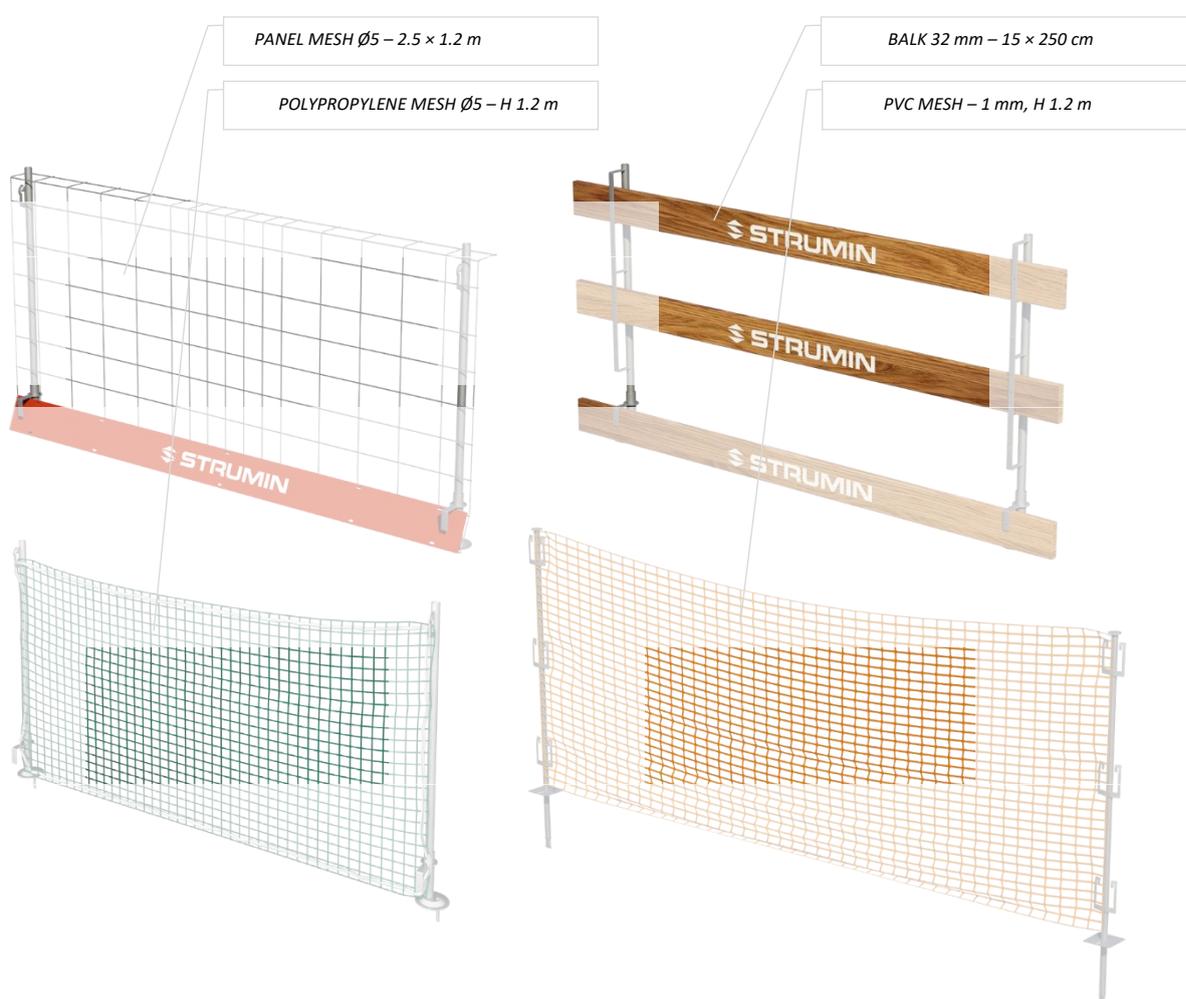
The intermediate barrier of the Ca1 protection area is defined by the EN-13374+A1\_2019-02E standard in point 4

*(Defined load classes A-static loads, B-static loads and low episodic dynamic loads, C-static loads and high dynamic loads connected to sliding down of people and objects)*

And in point 5.2, see Appendix No. 1.

The intermediate barrier of the edge protection system is also defined by such parameters, as the “mesh density” in the “containment porosity Cp” and the wind class” Cq.

The elements of the intermediate barrier are periodically checked for its wear and suitability for the use in a safety system. The check is performed by the manufacturer or an authorized body.



### 2.3.2 TECHNICAL SPECIFICATION – TOE BOARD

A standing / vertical element used to protect materials and people from falling or sliding down from the working surface.

The toe board shall provide the security for the area at the height of 1 cm from the working surface (measured perpendicularly to that surface)

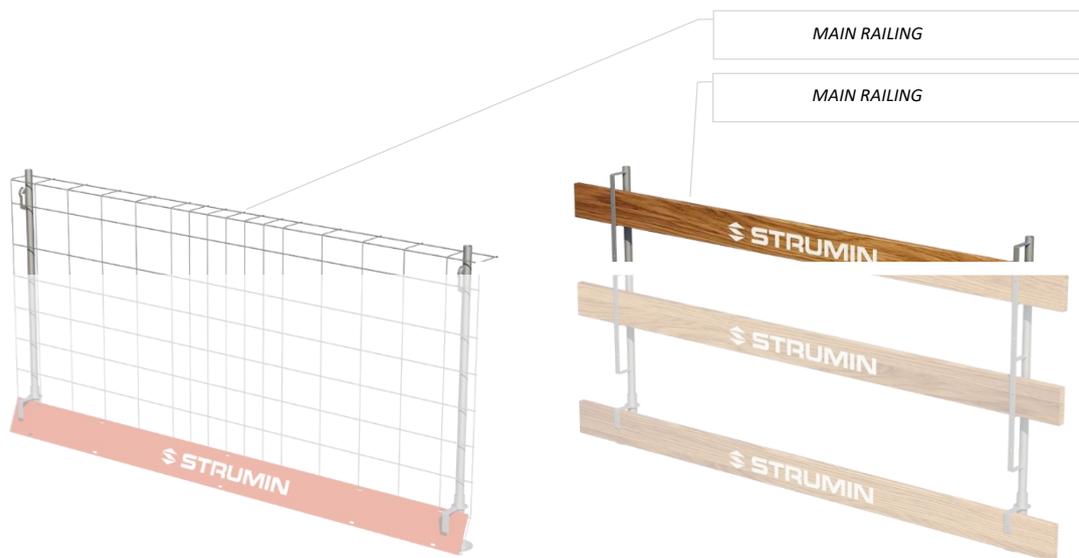
Its maximum lift towards the working surface equals 2 cm.



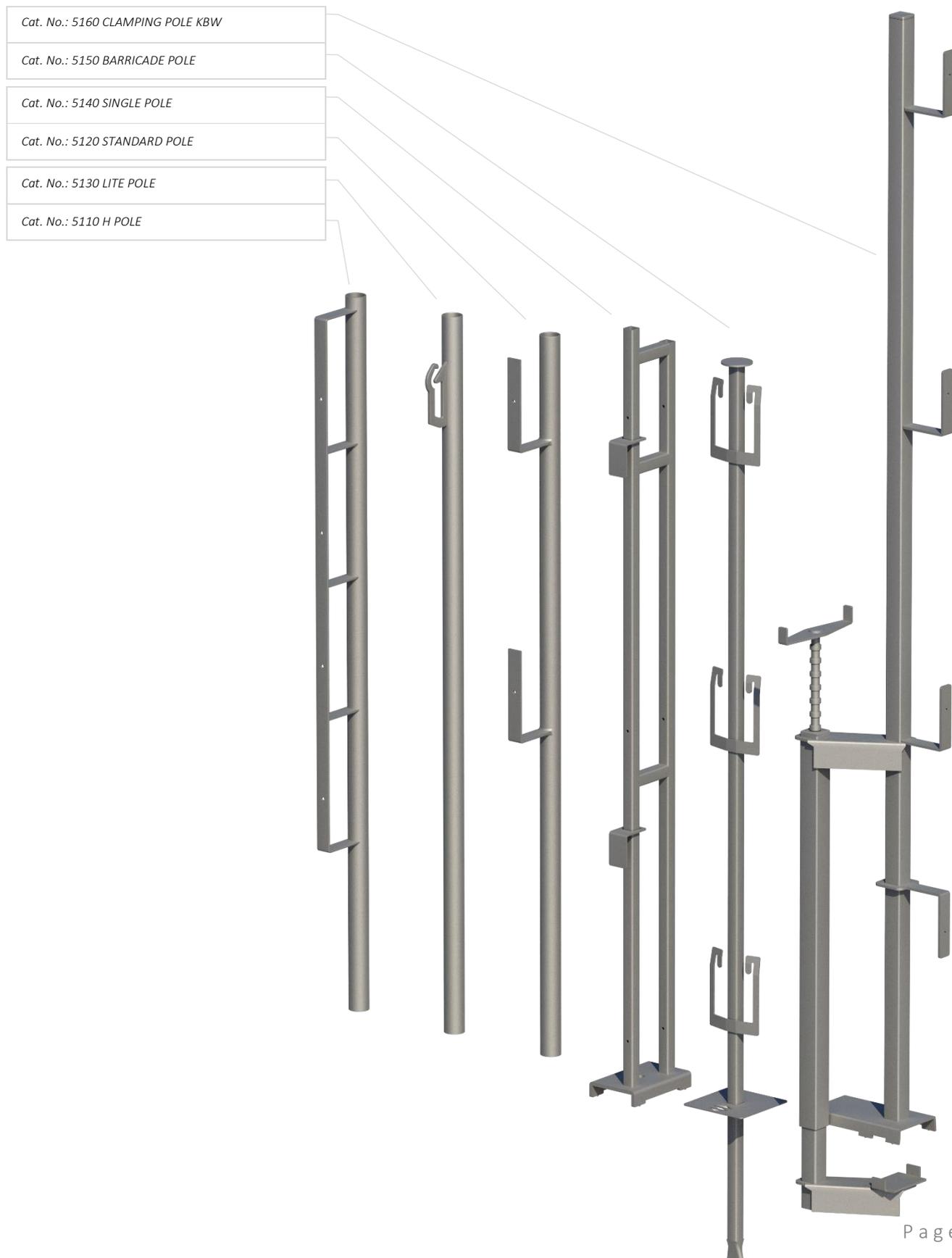
### 2.3.3 TECHNICAL SPECIFICATION – MAIN RAILING

A railing or an element which makes the upper edge / surface of the edge protection system.

The distance between the highest railing point and the working level cannot be smaller than 1000 mm (measured perpendicularly to the working surface).



### 2.3.4 TECHNICAL SPECIFICATION – POLES



#### 2.3.4 TECHNICAL SPECIFICATION – POLES

H POLE – Cat. No.: 5110 – with the height of 120 cm, it is used to prepare a safety barrier with a mesh filling and a boarding. It can be used for a few types of holders that can be assembled to different surfaces in different positions.

The pole is locked in a socket by rotating and placing in a working position towards the floor. It is used to work with horizontal and vertical holders, 500 and 250 adapters, a holder for a girder, Larsen, a floor clamp and a rammed holder.

LITE POLE – Cat. No.: 5130 – with the height of 120 cm, it is used to prepare a safety barrier with a mesh filling and a boarding. It can be used for a few types of holders that can be assembled to different surfaces in different positions.

It is equipped with a self-locking socket of the net.

The pole is locked in a socket by rotating and placing in a working position towards the floor. It is used to work with horizontal and vertical holders, 500 and 250 adapters, a holder for a girder, Larsen, a floor clamp and a rammed holder.

STANDARD POLE – Cat. No.: 5120 – with the height of 120 cm, it is used to prepare a safety barrier with a mesh filling and a boarding. It can be used for a few types of holders that can be assembled to different surfaces in different positions.

The pole is locked in a socket by rotating and placing in a working position towards the floor.

It is used to work with horizontal and vertical holders, 500 and 250 adapters, a holder for a girder, Larsen, a floor clamp and a rammed holder.

SINGLE POLE – Cat. No.: 5140 – with the height of 120 cm, it is used to prepare a safety barrier with a mesh filling and a boarding. It is intended for the assembly in a concrete surface with the screws for concrete or assembly anchors.

It allows to quickly, easily and cheaply assemble the protective barrier.

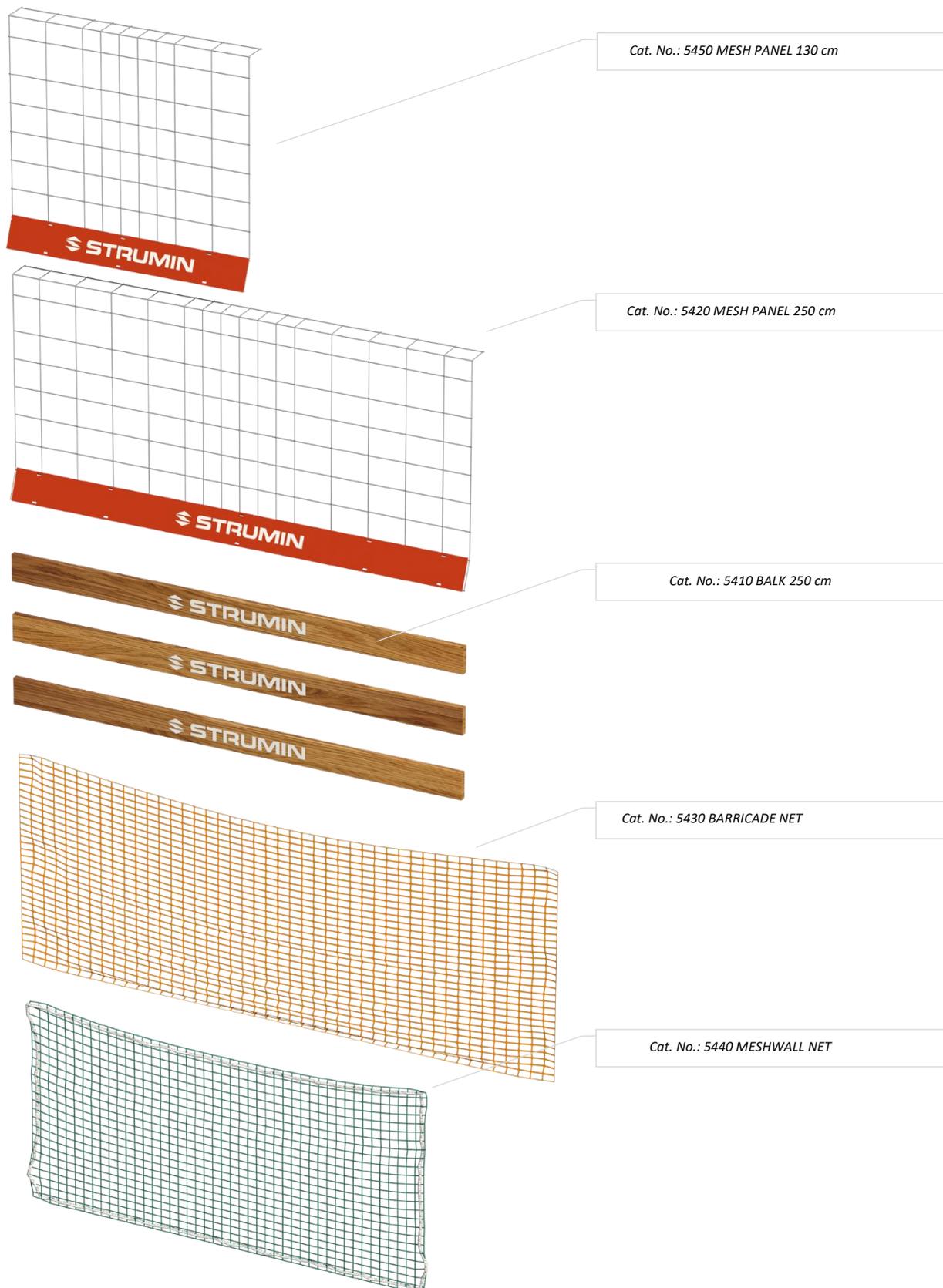
BARRICADE POLE – Cat. No.: 5150 – with the height of 120 cm, it is used to prepare a safety barrier with a mesh filling and a boarding. It is used at construction sites during renovation works, while performing roadworks and to secure digging deep trenches. An example of usage is separating the area where works which may cause the risk of potential accident, i.e. falling from height, dangerous wetland etc., are performed.

CLAMPING POLE KBW – Cat. No.: 5160 – with the height of 120 cm, it is used to prepare a safety barrier with a mesh filling and a boarding. The pole can be assembled at the edge of the floor by twisting the lower clamping jaw. Such type of assembly can also be used in case of girders that are placed below the floor. Thanks to the height of the pole, which is 180 cm, the users can secure the upper level to the min. required height of 1 m. The maximum jaw's offset is 50 cm.

The poles are made of constructional steel and are galvanized.



### 2.3.5 TECHNICAL SPECIFICATION – FILLING (INTERMEDIATE BARRIER)



### 2.3.5 TECHNICAL SPECIFICATION – FILLING (INTERMEDIATE BARRIER)

MESH PANEL 250/130 cm – Cat. No.: 5420/5450 – is made of a welded, galvanised net which consists of three protective areas:

- upper “shelf” (width = 12 cm) used as a supinated grip.
- the vertical filling up to the height of 120 cm over the working surface,
- full steel toe board (height = 12 cm).

The vertical poles are placed differently within the range of 10–20 cm, the oblique placement of the toe board allows to stop smaller objects (e.g. hardcore) from accidental falling out of the working area.

EPS BALK 250 cm – Cat. No.: 5410 – the intermediate barrier consists of three levels (2500 × 150 × 32 balk).

It protects from falling through the edge of the working level. It is assembled in the H pole holders, Standard and Single.

The lower balk is a protection – toe board which catches smaller objects accidentally falling from the working level.

BARRICADE NET – Cat. No.: 5430 – is a barrier made as a non-flexible PVC net. Its main advantage is low weight, easy assembly procedure, resistance to the weather conditions and universality.

The system is used at construction sites, during renovation works, roadworks and while digging deeper trenches. It is a warning barrier, informing people about a dangerous area. The poles of the barrier are made of constructional and galvanised steel.

MESHWALL NET – Cat. No.: 5440 – is a protective barrier made as a polypropylene net. Its main advantage is low weight, easy assembly procedure and resistance to the weather conditions.

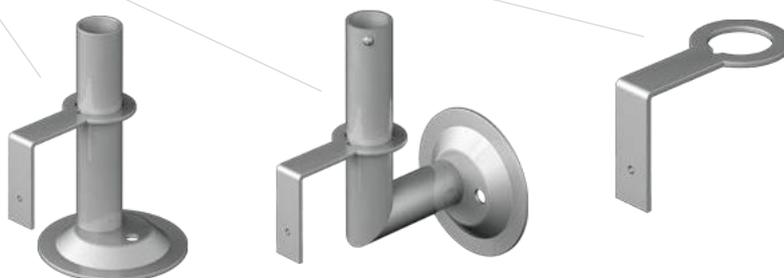
The MESHWALL barrier consists of poles, e.g. LITE, a net and an edge line which works as a supinated grip and an element stretching the whole system.

The net is manufactured in accordance with the edge protection systems and fall arrest systems (safety nets) standards.

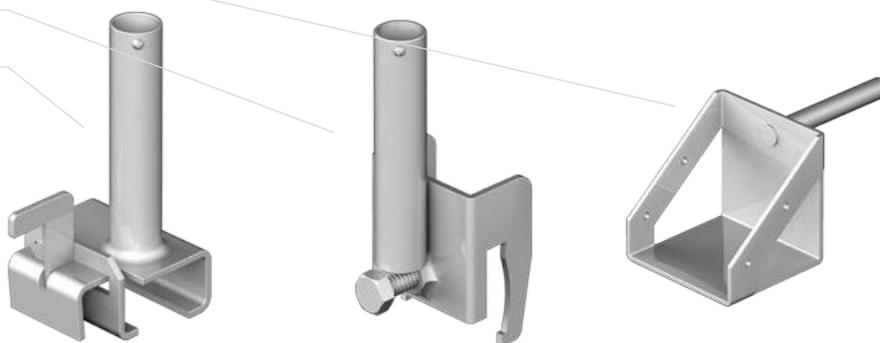


2.3.6 TECHNICAL SPECIFICATION – HOLDERS

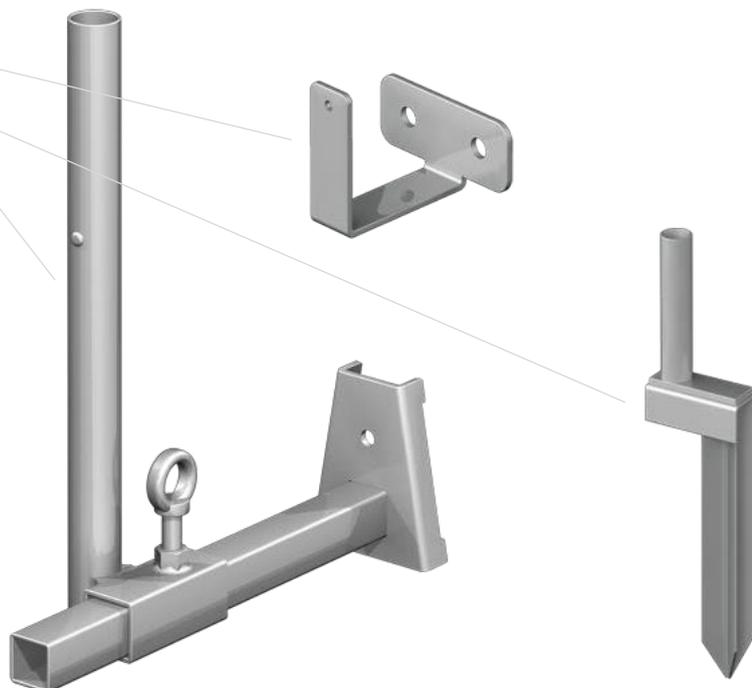
- Cat. No.: 5280 TOE BOARD HOLDER
- Cat. No.: 5210 VERTICAL HOLDER
- Cat. No.: 5220 HORIZONTAL HOLDER



- Cat. No.: 5270 PLATFORM HOLDER
- Cat. No.: 5250 LARSEN HOLDER
- Cat. No.: 5240 GIRDER HOLDER



- Cat. No.: 5260 WALL HOLDER
- Cat. No.: 5230 RAMMED HOLDER
- Cat. No.: 5290 ATTIC HOLDER



### 2.3.6 TECHNICAL SPECIFICATION – HOLDERS

HORIZONTAL HOLDER – Cat. No.: 5220 – is used to assemble poles to a moveable surface. It is adjusted to be assembled in a vertical position to the ground with screws for concrete or mechanical anchors. The holder has a socket with a blockade that is used to lock the pole and protect it from accidentally taking out. The horizontal holder contains the toe board holder used in case of using a net or boarding.

VERTICAL HOLDER – Cat. No.: 5210 – is used to assemble poles to a working surface. It is adjusted to be assembled in a vertical position to the ground with screws for concrete or mechanical anchors. The holder has a socket with a blockade that is used to lock the pole and protect it from accidentally taking out. The holder contains also a toe board holder used in case of a connection to the extending adapter 500/250. It is also used to block the net of prepare a toe board on the level of the pole or the extending adapter.

TOE BOARD HOLDER – Cat. No.: 5280 – is used to assemble the balk (toe board) or mesh panels on holders: *horizontal, vertical, on girder, on Larsen, rammed and on attic holders.*

GIRDER HOLDER – Cat. No.: 5240 – is used to prepare the protective barrier on formwork. Its main advantage is the speed and simplicity of assembly, it does not require using power tools, anchors etc. The assembly is limited only to placing an open clamp on the formwork and clenching it with a hammer by ramming a wedge into the clamp's socket. With the use of the 500/250 height adapter, in an easy way the workers may lift the barrier to the level ensuring safety and compliance with standards. It is used during the preparation of the concrete floor what leads to lifting the working level (while lowering the height of the protection that was earlier provided on formwork).

LARSEN HOLDER – Cat. No.: 5250 – is used to prepare a protective barrier sheet piles. Its main advantage is the simplicity of assembly and disassembly. It is limited to tightening the locking screw. A low weight and the ease of storing and transport are another advantages of that system's element. The LARSEN holder has a socket with a blockade that allows the lock the pole and secure it from an accidental taking out.

PLATFORM HOLDER – Cat. No.: 5270 – is used to create working bridges, e.g. in shafts or any niches where there is the need to create a temporary bridge. The holder is used with wooden balks of 10 cm width. The assembly to the wall is performed through the Ø16 diameter slot.

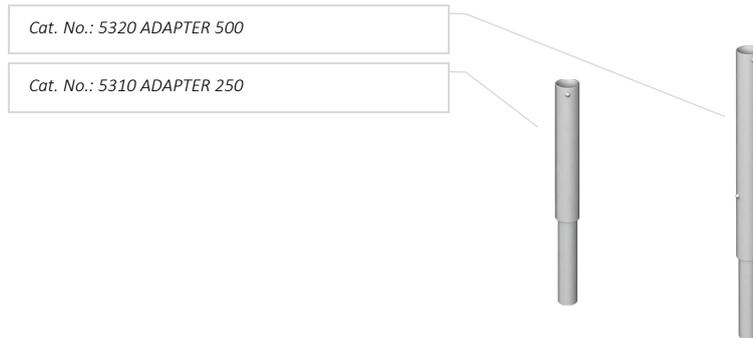
ATTIC HOLDER – Cat. No.: 5290 – is used to assembly the poles to the walls and allows to move the barrier towards and away from the wall. Thanks to this solution the user may adjust the barrier to given constructional elements i.e. attic etc. The vertical adjustment scope is 34 cm. The height (active) of the socket is 30 cm – is it the distance to which the holder can be lowered in relation to the working surface, so that the barrier will keep the 120 cm height. If there is the need to further lower the holder, the 250/500 adapters shall be used.



WALL HOLDER – Cat. No.: 5260 – is used to prepare a barrier assembled directly to the walls (i.e. protection of window openings, doors etc.). It can be used with formwork and mesh panels.

RAMMED HOLDER – Cat. No.: 5230 – is used to prepare a protective barrier in any surface which allows to assemble the anchor to the rammed holder. The surface must provide the stability of the barrier pole, so that it will not deviate from the vertical position due to the influence of the weather conditions. The holder has a socket with a blockade used to lock it and secure from an accidental taking out.

### 2.3.7 TECHNICAL SPECIFICATION – ADAPTERS

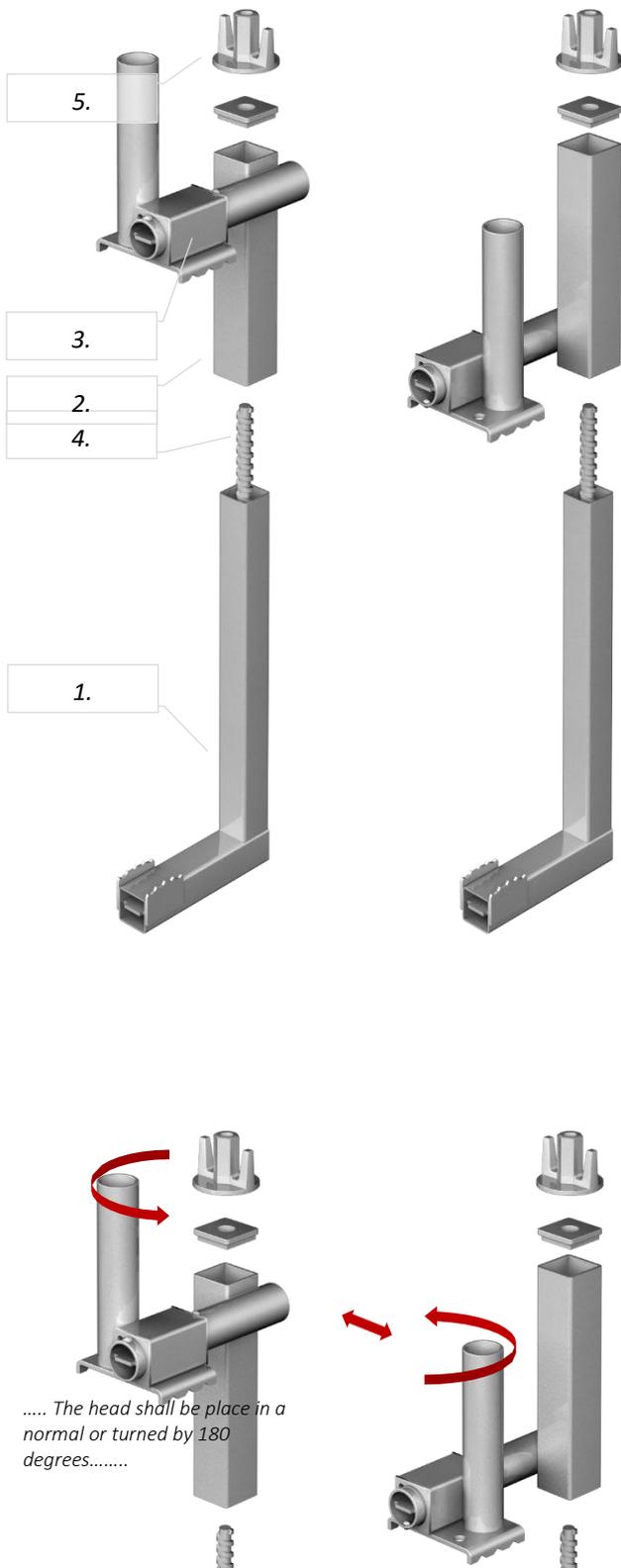


EXTENDING ADAPTERS 250/500 – Cat. No.: 5310/5320 – is used to lift the pole of the protective barrier in case of an assembly e.g. of the vertical holders (where there is the lowering of the barrier in relation to the working surface). When there is such need, the height adapter allows to lift the protection by 250/500 mm. The adapter has a lower locking socket which works with the holder and an upper socket working with the pole's socket. The sockets are locking each other what protects from an accidental taking out. The extending adapters are also useful while preparing barriers on girder or Larsen holders. In case of lifting the working surface (e.g. concrete floor) they lift the barrier to the level providing safety and compliance with standards.

The holders and adapters are made of constructional steel and are galvanised.



2.3.8 TECHNICAL SPECIFICATION – UNIVERSAL FLOOR CLAMP



FLOOR CLAMP Cat. No.: 5510 consist of:

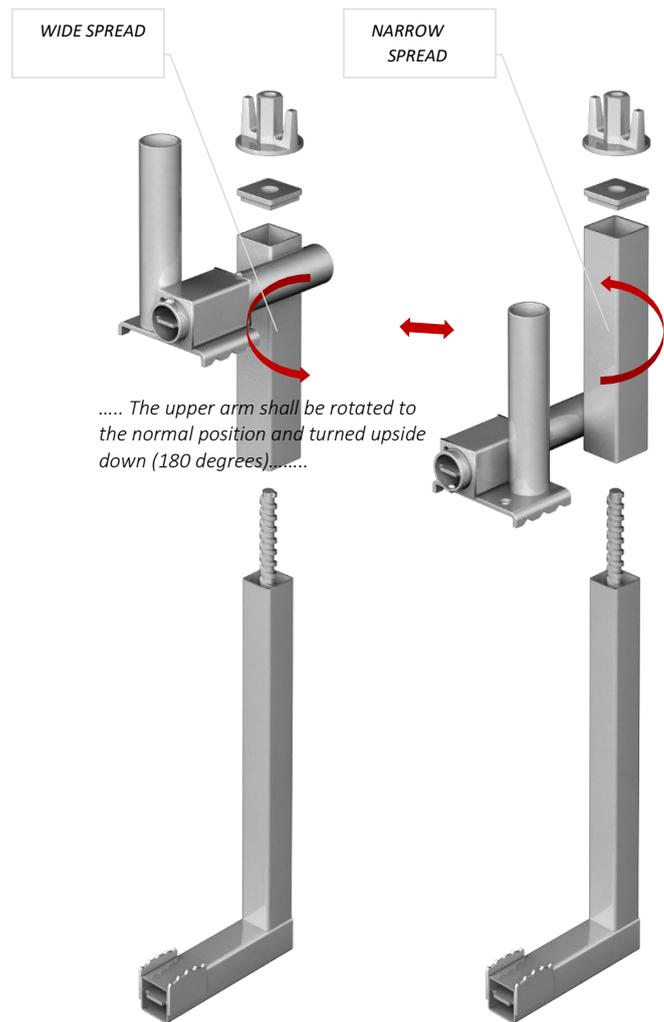
1. A lower arm
2. An upper arm (moveable)
3. A head (moveable)
4. A pressing screw
5. A pressing nut

The clamp is characterized by two types of arm spacing: narrow and wide.

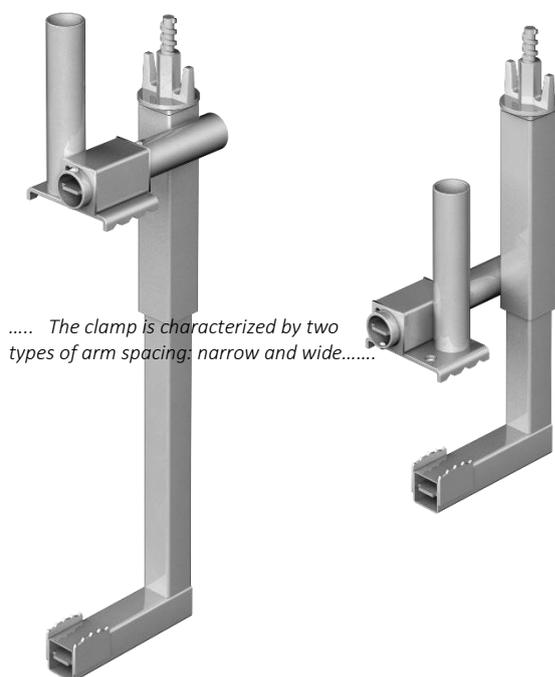
Based on the assembly needs, the user can configure the clamp's elements. The upper arm shall be rotated to the normal position and turned upside down (180 degrees).

The moveable head shall be adjusted to the assembled upper holder.

The head shall be place in a normal or turned by 180 degrees position in order to adjust it to the moveable arm's socket (see the figure.)



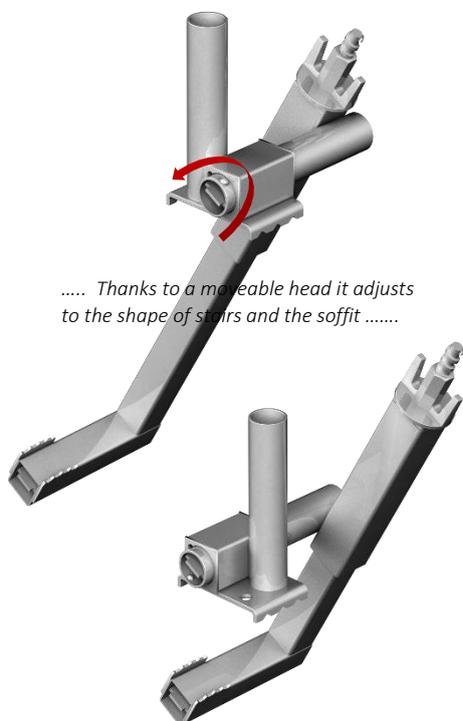
### 2.3.8 TECHNICAL SPECIFICATION – UNIVERSAL FLOOR CLAMP



..... The clamp is characterized by two types of arm spacing: narrow and wide.....

The maximum spacing 52 cm The minimum spacing: 9 cm

### UNIVERSAL FLOOR CLAMP – STAIRWAYS CONFIGURATION

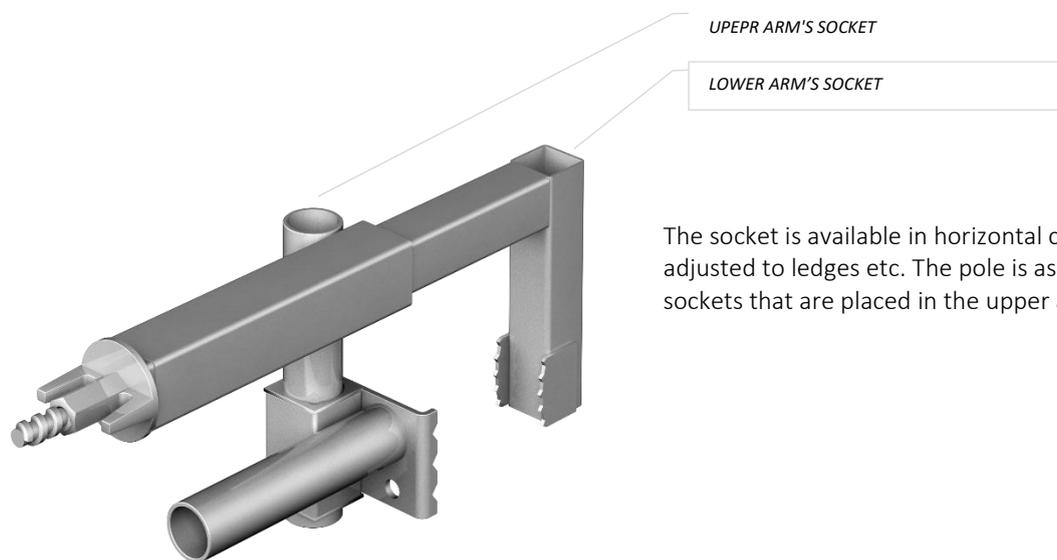


..... Thanks to a moveable head it adjusts to the shape of stairs and the soffit .....

The clamp can be adjusted to the flight of stairs. Thanks to a moveable head it adjusts to the shape of stairs and the soffit of each flight of stairs. The head turns freely around the upper arm's socket, thanks to what it automatically adjusts to a given shape.



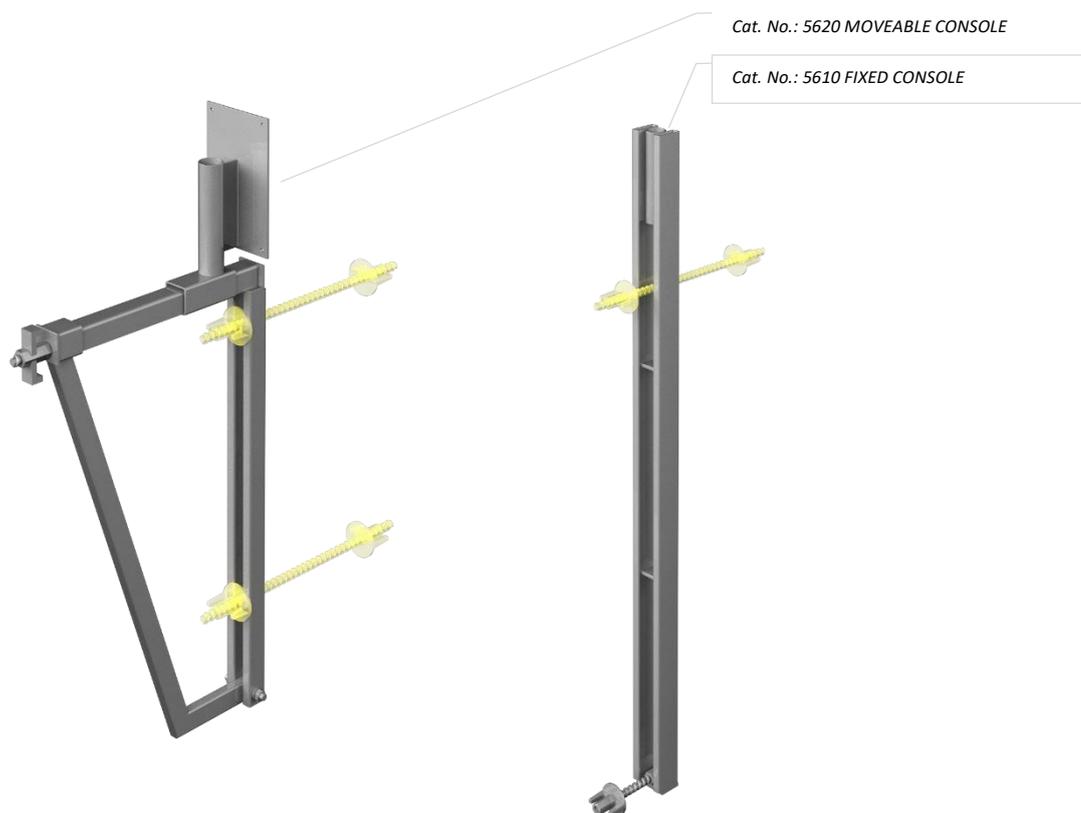
UNIVERSAL FLOOR CLAMP – HORIZONTAL CONFIGURATION



The socket is available in horizontal configuration, adjusted to ledges etc. The pole is assembled to optional sockets that are placed in the upper and lower arm.



### 2.3.9 TECHNICAL SPECIFICATION – FORMWORK CONSOLES



THE FIXED AND MOVEABLE CONSOLES are used in the preparation of security measures on the walls' edges which are used to prepare formwork. They are also used as a formwork element (to assemble the formwork balk), so they are a universal solution used in constructional works and increasing the level of safety of the works performed. This solution uses the holes in walls made during the preparation of formwork. The solution helps to save time on assembling the protection (no need to drill holes, anchoring etc.).

THE MOVEABLE CONSOLE is an extension of the fixed console when there was used the possibility to move the formwork balk from the wall.



## 2.4 SYSTEM'S ELEMENTS DIMENSIONS

Cat. No.	Name	H [m]	L[m]	weight [kg]	Works with:
5110	H POLE	1.20		3.80	Mesh panel, board, holders/adapters
5120	STANDARD POLE	1.20		2.90	Board, holders/adapters
5130	LITE POLE	1.20		2.80	Mesh panel, holders/adapters
5140	SINGLE POLE	1.20		3.60	Mesh panel, balk
5150	BARRICADE POLE	1.20/1.50		3.00	Barricade net
5160	CLAMPING POLE KBW	1.80		13.50	Mesh panel, balk
5420	Mesh panel 250	1.20	2.50	8.70	Poles: H, STAND., LITE, SINGLE, KBW
5450	Mesh panel 130	1.20	1.30	5.40	Poles: H, STAND., LITE, SINGLE, KBW
5410	BALK 250	0.15	2.50	6.50	Poles: H, STAND., SINGLE, KBW
5430	BARRICADE NET	1.20	100.0	15.00	Poles: barricade
5440	MESH WALL NET	1.20	3.00	1.50	Poles: LITE
5210	VERTICAL HOLDER	0.25		1.46	Poles: H, STAND., LITE, Adapters
5220	HORIZONTAL HOLDER	0.20		1.10	Poles: H, STAND., LITE, Adapters
5230	RAMMED HOLDER	0.60		2.80	Poles: H, STAND., LITE, Adapters
5240	GIRDER HOLDER	0.25		2.60	Poles: H, STAND., LITE, Adapters
5250	LARSEN HOLDER	0.27		2.00	Poles: H, STAND., LITE, Adapters
5260	WALL HOLDER	0.10		0.36	Mesh panel, balk
5270	PLATFORM HOLDER	0.10 × 0.22		0.90	Balk 100 × 100
5280	TOE BOARD HOLDER	0.13		0.30	Mesh panel, balk
5290	ATTIC HOLDER	0.51		4.50	Poles: H, STAND., LITE
5310	ADAPTER 250	0.43		1.13	Poles: H, STAND., LITE, Holders, Consoles
5320	ADAPTER 500	0.68		2.22	Poles: H, STAND., LITE, Holders, Consoles
5510	UNIVERSAL FLOOR CLAMP	0.55		6.80	Poles: H, STAND., LITE, Adapters
5610	FIXED CONSOLE	1.50		9.20	Poles: H, STAND., LITE, Adapters
5620	MOVEABLE CONSOLE	1.10 × 0.50		9.50	Poles: H, STAND., LITE, Adapters



## 2.5 USAGE

The edge protection system shall be used only for the purposes described in this manual. Any use not in compliance with this manual entails risk of accidents and poses a threat to health and life. Any use not in compliance with the Technical Documentation voids the guarantee.

The device is used to catch falling objects which may pose threat to any people standing below the working area. In case on an improper use of the system, it poses a risk for the user as well as the other people near the user.

Before using the edge protection system the worker shall read this manual.

During the use of the edge protection system, the workers shall meet all the requirements described in the Technical Documentation and in any laws and regulations that apply

Any works connected to the assembly, elements installation and anchoring to the floor lie within the responsibility of the site manager.

The whole scope of works connected to the everyday use of the product lies within the responsibility of the site manager.

Such actions like a daily and weekly inspection of the system shall be entered into a system's control card.

After an accident that resulted in damaging any elements of the system, it should be immediately withdrawn from further use. The damaged elements shall be replaced with new elements

### IMPORTANT NOTES:

- The device shall not be used as a barrier protecting form being hit by a vehicle and other equipment and devices and was not designed in order to carry fixed loads as well as storing.
- The device was not designed as a barrier protecting from sliding down materials, hardcore, snow etc.
- The system cannot be used as a protection in places where gather crowds of people.
- Elements not delivered with the complete device shall not be attached to the system. It may have a negative impact on mechanical parameters and affect the operational safety.
- The place where the edge protection system is used shall have a rescue plan implemented, in case of an event that led to securing from a fall.
- The edge protection system was designed in order to catch falling objects and catch, as well as support, workers. Detailed data concerning the strength of the protection are available in the Appendix 2 – the loads are described in the EN-13374+A1\_2019-02E standard, in point: 5.2.1, 6.3, 6.3.1 (table)  
Exceeding the allowed height and weight leads to an uncontrolled and unpredictable deformations and damages to the parts of the system.
- In case of selling the device, the seller shall provide the product's manual in the language of a country where the equipment is to be used.
- For elements not produced by STRUMIN, please adhere to a given element's product manual.



#### ACTIONS TO BE PERFORMED BEFORE OPERATING THE SYSTEM

- During the transport, workers shall act carefully in order to avoid possible impact to the constructional elements. In case of damaging any elements of the device, it shall be immediately withdrawn from further operation,
  - The assembly shall be performed with due care. In case of damaging any elements the device, it shall be immediately withdrawn from further operation or checked by a trained person.
  - If the device is transported with a crane, workers shall pay special attention to any movements of a crane and keep safe distance from it.
  - In case of using a crane, all works connected to joining the slings to the device shall be performed by a person holding the permissions for a hook operator,
- Check all elements of the system for damages, check the technical documentation and the net's certificate.

#### QUALIFICATIONS OF THE PEOPLE USING THE SYSTEM

Workers operating the system should:

- Read the whole Technical Documentation of the edge protection system – the training must be confirmed in a written form.
- Finish a training on the occupational safety and health (work at heights, position training).
- Undergo a training about using the personal and collective protective equipment.
- Hold current medical examinations proper for a given work.



## 2.6 ASSEMBLY OF THE EDGE PROTECTION SYSTEM

Any works connected to the assembly of the edge protection system shall be performed in accordance with this manual and under a supervision of people that finished the required trainings. The assembly of the system shall be performed by minimum 2 people, equipped with the right tools and PPE which protects them during the assembly works.

Before commencing the works, the deployment and assembly plan of the system's elements shall be prepared, individually for each construction site and for each variant of the system. It allows to properly use the safety system.

The assembly of the edge protection system can be performed only by a worker that has read the system's Technical Documentation. The site manager or a different person that obtained permission from the site manager is responsible for the deployment and the choice of places that are to be protected.

Before the assembly, it shall be checked if the system is complete and has no visible signs of damage.

The assembly shall be performed with caution. In case of damaging any elements of the system, it shall be immediately replaced or checked by a trained person.

Before starting any assembly works, there shall be determined a danger zone within the area where there is a danger of falling objects – 1/10 of the height, but no less than 6 m.

In case of performing connections with the use of screws for concrete, the user shall check the condition of the concrete surface and define if its technical parameters provide sufficient strength of 10 kN.

No elements that do not belong to the device can be assembled to the edge protection system.

## 2.7 DISASSEMBLING AND MOVING THE DEVICE BETWEEN WORKPLACES

During the disassembly of the edge protection system, workers shall keep all security measures and comply with the same regulations as during the assembly process.



#### ASSEMBLY CHECK AND ACCEPTANCE PROTOCOL

After the assembly of the system's elements, the quality of the assembly of the protection barrier shall be thoroughly checked in terms of:

1. Reliability of fixings (rigid with no backlash),
2. Completeness of all mounting and connecting parts,
3. No damages while performing assembly operations.

Acceptance protocol of the edge protection system can be signed by the site manager or any person designated by the manager or any other authorized person (holding authorization to perform independent technical functions in construction and building industry).



## 2.8 RULES FOR SAFE OPERATION

During the operation of the edge protection system, workers shall bear in mind the safety of the users, any personnel or people that may be affected by the operation of the device.

The EDGE PROTECTION SYSTEM is intended solely for the purposes described in this manual. Any operation not in compliance with the manual is forbidden by the producer. Before using the edge protection system the worker shall read this manual. This manual shall be always available for reference. Improper use of the system poses a risk for the user as well as other people near the user. Before the work with the EDGE PROTECTION SYSTEM workers shall read the manual. Each user working with this equipment shall undergo a training concerning the use of personal protective equipment providing protection from falling.

### GENERAL RULES

#### EACH USER OF THE SYSTEM:

Shall not stay close to the edge protection system during its transport.

Shall wear proper personal protective equipment.

During the assembly and disassembly of the system, the user shall use PPE equipment attached to the anchoring point on the floor's surface or on the wall (pole) on which/near to which there is the danger zone, or it should be attached to a different system securing from falling.

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All elements (not needed for the operation of the equipment) that may pose danger for users (cables, hoses, unnecessary material) shall be removed.

The device is not intended for permanent storing of materials.

It was not designed for such purposes.

It is forbidden to place materials/objects and lean them against the protective barriers.

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Elements not delivered with the complete device shall not be attached to the system.

It may have a negative impact on mechanical parameters and affect the operational safety.

During the transport, workers shall act carefully in order to avoid possible impact to the constructional elements. In case of damaging any elements of the device, it shall be immediately withdrawn from further operation.

The assembly shall be performed with due care. In case of damaging any elements of the device, it shall be immediately withdrawn from further operation or checked by a trained person.



During the transport with a crane, workers shall pay special attention to any movements of a crane and keep safe distance from it.

Introducing any changes and complementing the equipment/system demands a written consent from the manufacturer. Any repairs of the constructional elements must be performed in accordance with the procedures declared by the system's manufacturer.

In case of selling the system abroad (to a different country than the country where it was intended to be used in), the seller shall provide the user manual, maintenance and periodical inspection instructions in the language of a country where the equipment is to be used.

After 12 months of operation, the system must be withdrawn from operation and undergo a periodical inspection (see below). In case of any factors that influence the condition of the device, e.g. harsh working conditions or a very high operation frequency, the periodical inspection shall be performed more often. The periodical inspection must be performed by a qualified person, responsible for protective measures and equipment in a company, according to the procedures described by the producer and on condition of holding a proper certificate provided by the system's producer. The inspection may also be performed by a producer or a certified representative.

The edge protection system can be used for 5 years. After that time, a detailed inspection shall be performed at a producer's facility. That inspection may be performed only by the manufacturer or a certified representative.

During the loading, transport, unloading and assembly of the system, a danger zone shall be determined within the crane's working area and it shall be ensured that nobody is in that zone during the crane's operation.

If the system may affect other machines or devices, such machines and devices shall be stopped from working for the time of works performed with the use of the edge protection system.



## DETAILED RULES

### PPE

1. If a self-locking device is to be used, it has to be checked for holding appropriate certification
2. Personal protective equipment that protects from falling used in connection with the platform must be marked with the CE mark and certified in the country in which it is intended to be used
3. Personal protective equipment used as a part of the system protecting from falling shall be equipped with a device that limits the strength impacting the operator to no more than 6 kN.
4. It is not advised to use the fall-arrest device in case of people suffering from cardiovascular diseases, under the influence of alcohol or drugs or in any other health condition that may impact the worker's mental or physical capabilities.

### CRANE

1. Was inspected before the transport
2. Has sufficient load capacity and range
3. Was placed on a proper surface
4. Is operated by a person with proper permissions and qualifications
5. Is equipped with automatic brake in case of losing the power supply, the lifting limiter and mechanical lowering of the load
6. Has a protection for a lifting hook's throat
7. Allows to smoothly operate (with not shakes or sudden breaks) and provides speed restrictions while lifting and lowering the load (max. 0.5 m/s)

### SLINGS

1. Are four-armed devices
2. Have sufficient carrying capacity
3. Are compatible with the transport basket used for transporting the system's elements
4. Are not twisted or tied up

### TRANSPORT

1. Make sure that there are no materials on the transport basket or tools that may increase the weight of the system or fall during transport
2. The transport of the basket and materials shall be performed only in favourable weather conditions
3. Connecting the transport basket with a crane may only be performed by a worker holding the permissions for hook whistblowers



#### OPERATOR AND HOOK WHISTLEBLOWER

1. Decides on the technical possibility of transport
2. Shall take care of the transport which shall be performed smoothly (no shakes, impacts etc.)
3. Shall maintain a visual contact with each other during transport (they shall use reflective clothing)

#### PERSONNEL

1. Shall read the system's Technical Documentation
2. Shall wear proper personal protective equipment
3. Shall remove any elements not connected to the given work which may pose a threat (cables, hoses, unnecessary material).



### 3.0 SYSTEM'S CHECK

#### QUICK CHECK

Before each use of the equipment, its technical condition shall be checked in terms of:

1. Completeness of components.
2. Completeness of screws, connectors.
3. No damages to any welds.
4. Verify if there are no bent, broken, cut or otherwise damaged elements.
5. Check if all assembly holes are unobstructed.
6. Check the product's markings, its readability, lack of damages (i.e. they are not wiped, broken etc.).

In case any of these requirements are not met, the user shall stop using the equipment and inform the manufacturer about the need to perform a detailed check.

#### DETAILED CHECK

The detailed check of the system shall be performed by the manufacturer or any appropriate entity:

1. Always before delivering the equipment to a construction site.
2. After 12 months of using.
3. Always when the equipment has not been used form longer than 3 months.
4. After every information from the user about the need to perform the detailed check.  
For the detailed check, performed at the request of the user, shall be charged a fee.

#### PERIODICAL CHECK

In order to provide proper operation and safety of the system, the periodical check of the equipment shall be performed at least once every 12 months (each element that is included in the system).

The check must be performed by a competent person holding proper authorizations.



#### PERIODICAL CHECK EXPIRATION DATE

The periodical check expiration date is clearly marked on the outer edge of the check label [term (year and month) of the next check]



#### 3.1 MAINTENANCE

Parts of the system are covered with zinc and layer. While cleaning and performing the maintenance of the elements there shall always be used substances that do not react with the coating.

In case of any chips, they shall be filled with proper zinc paste.



4.0 DEVICE'S REGISTER

REGISTER OF THE SYSTEM/DEVICE				
Name of the product:				
Model and type / identification:		Trade name:		ID No.:
Producer:		Address:		Phone, e-mail, web page:
Date of production / Date of expiry		Date of purchase:		Date of the first use:
Other important information (e.g. document No.):				
PERIODICAL CHECKS AND THE HISTORY OF REPAIRS				
Date:	Reason (periodical check or repair):	Defects found, repairs performed and other relevant information:	Name and signature of a competent person:	Periodical check – next term:



PERIODICAL CHECKS AND THE HISTORY OF REPAIRS				
Date:	Reason (periodical check or repair):	Defects found, repairs performed and other relevant information:	Name and signature of a competent person:	Periodical check – next term:



5.0 RATING PLATE

 FALL ARREST EQUIPMENT	
Name / Type:	EDGE PROTECTION SYSTEM
Serial number / Part No.:	.....
Year of production:	2023
Weight:	..... kg
EN-13374+A1_2019-02E	
	
STRUMIN Sp. z o. o. Sp. k. 32-084 MORAWICA, Aleksandrowice 17	
	<i>Read the safety instruction / User manual</i>
	<i>Use personal protective equipment (PPE)</i>
	<i>Use personal protective equipment (PPE)</i>

- The information contained on a rating plate allow to precisely identify each device based on its ID/Serial number.
  - All documents attached to the device, such as the device's register after check or the user manual, are related to the ID / serial No. on the device in order to avoid any mistakes.
  - The warning field on the rating plate informs, with the use of text and symbols, about possible dangers when the device is working.
- Dangers
- Act accordingly to the safety instructions and use personal protective equipment (PPE)



6.0 TABLE: DANGER ☒ RISK ☒ PROTECTION

No.	Danger	Risk	Risk assessment	Safety measures
1	Not sufficient mechanical durability.	Using a damaged or destroyed holder.	Fall of the construction. Danger to health and life.	Check, control and properly store the elements of the system.
		Using a damaged or destroyed pole.	Fall of the construction. Danger to health and life.	Check, control and properly store the elements of the system.
		Damaging or destroying the balk, the mesh panel, the polypropylene net or the net's edge line due to overloading,	Fall of the construction. Danger to health and life.	Check, control and properly store the system's elements. Do not allow the risk of heavy objects falling from heights to arise.
2	Smashing, squeezing, injuring.	Placing a foot, hand or other body part under the holders while twisting or tightening.	Cutting off, smashing, cutting, injuring or scraping any part of the body. Danger to health and life.	Be careful while assembling and, especially, while placing the modules on the floor. The risk of falling from height, use personal protective equipment. Use gloves, shoes and protective helmets with a chin strap.
3	Hitting	The risk of being hit by the system's elements during transport and moving.	Hitting the construction or other working surface, especially the balks of the net (length 6 m). Danger to health and life.	Be careful while moving and avoid carrying long elements by only one worker. Use a protective helmet with a chin strap.
		Non-securing the filling of the protection while the assembly.	Hitting with head or any other part of the body of people that are on the bottom level. Danger to health and life.	Be careful while assembling, take notice of any protective measures of elements and avoid uncontrolled movements, i.e. turning, moving, slipping etc.
		Not securing the elements of the system from sliding out.	Risk for people on the lower levels of hitting with head or any other part of the body. Danger to health and life.	Be careful while assembling, take notice of any protective measures of elements and avoid uncontrolled movements, i.e. turning, moving, slipping etc.
4	Falling or thrown away objects	Improper securing of the objects around the workspace.	Hitting, breaking, injuring or burning any part of the body. Danger to health and life.	Wear proper personal protective equipment. Define the safe work's system. Define a safety area during the assembly and disassembly of the system, which amounts to (horizontally) 1/10 height of the building, but no less than 6 m.
5	Weather conditions	Hitting by a lightning, wind.	Electrocuting, burning. Danger to health and life.	Avoid performing any works during storms and working when the wind blows with the strength over 10 m/s.



## 7.0 DESIGNER'S STATEMENT

According to art. 20(4) of the "Building Code" I hereby declare that  
this project documentation  
of the constructional part for the edge protection system

was drawn in accordance *with the provisions of the code, rules and guidelines of technical knowledge (art. 20 point 4 of the 16 April 2004 Act, amending the 7 July 1994 Act – "Building Code" Journal of Laws 20 point 4 of the 16 April 2004 Act, amending the 7 July 1994 Act – "Building Code" Journal of Laws no. 6, pos. 41/2004)*, binding technical and building provisions, as well as Polish and European Standards, and was handed in full to serve its purpose..

mgr inż. Jan Bąba  
Uprawnienia budowlane do projektowania  
i kierowania robotami budowlanymi  
bez ograniczeń w specjalności  
konstrukcyjno-budowlanej  
czytelny podpis i pieczęć projektanta

**Projektant**

*designer's readable signature and seal*



EU DECLARATION OF CONFORMITY NO.: .....

1. A fall-arrest device: EDGE PROTECTION SYSTEM (Serial No.....),
2. Name and address of the manufacturer:  
STRUMIN Sp. z o. o. Sp. k., Aleksandrowice 17,  
32-084 MORAWICA, TIN: 513-024-97-17.
3. This declaration was issued for the sole responsibility of the manufacturer: STRUMIN Sp. z o. o. Sp. k.,
4. Object of the declaration: EDGE PROTECTION SYSTEM as described in the Technical Documentation in the appendix no. 1 to this declaration:  
"DTR EPS 2023-KWIECIEN.PDF"
5. The object of this declaration described in 4 herein complies with the provisions of the EU's standards.
6. References to the standards describing the declared compliance:  
The project of the edge protection system was prepared in accordance with the current laws and technical standards:  

EN-13374+A1_2019-02E	– Temporary protection systems on the edges of buildings
EN 1090	– Technical requirements for the execution of steel and aluminium structures.
EN ISO 3834-2	– Quality requirements for the welding of metal materials.
7. The object of this declaration, described in Point 4. herein complies with the type, in accordance with the company's production inspection system No. ZKP/STRUMIN/01 and the rules of the supervised product inspections in random time intervals).

Signing on behalf of: Kamil Strumiński, PPHU STRUMIN

**STRUMIN** Sp. z o. o. Sp. k.  
Aleksandrowice 17, 32-084 Morawica  
NIP 513-024-97-17  
REGON 367264950  
tel. 515 488 585 STRUMIN.PL



(place and date of issuing):  
MORAWICA  
18-04-2023



Appendix No. 1

**4.1 Class A**

Class A protection provides resistance to static loads only, based on the requirements to:

- support a person leaning on the protection or provide a handhold when walking beside it; and
- collectively stop a person who is walking or falling towards the protection.

**4.2 Class B**

Class B protection provides resistance to static loads and low dynamic actions only, based on the requirements to:

- support a person leaning on the protection or provide a handhold when walking beside it; and
- collectively stop a person who is walking or falling towards the protection;
- collectively stop a person sliding/falling down a sloping surface.

**4.3 Class C**

Class C protection provides resistance to high dynamic forces based on the safety requirements to prevent the fall of a person sliding down a steep sloping surface.

- Collectively stop a person sliding/falling down a steep sloping surface.



## 5.2 Additional dimensional requirements for individual classes

*Dimensions in millimetres*

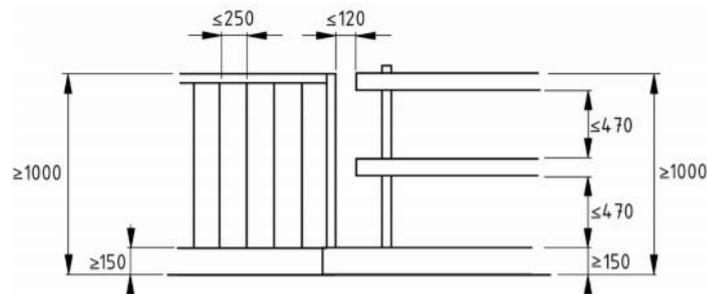


Figure 4 — Dimensional height and spacing of edge protection components

### 5.2.1 Edge protection system class A

**A1)** The inclination of edge protection system class A shall not deviate from the vertical by more than 15°, outwards or inwards. **A1)**

If an intermediate guardrail is provided, any gap shall be so dimensioned that a sphere of 470 mm diameter will not pass through the protection, see Figure 4. If there is no intermediate guardrail or if it is not continuous, the edge protection system shall be so dimensioned that a sphere with a diameter of 250 mm will not pass through it.

### 5.2.2 Edge protection system class B

**A1)** The inclination of edge protection system class B shall not deviate from the vertical by more than 15°, outwards or inwards. **A1)**

Any gap in a class B edge protection shall be so dimensioned that a sphere of 250 mm diameter will not pass through the protection.

### 5.2.3 Edge protection system class C

The inclination of the edge protection shall be between the vertical line AC of Figure 5, and a line perpendicular to the surface, line BC. Gaps in class C edge protection shall be dimensioned so that a sphere with a diameter of 100 mm will not pass through them.



Appendix No. 2

**5.2.1 Edge protection system class A**

**A1)** The inclination of edge protection system class A shall not deviate from the vertical by more than 15°, outwards or inwards. **A1)**

If an intermediate guardrail is provided, any gap shall be so dimensioned that a sphere of 470 mm diameter will not pass through the protection, see Figure 4. If there is no intermediate guardrail or if it is not continuous, the edge protection system shall be so dimensioned that a sphere with a diameter of 250 mm will not pass through it.

**6.3 Static loads**

**6.3.1 General**

An edge protection system shall be designed for the following loading criteria.

Point loads can act anywhere along the system, e.g. at the post or between the posts.

Point loads shall be assumed to be distributed upon a maximum area of (100 × 100) mm. For a net or a fen-cing structure, this load shall be assumed to be uniformly distributed upon a maximum area of (300 × 300) mm.

If nothing else is stated, all loads shall act in the most unfavourable position(s) of the edge protection system including all of its components.



Table 2 — Overview of static load requirements

Line No.	Clause	Load case	Designation	Point Load [N]	Distributed Load $q_i$ [N/m <sup>2</sup> ]	$\gamma_f$	Requirement
1	6.3.2	Serviceability Limit State Toeboard level	$F_{T2}$	200	-	1,0	max. 55 mm elastic deflection of the system
		Serviceability Limit State Guardrails level	$F_{T1}$	300			
2	6.3.3	Ultimate Limit State Toeboard level	$F_{H2}$	200	-	1,5	$E_d \leq R_d$
		Ultimate Limit State All other parts	$F_{H1}$	300			
3	6.3.4	Ultimate Limit State, Maximum Wind	$Q_{MW}$	-	600	1,5	$E_d \leq R_d$
4	6.3.5	Ultimate Limit State, Load Combination Toeboard level	$Q_{WW} + F_{H2}$	200	200	1,5	$E_d \leq R_d$
		Ultimate Limit State, Load Combination All other parts	$Q_{WW} + F_{H1}$	300			
5	6.3.6	Ultimate Limit State, Parallel	$F_{H3}$	200	-	1,5	$E_d \leq R_d$
6	6.3.7	Ultimate Limit State with accidental loads	$F_D$	1250	-	1,0	$E_d \leq R_d$ max. 300 mm deflection during load
NOTE Lines 2 to 5 specify fundamental loads.							

