

## MOSTOSTAL PLUS FRAME SCAFFOLDINGS

CATALOGUE





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#### **1. SCAFFOLDING CHARACTERISTICS**

ALTRAD-MOSTOSTAL manufactures steel and aluminium MOSTOSTAL Plus frame scaffoldings. The system includes such basic components as base jacks, frames, railings, braces, platforms and toe boards. Distance between the individual scaffolding levels is indicated by the frames 2.00 m high and 0.73 or 1.09 m wide. Bay working platform system length equals to 0.73 m, 1.09 m, 1.57 m, 2.07 m and 3.07 m respectively.



Construction of Quattro Business Park - Cracow



Sukiennice - Cracow

The scaffolding load capacity depends on its width and the length of the platforms used to install the given set and it can vary from 2 up to 6 kN/m<sup>2</sup> (load classes according to PN-EN 12811-1:2004). The scaffolding load capacity relies on the base jacks, frames and platforms. To make the scaffolding rigid it must be stiffened with braces. The safety components are: railings, double railings, front railings and toe boards. By using the above-mentioned components and other components present in the system (see p. 5 - components) you can develop the scaffolding while maintaining the safety rules.

MOSTOSTAL Plus scaffoldings are certified with the IMBiGS Safety Certificate and other certificates that confirm safety and quality of the equipment manufactured.



#### 2. STANDARDS AND RULES CONCERNING THE SCAFFOLDINGS

When designing, installing, disassembling and using the scaffoldings you should observe the rules and requirements included in:

- this manual
- Regulation of the Minster of Infrastructure of 6 February 2003 on occupational health and safety during construction works (Journal of Laws No. 47/03 item 401)
- Announcement of the Minister of Economy, Labour and Social Policy of 28 August 2003 on publishing a unified text of the regulation of the Minister of Labour and Social Policy on the general occupational health and safety rules (Journal of Laws No. 169/03 item 1650)
- PM-M-47900-1:1996 "Steel, standing scaffoldings. Definitions, division and main parameters."
- PM-M-47900-2:1996 "Steel, standing scaffoldings. Pole scaffoldings made of pipes."
- PM-M-47900-3:1996 "Steel, standing scaffoldings. Frame scaffoldings."
- PN-EN 12811-1:2004 "Provisional structures used at a construction site. Scaffoldings. Conditions for the production and general design rules."
- PN-EN 12810-1:2004 "Facade scaffolding made of prefabricated elements. Products' technical specifications."
- PN-EN 12810-2:2004 "Facade scaffolding made of prefabricated elements. Particular design and construction methods."
- PN-EN 74:2002 "Couplings, centring plungers and foot sets used in working and load-bearing scaffoldings made of steel pipes. Requirements and examination procedures."
- PN-EN 39:2003 "Steel pipes for scaffolding construction Technical regulations for the delivery process."

The above-specified documents should be available where the MOSTOSTAL scaffoldings are installed and used.

This catalogue will provide you with the basic components and supplementary parts of the ALTRAD-MOSTOSTAL scaffolding system.

#### Steel frame

Frame stands are made of 48.3 mm diameter pipes. The upper U-section of the frame enables fast and safe installation of platforms. Railing couplings with wedges for installing safety railings. Frame rigidity is assured by gusset plates in both upper corners. Studs welded to the bottom frame section are used for fixing toe boards. Wide assortment of compensating frames the height of 0.66 m, 1.00 m and 1.5 m allows eliminating even large irregularities of terrain.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E281606 | 0.66x0.73      | 10.28       |
| E281610 | 1.00x0.73      | 12.76       |
| E281615 | 1.50x0.73      | 16.20       |
| E281620 | 2.00x0.73      | 19.27       |
| E281206 | 0.66x1.09      | 14.44       |
| E281210 | 1.00x1.09      | 16.79       |
| E281220 | 2.00x1.09      | 24.75       |

#### Aluminium frame 0.73

Approx. 50% lighter than steel frame – enables easier assembly and disassembly. Compensation frames allow setting up scaffolding on uneven (irregular) terrain and present an alternative for steel compensation frames.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E282206 | 0.66x0.73      | 5.12        |
| E282210 | 1.00x0.73      | 6.43        |
| E282215 | 1.50x0.73      | 8.23        |
| E282220 | 2.00x0.73      | 9.73        |

#### PLUS steel frame

New steel frame version fully compatible with the other system frames.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E202029 | 0.66x0.73      | 10.36       |
| E202028 | 1.00x0.73      | 13.17       |
| E202027 | 1.50x0.73      | 16.20       |
| E202026 | 2.00x0.73      | 19.80       |
| E202018 | 2.00x0.36      | 17.94       |

#### PLUS aluminium frame

New aluminium frame version fully compatible with the other system frames.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E203010 | 0.66x0.73      | 4.64        |
| E203011 | 1.00x0.73      | 6.05        |
| E203012 | 2.00x0.73      | 9.40        |





#### Steel Frame PLUS-double railing

Steel Frame enabling installation of double railing thanks to four wedle cassettes.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E202036 | 0.73x2.00      | 21.02       |





#### Bypass frame

Used for bypassing horizontal protrusion of a building, such as eaves, cornices, allowing to maintain constant platform width.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E202019 | 2.00x0.73      | 25.24       |
| E280520 | 2.00x0.73      | 22.84       |



Ø**36** 

#### Standard base jack

150 x 150 mm stand with pipe stud of 36 mm diameter, for correct setting of scaffolding that does not require height adjustment.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511200 | 0.15           | 1.38        |

## 



Stands of different height designed for compensating terrain irregularities. The stand base has the dimensions of 150 x 150 mm and is fitted with a threaded pipe connector and a nut with a socket for fixing the pipe. Flattened thread assures the nut will not become loose (at least 15 cm of stand's threaded pipe must remain inside the frame) or lost. Basic stand height and max. extension: height – 40 cm, max. extension length – 20 cm; height – 60 cm, max. extension length – 40 cm; height – 80 cm, max. extension length – 60 cm; Permissible stand load is 3 t.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511204 | 0.40           | 3.39        |
| E511206 | 0.60           | 4.28        |
| E511208 | 0.80           | 5.20        |
| E511313 | 1.50           | 9.45        |



#### Tilt base jack

Tiltable threaded pipe connector on 150 x 150 mm base, fitted with a nut and a clamp for pipe of 48.3 mm diameter. Used for setting up the frame on inclined surfaces.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511408 | 0.80           | 7.81        |
|         |                |             |

#### Platform ladder, spare part

Aluminium ladder for the aluminium platform with a trapdoor (E4923xx) – supplied as a spare part with a pin and a washer.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E492601 | 2.45x0.40      | 4.60        |



Ladder with perforated, non-slip spokes, used together with E4925xx platforms.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511600 | 2.14x0.34      | 11.68       |
| E511601 | 2.78x0.34      | 14.06       |









Building Quattro Business Park - Kraków

Facade tower's renovation – Szczecin

#### Aluminium-plywood access platform with a ladder

Used for assuring vertical traffic inside the scaffolding. Fitted with suspended platform ladders which, once installed, assure free traffic between scaffolding levels. The carrying structure and integrated ladder made of aluminium, filling made of waterproof non-slip plywood.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E492125 | 2.57x0.61      | 23.80       |
| E492130 | 3.07x0.61      | 29.10       |

#### Passing Platform Plus without ladder

A light passing platform without the ladder (used with the inter-level ladder E511600).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E492020 | 0.61x2.07      | 15.96       |
| E492030 | 0.61x3.07      | 24.30       |

#### Complete aluminium and plywood Platform Plus

An aluminium and plywood platform with the anti-slip surface.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E491907 | 0.61x0.73      | 6.07        |
| E491910 | 0.61x1.09      | 8.75        |
| E491915 | 0.61x1.57      | 11.92       |
| E491920 | 0.61x2.07      | 15.53       |
| E491925 | 0.61x2.57      | 18.80       |
| E491930 | 0.61x3.07      | 24.06       |

#### Steel platform

Perforated, non-slip surface, and on both ends equipped with catches that allow fixing it to the frame's u-section. Platforms are used as working stations and carry the load of people, tools and materials necessary for performing the works. Perfect universal platform for scaffoldings of the frame width of 0.73 m (two 0.32 m wide platforms) or 1.09 m (three 0.32 m wide platforms) and as extension platform fixed on a bracket. Nominal load, depending on length, up to 6 kN/m<sup>2</sup>.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E491307 | 0.32x0.73      | 6.09        |
| E491310 | 0.32x1.09      | 8.54        |
| E491314 | 0.32x1.40      | 10.31       |
| E491315 | 0.32x1.57      | 11.84       |
| E491320 | 0.32x2.07      | 15.34       |
| E491325 | 0.32x2.57      | 18.70       |
| E491330 | 0.32x3.07      | 22.13       |











#### Steel platform with crosspiece

A steel perforated platform with ergonomic crosspiece which are the additional handle for the fitter. Perfect when the scaffolding is often relocated.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E491415 | 0.32x1.57      | 12.04       |
| E491420 | 0.32x2.07      | 15.74       |
| E491425 | 0.32x2.57      | 19.10       |
| E491430 | 0.32x3.07      | 22.56       |



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#### ECO platform with crosspiece

Clinched ECO platforms are lighter and less expensive while maintain the same strength parameters as welded platforms. Ergonomic crosspieces provide additional grip for the installer. Manufacturing includes an innovative solution for connecting the beam with catches with the main drawpiece by using the embossing and parent rivets.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E491625 | 0.32x2.57      | 16.15       |
| E491630 | 0.32x3.07      | 18.85       |

#### Steel intermediate U-platform

A platform with the U-section catch, perforated, anti-slip.

| Index    | Dimensions (m) | Weight (kg) |
|----------|----------------|-------------|
| E491807  | 0.19x0.73      | 4.63        |
| E491810  | 0.19x1.09      | 6.57        |
| E491815  | 0.19x1.57      | 9.29        |
| E491820  | 0.19x2.07      | 11.92       |
| E491825  | 0.19x2.57      | 14.64       |
| E 491830 | 0.19x3.07      | 17.37       |

#### Steel additional (moveable) platform

Used to fill space between two scaffolds (load capacity: 2 kN)

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E494310 | 0.3x1.0        | 5.14        |
| E494315 | 0.3x1.5        | 7.39        |
| E494320 | 0.3x2.0        | 9.65        |
| E494325 | 0.3x2.5        | 11.90       |



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#### Additional Platform

Used to fill space between two scaffolds (load capacity: 2 kN)

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E494407 | 0.19x0.7       | 2.86        |
| E494410 | 0.19x1.0       | 3.94        |
| E494415 | 0.19x1.5       | 5.72        |
| E494420 | 0.19x2.0       | 7.51        |
| E494425 | 0.19x2.5       | 9.29        |
| E494430 | 0.19x3.0       | 11.08       |





#### Single railing

Used for securing scaffolding bays. Pipe of the diameter of 38 mm with flat strips for fixing in the wedge cassettes on both ends.

| Index    | Dimensions (m) | Weight (kg) |
|----------|----------------|-------------|
| E283607  | 0.73           | 1.55        |
| E283610  | 1.09           | 2.17        |
| E283615  | 1.57           | 3.00        |
| E283620  | 2.07           | 3.86        |
| E 283625 | 2.57           | 4.70        |
| E 283630 | 3.07           | 5.58        |



#### Front railing

Used for securing the front area of the working bay. Fixed to the frame using a half-coupling by tightening the nut. Pipe diameter of 33.7 mm and 26.9 mm.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E283907 | 0.73           | 3.72        |
| E283910 | 1.09           | 4.66        |



### Front railing with wedge coupling

Fitted with a wedge coupling that assures easier and faster assembly and disassembly.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E283007 | 0.73           | 3.80        |
| E283010 | 1.09           | 4.76        |





Exemplary front railing applications



#### Double railing

Double steel or aluminium railing replaces two single steel railing reducing the railing weight by half. It stiffens and stabilises scaffolding structure and makes the assembly faster and easy.

| Index         | Dimensions (m) | Weight (kg) |
|---------------|----------------|-------------|
| E284215 steel | 0.50x1.57      | 7.40        |
| E284220 steel | 0.50x2.07      | 9.13        |
| E284225 steel | 0.50x2.57      | 11.51       |
| E284230 steel | 0.50x3.07      | 13.24       |
| E284315 alu.  | 0.50x1.57      | 3.48        |
| E284320 alu.  | 0.50x2.07      | 4.28        |
| E284325 alu.  | 0.50x2.57      | 5.08        |
| E284330 alu.  | 0.50x3.07      | 5.89        |



#### Steel telescopic railing

Replaces single railings and can be used as railing for bays with non-system dimensions (max. for 2.57 bay).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E283700 | 1.60-2.62      | 7.16        |



#### Steel railing post with platform protection

Ensures safety on the highest scaffolding level by acting as a railing support. It is made of the pipe of the diameter of 48 mm with wedge cassettes to install the typical side railings.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E202089 | 0.73x1.00      | 6.64        |
| E202091 | 0.73x1.00      | 5.86        |
| E202092 | 1.09x1.00      | 6.50        |
| E282007 | 0.73x1.00      | 5.89        |
| E282010 | 1.09x1.00      | 6.53        |

#### Aluminium railing post with platform protection

An alternative to the steel post, approx. 50% lighter.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E203083 | 0.73x1.00      | 2.97        |



#### Steel front frame

Assures work safety on the highest scaffolding level from the front side. It also serves as a longitudinal railing support.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E202023 | 0.73x1.00      | 11.34       |
| E202024 | 1.09x1.00      | 13.20       |
| E283307 | 0.73x1.00      | 12.53       |
| E283310 | 1.09x1.00      | 14.43       |

#### Aluminium front frame

An alternative to the steel front frame, approx. 50% lighter.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E203080 | 0.73x1.00      | 5.69        |

#### Transverse toe board

For protection from the front side of the scaffolding. Used in conjunction with the front railing and the front frame. The toe board is impregnated and fitted with steel fixtures on the ends.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286807 | 0.15x0.73      | 1.70        |
| E286810 | 0.15x1.09      | 2.72        |

#### Longitudinal toe board

Protects against slipping of the worker's foot or tools from the working platform. The toe board completes the scaffolding's triple protection system (two single railings + toe board) as per the governing regulations. The toe board is impregnated and fitted with steel fixtures on the ends. The toe board is installed on the platform level on the studs welded to the lower section of frame.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286813 | 0.15x1.09      | 2.94        |
| E286815 | 0.15x1.57      | 4.15        |
| E286820 | 0.15x2.07      | 5.40        |
| E286825 | 0.15x2.57      | 6.70        |
| E286830 | 0.15x3.07      | 7.90        |

#### Transverse curb

Secures a scaffolding from the front. Assembly is possible thanks to the handle of the curb E286615.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286805 | 0.15x0.54      | 1.54        |











#### Net screen post

For installing the protective mesh in two rows (up to 2 meters over the highest scaffolding level).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E285911 | 0.73x2.00      | 15.20       |
| E285912 | 1.09x2.00      | 16.90       |



#### Net screen

Assures work safety on scaffoldings. Used for roofworks or other works connected with high risk. Protects people and various materials and tools from falling out. 60 mm mesh, fixed in a frame, installed instead of railings and toe boards on the last level of the scaffolding and used exclusively with the protective mesh post.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E285015 | 1.00x1.57      | 16.92       |
| E285020 | 1.00x2.07      | 21.52       |
| E285025 | 1.00x2.57      | 25.10       |
| E285030 | 1.00x3.07      | 28.64       |

#### Steel railing post

Used for fixing the railings on last level of scaffolding. Use in conjunction with the platform protection (E2854xx).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E202085 | 1.00           | 5.25        |
| E282700 | 1.00           | 4.15        |

#### Aluminium railing post

An alternative to the steel post, approx. 50% lighter.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E282800 | 1.00           | 2.28        |
| E203084 | 1.00           | 2.44        |







#### Diagonal

Used for stiffening the scaffolding. Made of pipe 42 mm in diameter fitted with a rotary clamp. Installed by sliding the upper end of the bracing into the gusset opening of the vertical frame and fixing the other end to the bottom of the opposite vertical frame using the clamp.

| Index    | For bay     | Length<br>(m) | Weight<br>(kg) |
|----------|-------------|---------------|----------------|
| E284715* | 1.57 x 2.00 | 2.40          | 6.27           |
| E284720  | 2.07 x 2.00 | 2.80          | 6.45           |
| E284725  | 2.57 x 2.00 | 3.20          | 7.25           |
| E284730  | 3.07 x 2.00 | 3.60          | 8.14           |

\* Rotary clamps on the both endings.



#### Diagonal with wedge coupling

Alternative to the E2847xx diagonal. Instead of the rotary half-coupling with a nut and bolt this bracing is fitted with a wedge half-coupling which assures faster and easier bracing assembly and disassembly.

| Index   | For bay     | Length<br>(m) | Weight<br>(kg) |
|---------|-------------|---------------|----------------|
| E284815 | 1.57 x 2.00 | 2.40          | 6.65           |
| E284820 | 2.07 x 2.00 | 2.80          | 6.63           |
| E284825 | 2.57 x 2.00 | 3.20          | 7.43           |
| E284830 | 3.07 x 2.00 | 3.60          | 8.33           |



#### Steel horizontal brace

Used for stiffening the scaffolding. Installed in columns (vertical sections) braced on the bottom of the first frame or when assembling the mobile scaffoldings based on the frame scaffoldings.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E283820 | 2.07           | 8.13        |
| E283825 | 2.57           | 9.77        |
| E283830 | 3.07           | 11.40       |



#### Angle brace

Used for supporting the steel bracket of the width of 0.73 m (E285579) or 1.09 m (E285519). Fitted with a rotary coupling.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E285179 | 1.75           | 4.99        |
| E285119 | 1.95           | 5.52        |



#### Universal steel pipe

Universal component used for non-standard structures and different bay lengths. Pipe diameter of 48.3 mm.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E440510 | 0.048x1.00     | 3.58        |
| E440520 | 0.048x2.00     | 7.16        |
| E440530 | 0.048x3.00     | 10.70       |
| E440540 | 0.048x4.00     | 14.30       |
| E440550 | 0.048x5.00     | 17.90       |
| E440560 | 0.048x6.00     | 21.50       |





Bre Bank - Łódź



Sukiennice - Cracow



NMP Łaskawa Church - Warsaw

#### Normal coupling

Used for connecting two pipes of the diameter of 48 mm at the angle of 90°. Can be used for anchoring the scaffolding to the building. Fixed in the area of the gusset plates of the vertical frame together with the anchoring coupling. Permissible load of the standard coupling is 9.1 kN.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E581119 | -              | 1.25        |

#### Rotary coupling

With flange nuts, used for connecting two pipes of the diameter of 48 mm at any angle. Permissible load of the rotary coupling is 5.9 kN.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E581319 | 0.40x2.45      | 1.20        |

#### In-line coupling

Used for connecting two pipes of the diameter of 48 mm in the longitudinal direction while maintaining coaxiality. The longitudinal coupling must be used exclusively with the centring stud fixed on the connection of both pipes. Permissible load of the longitudinal coupling is 6 kN.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E581419 | -              | 1.50        |

#### Railing coupling with wedge

Half-coupling with an integrated wedge cassette, enables fixing the railing to the frame from facade side or at any frame height.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E284600 | -              | 0.90        |

#### Anchor coupling

Used for anchoring the scaffolding with the standard 48 mm diameter pipes and standard couplings. Used instead the anchoring connector.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E284610 | -              | 0.99        |

#### Handle of a curb

An element used when the curb needs to be installed from the inside of a scaffolding. Installed at the bottom of the frame to pipe Ø48.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E284615 | -              | 0.85        |



see p. 43

see p. 43













#### Anchor coupler

The element used to connect the Ø48.3 pipe with steel elements of the construction of the building (double tee). Always use two anchor couplers.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E284620 | -              | 1.06        |

#### Aluminium stairs

Assure convenient access to the scaffolding and transportation of materials.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286225 | 0.64x2.57      | 25,23       |
| E286230 | 0.64x3.07      | 30.00       |

# 5ee p. 37-39

see p. 43

#### External railing for stairs

Assures safety when entering or exiting the frame scaffolding staircase.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286325 | 2.57           | 16.00       |
| E286330 | 3.07           | 17.80       |



#### Internal railing for stairs

Assures safety when entering or exiting the scaffolding.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286300 | -              | 11.85       |



#### Initial U-transom for stairs

Component necessary on the first scaffolding level as a support for stairs.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286207 | 0.73           | 3.02        |



#### Steel lattice girder

For constructing passages under the scaffoldings, spans over the structural elements of the building, and all types of platforms. The girder is connected to the vertical frame using 4 standard couplings. The girder is made of pipes of the diameter of 48.3 mm x 3.2 mm.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E503330 | 0.40x3.00      | 29.22       |
| E503332 | 0.40x3.24      | 31.14       |
| E503340 | 0.40×4.00      | 39.28       |
| E503342 | 0.40x4.24      | 39.67       |
| E503352 | 0.40x5.24      | 48.55       |
| E503360 | 0.40x6.00      | 57.42       |
| E503362 | 0.40x6.24      | 58.03       |
| E503230 | 0.50x3.24      | 36.40       |
| E503240 | 0.50x4.24      | 45.60       |
| E503250 | 0.50x5.24      | 52.33       |
| E503260 | 0.50x6.24      | 61.12       |

#### Aluminium lattice girder

Lighter alternative to the steel lattice girder. Assures much easier assembly and disassembly due to lighter weight.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E501230 | 0.40x3.00      | 12.70       |
| E501240 | 0.40×4.00      | 17.00       |
| E501252 | 0.40x5.24      | 20.96       |
| E501260 | 0.40×6.00      | 24.70       |
| E501262 | 0.40x6.24      | 25.12       |
| E501280 | 0.40×8.00      | 32.40       |
| E501330 | 0.50x3.24      | 14.97       |
| E501340 | 0.50x4.24      | 18.79       |
| E501350 | 0.50x5.24      | 22.60       |
| E501360 | 0.50x6.24      | 26.43       |
| E501380 | 0.50x8.24      | 34.03       |

#### Transfer steel girder

Used for constructing the passages of the following system dimensions: 5.14 (2x2.57), 6.14 (2x3.07). The ends of girder's upper and lower section are fitted with the permanent half-couplings that enable fixing the girder to the frame. The transfer girder transoms can be used to install platforms in the transfer girder areas.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E503152 | 0.40x5.14      | 56.00       |
| E503162 | 0.40x6.14      | 62.13       |





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#### Transfer girder transom

Used together with the E503152 and E503162 steel transfer girders as a support for platforms in the central part of the girder.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E503407 | 0.73           | 2.80        |

#### Girder connector with fixture elements

Enables connecting the truss girders of different length allowing the construction of the spans 6 to 12 meters long.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E502000 | 0.44           | 2.20        |





#### Aluminium platform cross-bar

U-section for 2, 3, 4, 5, 6 platforms 0.32 m wide and the appropriate lengths of girders - 3 m, 4 m, 5 m, 6 m. Fixed to the upper girder section with a coupling. Used for constructing platforms.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E501006 | 0.60           | 2.70        |
| E501009 | 0.90           | 3.30        |
| E501012 | 1.20           | 3.80        |
| E501016 | 1.60           | 5.20        |
| E501019 | 1.90           | 5.80        |
| E501030 | 3.00           | 8.50        |
| E501040 | 4.00           | 10.20       |
| E501050 | 5.00           | 12.70       |
| E501060 | 6.00           | 15.20       |



#### Aluminium platform

Universal light aluminium platform facilitating traffic on the construction site. Enables constructing elevated work and inspection platforms.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E491042 | 0.59x4.20      | 32.70       |
| E491052 | 0.59x5.20      | 39.68       |
| E491061 | 0.59x6.10      | 46.90       |
| E491071 | 0.59x7.10      | 53.51       |





see p. 40

#### Aluminium railing post. Railing clamp. Clamp for aluminium platform

Elements used together with the aluminium platform. The aluminium post for the railings including a railing clamp and pipe of the diameter of 48.3 mm enables installing protective railings on the aluminium platform. An aluminium platform clamp is used for connecting the adjacent platform to increase the width of a platform or traffic route.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E491001 | -              | 2.50        |
| E491002 | -              | 0.30        |
| E491003 | -              | 0.30        |

#### Console

Permissible console load:

0.73 m up to 1 kN/m<sup>2</sup> when not propped.

And up to 3 kN/m<sup>2</sup> when propped. E285579 and E285519 consoles are also used together with the E285179 or E285119 transverse brace. The E285589 (high) console does not need any support.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E285539 | 0.36x0.28      | 3.40        |
| E285589 | 0.73x1.76      | 19.40       |
| E285579 | 0.73x0.38      | 6.54        |
| E285519 | 1.09x0.38      | 10.64       |
| E285550 | 0.50x0.30      | 5.15        |

#### Steel console – anchored

The console is anchored to the wall and thanks to its design it enables 0.73 m wide frames and E4913... platforms to be installed on it.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E285590 | 0.73           | 16.10       |
| E285515 | 1.50           | 41.10       |



#### Anchor coupling with hook

Installed in the cut outs in the frame gusset plates using one standard coupling enabling free adjustment of distance between the scaffolding and the wall and transferring the external load from the scaffolding to the building.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286606 | 0.60           | 2.74        |



**e** see p. 39-40





#### Distance anchor coupling with hook

Long anchor couplings (1.30 m and 1.50 m long) are fixed to both stands of the vertical frames using two standard couplings. Short anchor couplings (0.40 m and 0.80 m long) are fixed to just one frame stand, located near the wall, using one standard coupling.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E286504 | 0.40           | 1.66        |
| E286508 | 0.80           | 2.96        |
| E286513 | 1.30           | 4.58        |
| E286515 | 1.50           | 5.20        |



#### Platform securing element

Secures the platforms against falling out of the frame u-section on the highest level of the scaffolding with the installed standard railing posts and platforms placed on the steel supports.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E285403 | 0.36           | 0.99        |
| E285407 | 0.73           | 1.75        |
| E285410 | 1.09           | 2.48        |



#### Securing pin

The pin protects vertical frames against disconnecting. It is drawn through the holes for connecting two frames.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511100 | -              | 0.10        |

#### Plastic rawplug

Plastic rawplug of the diameter of 14 mm for fixing eye bolts (E5110xx).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511907 | 14 / 70        | 0.03        |
| E511910 | 14 / 100       | 0.03        |





#### Anchor eye bolt

Bolt used for anchoring the scaffolding to a wall, used together with the rawplug (E511907).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511012 | 0.12           | 0.20        |
| E511016 | 0.16           | 0.25        |
| E511019 | 0.19           | 0.30        |
| E511023 | 0.23           | 0.40        |
| E511028 | 0.28           | 0.50        |
| E511030 | 0.30           | 0.55        |
| E511035 | 0.35           | 0.60        |



#### Hole plug

Used for plugging the holes created after removing the anchor bolts.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E511800 | -              | 0.01        |

#### Tee head bolt

Used together with the E581302 flange nut. A spare part for the couplings.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E581301 | -              | 0.10        |

#### Flange nut

A service component and a component of all types of couplings and vertical braces. Used together with the SW 19 tee head bolt.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E581302 | -              | 0.04        |

#### Protective roof console

Used together with the steel support with a clamp (E285579) for securing personnel traffic routes against falling objects.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E288501 | 0.73           | 5.65        |









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#### Steel transfer frame

Enables safe and convenient personnel traffic under the constructed scaffolding. Bottom parts of the transfer frame stands are connected together in parallel to the wall using the horizontal braces (or pipes and couplings) or secured near the ground against shifting. Compatible with frames 0.73 m and 1.09 m wide.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E202195 | 1.50x2.20      | 34.54       |
| E281515 | 1.50x2.20      | 35.96       |

## **↓** •

#### Transverse transom

Designed for fixing platforms at any height on the frame.

| Index   | Dimensions [m] | Weight [kg] |
|---------|----------------|-------------|
| E285379 | 0.73           | 3.40        |
| E285319 | 1.09           | 6.14        |

#### Jib for block. Block.

For manual vertical transport of scaffolding elements or materials. The maximum weight of the transported load is up to 150 kg.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E552100 | 0.85           | 7.70        |
| E552000 | -              | 3.00        |

#### Module pallet

Perfect for space-efficient storage and transportation of the scaffolding components. Can be moved using a forklift or crane.

| Index   | Dimensions<br>HxAxB (m) | Load capacity<br>of a single pallet<br>(kN) | Max.<br>number of<br>levels | Weight<br>(kg) |
|---------|-------------------------|---|-----------------------------|----------------|
| E822800 | 0.82x0.88x1.28          | 20  | 3 levels<br>- 60 kN         | 40.20          |
| E823800 | 0.82x0.88x1.28          | 15  | 3 levels                    | 29.00          |





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#### Module basket

Comes together with the Modul pallet, used for storing small scaffolding components (couplings, stands, anchor connectors, brackets).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E822900 | 0.68x1.08      | 30.40       |



**Fe** see p. 41

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#### Net pallet

Perfect for space-efficient storage and transportation of the scaffolding components.

| Index   | Dimensions<br>HxAxB (m) | Load capacity<br>of a single<br>pallet (kN) | Max.<br>number<br>of levels | Weight<br>(kg) |
|---------|-------------------------|---|-----------------------------|----------------|
| E822808 | 0.82x0.88x1.28          | 20  | 3 levels<br>- 60 kN         | 69.70          |
| E823808 | 0.82x0.88x1.28          | 15  | 3 levels<br>- 45 kN         | 58.50          |







800

#### Mobile scaffolding guide beam

Designed for installing mobile scaffoldings using the frame scaffolding components. Used exclusively with the E571175 base jack with two nuts and the MP-116 mobile scaffolding wheel, and the horizontal brace.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E571110 | 1.09x2.60      | 37.76       |
| E571173 | 0.73x1.90      | 26.34       |



#### Base jack with two nuts

Designed for compensating surface irregularities. Used also as a mobile scaffolding base jack.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E571175 | 0.40           | 4.10        |

#### Mobile scaffolding wheel

Used together with E571175. Operational load of a single wheel is 750 kg. The wheel is fitted with a lock.

| Index  | Dimensions (m) | Weight (kg) |
|--------|----------------|-------------|
| MP-116 | -              | 4.00        |

#### Scaffolding net

Securing net reinforced with the black-coloured threads, with fixing holes every 10 cm on the entire length. Basis weight – approx  $65 \text{ g/m}^2$ . Wind permeability – 50-55%.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E732025 | 2.57x10        | 0.05        |
|         | 2.57x20        | -           |
| E732030 | 3.07x10        | 0.06        |
|         | 3.07x20        | -           |









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#### Scaffolding canvas cover

The canvas cover coated on both sides (polyethylene – TEX 12x12 fabric). Basis weight approx 180 g/m².

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E733725 | 2.60x10        | 0.18        |
|         | 2.60x20        | -           |
| E733730 | 3.10x10        | 0.18        |
|         | 3.10x20        | -           |



#### Reducing transom (steel adjusting beam)

Designed for reducing the scaffolding bay area (changing the bay width from 1.09 m to 0.73 m).

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E281402 | 0.73x1.09      | 12.85       |



#### Installation post (leading)

Component of the Safety Kit. One set consists of two posts which together with the telescopic railing constitute a temporary safety feature for the installer during the scaffolding assembly.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E206600 | 2.00           | 6.82        |



#### Telescopic railing

Component of the Safety Kit. Enables moving the installation posts to the following levels without disassembling the kit. Adjustment range 1.5 - 2.07 m or 2.07 - 3.7 m.

| Index   | Min. length (m) | Max.<br>length<br>(m) | Weight<br>(kg) |
|---------|-----------------|-----------------------|----------------|
| E206700 | 2.07            | 3.70                  | 4.23           |
| E206800 | 1.50            | 2.07                  | 3.45           |



#### Steel and aluminium eaves frame

Designed for bypassing eaves and cornices of the building.

| Index         | Dimensions (m) | Weight (kg) |
|---------------|----------------|-------------|
| E281525 steel | 1.00           | 15.22       |
| E281530 alu.  | 1.00           | 7.96        |





#### Steel roof girder

Component for connecting the system girders when building roofs of halls and tents.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E502140 | 0.4x0.80       | 8.20        |



Component connecting the frame with the girder. Provides a 10-degree slope of hall or tent roofs.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E503507 | 0.73           | 5.99        |









#### Steel girder transom

Constitutes the base for constructing the scaffolding over passageways. Installed on the girders.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E503573 | 0.28x0.91      | 7.47        |





Roof ending beam

Element intended for system end of beams 0,4xL. It plays the role of an eaves.

| Index   | Dimensions (m) | Weight (kg) |
|---------|----------------|-------------|
| E501940 | 0.4x0.62       | 5.59        |





#### Electric hoisting winches Mini 605, Maxi 1205, Maxi 1505

Lifting capacity - 120 kg; 2 lifting speeds 20/60 m/min; power - 0.45/1.35 kW; power supply - 230 V/50 Hz. Lifting capacity - 150 kg; 2 lifting speeds 15/45 m/min; power - 0.45/1.35 kW; power supply - 230 V/50 Hz.

| Index                   | Lifting capacity (kg) |
|-------------------------|-----------------------|
| E552606 with 51 m cable | 50.00                 |
| with 81 m cable         | 56.00                 |
| E552612 with 51 m cable | 60.00                 |
| with 81 m cable         | 65.00                 |
| E552615 with 51 m cable | 60.00                 |
| with 81 m cable         | 65.00                 |



#### Accessories for hoisting winches

- Block for jib
- Jib for block
- Rotary outrigger
- Hook
- Holder for 5 hooks
- Cable (5 mm diameter, 35 cm long) for suspending several hooks
- Hanger for 4 buckets
- Power supply cable 30 m
- Power supply cable 50 m
- Cable 51 m
- Cable 81 m





#### 4. FOOTWAYS (PASSAGE FRAMES)

#### Passages under scaffoldings

The passage frames are installed to provide a passage for people under the scaffolding. The frames should be inter-connected with the horizontal braces. The connection should be made directly over the screw base jack nut parallel to the facade.

The scaffolding made of the passage frames is max. 34 m high providing that all first and second level nodes are anchored. The passage frames are braced on both (external and internal) frame sides. For higher levels brace the external frames.



#### 5. BYPASS FRAMES

#### Bypass frames

Used where the cornices, roof protrusions overlap the scaffolding. Bypass frames may be fitted with the standard system vertical frames 2.0x0.73 m. The bypass frame may be built up to 8 m.



#### 6. GATE ENTRIES (PASSAGES UNDER SCAFFOLDINGS - GIRDERS)

#### Gate entries

Grate girders are used to provide passages under the scaffolding and they are installed outside the adjacent frames with the standard couplings. Each girder is fixed to the frame stands with 4 couplings. When the passage must be more than 3.07 m wide use the E503573 girder transom or steel frame 0.6 m where you can put next level frames (adjacent figure). When building the passage under the scaffolding with a grate girder it can replace no more than 2 bays. For the scaffoldings 20 m - 34 m high and 1.09 m wide the structure should be additionally reinforced above the girder and fitted with the standard pipes 6 m long to reinforce the frame stands in the passage zone.





The example of using the lattice girder

#### EFFECTIVE LOAD CAPACITY OF ALUMINIUM MOSTOSTAL Plus GIRDERS

Girder fixed to the supports (frames) with 4 normal connectors







(anchored transversely)

| ε             | Girder supports<br>spacing (bay dimens.)<br>L (m) | Concentrated force<br>F (kN)  | Concentrate<br>F (kN)  | d force | Uniform load<br>q (kN/m)  |
|---------------|---|---|--|---------|---|
| .L + min. 0.1 |   | Loaded with force concentrated<br>in the middle of the bay length.<br>Upper belt stabilised<br>in the middle of the bay length. | Loaded with force concentrated<br>in the middle of the bay length.<br>Upper belt stabilised uniformly<br>every () m. |         | Loaded uniformly over the entire<br>length of the upper belt.<br>Stabilised with platforms installed<br>over the entire length of theupper<br>belt. |
| 7 X           | 3.07  | 7.50  | 10.90  | (1.02)  | 2.87  |
| ers, (        | 4.14  | 5.70  | 10.50  | (1.38)  | 2.17  |
| gird          | 5.14  | 4.40  | 4.30   | (1.29)  | 2.84  |
| ium           | 6.14  | 3.50  | 4.30   | (1.54)  | 2.29  |
| imi           | 8.00  | 2.30  | 6.90   | (1.36)  | 1.15  |
| A             | 10.00   | 1.60  | 4.90   | (1.42)  | 0.83  |
|               | 12.00   | 1.50  | 4.10   | (1.50)  | 0.51  |

| E            | Girder supports<br>spacing (bay dimens.)<br>L (m) | Concentrated force<br>F (kN)  | Concentrated force<br>F (kN)   |        | Uniform load<br>q (kN/m)  |
|--------------|---|---|--|--------|---|
| L + min. 0.1 |   | Loaded with force concentrated<br>in the middle of the bay length.<br>Upper belt stabilised<br>in the middle of the bay length. | Loaded with force concentrated<br>in the middle of the bay length.<br>Upper belt stabilised uniformly<br>every () m. |        | Loaded uniformly over the entire<br>length of the upper belt.<br>Stabilised with platforms installed<br>over the entire length of the upper belt. |
| 7.5 X        | 3.07  | 7.66  | 23.13  | (1.02) | 4.15  |
| ers, (       | 4.14  | 5.82  | 14.20  | (1.38) | 2.98  |
| gird         | 5.14  | 4.45  | 13.80  | (1.29) | 2.29  |
| nium         | 6.14  | 3.49  | 10.93  | (1.54) | 2.09  |
| umir         | 8.00  | 2.29  | 7.53   | (1.36) | 1.27  |
| AI           | 10.00   | 1.58  | 5.73   | (1.42) | 0.91  |
|              | 12.00   | 1.15  | 6.13   | (1.50) | 0.60  |

#### Effective load capacity of steel MOSTOSTAL Plus girders

| Girder fixed to the supports (frames)<br>with 4 normal connectors |              | Girder supports<br>spacing (bay dimens.)<br>L (m) | Concentrated force<br>F (kN)  | Concentrated<br>F (kN)  | force  | Uniform load<br>q (kN/m)   |
|---|--------------|---|---|---|--|--|
|   | + min. 0.1 m |   | Loaded with force<br>concentrated<br>in the middle of the bay<br>length. Upper belt stabilised<br>in the middle of the bay<br>length. | Loaded with force co<br>in the middle of the l<br>Upper belt stabilised<br>every () m | ncentrated<br>bay length.<br>uniformly<br>h. | Loaded uniformly over the entire<br>length of the upper belt.<br>Stabilised with platforms installed<br>over the entire length of the<br>upper belt. |
| Concentrated load   | 4 XL         | 3.07  | 8.13  | 9.73  | (1.02)                                       | 2.20   |
|   | ų.<br>O      | 4.14  | 6.61  | 9.00  | (1.38)                                       | 1.69   |
|   | irder        | 5.14  | 5.57  | 8.20  | (1.29)                                       | 2.37   |
| 9   | eel 8        | 6.14  | 4.50  | 5.13  | (1.54)                                       | 1.97   |
|   | ស្ដ          | 8.00  | 3.05  | 5.53  | (1.36)                                       | 0.80   |
|   |              | 10.00   | 2.08  | 3.87  | (1.42)                                       | 0.58   |
| Continuous load   |              | 12.00   | 1.52  | 3.07  | (1.50)                                       | 0.41   |
|   |              |   |   |   |  |  |
| - Alexandre   |              | Girder supports<br>spacing (bay dimens.)<br>L (m) | Concentrated force<br>F (kN)  | Concentrated<br>F (kN)  | force  | Uniform load<br>q (kN/m)   |
|   | + min. 0.1 m |   | Loaded with force<br>concentrated<br>in the middle of the bay<br>length. Upper belt stabilised<br>in the middle of the bay<br>length. | Loaded with force co<br>in the middle of the l<br>Upper belt stabilised<br>every () m | ncentrated<br>bay length.<br>uniformly<br>n. | Loaded uniformly over the entire<br>length of the upper belt.<br>Stabilised with platforms installed<br>over the entire length of the<br>upper belt. |
|   | 2 XL         | 3.07  | 8.45  | 9.27  | (1.02)                                       | 2.41   |
|   | 0            | 4.14  | 6.91  | 13.53   | (1.38)                                       | 2.39   |

Upper belt stabilisation

(anchored transversely)

|              | L (m)                  | . ()  | . ()  |  | 4 (  |
|--------------|------------------------|---|---|--|--|
| + min. 0.1 m |                        | Loaded with force<br>concentrated<br>in the middle of the bay<br>length. Upper belt stabilised<br>in the middle of the bay<br>length. | Loaded with force co<br>in the middle of the l<br>Upper belt stabilised<br>every () m | ncentrated<br>bay length.<br>l uniformly<br>n. | Loaded uniformly over the entire<br>length of the upper belt.<br>Stabilised with platforms installed<br>over the entire length of the<br>upper belt. |
| 2 XL         | 3.07                   | 8.45  | 9.27  | (1.02)   | 2.41   |
| 5,0.1        | 4.14                   | 6.91  | 13.53   | (1.38)   | 2.39   |
| irder        | 5.14                   | 5.59  | 9.27  | (1.29)   | 1.47   |
| el gi        | 6.14                   | 4.53  | 10.47   | (1.54)   | 1.71   |
| Š            | 8.00                   | 2.97  | 6.2   | (1.36)   | 1.07   |
|              | 10.00                  | 2.09  | 4.67  | (1.42)   | 0.69   |
|              | 12.00                  | 1.53  | 3.67  | (1.50)   | 0.49   |
| Ste          | 8.00<br>10.00<br>12.00 | 2.97<br>2.09<br>1.53  | 6.2<br>4.67<br>3.67   | (1.36)<br>(1.42)<br>(1.50)                     | 1.07<br>0.69<br>0.49   |

#### 7. MOBILE SCAFFOLDINGS MOSTOSTAL Plus

#### Mobile scaffoldings supported on frame scaffoldings

The following rule must be obeyed when building mobile scaffoldings: scaffolding height cannot exceed tripled length of the smaller side of the scaffolding base (outside).

Scaffolding height cannot exceed quadrupled length of the smaller side of the scaffolding base (inside).

These rules do not apply to the mobile scaffoldings anchored to the building.

Following rules must be obeyed when working on this type of scaffolding:

- work only on one working level,
- · do not mount hoisting winches,
- move the scaffolding only across flat, even and sufficiently strong surface,
- move the scaffolding only along its longer axis,
- workers and tools are not allowed to be/remain on the scaffolding when it is moved,
- when the scaffolding reaches its destination point lock the caster brakes,
- check the scaffolding stability (all castors supporting the scaffolding) each time it is moved.

#### Wall scaffolding building diagram





• Example: working platform height: 6.53 m

|        | Working                | g height (m)                               |         | 4.53 | 6.53      | 8.53      |
|--------|------------------------|--|---------|------|-----------|-----------|
|        | Scaffolding height (m) |  |         | 3.53 | 5.53      | 7.53      |
|        | Working                | g platform height (m)                      |         | 2.53 | 4.53      | 6.53      |
| Lp.    | No.                    | Component name                             | Index   |      |           |           |
| ģ      | 1.                     | Mobile scaffolding guide beam              | E571173 | 2    | 2         | 2         |
|        | 2.                     | Base jack with two nuts                    | E571175 | 4    | 4         | 4         |
| AFFG   | 3.                     | Mobile scaffolding wheel                   | MP-116  | 4    | 4         | 4         |
| S      | 4.                     | Steel horizontal brace 2.57 m**            | E283825 | 2    | 2         | 2         |
|        |                        |  |         |      |           |           |
|        | 5.                     | Universal pipe 4 m                         | E440540 |      |           | 2         |
|        | 6.                     | Rotary coupling                            | E581319 |      |           | 4         |
|        | 7.                     | Steel frame 2.0x0.73 m***                  | E202026 | 2    | 4         | 6         |
| URE    | 8.                     | Steel platform 2.57 m**                    | E491325 | 1    | 1         | 1         |
| Ę      | 9.                     | Aluminium platform 2.57 m with plywood**   | E491125 | 2    | 2         | 2         |
| TRI    | 10.                    | Aluminium-plywood access platform 2.57 m** | E492125 | 1    | 2         | 3         |
| 5      | 11.                    | Single railing 2.57 m**                    | E283625 | 2    | 4         | 6         |
| ē      | 12.                    | Front railing 0.73 m                       | E283907 |      | 2         | 4         |
| 6<br>L | 13.                    | Longitudinal toe board 2.57 m**            | E286825 | 1    | 2         | 3         |
| CAF    | 14.                    | Transverse toe board 0.73 m                | E286807 | 2    | 4         | 6         |
| U      | 15.                    | Front frame 0.73 m                         | E202023 | 2    | 2         | 2         |
|        | 16.                    | Diagonal for bay 2.57**                    | E284725 | 1    | 2         | 3         |
|        | 17.                    | Securing pin                               | E511100 | 8    | 12        | 16        |
|        |                        | Ballast for working inside building        |         |      | -         | _         |
|        |                        | Ballast for working outside building       |         |      | 6 weights | 8 weights |

\* weights 26 kg

5 kg \*\* replacement parts for bay 3.07 m

\*\*\* alternative to aluminium

#### Ceiling scaffolding building diagram





• Example: working platform height: 4.53 m

|          | Workin  | g height (m)  |                    | 4.53      | 6.53 | 8.53      | 10.53       |
|----------|---------|---|--------------------|-----------|------|-----------|-------------|
|          | Scaffol | ding height (m)                                     |                    | 3.53      | 5.53 | 7.53      | 9.53        |
|          | Workin  | g platform height (m)                               |                    | 2.53      | 4.53 | 6.53      | 8.53        |
| Lp.      | No.     | Component name                                      | Index              |           |      |           |             |
| g        | 1.      | Mobile scaffolding guide beam                       | E571173            | 2         | 2    | 2         | 2           |
|          | 2.      | Base jack with two nuts                             | E571175            | 4         | 4    | 4         | 4           |
| AFFG     | 3.      | Mobile scaffolding wheel                            | MP-116             | 4         | 4    | 4         | 4           |
| ů,       | 4.      | Steel horizontal brace 2.57 m**                     | E283825            | 2         | 2    | 2         | 2           |
|          |         |   |                    |           |      |           |             |
|          | 5.      | Universal pipe 4 m                                  | E440505            |           |      | 2         | 4           |
|          | 6.      | Normal coupling                                     | E581119            |           |      | 4         | 8           |
|          | 7.      | Steel frame 2.0x0.73 m***                           | E202026            | 4         | 8    | 12        | 16          |
| Ĩ,       | 8.      | Steel platform 2.57 m**                             | E491325            | 2         | 3    | 4         | 6           |
| 5        | 9.      | Aluminium platform 2.57 m with plywood**            | E491125            | 3         | 4    | 5         | 6           |
| STR      | 10.     | Aluminium-plywood access platform 2.57 m**          | E492125            | 1         | 2    | 3         | 4           |
| 5<br>N   | 11.     | Single railing 2.57 m**                             | E283625            | 4         | 8    | 12        | 16          |
| Ē        | 12.     | Front railing 0.73 m                                | E283907            |           | 4    | 8         | 12          |
| <u>E</u> | 13.     | Longitudinal toe board 2.57 m**                     | E286825            | 2         | 2    | 2         | 2           |
| CAI      | 14.     | Transverse toe board 0.73 m                         | E286807            | 4         | 4    | 4         | 4           |
| 01       | 15.     | Front frame 0.73 m                                  | E202023            | 4         | 4    | 4         | 4           |
|          | 16.     | Diagonal for bay 2.57**                             | E284725            | 2         | 4    | 6         | 8           |
|          | 17.     | Securing pin  | E511100            | 16        | 24   | 32        | 40          |
|          |         | Ballast for working inside building                 |                    |           |      | -         | -           |
|          |         | Ballast for working outside building                |                    |           |      | 7 weights | 2x7 weights |
|          |         | * weights 26 kg ** replacement parts for bay 3.07 m | *** alternative to | aluminium |      |           |             |

#### 8. ANCHORED CONSOLES

#### Scaffoldings build on anchored consoles

Anchored consoles allow building the scaffoldings at any height. It is often required when it is not necessary or possible to build the scaffolding on the ground level. A scaffolding cannot be often installed on roofs, balconies or ceilings due to their structure or load capacity and a wall anchored console is often used then to build a scaffolding by using the grate girders.

The console must be anchored with two or three anchors while considering the base (wall) characteristics. In general, it is recommended to make holes through the entire wall thickness and mount the consoles with the threaded stays. When it is not possible to make such holes it is recommended to use chemical anchors stuck according to the supplier guidelines.

When calculating the forces acting on the console you should consider the structure weight and the operational load.

Put simply, you can assume that the height of the facility is as follows: Frame scaffolding 0.73 m, L - 2.75 m - 34 m; (console 1.5 m) Frame scaffolding 0.73 m, L - 3.07 m - 32 m; (console 1.5 m) Frame scaffolding 0.73 m, L - 2.75 m, L = 3.07 m -20 m; (console 0.73)



Town Hall in Głubczycze - console 1.5 m



Method for calculation the reaction for the anchorage sites





Assembly diagram presenting the position of the anchored console
0.73 m and 1.5 m

#### 9. EXTERNAL STAIRCASES

#### External staircases

To provide convenient vertical communication external staircases are installed on the scaffolding. Typically, an external staircase is installed in the bay measuring 3.07 m or 2.57 m according to one of the two presented diagrams. Additionally, installed frames are vertically connected with the wall scaffolding every 4 m with the wall scaffolding node anchored in the connection points. The connections are made of pipes of the diameter of 48.3x3.2 and normal couplings. The staircase front surfaces are secured with the front railings, external surface should be secured with the stairs external railing and internal surface - with the stairs internal railing.



Complete view - double staircase









Top view



Complete view - single staircase





• Detail A



#### **10. ALUMINIUM PLATFORMS**

#### Aluminium platforms

To facilitate construction works an aluminium platform system has been designed. They act as movable platforms. When laid on the scaffolding or the building structural elements they act as a working platform, ceiling, communication and inspection platforms.

A platform is made of the aluminium sections and skin trapezoidal plate. The system includes also steel auxiliary components which are rust-protected. You can use platforms 4.25 m, 5.2 m, 6.1 m and 7.1 m long and 0.6 wide. The platform load capacity is  $2 \text{ kN/m}^2$ .

7.1 m long and 0.6 wide. The platform load capacity is 2 kN/m<sup>2</sup>. When selecting the platform length you should consider the overlap to be kept to properly support the component. For AL-TRAD-MOSTOSTAL platforms the overlap is at least 400 mm. Fig. 10.1 presents an example of supporting the aluminium platform on the structure made of the modular scaffoldings.



• Figure 10.1

When several platforms are laid next to each other you should

join them with a clamp (E491003). The clamps are installed both on the upper and bottom platform plane (Fig. 10.2). Installation includes fixing the clamp handles on the side sections of the adjacent platforms and clamping the movable clamp parts by driving a wedge (Fig. 10.3).





• Figure 10.2

To protect the persons on the platform you should install the protective railings. To do this you should use the railing post, railing clamp and universal pipes.

The railing post is installed by clamping its movable part (Fig. 10.4) by driving a wedge (Fig. 10.5).



By using the railing handle you can fasten the universal pipe to the post to act as a railing. The horizontal pipe is clamped to the vertical pipe with a screw fitted with a handle (Fig. 10.6).



• Figure 10.7

The upper railing should be installed 1.0 m over the platform surface.

Eventually, instead of installing the railings in this manner you can install the universal pipes with the rotary or normal couplings. Join the length of the universal pipes with a longitudinal coupling.

The railing posts should be spaced so that you could install the system toe boards. A post allows for installing both the MOSTOSTAL Plus system scaffolding toe boards (Fig. 10.7) and the ROTAX scaffolding system toe boards.

Spacing the posts at 0.73 m, 1.09 m, 1.57 m, 2.07 m, 2.57 m or 3.07 m is also important when you want to use the ROTAX transoms of the system length as the protective railings. However, this solution requires using the additional component - a Rotax adjustable node (E371200) (Fig. 10.8).

Below is a figure presenting an example of the frame scaffolding set-up with the aluminium platforms.



Figure 10.8



#### 11. PALLETS FOR THE FACADE SCAFFOLDING STORAGE AND TRANSPORT

#### Pallets for the facade scaffolding storage and transport

By using the pallets for the facade scaffolding storage and transport you will save both time and money.

Our offer includes different pallet versions used for storage and vertical transport of the frames, platforms, small component and similar parts.

The pallets can be stacked and save not only space but also time and costs.





#### 12. LIST OF COMPONENTS STORED ON THE PALLETS

#### Scaffoldings 0.73 m wide, with 2.57 m long bay





| Workir                       | 86.35       |   |                 |  |  |  |
|------------------------------|-------------|---|-----------------|--|--|--|
| Height                       | Height      |   |                 |  |  |  |
| Length                       |             |   | 10.28           |  |  |  |
| Number                       | r of levels |   | З               |  |  |  |
| Circulat                     | ion paths   |   | 1               |  |  |  |
| Braced                       | columns     |   | 1               |  |  |  |
| Lp.                          | Index       | Component name  | Quantity (pcs.) |  |  |  |
| 1.                           | E202026     | Plus steel frame 2.00x0.73                              | 15              |  |  |  |
| 2.                           | E202091     | Plus steel railing post with platform protection 0.73 m | 3               |  |  |  |
| 3.                           | E202023     | Plus front frame 0.73 m                                 | 2               |  |  |  |
| 4.                           | E283625     | Single railing 2.57 m                                   | 28              |  |  |  |
| 5.                           | E283907     | Front railing 0.73 m                                    | 4               |  |  |  |
| 6.                           | E284725     | Diagonal for bay 2.57 m                                 | 3               |  |  |  |
| 7.                           | E283825     | Horizontal brace 2.57 m                                 | 1               |  |  |  |
| 8.                           | E286606     | Anchor coupling with hook 0.60 m                        | 7               |  |  |  |
| 9.                           | E286807     | Transverse toe board 0.73 m                             | 6               |  |  |  |
| 10.                          | E286825     | Longitudinal toe board 2.57 m                           | 12              |  |  |  |
| 11.                          | E491625     | ECO STEEL PLATFORM 2.57 m                               | 18              |  |  |  |
| 12.                          | E492125     | Alum. platform with hatch and ladder 2.57 m             | 3               |  |  |  |
| 13.                          | E511206     | Base jack with a nut 0.60 m                             | 10              |  |  |  |
| 14.                          | E581119     | Normal coupling   | 7               |  |  |  |
| 15.                          | E824400     | Pallet for steel frames                                 | 1               |  |  |  |
| 16.                          | E824300     | Pallet for platforms                                    | 1               |  |  |  |
| Scaffolding weight [kg] 1038 |             |   |                 |  |  |  |

Scaffolding weight [kg]

#### Scaffoldings 0.73 m wide, with 3.07 m long bay





| Workir   | 103.15    |   |                 |  |  |  |
|----------|-----------|---|-----------------|--|--|--|
| Height   | Height    |   |                 |  |  |  |
| Length   | Length    |   |                 |  |  |  |
| Number   | of levels |   | З               |  |  |  |
| Circulat | ion paths |   | 1               |  |  |  |
| Braced   | columns   |   | 1               |  |  |  |
| No.      | Index     | Component name  | Quantity (pcs.) |  |  |  |
| 1.       | E202026   | Plus steel frame 2.00x0.73                              | 15              |  |  |  |
| 2.       | E202091   | Plus steel railing post with platform protection 0.73 m | 3               |  |  |  |
| 3.       | E202023   | Plus front frame 0.73 m                                 | 2               |  |  |  |
| 4.       | E283630   | Single railing 3.07 m                                   | 28              |  |  |  |
| 5.       | E283907   | Front railing 0.73 m                                    | 4               |  |  |  |
| 6.       | E284730   | Diagonal for bay 3.07 m                                 | 3               |  |  |  |
| 7.       | E283830   | Horizontal brace 3.07 m                                 | 1               |  |  |  |
| 8.       | E286606   | Anchor coupling with hook 0.60 m                        | 7               |  |  |  |
| 9.       | E286807   | Transverse toe board 0.73 m                             | 6               |  |  |  |
| 10.      | E286830   | Longitudinal toe board 3.07 m                           | 12              |  |  |  |
| 11.      | E491630   | ECO STEEL PLATFORM 3.07 m                               | 18              |  |  |  |
| 12.      | E492130   | Alum. platform with hatch and ladder 3.07 m             | 3               |  |  |  |
| 13.      | E511206   | Base jack with a nut 0.60 m                             | 10              |  |  |  |
| 14.      | E581119   | Normal coupling   | 7               |  |  |  |
| 15.      | E824400   | Pallet for steel frames                                 | 1               |  |  |  |
| 16.      | E824300   | Pallet for platforms                                    | 1               |  |  |  |
|          |           |   |                 |  |  |  |

Scaffolding weight (kg)

#### Tables - platform and base jack load

#### Table 1. Platform load

|     | Platform load class acc. to EN-12 811                              |                      |                      |                      |                      |                      |                      |  |  |  |  |
|-----|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--|--|--|--|
| No. | Platform type  | 3.07                 | 2.57                 | 2.07                 | 1.57                 | 1.09                 | 0.73                 |  |  |  |  |
| 1.  | Steel platforms 0.32<br>E4913xx, 4914xx, 4916xx,<br>4955xx, 4956xx | 4 kl.<br>(3.0 kN/m²) | 5 kl.<br>(4.5 kN/m²) | 6 kl.<br>(6.0 kN/m²) | 6 kl.<br>(6.0 kN/m²) | 6 kl.<br>(6.0 kN/m²) | 6 kl.<br>(6.0 kN/m²) |  |  |  |  |
| 2.  | Filling steel platforms 0.19<br>E491810xx                          | 6 kl.<br>(6.0 kN/m²) |  |  |  |  |
| 3.  | Alu-plywood platforms 0.61<br>E4920xx, 4919xx, 4923xx, 4925xx      | 3 kl.<br>(2.0 kN/m²) |  |  |  |  |
|     |  |                      |                      |                      |                      |                      |                      |  |  |  |  |

|     | Length - L (m)        |             |             |             |             |             |             |  |  |  |
|-----|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|--|
| No. | Platform type         | 3.00        | 2.50        | 2.00        | 1.50        | 1.00        | 0.70        |  |  |  |
| 4.  | Filling platform 0.30 | 3 kl.       | 4 kl.       | 5 kl.       | 6 kl.       | 6 kl.       | 6 kl.       |  |  |  |
|     | E4943xx               | (2.0 kN/m²) | (3.0 kN/m²) | (4.5 kN/m²) | (6.0 kN/m²) | (6.0 kN/m²) | (6.0 kN/m²) |  |  |  |
| 5.  | Filling platform 0.19 | 4 kl.       | 5 kl.       | 6 kl.       | 6 kl.       | 6 kl.       | 6 kl.       |  |  |  |
|     | E4944xx               | (3.0 kN/m²) | (4.5 kN/m²) | (6.0 kN/m²) | (6.0 kN/m²) | (6.0 kN/m²) | (6.0 kN/m²) |  |  |  |

#### Table 2. Coupling load capacity

| L.p | Index   | Name of the element |
|-----|---------|---------------------|
| 1.  | E581119 | Normal coupling     |
| 2.  | 581320  | Rotary coupling     |
| 3.  | E581419 | In Line coupling    |
| 4.  | E284620 | Anchor coupling     |





#### Table 3. Base jack bearing capacity

Standards base jack

| Types         |   | Permissible unscrewing the nut X (cm) |    |    |    |    |  |  |
|---------------|---|---------------------------------------|----|----|----|----|--|--|
| of base jacks |   | 20                                    | 30 | 40 | 50 | 60 |  |  |
| E511204       | Permissible vertical load capacity* <b>[kN]</b> | 40                                    | -  | -  | -  | -  |  |  |
| E511206       |   | 40                                    | 29 | 22 | -  | -  |  |  |
| E511208       |   | 40                                    | 29 | 22 | 17 | 15 |  |  |

\* The values take into account a 5% share of horizontal forces. Appropriate calculations allows the use of higher loads.



#### Reinforced base jack 1.5 m

| Types         |  |               | Permissi      | ible unscre   | wing the n    | ut X (cm)     |              |
|---------------|--|---------------|---------------|---------------|---------------|---------------|--------------|
| of base jacks |  | <b>30</b> +20 | <b>30</b> +30 | <b>30</b> +40 | <b>30</b> +50 | <b>30</b> +60 | <b>30</b> +7 |
| E511313       | Permissible vertical load capacity* [kN] | 38            | 26            | 20            | 16            | 15            | 13           |

\* The values take into account a 5% share of horizontal forces. Appropriate calculations allows the use of higher loads.



#### 14. ANNEX NO. 1 - SCAFFOLDING COMMISSION PROTOCOL

| MOSTOSTAL                       | SCAFFOLDING       | COMMISSION PROTOCO   | L |
|---------------------------------|-------------------|----------------------|---|
| SCAFFOLDING                     | No                | of                   | _ |
| ALTRAD                          | To agreement no   | of                   | _ |
| Contractor                      |                   | User                 |   |
|                                 |                   |                      |   |
|                                 |                   |                      |   |
| Authorised person               |                   | Authorised person    |   |
| Phone no                        |                   | Phone no             |   |
| Scaffolding type:               |                   | Assembly site        |   |
|                                 |                   |                      |   |
| Frame                           |                   |                      |   |
|                                 |                   |                      |   |
|                                 | □ Hanging         |                      |   |
|                                 |                   |                      |   |
|                                 |                   |                      |   |
| Scarrolding parameters:         |                   | Scarrolaing purpose  |   |
| Structure dimensions            |                   |                      |   |
| Structure lead and site         |                   |                      |   |
| Structure load capacity         |                   |                      |   |
| working platform permissible lo | ad capacity גואדי |                      |   |
|                                 |                   |                      |   |
| Earthing resistance             | Ω                 | Additional equipment |   |
| Subsequent inspection dates     |                   |                      |   |
|                                 |                   |                      |   |
|                                 |                   |                      |   |
|                                 |                   |                      |   |

Declaration and confirmation

- Assembly Contractor certifies that the scaffolding described in this protocol is complete. The scaffolding was assembled according to the best construction practices and the assembly manual issued by the manufacturer as well as according to the OHS requirements. The assembly was performed by certified fitters.
- 2. The scaffolding structure may be modified only by the Assembly Contractor.
- 3. The Assembly Contractor provides the following along with this protocol:
  - a) scaffolding scheme
  - b) scaffolding assembly manual
  - c) .....
- d) .....
- 4. Scaffolding user accepts this scaffolding for use without any reservations and declares that he/she is aware of the rules of use resulting from the assembly manual.
- 5. Before each use of the scaffolding the User should check its technical condition and completeness.
- 6. Commission in the following panel confirms the scaffolding hand-over after assembly and acceptance for use.

| ( | c) | full name | position | signature | - Contractor |
|---|----|-----------|----------|-----------|--------------|
| I | b) |           |          |           | - User       |
| i | a) |           |          |           | - User       |

Application date for scaffolding disassembly: .....

#### 15. LOCALIZATION OF ALTRAD-MOSTOSTAL



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