Tobler®

MATO Pro anti-fall protection

IAU Instructions for assembly and use

2023



Swiss Engineering.
Swiss Technology.

MATO Pro **anti-fall protection**

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MATO Pro **anti-fall protection**

1 Allgemeines.

1.1 When working on roofs, the required safety measures must be consistently observed. Even if this work only lasts a short time.

1.2 Before installing the components, they must be visually inspected for damage. Damaged components must not be used under any circumstances. They may only be repaired by the manufacturer himself.

1.3 For occupational health and safety during the installation of the integral console, the national and international laws and regulations must be observed.

1.4 It is forbidden to lean over the side protection.

1.5 At least two persons must be involved in the assembly.

1.6 Before placing the integral console bracket and its safety railings, the roof and gutter must be checked by a professional for stability, load-bearing capacity and quality.

1.7 The maximum distance between the integral consoles is 300 cm.

1.8 Preferably Tobler safety railings (Z-616200 / Z-616300) are to be used as side protection.

1.9 The Tobler integral console brackets must be checked for proper condition and function upon arrival at the construction site and before each use. Modifications to the component are not permitted.

1.10 The Tobler integral console brackets meet the requirement "Side protection component class C".

1.11 In order to guarantee the warranty given by Tobler AG, damaged or worn components are to be replaced exclusively with original Tobler components.

1.12 After a person has fallen or an object has fallen against or into the side protection / system and its accessories, the side protection component may only continue to be used if it has been inspected by a competent person.

1.13 Openings between side protection systems and other structures must be as small as possible, but must not exceed 120 mm for the tubes of the safety railing and 20 mm for the toe board.

1.14 Maintenance and repair: The parts of the integral console may only be repaired by the manufacturers of Tobler AG.

1.15 Recommended storage: The products for the integral console are to be stored in dry areas if possible.

1.16 National laws on accident prevention, as well as, special regulations for side protection systems have to be obeyed and strictly followed.

1.17 E.g. in Switzerland, such laws and regulations can be found in the document "Bauarbeitenverordnung 2022 (BauAV22)", just as a given orientation.

1.18 Publisher of these instructions for assembly and use (IFU) is:

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IFU
Instructions for
assemblyand use

2.1 Purpose of the integral console bracket

The Tobler integral console bracket and its safety railing are designed to create an appropriate anti-fall protection on flat as well as on inclined roofs.

The product is suitable as a temporary edge protection in the roof area, according to the requirements of EN 13374, for roof angles up to 60° and is used for workplaces and transport routes on roofs with a pitch of more than 20° up to 45°, when the eaves are more than 2,00 m above the ground.

For roof pitches of more than 45° to 60°, the maximum falling height is limited to be not more than 5 m. The falling height is the vertical height between the workplace and the base of the safety barrier.

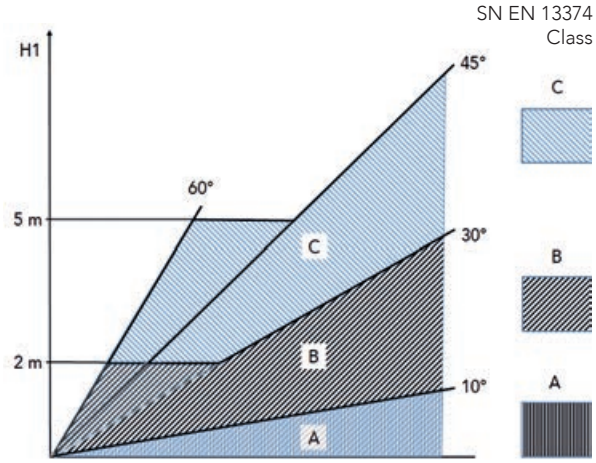
The integral bracket console is also suitable for an inclination range of 0° to 20°.

The integral safety bracket should be used for all roof roof pitches

For roofs pitched between 30° and 60°, however, it is absolutely mandatory to use the integral safety bracket.

National laws and regulations have to be obeyed. According to the Swiss BauAV 2022, the integral bracket may only be used up to a roof pitch of 45° in the entire area of application.

Protective walls must project at least 1 m beyond the sides of the workplaces to be secured.



H1 Falling Height

Requirements for side protection components

Class A (inclinations up to 10°)

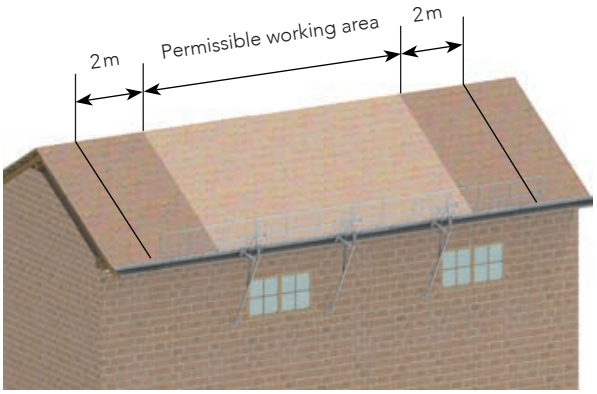
- Test: no material failure and maximum bending under loads according to SN EN 13374

Class B (inclinations 10° to 30°)

- Test: pendulum impact test according to SN EN 13374

Class C (inclinations 30° to 60°)

- Test: pendulum impact test and rolling test according to SN EN 13374



3.1 Integral console bracket Article no. Z-615200

- Weight: 10,5 kg
- Height adjustable from 2,60 – 3,50 m

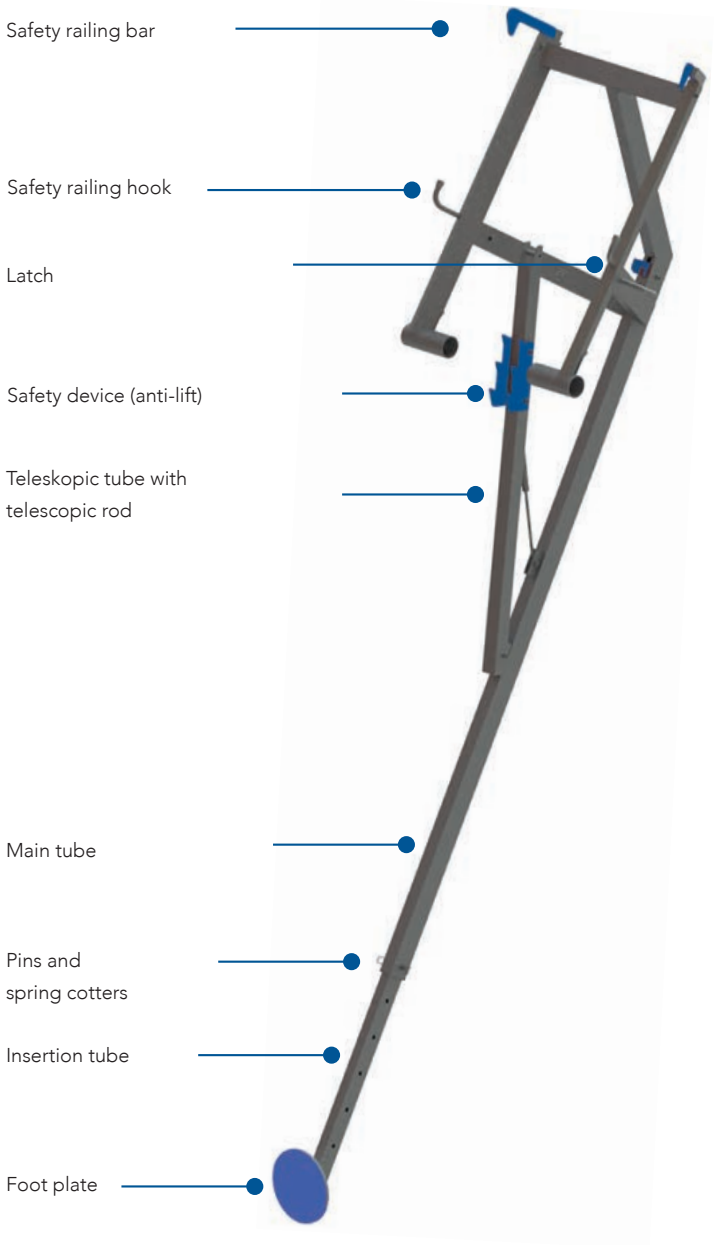


Figure 1: *Integral console bracket Z-615200.*

3.2 Safety railing for integral console bracket 300 cm – Article no. Z-616300

- Weight: 17,0 kg
- Suitable up to and including class C

200 cm – Article no. Z-616200

- Weight: 11,2 kg
- Suitable up to and including class C

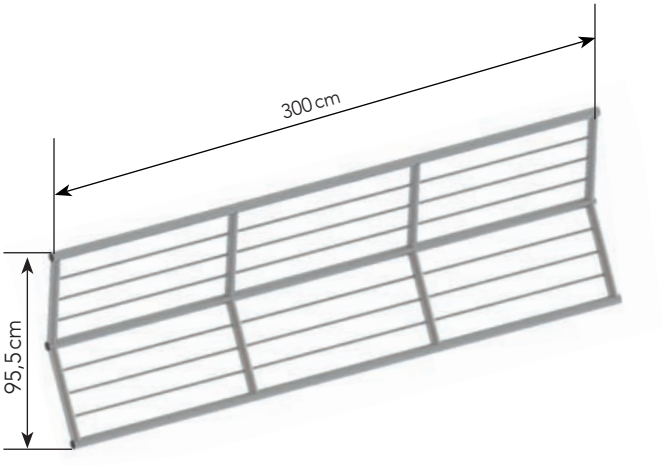


Figure 2: *Safety railing for integral console bracket 300 cm Z-616300.*

3.3 Integral safety bracket Article no. Z-616010

- Weight: 2,2 kg

The safety bracket should be used for all roof pitches.

However, from a roof pitch of 30° to 60°, the integral safety bracket is mandatory.



Figure 3: *Integral safety bracket Z-616010.*

3.4 Aluminum toe board 300 cm – Article no. Z-617300

- Weight: 4,9 kg

200 cm – Article no. Z-617200

- Weight: 3,6 kg

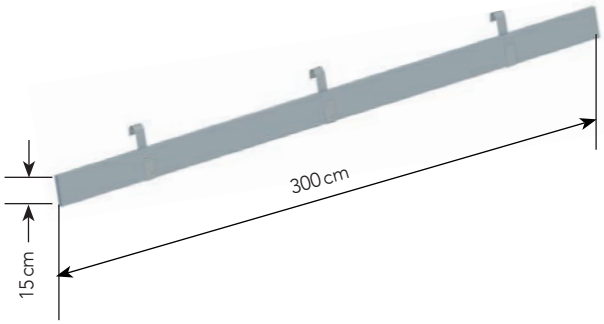
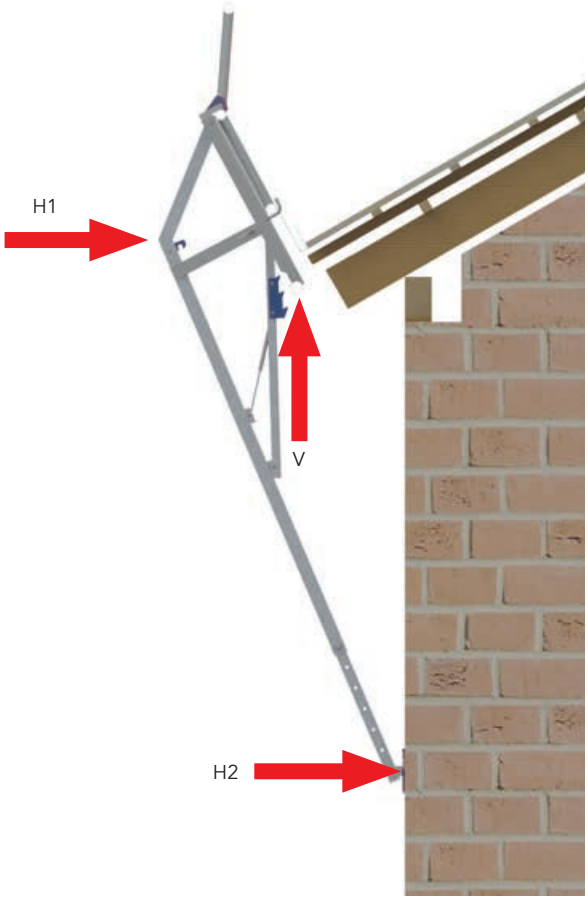


Figure 4: *Aluminum toe board 300 cm Z-617300.*

3.5 Support forces

The integral console has been tested according to EN 13374.



V: Vertical support force on gutter
H1: Horizontal support force on gutter
H2: Horizontal support force on the wall

Figure 5: *Support forces.*

3.6 Static load

	V	H1	H2
A	1,55 kN	0,50 kN	0,20 kN
B	1,55 kN	0,75 kN	0,75 kN
C	Not applicable		

4 Assembly.

4.1 Before the assembly

Before mounting the integral bracket, check the object for its suitability. See also section: "Boundary condition for the use of the integral console".

Likewise, all products must be checked for any defects before assembly and disassembly. Damaged components must not be used!

There may be a danger of falling during assembly, modification and disassembly. The work must be carried out in such a way that the danger of falling is avoided as far as possible or the unavoidable danger is kept as low as possible (e.g. by means of applying personal protective equipment against falls from a height).

Ideally, a safety-tested working platform or rolling scaffold is used for assembly.



Figure 6: *Adjustment of length.*

4.2 Mounting procedure integral console bracket

1. The insertion tube is to be adjusted in length *(see Fig. 6)* so that the foot plate is well supported on a load-bearing part of the facade.
2. the lower horizontal tubes are to be placed behind the roof edge or in the gutter.

In particular, the user must ensure that the gutter is in a stable, sound condition and made of a material that is capable of withstanding high forces. Thus, the gutters should be made of zinc or copper, not PVC or similar material. Also, the gutter itself must be firmly anchored.

Now unlock the hydraulic function and move the telescopic tube to the roof edge or gutter *(see Fig. 7)*.



Figure 7: *Movement of the telescopic tube to the gutter (or to the edge of the roof).*

3. The telescopic arm must be aligned so that the securing device is below the gutter or the roof edge. Check that the integral bracket is secured against lifting out. *(see Fig. 8, Fig. 9 and Fig. 10).*



Figure 8: *Mounted integral console bracket.*



Figure 9: *Securing against lifting on the gutter.*



Figure 10: *Securing against lifting at the roof edge.*

4. The foot plate must be aligned so that it fits tightly against a load-bearing facade element *(see Fig. 11).* The insertion tube must be secured again at this position.



Figure 11: *Foot plate on facade.*

5. The next integral console bracket is attached to the already mounted integral console bracket with the maximum distance of a safety railing length, i.e. of 3,00 m.



Figure 12: *Attaching the next integral console brackets.*

4.3 Mounting of safety railing forintegral console bracket

6. Align the first safety railing against the two integral console brackets *(see Fig. 13)*.

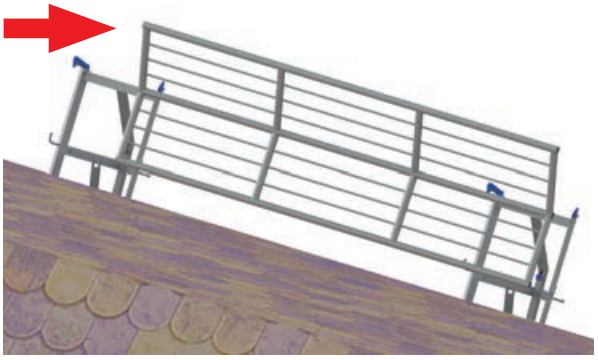


Figure 13: *Attaching the first safety railing for integral console bracket.*

After the safety railings have been placed in the integral console brackets, each of the upper movable safety railing bars of the integral control brackets must be closed *(see Fig. 14)*. This locks the safety railings in the brackets. A safe closing mechanism is only given when the bars are closed (in bottom position).



Figure 14: *Safety railing bars.*

7. The bottom tube of the safety railing is placed on the safety railing hook of the integral console bracket. Now the safety railing is pressed against the head formation of the integral console bracket in such a way that their safety railing bars drop down and secure the safety railing.

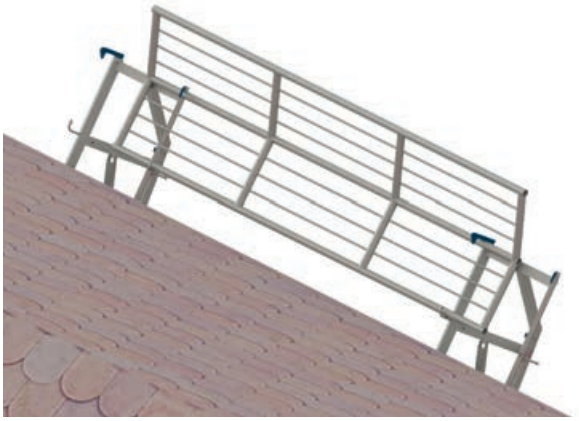


Figure 15: *Secured assembly of safety railing.*



Check again that the safety railing bars of the integral console bracket are secured. If necessary, close the safety railing bars manually *(Fig. 15 and Fig. 16)*.



Figure 16: *Securing safety railing bars / Attaching to safety railing hooks at integral console bracket.*

8. The vertical distance between the upper horizontal safety railing tube and the roof surface must be at least 1,00 m. This may vary depending on the roof slope in conjunction with the set length of the insertion tube of the integral console bracket.

9. Then attach the toe board to the bottom tube of the saftey railing using the brackets.





The toe board is an integral part of the overall system safety equipment and must always be fitted.

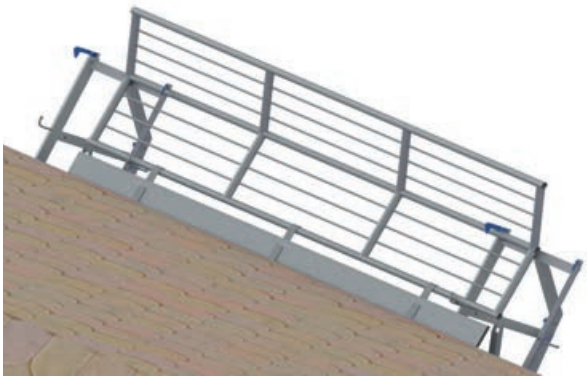


Figure 17: *Mounting of the toe board.*

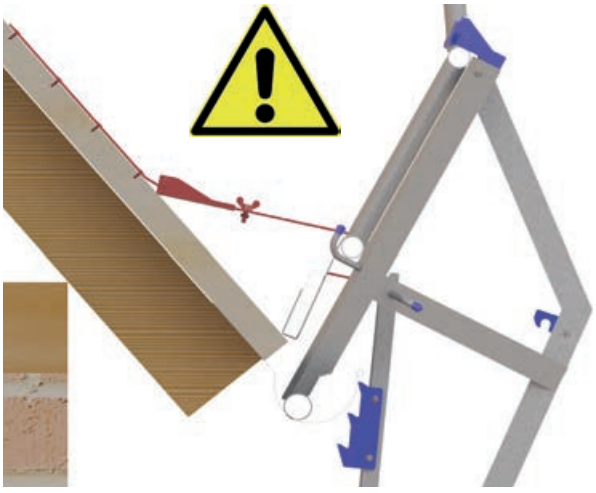
10. If the roof is pitched 30° and more, the integral safety bracket must be mounted. The integral safety bracket must be mounted at the center of the safety railing. The hook of the integral safety bracket is hooked to the bottom tube of the safety railing.

    The safety bracket must now be adjusted to the correct height and locked using the wing screw. The integral safety bracket must be fastened to the rafter with four screws. Only suitable stainless steel screws are allowed, taking into account the required penetration depth. The integral safety bracket is to be used for fixing and securing each safety railing.

    The integral safety bracket may only be attached to continuous solid wood rafters that are perpendicular to the safety railings. The rafters must not be damaged and must have sound wood. Attachments to extension leaves, replacements and the like are not permitted.

    Ensure that all screws are correctly seated and provide sufficient strength for the integral safety bracket.





It is absolutely imperative to fasten the integral safety bracket under tensile stress. This is the only way to ensure that the safety bracket fulfills its purpose.

Figure 18: *Mounting of integral safety bracket under tensile stress.*

11. The side protection is now completed as described above. The safety railings must be placed as close together as possible.



Figure 19: *Assembly toe board.*

The integral bracket is hung on the edge of the roof or into the gutter of a building. Most of the buildings are suitable to use this system. However, there are situations where this system is not suitable. Therefore, it must be checked in each case whether the following boundary conditions are met.

5.1 Attachment to the roof edge

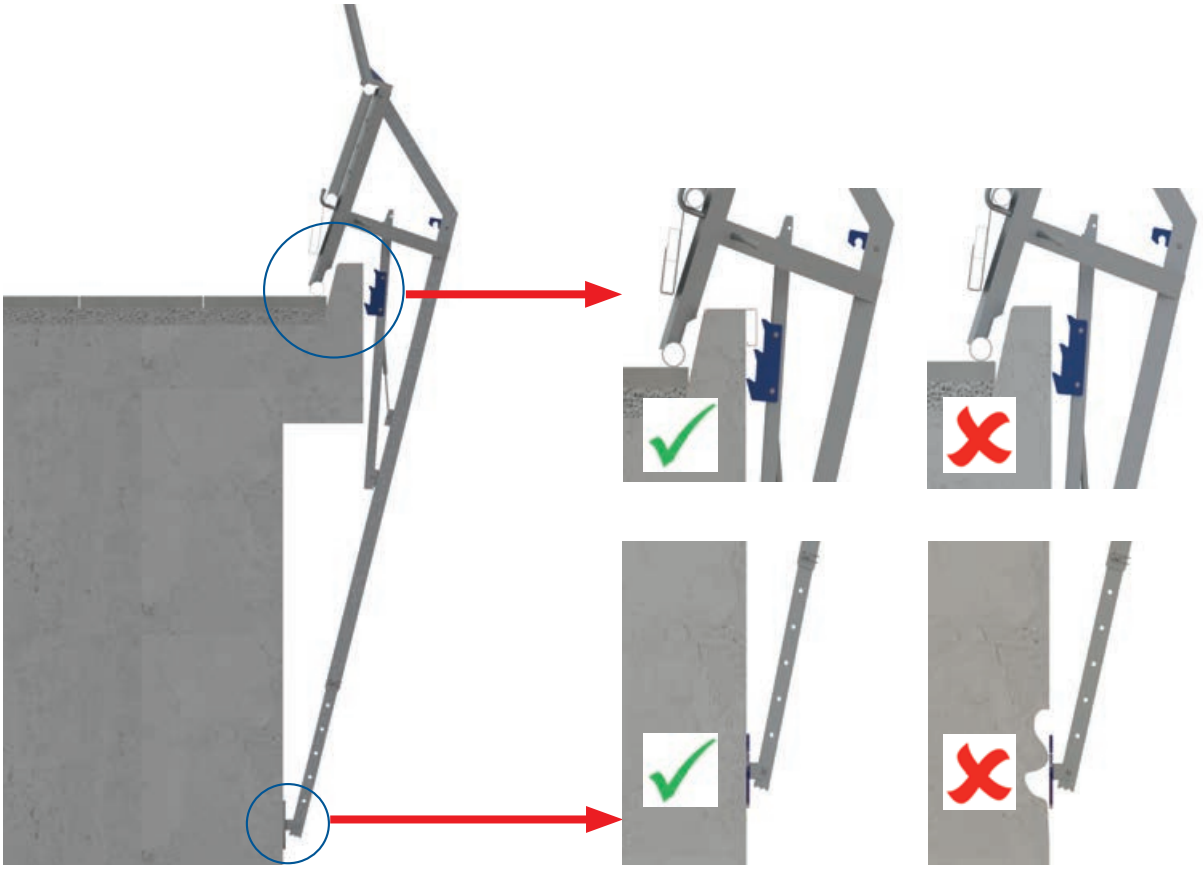


Figure 20: Attachment to the roof edge.

1. The roof edge (upstand) must have a height of at least 6 cm, at the point, where the round tube is laid on.
2. The roof edge must be strong enough, and the facade must have sufficient load-bearing capacity.
3. The roof edge has a fixed strip made of copper, or an equivalent edge formation, under which the anti-lifting device can be fitted. Only in this way, the integral console bracket is secured against lifting out.
4. The foot plate must be fully and firmly supported on the load-bearing facade.

5.2 Installation in the gutter

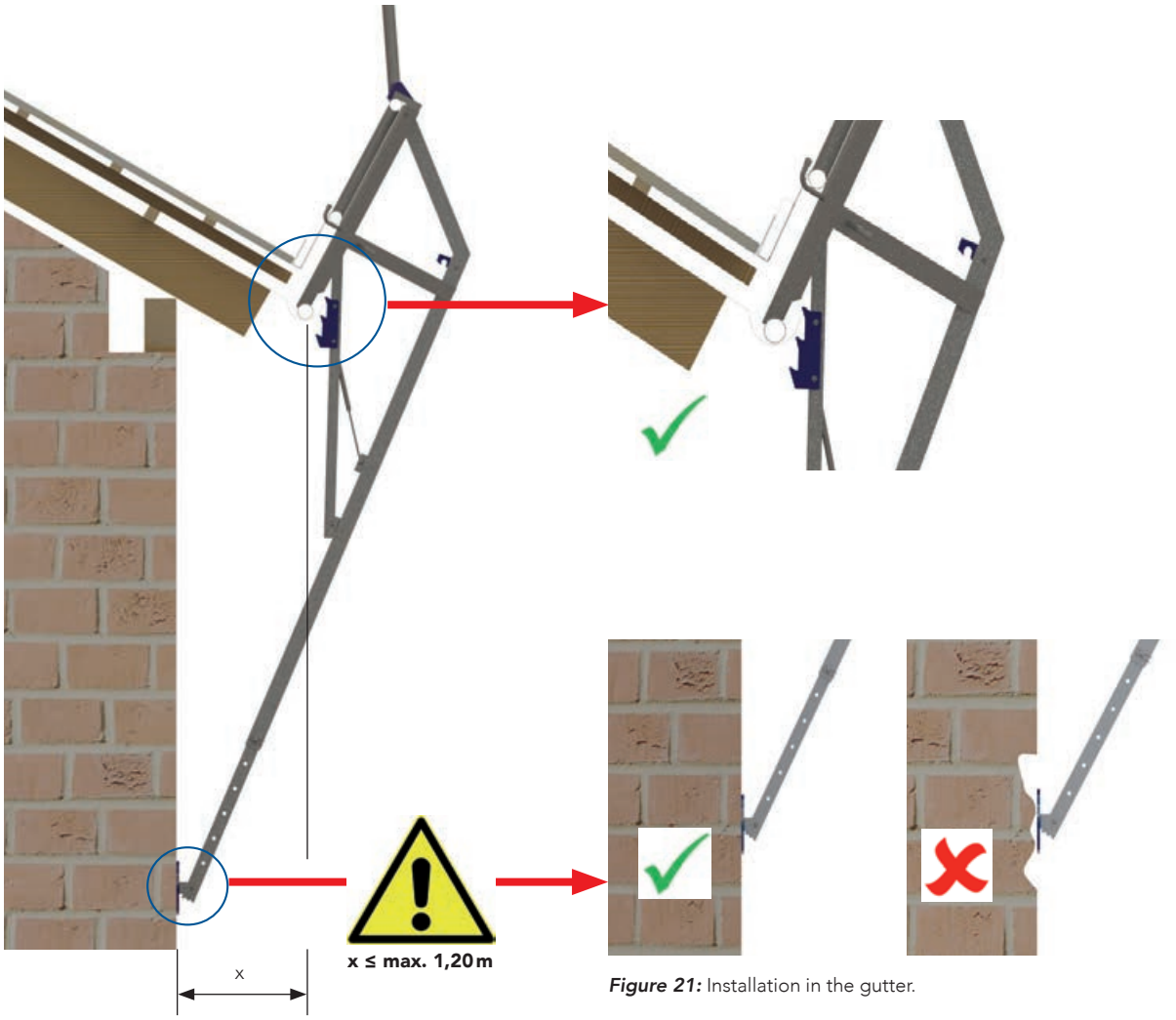
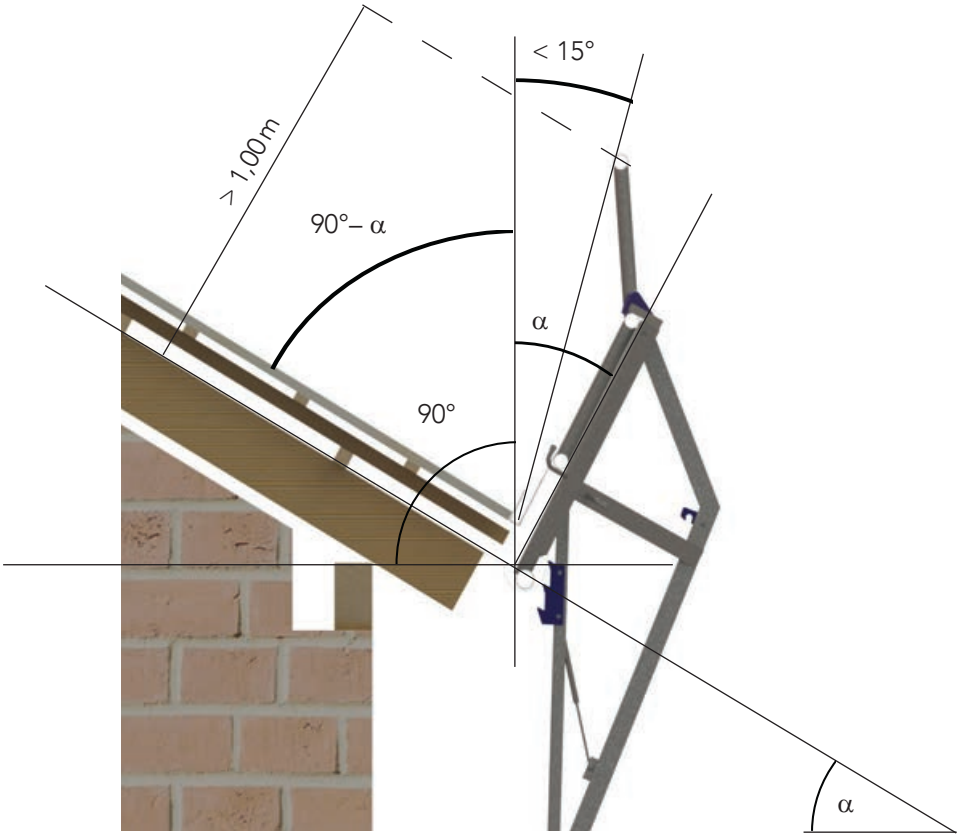


Figure 21: Installation in the gutter.

1. The gutter is designed and positioned in such a way that the integral bracket can be placed in the gutter.
2. The gutter and the gutter brackets are strong enough and the façade has sufficient load-bearing capacity.
3. The gutter has a beaded seam or another type of edge under which the anti-lift device can be positioned. Only in this way the integral console bracket is secured against lifting out.
4. The footplate must be fully and firmly supported on the load-bearing facade.
5. The distance between the facade and the gutter must not exceed 1,20 m.

5.3 Dimensional data



5. The safety railing is at least 1,00 m vertically above the roof surface and the angle between the toe board and the upper horizontal tube of the safety railing is maximum 15° with respect to the vertical. In order to be able to use the integral console bracket in as many different situations as possible, the safety railing can be installed with the bend towards the building, or away from the building.
6. Other elements, such as tarpaulins or nets, must not be attached to the system.
7. The system must be dismantled when the wind force exceeds 6 on the Beaufort scale.
8. All components must be checked for damage before assembly. Only undamaged components may be used. All system components must also be visually inspected once a year (irrespective of daily use), in the sense of the normal ladder inspection. This inspection should be documented in writing.

5.4 Basic information on operational safety

The integral console system is operationally safe if:

- Neither damage nor permanent changes in shape can be detected after use.
- Bolts and locking pins are in perfect condition, are in good condition, have good spring pressure and are functional.
- Hole drillings are undamaged and ensure a tight fit of the system parts.
- Aluminum and plastic parts show no cracks or other damage.
- Weld seams are visually flawless and free of cracks and damage.
- Metal parts show no corrosion damage.
- Hydraulic parts are free of corrosion damage and are in perfect condition.
- The labeling on the products is complete.
- The system as a whole can be used in accordance with its intended purpose

6. Disassembly

Disassembly is carried out in the reverse order to that described for assembly.

Integral console bracket

Artikel-no.	Designation	Weight
Z-615200	integral console bracket 200 cm, aluminum, height adjustable 2,60 – 3,50 m	10,45 kg

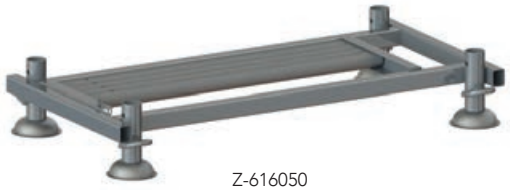


Z-615200

Storage racks for safe transportation

- made of steel
- Storage rack for 16 units of safety railings

Article no.	Length	Width	Weight
Z-616050	125 cm	64 cm	26,0 kg



Z-616050

- Storage rack for 11 integral console brackets (30 linear metres)

Article no.	Length	Width	Weight
Z-615050	260 cm	60 cm	45,8 kg

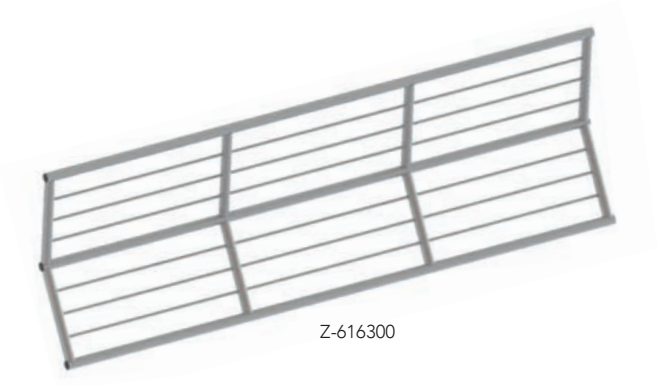


Z-615050

Safety railing for integral console bracket

- Full aluminum
- Available in sizes 200 cm and 300 cm
- 48,3 mm round tube for detachable connections with the gable protection / gable tubes
- Couplings can be attached at any point
- Optional extension with 38 mm star pipe
- Suitable up to and including Class C
- Refer to assembly instructions

Article no.	Length	Height	Weight
Z-616200	200 cm	100 cm	11,3 kg
Z-616300	300 cm	100 cm	16,45 kg



Z-616300

- Aluminum toe board for safety railing Z-616…
- Light and easy to install
- Reinforced aluminum brackets
- Powder-coating and labelling are possible from 100 units combined with other system toe boards (e.g. MATO 1, 2,…)

Article no.	Length	Weight
Z-617200	200 cm	3,4 kg
Z-617300	300 cm	5,15 kg



Z-617300

- Integral safety bracket for safety railing Z-616…
- Made of steel (6 mm)
- Height-adjustable bracket
- Angle-adjustable hinge
- Compatible with all roof inclines
- The safety bracket is mandatory for roof inclines from 30° to 60°.

Article no.	Length	Weight
Z-616010	75 cm	2,2 kg



Z-616010

MATO Scaffoldings

Efficiency. Flexibility. Safety.

Facade scaffoldings	**MATO** 1 **MATO** 2	**MATO** 53 CK **MATO** 54 Lay **MATO** 62 Ple **MATO** 65 Hün	compatible with your existing scaffolding
All-in-one scaffolding system	**MATO** 3 **MATO** 8	**MATO** Connect Road Bridge **MATO** Connect Bridge Beam	
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Mobile scaffoldings	**MATO** R	**MATO** R Profi **MATO** R Pro **MATO** R One Man Tower **MATO** R Eco	
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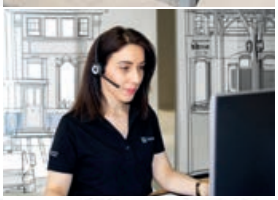






Tobler Formwork

Enjoying industrialized construction.

Wall formwork	**Tobler** Wall	**Tobler** Top **Tobler** Manu Master Pro (Ringer) Master steel / alu (Ringer) System 2000 steel / alu (Ringer)	
Slab formwork	**Tobler** Sky	**Tobler** Deck **Tobler** Desk Slab Table / Kart **Tobler** Flex AluDEK (Ringer) DEKplus Slab Table (Ringer)	
Individual formwork	**Tobler** I	**Tobler** Rex Girder wall formwork **Tobler** Varia Circular formwork **Tobler** Project Special formwork	
Shoring systems	**Tobler** H	**Tobler** Tower Heavy-Duty Props **Tobler** T22 Load-bearing system	
Work scaffolding on construction sites	**MATO** T	**MATO** T Reinforcement scaffolding **MATO** T Ramps for site access, **MATO** T Towers / Cable bridges **MATO** R Pro / Eco **MATO** R One Man Tower	
Engineering	**Tobler** Kit	**MATO** 3 **MATO** 8 **MATO** Connect Road Bridge **MATO** Connect Bridge Beam	
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« With MATO Pro anti-fall protection, you benefit from our core competence in aluminum. Fewer and lighter components mean significantly shorter sassembly time – saving you money every day. »



Markus Etter
Sales Manager
Scaffolding

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