

SKYRAIL RAIL SYSTEM

Instructions for use/assembly

Type D anchor device in accordance with EN 795:2012, CEN/TS 16415:2013 and UNI 11578:2015

Manufacturer

SKYLOTEC GmbH - Im Mühlengrund 6-8 - 56566 Neuwied

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1. SYMBOLS

The components of the device are labelled with pictograms which have the following meaning:



Please read the operating instructions before use!

Before using the SKYRAIL Runner, please also read the general instructions for use part 1 and the instructions for use part 2 provided with the SKYRAIL Runner by Skylotec!



Number of simultaneous users at this anchorage device (in this Example max. 3 persons). Is displayed in 6.1-6.4 and 7.2.



Danger! or: Need to check the equipment

2. PRODUCT DESCRIPTION

The SKYRAIL horizontal rail system is a fall protection system that has been tested in accordance with DIN EN 795/D:2012 CEN/TS 16415 and UNI 11578:2015.

The SKYRAIL fall arrest system is suitable for the protection of maximum 4 persons.

The system is suitable for fall protection of persons and "rope access" and is designed in such a way that it deforms during a fall and thus dampens the fall.

The system must not be used for slinging or transporting loads!

The system may only ever be used for one intended purpose, either as a fall arrest system or for "rope access", never both at the same time!

The system is therefore particularly suitable for safe working on high structures and, under certain conditions, is suitable for "rope access". See chapter 7

2.1 Installation direction

The SKYRAIL can be installed on the floor, wall or ceiling.

The system inclination of the SKYRAIL must not exceed a maximum inclination of 15° to the horizontal.

The materials are resistant under particularly aggressive conditions, such as constant, alternating immersion in seawater or the splash zone of seawater, chlorinated atmospheres in swimming pool halls or atmospheres with extreme chemical contamination.

SKYLOTEC GmbH accepts no liability for non-compliance with the instructions for use Part 1 to Part 3 of the fall protection system.

3. SAFETY INSTRUCTIONS

Every installer or user must be familiarised with these instructions before starting installation. The installation instructions must be followed without fail, as failure to do so could endanger human life. If difficulties arise during installation of the fall protection system, it must be cancelled immediately. Further information can be obtained from the manufacturer.

It must be ensured that the provided instructions for use are stored with the fall protection system in a dry place and are accessible to all users at all times.

- Before use and during use, a visual inspection must be carried out to ensure that the system is functioning properly.
- As this system is electrically conductive, it must be professionally integrated into the lightning protection/equipotential bonding in accordance with the DIN VDE 0185 standard if a lightning protection system is present.
- When planning and installing anchorage devices, observe the DGUV information "Planning principles for anchorage devices on roofs" (201-056) The minimum distance between the anchorage point and the edge of the fall should be at least 2.5 metres.
- When installing the anchoring points, the load-bearing capacity of the substructure must be taken into account. Compatibility with similar systems is not guaranteed and may pose a risk to life and limb in the event of non-compliance.

- Fall protection systems are used to prevent people from falling and not objects or as transport anchor points.
- During installation, the approval and processing instructions for the fasteners must also be observed. The system may only be fastened with the fasteners supplied or recommended by Skylotec and all of them must always be used, i.e. if, for example, 2 screws are supplied with a bracket, they must all be used in accordance with the installation instructions!
- All screws (countersunk screws M8x16, M8x20 and M12x25) are provided with a micro-encapsulated screw lock; if this is not the case, these countersunk screws must be treated manually with a medium-strength screw lock.
- Fall protection systems may only be used by trained and instructed users. Users must be instructed in the correct use of the system by the employer or an expert.
- Fall protection systems must be inspected and maintained annually by an expert.
- Before each use, fall protection systems and personal fall protection equipment must be checked for defects. If there are any doubts about the functionality of the products, they must not be used and must be inspected by an expert. Damaged fall protection systems and/or lanyards as well as other parts of the PPE against falls from a height may no longer be used. If necessary, the system or the PPE must be inspected by the manufacturer or an expert.
- After a fall, fall protection systems must not be used again. Incorrectly executed bondings/screw connections can come loose and jeopardise the safe function of the fall arrest systems! Improper repairs, maintenance and/or manipulation of the fall arrest system and its components pose a risk to life and limb. In this case, any warranty is void and any liability on the part of SKYLOTEC GmbH is excluded.
- The product may only be used with connecting elements (observe conformity to EN 362) and personal fall protection equipment.
- When using personal protective equipment, the corresponding operating instructions and applicable regulations must be observed, see the enclosed.

4. GENERAL INSTALLATION CONDITIONS

All individual parts must be cleaned of dirt before installation. Avoid contact of the system with aggressive substances and chemicals as well as mortar, cement or similar materials. Mortar residues and/or other contaminants must be removed immediately so that the function of the product is not impaired. The products must be installed strictly in accordance with the manufacturer's installation instructions. Deviations are not permitted. Only original SKYLOTEC components may be used for installation and replacement. The combination with components or elements from other manufacturers or suppliers can pose a risk to life and limb! The components must be handled with care and must not be used improperly. A set of appropriate labelling plates must be attached to each entry and exit point. The following additional safety equipment must be used when assembling upright structures: Safety harnesses in accordance with EN 361 and separate safety ropes with energy absorbers in accordance with EN 354/355.

As structurally anchored anchor points/equipment are no longer subject to the PPE Directive, they may no longer be labelled with CE. In Germany, building authority approval is required for these products. In Europe, different national regulations apply to these products and approval may be required in individual cases.

5. ASSEMBLY INSTRUCTIONS

Components required to install a SKYRAIL system.

Fasteners required for mounting on concrete are not included in the scope of delivery:

For general attachment of the SKYRAIL:

- Torx spanner TX25
- Bit Torx TX25
- Torx spanner TX40
- Bit Torx TX40
- Hexagon socket spanner SW5
- Hexagon socket bit SW5
- Allen key SW8 (for adapter plates SR-120 and SR-122)
- Universal adapter ¼ " for bits
- Calibrated 1/4" torque spanner with a torque range of 5-30 Nm
- Ratchet spanner ¼"
- Non-rebound plastic hammer
- Hammer drill (for mounting on concrete)
- Concrete drill bit (for mounting on concrete)
- Blow-out pumps for borehole cleaning (for mounting on concrete)
- Cleaning brushes (for mounting on concrete)
- Calibrated torque spanner ½" with a torque range of 20 -120Nm
- Ratchet spanner ½" and various sockets ½" from SW 13 -19.

Recommended fasteners for the SR-121 adapter plate on concrete:

- Würth bolt anchor: W-FAZ/A4 M12-15/110

Special notes:

Tightening torques of all screws supplied as follows:

- M12 = 32 Nm
- M8 = 22 Nm
- M8 grub screw = 18 Nm
- M6 = 10 Nm

The following applies to all mounting surfaces:

- It must be ensured that a static load of 10kN can be absorbed per SR-105 base console and must be verified by the operator by calculation

Article overview:

- **SR-100 SKYRAIL RUNNER**
(mobile anchor point for 1 person)
- **SR-101-6 SKYRAIL 6 metres or SR-101-L individual length up to 6 metres**
- **SR-102 SKYRAIL horizontal curve**



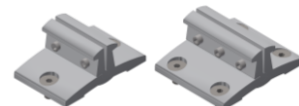
- **SR-103 SKYRAIL inside curve**



- **SR-104 SKYRAIL outside curve**



- **SR-105 SKYRAIL base console**
- **SR-105-80 SKYRAIL base bracket 80mm wide**



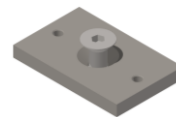
- **SR-108 End Stopper**



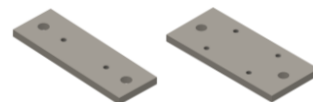
- **SR-109-2 SKYRAIL rail connector**



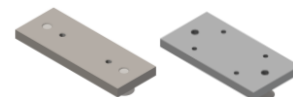
- **SR-120 SKYRAIL adapter plate M12**



- **SR-121/SR-121-80 SKYRAIL adapter plate concrete**



- **SR-122/SR-122-80 SKYRAIL adapter plate UK plates**



- **SR-110-2 SKYRAIL SYSTEM SIGN**



5.1 SKYRAIL base console SR-105 in the SKYRAIL rail SR-101

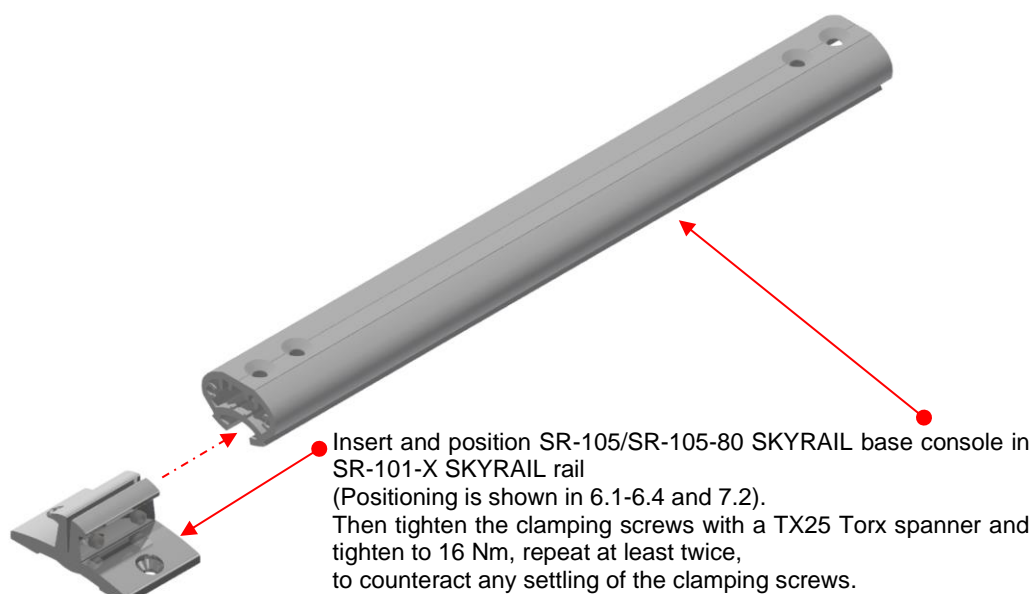


Fig. 1 Mounting the SR-105 base console

SKYRAIL rail connector SR-109-2 in the SKYRAIL rail SR-101

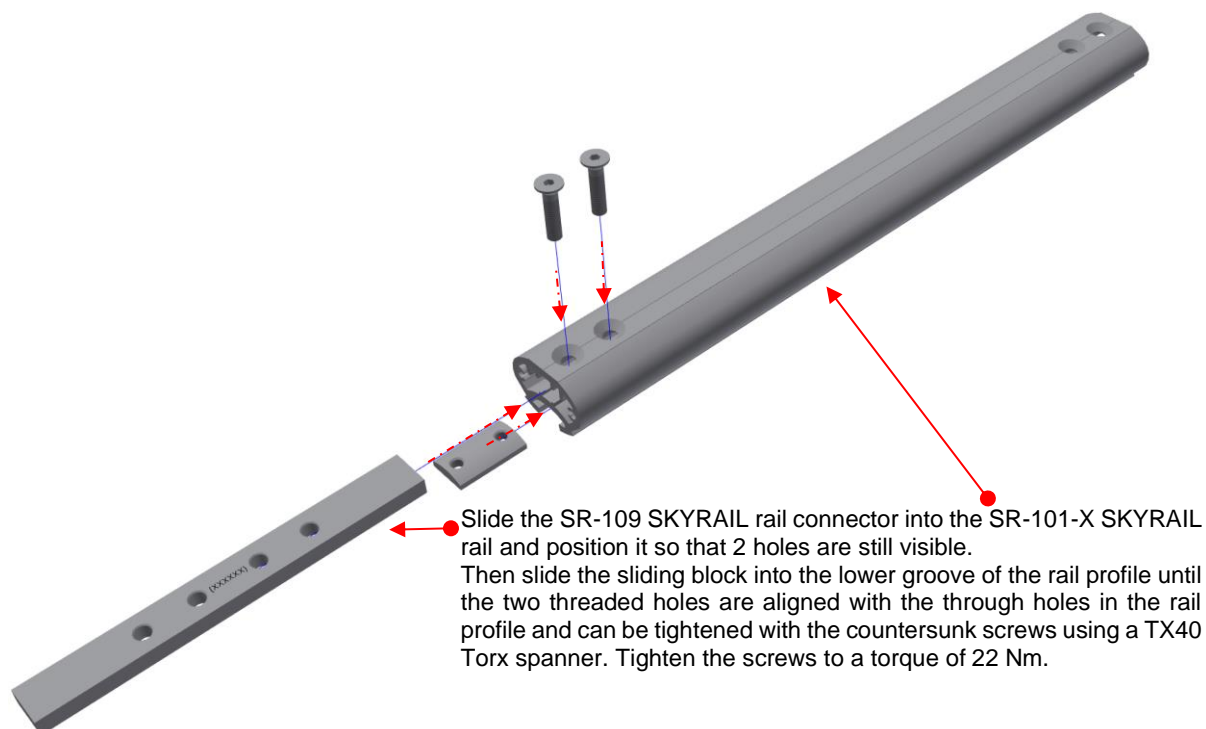


Fig. 2 Mounting rail connector SR-109-2

5.2 SKYRAIL end stopper SR-108 in SKYRAIL rail SR-106

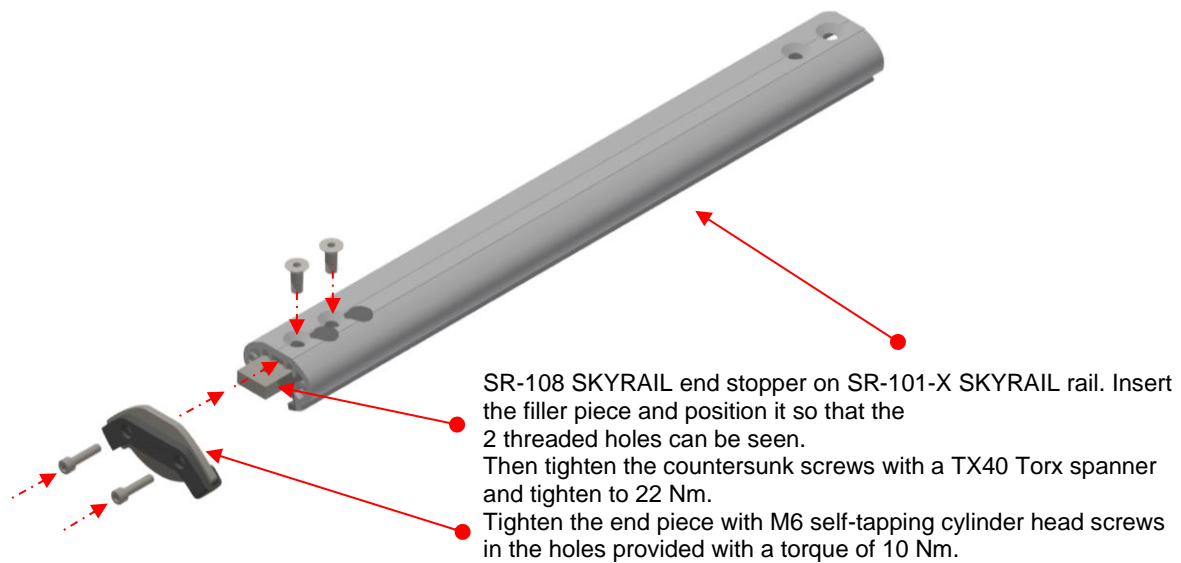


Fig. 3 Mounting end stopper SR-108

5.3 SKYRAIL base console SR-105 on adapter plate SR-120

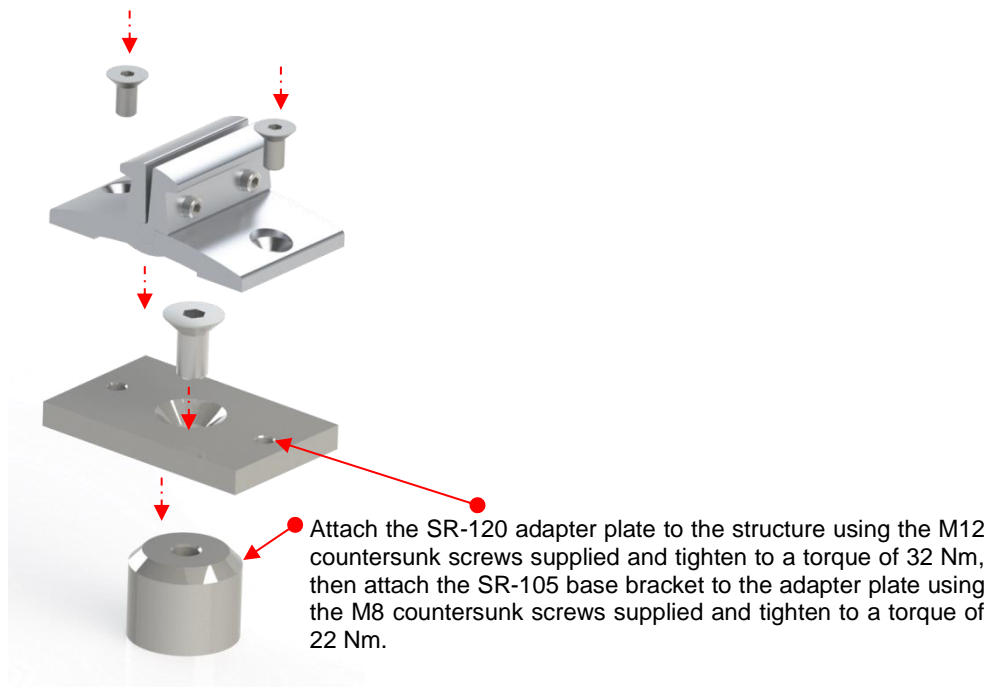


Fig. 4 Mounting base console SR-105 on adapter plate SR-120

5.4 SKYRAIL base bracket SR-105/SR-105-80 on adapter plate SR-121/ SR-121-80

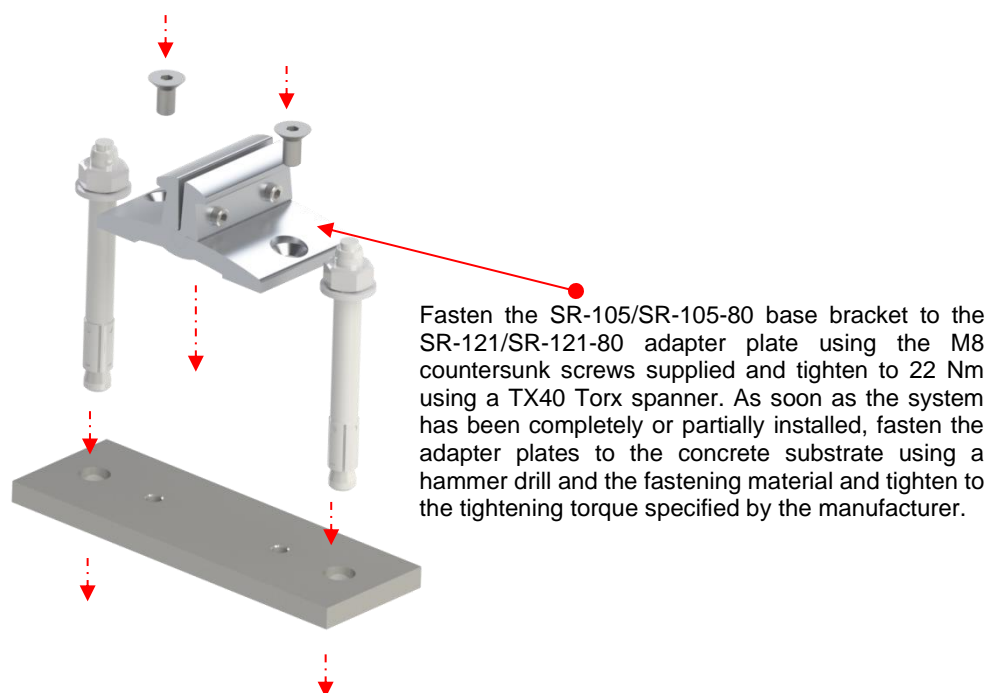


Fig. 5 Mounting the SR-105 base console on the SR-121 adapter plate /SR-121-80

5.5 SKYRAIL base console SR-105/ SR-105-80 on adapter plate SR-122 / SR-122-80

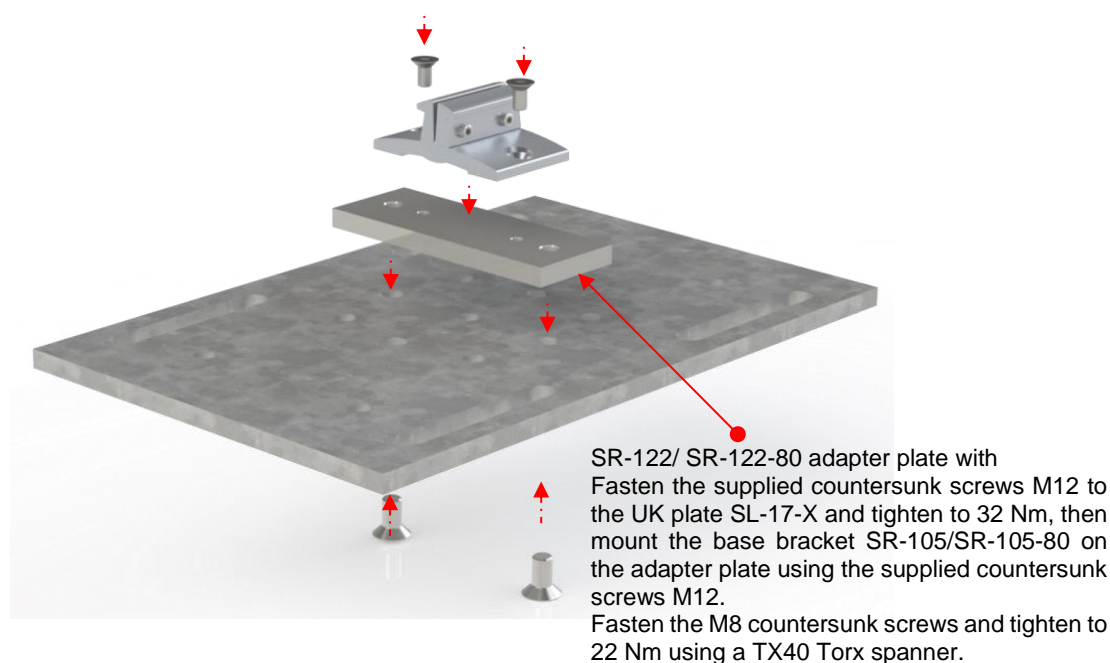


Fig. 6 Mounting base bracket SR-105 on adapter plate SR-122 for substructure plates SR-017

6. ARRANGEMENT AND MOUNTING DIAGRAMS FOR FLOOR, CEILING AND WALL MOUNTING

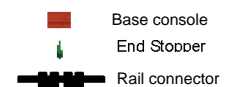
6.1 SKYRAIL basic brackets SR-105 for a single rail for floor or ceiling installation

Number of users: pppp



The maximum bracket stock of 5000mm can only be realized within a rail segment of 6000mm. For a single SKYRAIL rail of 6000mm, at least 4 base brackets must be used.

Fig. 7 Single rail without connection



6.2 SKYRAIL base bracket SR-105 for rails with connector for floor or ceiling installation

Number of users: pppp

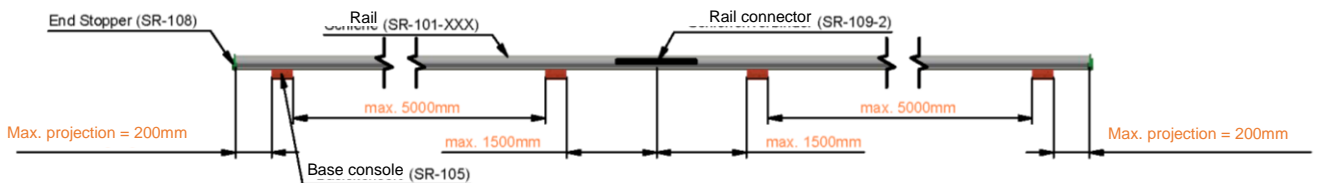


Fig. 8 Interconnection of any number of rails

6.3 SKYRAIL base bracket SR-105 for curved floor or ceiling installation

Number of users : pppp

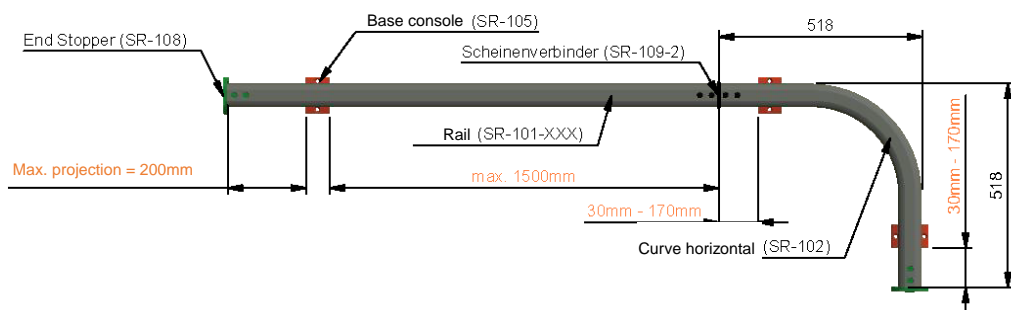
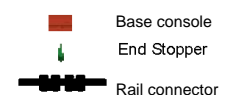


Fig. 9 Arrangement with a curve



6.4 SKYRAIL base bracket SR-105 in conjunction with an internal or external curve for wall mounting

Number of users: pppp

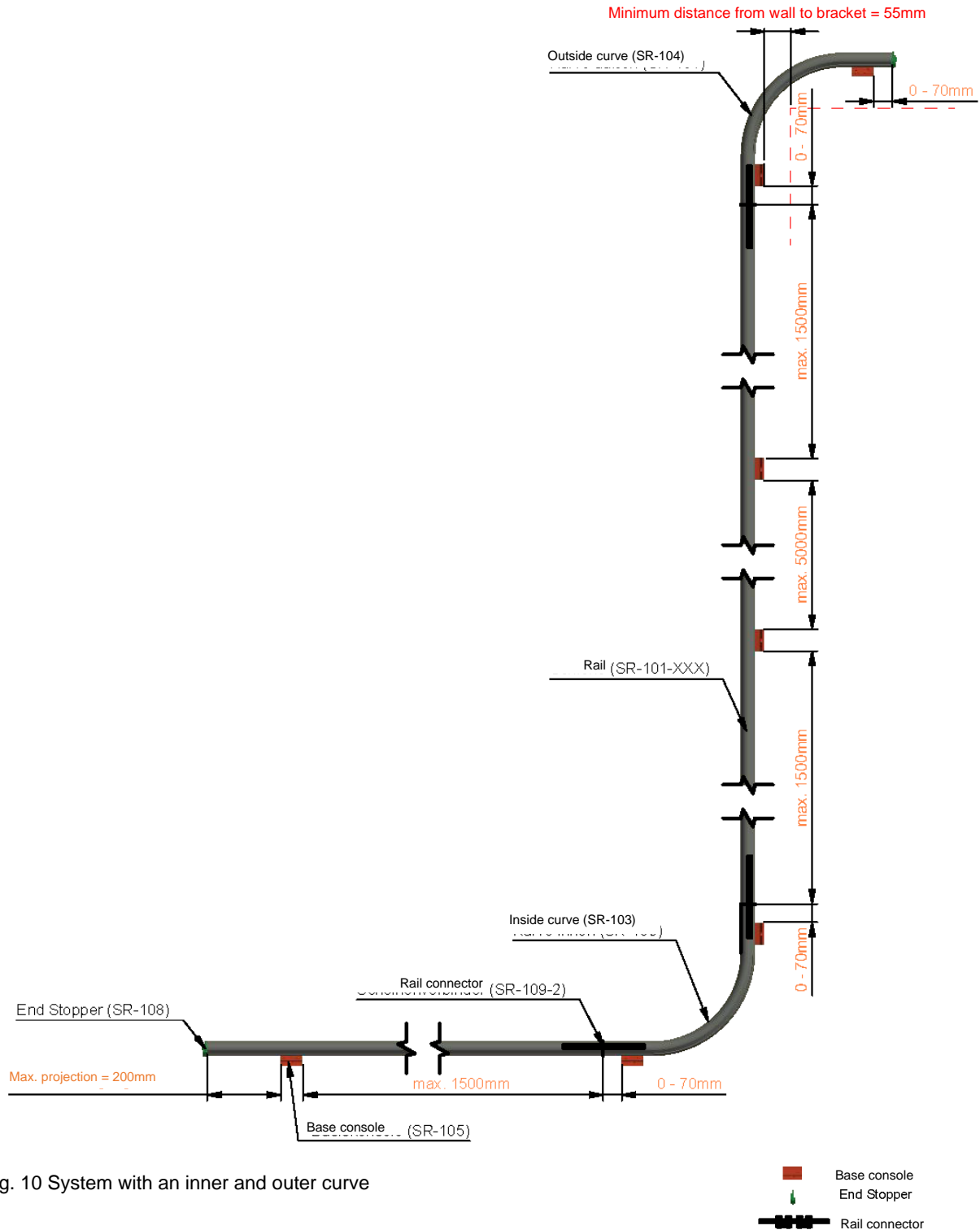


Fig. 10 System with an inner and outer curve

7. ROPE ACCESS

7.1 Instructions for rope access

In addition to using the SKYRAIL system as an anchorage point for rope access, it is important to ensure that another redundant anchorage system is used for fall protection during rope access!

7.1.1 General procedure

1. The SKYRAIL should only be mounted upside down to optimise the running characteristics of the SR-100 under load!
2. The bracket distance must not exceed 2750 mm!
3. No bracket may be installed directly on the joint!
4. A maximum of 1 user per system field of up to max. 2750 mm bracket distance may work!
5. The number of users in the complete system is limited to 3!
6. The SR-108 end stopper must always be installed at the end of every SKYRAIL system!
7. To assemble the individual parts **Fehler! Verweisquelle konnte nicht gefunden werden.** - Fig. 6 from chapter 5.

7.1.2 Dimensions and forces to be observed

1. The substructure on which the SR-105 base bracket is installed must safely absorb the force of at least 10kN and be statically verified!
2. At the end of each SKYRAIL system, the rail must not protrude more than 200 mm from the edge of the bracket!
3. For a rail connection with the SR-109-2 rail connector, the distance from the end of the rail to the nearest bracket centre must not exceed 250 mm!
4. The SR-102 curve may only be installed with one SR-105 base bracket at each of the two straight ends! Here, the bracket may only be clamped in the straight area, which automatically results in a reduced overhang if the system should come to an end after the curve!
5. The minimum rail length of 2000 mm must not be exceeded!

7.2 Arrangement and installation diagrams on floors, walls and ceilings

7.2.1 SKYRAIL assembly variant with SR-105 base consoles for a single rail

Number of users: ppp

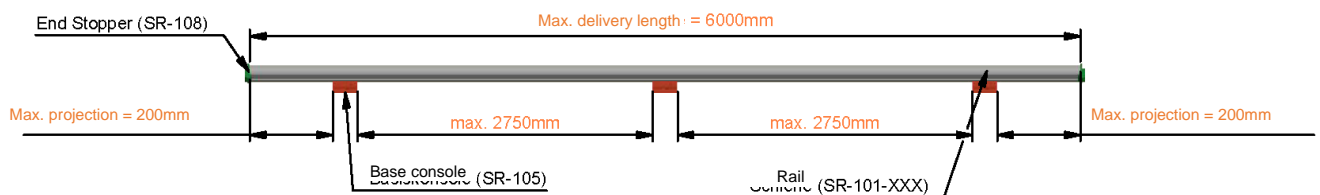


Fig. 11 Schematic structure of Rope Access single rail

7.2.2 SKYRAIL assembly variant with SR-105 base console and connectors

Number of users: ppp

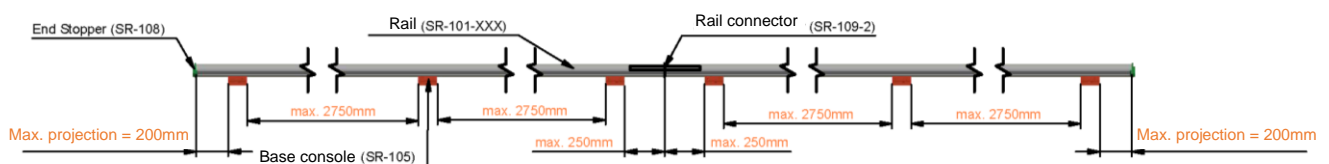


Fig. 12 System variant with joint

8. IDENTIFICATION

All system components of the SKYRAIL fall protection system are labelled with the necessary information for each user. The SR-110 system sign must be visibly attached so that every user can read it before using the fall protection system. If there are several access points to the system, system signs must be affixed accordingly.

9. MAINTENANCE

9.1 Inspection

The installed SKYRAIL fall protection system must be inspected by an expert as necessary (soiling, damage, etc.), but at least once a year.

A competent person is someone who has sufficient knowledge in the field of personal protective equipment through training and experience. It must be ensured that they are able to assess the safe working condition of the fall protection equipment. They must be familiar with the relevant guidelines and the generally recognised rules of technology (e.g. EN standards).

If the prescribed maintenance intervals are not adhered to, SKYLOTEC GmbH accepts no liability whatsoever.

9.2 User maintenance

The system and its components must be in an undamaged, corrosion-free condition. Components that are damaged, bent or stressed by a fall must be withdrawn from use. Failure to do so may result in danger to life and limb. All screw connections must be constantly checked to ensure that they are tight. If this is not the case, the screw of the screw connection must be removed, cleaned, then secured with threadlocker and reinserted. The anchor device must not be used if it is defective. It must be checked and, if necessary, repaired by an expert.

9.3 Maintenance and care

The SKYRAIL fall arrest system does not require any special maintenance. Please ensure that the SR-100 runners are clean and smooth-running.



Caution: All anchor systems must be inspected and serviced annually by an expert.

9.4 Service life

The service life depends on the individual operating conditions. All elements of the system are made of seawater-resistant aluminium or corrosion-resistant stainless steel (A4) and are therefore weather-resistant and low-maintenance. Slight surface rust on stainless steel components near the coast is not a material defect. Regular cleaning favours the service life by removing aggressive substances from the surface and thus protecting it from premature ageing. Under optimum operating conditions, a total service life of max. 20 years is possible.

When the system is inspected, the expert decides on the continued or extended service life.

After a fall, the SKYRAIL fall protection system may no longer be used until it has been repaired and inspected by an expert and released for use again.

10. WARRANTY

Under normal conditions of use, a warranty of 1 year is granted. Some of the materials used are resistant under particularly aggressive conditions, such as constant, alternating immersion in seawater or the splash zone of seawater, chlorinated atmospheres in swimming pool halls or atmospheres with extreme chemical contamination, which means that a warranty can only be provided after precise testing and a positive assessment.

In the event of a fall, the warranty becomes void as the components are designed to absorb energy through deformation. After a crash, the entire system must be checked and affected components replaced.



Note: The manufacturer's product liability does not extend to property damage or physical injury that may occur even if the personal fall protection equipment is functioning properly and is used correctly. The manufacturer's extended product liability does not apply if the equipment is modified or if these instructions or the applicable accident prevention regulations are not observed.

11. ASSEMBLY AND FINAL ACCEPTANCE REPORT

11.1 Part 1, remains with the operator

Building/construction

Address: _____ Order no: _____
 _____ Building type: _____
 Remarks: _____ Roof shape: _____
 _____ Anchor device: _____

Client

Name: _____ Contact person: _____
 Address: _____
 _____ Tel: _____

Fitter

Name: _____ Chief fitter: _____
 Address: _____
 _____ Tel: _____

Anchor device

Manufacturer: _____
 Model/type designation: _____
 Serial numbers: _____

Building section

Component 1: _____ Minimum component thickness: _____
 Component 2: _____ Minimum component thickness: _____
 Building material: _____ Quality: _____

Mounting type:

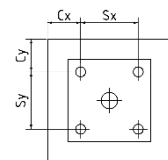
Dowels: ☐ Injection dowels: ☐ Screw anchor: ☐ Clamp connection: ☐
Mechanical engineering screws: ☐

Setting data: Drill-Ø: _____ mm material: _____
Drilling depth: _____ mm Minimum component thickness: _____
Tightening torque: _____ Nm

Effect. Situation: Edge distance: Cx: _____ Cy: _____
Centre distance Sx: _____ Sy: _____

Example:
 Possibly, additional
 Use additional blade

Remarks: _____



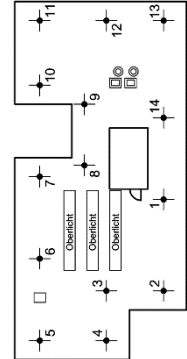
Drilling method: ☐ Hammer drill Drill holes cleaned ☐ yes ☐ no
Blow ☐ yes ☐ no
☐ Diamond drill system ☐ wet ☐ dry
Test device: ☐ Torque spanner ☐ yes ☐ no

Enter building sketch on sheet 2 and checklist on sheet 2.

Roof floor plan (lines, please draw with a ruler):

Example:

If there is not enough space, please use separate sheets and attach them to the minutes!



Checklist:	yes	no	n.r.
Substrate as expected (no doubts about load-bearing capacity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proof of load-bearing capacity available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Installation carried out according to the system manufacturer's installation instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connection technology installed according to the respective manufacturer's specifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Only corrosion-protected fastening elements were used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All mountings photographed with licence plate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assembly plan stored on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Labelling plate(s) is/are present and attached	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pretensioning correct (only cable system)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System/ attachment point is free of dirt and slider is smooth-running	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Runner has been handed over to the operator (only for rail/rope system)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trial inspection was carried out and passed (only for rail/rope system)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System has been installed and handed over free of defects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assembly and operating instructions are available in full and handed over to the operator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remarks Chief fitter:

Delivered to:

(Operator or his representative)

Name in block capitals
Signature

Site manager assembly company

Name in block capitals
Signature

Place: _____

Date: _____

11.2 Part 2, must be sent to system manufacturer

Building/construction

Address: _____ Order no: _____
 _____ Building type: _____
 Remarks: _____ Roof shape: _____
 _____ Anchor device: _____

Client

Name: _____ Contact person: _____
 Address: _____
 _____ Tel: _____

Fitter

Name: _____ Chief fitter: _____
 Address: _____
 _____ Tel: _____

Anchor device

Manufacturer: _____
 Model/type designation: _____
 Serial numbers: _____

Building section

Component 1: _____ Minimum component thickness: _____
 Component 2: _____ Minimum component thickness: _____
 Building material: _____ Quality: _____

Mounting type:

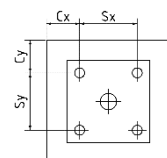
Dowels: ☐ Injection dowels: ☐ Screw anchor: ☐ Clamp connection: ☐
Mechanical engineering screws: ☐

Setting data: Drill-Ø: _____ mm material: _____
Drilling depth: _____ mm Minimum component thickness: _____
Tightening torque: _____ Nm

Effect. Situation: Edge distance: Cx: _____ Cy: _____
Centre distance Sx: _____ Sy: _____

Example:
 Possibly, add.
 Use sheet

Remarks: _____



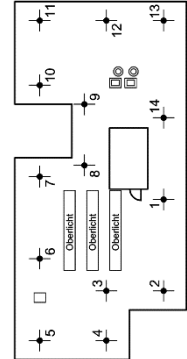
Drilling method: ☐ Hammer drill Drill holes cleaned ☐ yes ☐ no
Blow ☐ yes ☐ no
☐ Diamond drill system ☐ wet ☐ dry
Test device: ☐ Torque spanner ☐ yes ☐ no

Enter building sketch on sheet 2 and checklist on sheet 2.

Roof floor plan (lines, please draw with a ruler):

Example:

If there is not enough space, please use separate sheets and attach them to the minutes!



Checklist:	ja	nein	N.R.
Substrate as expected (no doubts about load-bearing capacity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proof of load-bearing capacity available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Installation carried out according to the system manufacturer's installation Instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connection technology installed according to the respective manufacturer's specifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Only corrosion-protected fastening elements were used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All mountings photographed with licence plate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assembly plan stored on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Labelling plate(s) is/are present and attached	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pretensioning correct (only cable system)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System/ attachment point is free of dirt and slider is smooth-running	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Runner has been handed over to the operator (only for rail/rope system)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trial inspection was carried out and passed (only for rail/rope system)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System has been installed and handed over free of defects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assembly and operating instructions are available in full and handed over to the operator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remarks Chief fitter:

Delivered to:

(Operator or his representative)

Name in block capitals
Signature

Site manager assembly company

Name in block capitals
Signature

Place: _____

Date: _____

12. NOTES

Type approval body:
TÜV AUSTRIA SERVICE GmbH
Deutschstraße 10
A-1230 Vienna

1 INSPECTION CERTIFICATE

OBJECT DATA

Object: _____

Project - No. _____

Manufacturer: SKYLOTEC GmbH
Im Mühlengrund 6-8
D-56566 Neuwied

Year of manufacture: _____

Series / Batch /
Order number: _____

Procurement date: _____

Commissioning date: _____

Reason for the check: Regular inspection ☐ Maintenance ☐

The safety device, its components and the installation documentation were inspected by a competent person at _____.

During the inspection no defects were found ☐

The following defects were identified ☐

Defects found: _____

Labelling legible Yes ☐ No ☐

Date of the next review: _____

Place / Date Signature / address of the authorised person

No legal claims can be derived from the application of the details and all information, as we are not aware of the respective conditions (applies to all types of construction). We reserve the right to make technical changes. Assembly instructions of an earlier date lose their validity. It is the responsibility of the installation company to check and clarify whether the product may be installed in the country of delivery prior to installation.