GENESI
ITALIA

Sky Allukemi™

Manufacturer's Installation Instructions

Table of Contents.

1. Introduction.

Preventive and protective measures should be installed for works performed in places exposed to a danger of falls, in order to allow the operator to perform maintenance operations to move easily along the work area.
These protective devices, in addition to being safe, must be ergonomic, or rather “comfortable” to use for the operator, and they must be provided in the Technical Coverage Report (ETC) that is drawn up by the Health & Safety Co-ordinator at the design phase (CSP), in agreement with the designer, and be an integral part of the project both of the technical dossier and of the works. The ETC is therefore composed of various documents, with relevance to different subjects, in particular:

- **Coordinator/technician**: graphics with routes and access points to the roofing highlighted, technical report with adopted design solutions, structure support and mounting calculation report.
- **Manufacturer**: product certification, Manufacturer Instructions - Manual of installation, use and maintenance.
- **Installer**: declaration of conformity of the works performed.

From the designer to the consumer 1.1

With regard to the points mentioned above, the objectives of **Genesi Italia** are to create a direct line between the designer of the system and the final user, passing by the manufacturer and installer by means of:

- Study of the line through software with immediately understandable graphical interface and return of the elements that constitute the system (as an alternative to consultancy from our technical office).
- Supply of the elements provided for the entire system directly from **Genesi Italia** or from the chain of Partners and authorised resellers.
- Installation with simple procedures according to the Installation Manual by installers trained by Genesi Italia (subject of this document).
- Provision of information necessary for the proper use and maintenance contained in the Manufacturer's Instructions.

2. Important warnings.

- Before system use, read the Manufacturer's Instructions - Use and Maintenance.
- All users must be trained and informed about risks and must have carried out the training on 3rd category PPE.
- Users must be in optimal physical conditions for the duration of works.
- Operators must be trained and informed about emergency, recovery and evacuation procedures in the work area in which they operate.
- Making changes and/or additions to the equipment/system without consent from the manufacturer/distributor is prohibited
- Equipment must not be used beyond its limitations or for purposes other than those foreseen.
- Before using the system, verify good equipment conditions as much as possible.
- For safety, it is imperative that use of equipment be suspended immediately in the event of doubts about their safe conditions or if they have been used for fall arrest. In both cases, before restarting operation, you must get written confirmation from a competent person stating that re-use of the system is acceptable.
- Periodic system review is mandatory. Verify maintenance with the holder of the Technical File.

3. Technical information.

Product description 3.1

Allukemi Sky™ railings are in compliance with standard EN ISO 14122-3 which includes permanent access safety devices to machinery with ladders, stepladders and guard railings. The standard also applies to ladders, stepladders and guard railings in the part of the building in which maintenance of said machinery must be performed, provided that the main function of said part of the building is to supply a means of access to the maintenance site. It also complies with the Technical Standards on Construction (NTC 2008) for varying loads cat. H1 - roofs and attics accessible only maintenance.

It is a collective protection system, so there is a maximum number of operators that can simultaneously access the area protected with railings. The only constraint is that the area not be accessible to the public but only to maintenance personnel.

Application is possible so as to bring the height of the protection to 110 cm from the floor level as provided by law. It consists of uprights engaged every 150 cm to a universal base on which a handrail is mounted. The uprights can be mounted at a distance of 2 m from each other upon prior approval from the Genesi Italia Technical Department. When the plenum is less than 60 cm, the composition is then integrated with a beam, as the distance between the handrail and the cross-piece cannot exceed 50 cm. In the event that the plenum is less than 15 cm or is not present, it is also necessary to protect from falling material with a toe-clip board.

Horizontal and vertical irregular levels can be overcome with special articulated components.

Railings are available in the following configurations:

SKPD: Allukemi Sky™ mounting on a straight plane
SKPI: Allukemi Sky™ mounting on an inclined plane
SKMD: Allukemi Sky™ mounting on a straight wall
SKMI: Allukemi Sky™ mounting on an inclined wall
SKCD: Allukemi Sky™ straight under roof mounting
SKCI: Allukemi Sky™ inclined under roof mounting
SKSD: Allukemi Sky™ straight protruding mounting
SKSI: Allukemi Sky™ inclined protruding mounting
SKRD: Allukemi Sky™ straight reclinable

Available in three versions:
version 1: handrail only Max H upright 50 cm
version 2: handrail+ cross beam Max H upright 95 cm
version 3: handrail+ cross beam+toe-clip board Max H upright 110 to 130 cm

Railings can be mounted directly on the reinforced concrete structure with floor, wall, protruding wall, under roof, reclinable attachments with straight or inclined uprights. Application can be made both inside and outside the plenum.

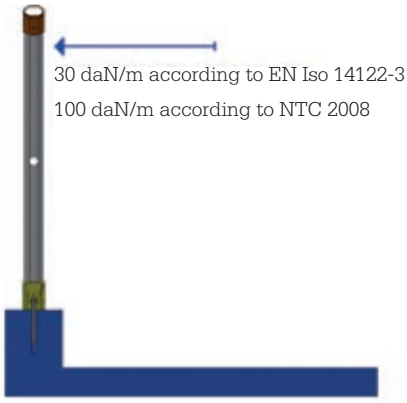
They can be mounted to the side of the Allukemi Step gangway to protect the walkway on 1 or both sides.

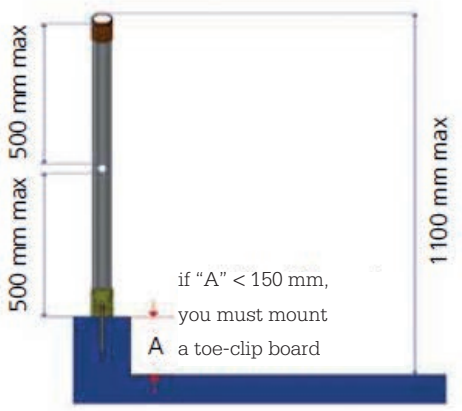
Users must be in optimal physical conditions for the duration of works.
Before use, verify the presence of recovery and rescue floors or procedures in the plant location to be implemented in case of need.
The plant is guaranteed for 10 years with no annual maintenance requirement.
All components are made of aluminium with the possibility of coating with epoxy paint as a base and any desired RAL colour paint.

The railings in question have been tested by the Apave Certifying Organisation and the elements used at times are in accordance with those tested.

Below is a detailed description of the system.

Functional diagram 3.2





Upright/handrail components 3.3

Uprights are mounted at a wheelbase of 150 cm for all types. The elements that characterise them include:

- universal base art. SKU (floor or wall mounting) or under roof base art. SKC or protruding base art. SKS, reclinable base art. SKR
- polygonal extrusion art. SK01 to be used for straight or inclined uprights and for handrails
- polygonal joint art. SK02
- horizontal polygonal corner transmission art. SK03
- vertical polygonal corner transmission art. SK04
- horizontal polygonal joint art. SK05
- polygonal T-fitting. art. SK06
- polygonal L-fitting. art. SK07
- polygonal T-joint art. SK08
- polygonal cap art. SK09
- polygonal cap for fastening art. SK10

Beam components 3.4

Beams are mounted when the plenum is absent or less than 60 cm. The elements that characterise them include:

- round extrusion art. SK11
- round joint art. SK12
- round corner transmission art. SK13
- round cap for fastening art. SK14
- round cap art. SK15

Toe-clip board components 3.5

Toe-clip boards are installed when no plenum is present to prevent material from falling over persons. The elements that characterise them include:

- toe-clip board art. SK16
- toe-clip board support art. SK17
- toe-clip board joint art. SK18

System 3.6

Other elements used in addition to specific railing components used for closing the system and its identification:

- mandatory sign art. CA00 in the vicinity of every access point
- identifier seal art. C35

Description of components 3.7

Universal base art. SKU

Used for fastening the vertical upright of the railing directly to the support structure and can be used, thanks to its innovative geometry, both on wall and floor configurations, with an under roof plate or with a shim plate.

Material:
aluminium die-cast, alloy EN AB 46100
Geometry:
see figure
Weight:
0.66 Kg
Equipment:
22 mm
Mounting:
M12 mm bars+ dual-component chemical resin on the reinforced concrete structure every 150 cm
Equipment:
2 Ø 13mm holes for mounting on the structure at a wheelbase of 100 mm
2 threaded holes with M6x10 mm flat grub screws for mounting the polygonal extrusion of the upright

Under roof base art. SKC

Used as a SKU universal base adapter support for fastening to plenums covered with flashings to prevent all types of infiltration.

Material:
stainless steel
Geometry:
variable
Net weight:
variable
Mounting:
M12 mm bars+ dual-component chemical resin on the reinforced concrete structure every 150 cm
Equipment:
2 Ø 13 mm wall holes for mounting attachment art. SKU at a wheelbase 100 mm
Ø 13 mm holes for mounting on the structure to the ground

Protruding base art. SKS

Protruding bases act as spacers on which universal base art. SKU can be mounted, to move rail attachment away from the plenum. Spacers can be overlapping up to a maximum of 5 and cover a distance of 50 mm.

Material:
aluminium
Geometry:
same profile as universal base art. SKU, thickness
10 mm
Weight:
0.13 Kg/10 mm
Mounting:
M12 mm bars+ dual-component chemical resin on the reinforced concrete structure every 150 cm
Equipment:
2 Ø 13 mm wall holes for mounting attachment art. SKU at a wheelbase 100 mm

Reclinable base art. SKR

Reclinable bases allow mounting of a rail that can be reclined 90° toward the inside of the roof. This version provides modular railing with maximum length 3 m.

Material:
stainless steel
Geometry:
plenum support base plate 140x120 mm
Net weight:
1.10 Kg
Mounting:
M12 mm bars+ dual-component chemical resin on the reinforced concrete structure every 150 cm
Equipment:
2 Ø 13 mm holes for mounting at a wheelbase of 100 mm

Polygonal extrusion art. SK01

Polygonal extrusions are used for uprights, for horizontal lever arms and for handrails.

Material:
aluminium alloy 6060-T6
Geometry:
maximum dimensions 65x30 mm and thickness 2.5 mm, straight or inclined, cut to size (h = 104 cm) when used as an upright
in 3/6 m rods if used as a handrail
Net weight:
1.00 Kg/m
Mounting:
with M6x10 flat grub screws at bases with 4.2x16 mm self-tapping screws for transmission corners, joints and fittings
Equipment
when used as an upright, a Ø 31 hole is present to allow round profile passage of the cross beam

Polygonal joint art. SK02

Polygonal joints are used to restore polygonal extrusion continuity when used as a handrail.

Material:
aluminium alloy 6060-T6
Geometry:
maximum dimensions 58x23 mm and thickness 2mm L=150 mm
Net weight:
0.090 Kg
Mounting:
2 4.2x19 mm countersunk screws, with Ø 4 countersunk drilling in the lower part of the two handrail sections to be connected

Horizontal polygonal corner transmission art. SK03

Horizontal polygonal corner transmissions are used to connect the two consecutive handrail sections and allow for a change of horizontal direction.

Material:
aluminium die-cast, alloy EN AB 46100
Geometry:
see figure
Net weight:
0.67 Kg
Mounting:
2 4.2x19 mm self-tapping screws for each handrail attachment side
Equipment:
4 Ø 4mm countersunk holes, 2 bottom and 2 top

Vertical polygonal corner transmission art. SK04

Vertical polygonal corner transmissions are used to connect the two consecutive handrail sections and allow for overcoming irregular levels.

Material:
aluminium die-cast, alloy EN AB 43100
Geometry:
see figure
Net weight:
0.34 Kg
Mounting:
2 4.2x19mm self-tapping screws
Equipment:
2 Ø 4mm countersunk holes at the bottom

Horizontal polygonal joint art. SK05

Horizontal polygonal joints are used to connect two consecutive handrail sections and allow for a change of horizontal direction with inclined uprights.

Material:
aluminium die-cast, alloy EN AB 46100
Geometry:
see figure
Net weight:
0.67 Kg
Mounting:
2 4.2x19mm self-tapping screws
Equipment
2 Ø 4mm countersunk holes at the bottom

Polygonal T-fitting art. SK06

Polygonal T-fittings are used to connect middle uprights with the handrail.

Material:
aluminium die-cast, alloy EN AB 46100
Geometry:
see figure
Net weight:
0.28 Kg
Mounting:
2 4.2x16mm self-tapping screws on the handrail
2 4.2x16mm self-tapping screws on the upright
Equipment:
4 Ø 4mm countersunk holes (2 on the vertical part, 2 at the bottom)

Polygonal L-fitting art. SK07

Polygonal L-fittings are used to connect end uprights with the handrail.

Material:
aluminium alloy EN AB 46100
Geometry:
see figure
Net weight:
0.21 Kg
Mounting:
1 4.2x19mm self-tapping screw on the handrail
1 4.2x19mm self-tapping screw on the upright
Equipment:
2 Ø 4mm holes (1 on the vertical part, 1 on the bottom)

Polygonal T-joint art. SK08

Used to connect uprights with the handrail for overcoming different height levels.

Material:
aluminium alloy EN AB 43100
Geometry:
see figure
Net weight:
0.39 Kg
Mounting:
2 4.2x19mm self-tapping screws on the handrail
1 4.2x19mm self-tapping screw on the upright
Equipment
3 Ø 4 mm countersunk holes, 1 on the vertical part, 2 on the bottom

Polygonal cap art. SK09

Polygonal caps are used to close the end of the handrail.

Material:
aluminium alloy 6060-T6
Geometry:
maximum dimensions 58x23 mm and thickness 2 mm L=30 mm with closing plate with maximum dimensions 65x30 mm
Net weight:
0.030 Kg
Mounting:
1 4.2x19 mm countersunk screws, with Ø 4 countersunk drilling in the lower part of the handrail

Polygonal cap for fastening art. SK10

Polygonal caps for mounting are used to fasten the end of the handrail to the wall.

Material:
aluminium alloy 6060-T6
Geometry:
maximum dimensions 58x23 mm and thickness 2 mm L=30 mm with closing plate with maximum dimensions 120x70 mm
Net weight:
0.074 Kg
Mounting:
2 Ø 12mm mechanical wall anchors
1 4.2x19 mm countersunk screws, with Ø 4 countersunk drilling in the lower part of the handrail
Equipment
2 Ø 13 holes with wheelbase 90 mm

Round extrusion art. SK11

Round extrusions are used to make the cross beam when the plenum is less than 60 cm.

Material:
aluminium alloy 6060-T6
Geometry:
round Ø 30 mm and thickness 2 mm in 3/6 m rods
Net weight:
0.68 Kg/m
Mounting:
1 4.2x30 mm countersunk screws, with Ø 4 countersunk drilling at each upright

Round joint art. SK12

Round joints are used to restore round extrusion continuity of the cross beam.

Material:
aluminium alloy 6060-T6

Geometry:
round Ø 25 mm and thickness 2 mm L=150 mm

Net weight:
0.03 Kg

Mounting:
2 4.2x19 mm countersunk screws, with Ø 4 countersunk drilling in the lower part of the two beam sections to be connected

Round corner transmission art. SK13

Round corner transmissions are used to connect the two consecutive handrail sections and allow for a change of horizontal or vertical direction.

Material:
aluminium die-cast, alloy EN AB 46100
Geometry:
see figure
Net weight:
0.16 Kg
Mounting:
2 4.2x19mm self-tapping screws on two consecutive sections of the beam
Equipment:
4 Ø 4mm countersunk holes (2 bottom and 2 top)

Round cap for fastening art. SK14

Round caps are used to fasten the end of the cross beam to the wall.

Material:
aluminium alloy 6060-T6
Geometry:
round Ø 25 mm and thickness 2 mm L=30 mm with closing plate with maximum dimensions 120x70 mm
Net weight:
0.06 Kg
Mounting:
2 Ø 12 mm mechanical wall anchors
1 4.2x19 mm countersunk screw, with Ø 4 countersunk drilling in the lower part of the cross beam
Equipment:
2 Ø 13 holes with wheelbase 90 mm

Polygonal cap art. SK15

Polygonal caps are used to close the end of the cross beam.

Material:
aluminium alloy 6060-T6
Geometry:
round Ø 25 mm and thickness 2 mm L=30 mm with closing plate with round closing Ø 30
Net weight:
0.005 Kg
Mounting:
1 4.2x19 mm countersunk screw, with Ø 4 drilling in the lower part of the cross beam

Toe-clip board art. SK16

Used to prevent material from falling when there is no building plenum or it is less than 10 cm.

Material:
aluminium alloy T6-6060
Geometry:
20+150+20 mm thickness 1.5 mm in 3 m rods
Net weight:
0.70 Kg/m
Mounting:
2 4.2x16 countersunk head screws, vertically spaced 80 mm with Ø 4 countersunk drilling on each upright

Toe-clip board support art. SK17

Whenever the toe-clip board is used in the version with floor attachment, this component is interposed between the upright and the toe-clip board to allow for proper mounting.

Material:
aluminium alloy T6-6060
Geometry:
see figure
Net weight:
0.08 Kg
Mounting:
2 4.2x19 mm self-tapping screws for each upright (1 per flat side of the upright)
Equipment:
2 Ø 4 holes

Toe-clip board joint art. SK18

Toe-clip board junctions are used to restore toe-clip board continuity.

Material:
aluminium alloy 2014

Geometry:
130x100 thickness 1.5 mm

Net weight:
0.050 Kg

Mounting:
4 M6x16mm hex head screws with self-locking nut

Equipment:
4 7x25 mm slotted holes

Sign art. CA00

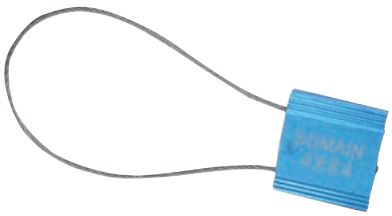
The sign must be posted on every access point to the secured area.

Material:
PVC
Installation:
with every access
Contents:
type of rail, serial number, date of entry into service of the system, manufacturer name, distributor name, reseller name, installer name

Identifier seal art. C35

Identifier seals are unique for each system and must be positioned at the end of the same. The numbering is the same as reported on the sign described above and in the certification that accompanies the system

Installation:
at the end of each line
Contents:
serial number



M12 Mountings

M12 Mountings are used to fasten the upright bases to the reinforced concrete structure with dual-component resin.

Composition:
12x160mm bar + flat washer + nut
Material:
steel A4-70
Tightening:
70 Nm

Dual-component epoxy resin art. RBS 345 MX

The dual-component, high-performance fast-curing epoxy resin is used in the insertion of threaded bars directly in the structure. For the technical data and instructions on use refer to the product datasheet.

Composition:
vinylester without styrene with benzoyl peroxide as activator

Contents:
345 ml cartridge

Grub screws

Grub screws are used to fasten the upright bases.

Composition:
flat M6x10mm
Material:
18-8 stainless steel

4.2x19/30 mm self-tapping screw

4.2x19/30 mm self-tapping screws are used to fasten railing extrusions to the railing fitting, joint, corner elements.

Material:
A2 stainless steel

6.3x90 mm self-tapping screw

6.3x90 mm self-tapping hex head screws are used to fasten the concrete counter-weight to the horizontal lever arm.

Material:
A2 stainless steel

4. Assembly

Recommendations: 4.1

Before fitting, a site inspection is recommended to ascertain the real situation of the area on which the system is to be mounted and to check for compliance with the planimetric report of the roof within which all the elements of the system are highlighted.

Installation must be carried out in compliance with the measures for the prevention of accidents in accordance with Legislative Decree 81/2008 - Consolidated Text on Health and Safety and on that indicated by the reference standard EN ISO 14122-3.

Fitters: 4.2

Installation of **Allukemi Sky**™ Self-supporting rails includes the training of installers by an in-house technician to put into practice the correct methods for assembly.

The fitters affiliated to the partners of Genesi Italia are obliged to draw up their own Risk Assessment Document (DVR) from which the risks linked to the fitting of the system and the counter-measures adopted to reduce the likelihood of this happening are drawn.

Assembly kit: 4.3

The main work equipment to perform correct installation:

- kit for holes: rotopercussion drill, brush, blower, resin gun
- torque wrench to tighten the nuts on the threaded bars
- bush for M12 nuts
- PH insert for self-tapping screws
- diameter 3 Allen wrench
- hand tools (pliers, various wrenches, riveter)

Movement and storage: 4.4

Take utmost care during movement and storage of all system components. All the components weigh less than 25 kg, maximum weight allowed for the manual handling of loads by a single operator.

When the weight of the components exceeds this value, movement with two operators or crane must be performed. These operations are also an integral part of the DVR.

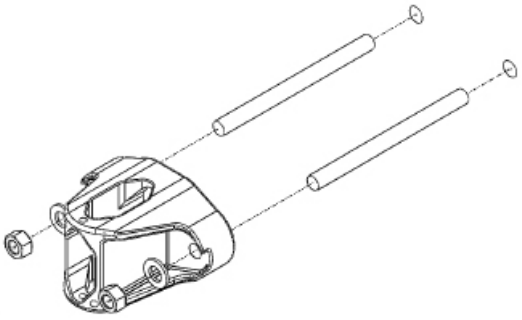
Stages: 4.5

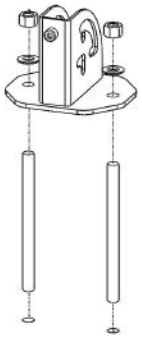
The phases described in this chapter are valid for the mounting of the system into the desired position and must be carried out in complete safety, thus complying with the instructions contained in the Safety Operational Plan (SOP) drawn up by the installer, in conformity with the Safety and Coordination Plan (SCP) drawn up by the Safety Coordinator at the Design phase (SCD) or by the Security Coordinator during the Implementation stage (SCI) where these two figures are present.

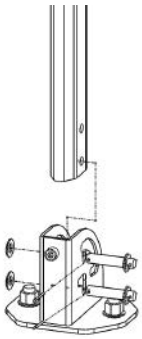
The steps of installation of this system shall be construed as excluding all those operations that are used to prepare the work area or to access the same.

Mounting the upright base 4.5.1

Procedures for floor or wall mounting universal base art. SKU, or of the under roof base art. SKC or protruding base art. SKS or reclinable base art. SKR, depending on the type of railing, with 2 M12 bars and dual-component resin:
Note: position upright bases every 150 cm.





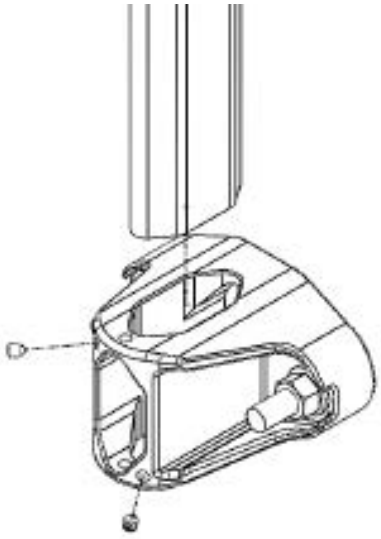


- drill two Ø 14 mm holes in the plenum structure every 100 mm (use the base as a sample) at a length of 8-10 cm with a rotopercussion drill
- clean with special brush, rotating it, and then use a manual pump to eliminate dust residue from the hole walls (repeat operation more than once)
- slowly insert the dual-component resin to prevent the formation of air bubbles
- insert the M12 threaded bar, rotating it
- after the resin hardens, which varies depending on the application temperature (see product label), position the upright base, insert the washer and the nut on the threaded bar
- tighten the nut applying a torque of 70 Nm

Note: railing mounting can also be carried out with mechanical anchors along the height of the railing. An assessment of correct mounting can be carried out by the Genesi Italia Technical Department or by a qualified technician.

Upright mounting 4.5.2

After installation of the upright bases, proceed with the mounting of the cut-to-size, polygonal extrusion art. SK01 vertical uprights as follows:

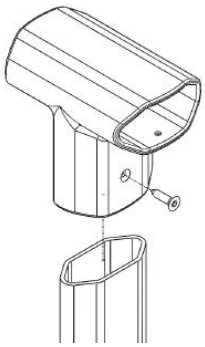


- position the polygonal tubular at the desired height inside the corresponding base housing
- screw in the two M6x10 flat grub screws until they adhere to the base uprights

Mounting of polygonal T- and L-fittings and polygonal joints on uprights 4.5.3

As soon as they are installed, polygonal T-fittings art. SK06 should be mounted at the top of middle uprights and polygonal L-fittings art. SK07 should be mounted on end uprights, as follows:

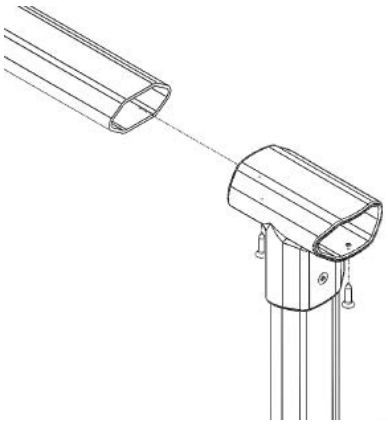
- push the fitting on the upright in order to obtain a total railing height of 110 cm from floor level
- insert 1 4.2x19 self-tapping screw in the Ø 4 countersunk hole positioned on the vertical part of fittings (2 screws per T-fitting art. SK06)



Handrail mounting 4.5.4

- slip the polygonal profile inside the T-fittings and L-fittings seen previously
- fasten it to the polygonal T-fittings and polygonal T-joints, inserting the 2 4.2 x 19 self-tapping screws in the Ø 4 countersunk holes positioned at the bottom horizontal part of the fittings
- fasten it to the polygonal L-fittings, inserting 1 4.2 x 19 self-tapping screw in the Ø 4 countersunk hole positioned at the bottom horizontal part of the fittings

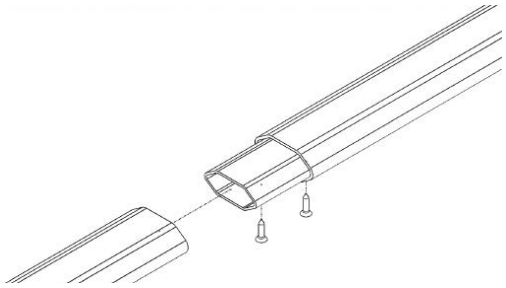
Note: before mounting all fittings, insert polygonal joint art. SK02 to restore handrail continuity as indicated in the corresponding paragraph.



Handrail joint 4.5.5

To restore handrail continuity, insert two consecutive rods of the polygonal joint art. SK02 inside, as follows:

- insert the polygonal joint into half of the first rod
- drill the handrail and the joint at the bottom with 1 Ø 4 countersunk head; insert 1 4.2x19 mm countersunk screw to fasten the two elements
- on the half of the remaining joint, insert the other handrail rod
- drill the handrail and the joint at the bottom with 1 Ø 4 countersunk head; insert 1 4.2x19 mm countersunk screw to fasten the two elements

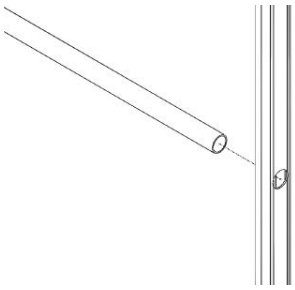


Beam mounting 4.5.6

Whenever plenums are less than 60 cm, a vertical round extrusion upright art. SK11 is inserted to perform the function of a cross beam, as indicated:

- slip the round profile inside the corresponding hole on the uprights
- drill the upright and beam with 1 Ø 4 countersunk hole, insert 1 4.2x30 mm countersunk screw to fasten the two elements

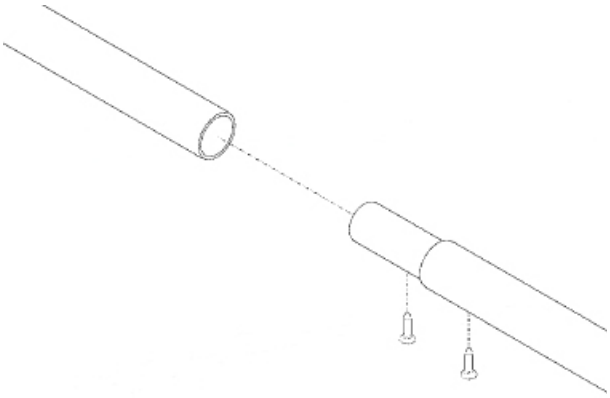
Note: before mounting all the beam, insert round joint art. SK12 to restore handrail continuity as indicated in the corresponding paragraph.



Beam joint 4.5.7

To restore cross beam continuity, insert two consecutive rods of the round joint art. SK12 inside, as follows:

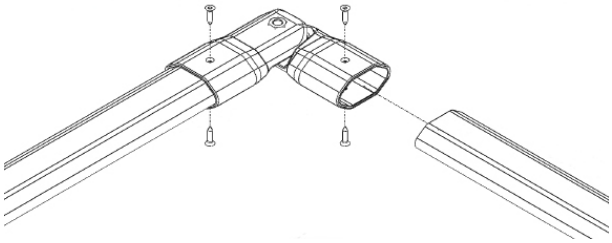
- insert the round joint into half of the first of the rod
- drill the handrail and the joint at the bottom with 1 Ø 4 countersunk hole
- insert 1 4.2x19 mm countersunk screw to fasten the two elements
- on the half of the remaining joint, insert the other cross beam rod
- drill the handrail and the joint at the bottom with 1 Ø 4 countersunk hole
- insert 1 4.2x19 mm countersunk screw to fasten the two elements



Forming angles on the handrail 4.5.8

Whenever development of the railing requires a change of horizontal direction, insert horizontal polygonal corner transmission art. SK03. If it is necessary to overcome height changes, insert the vertical polygonal corner transmission art. SK04 or horizontal polygonal joint art. SK05 to change horizontal direction with the railing in the inclined configuration. The procedure is the same even with different components:

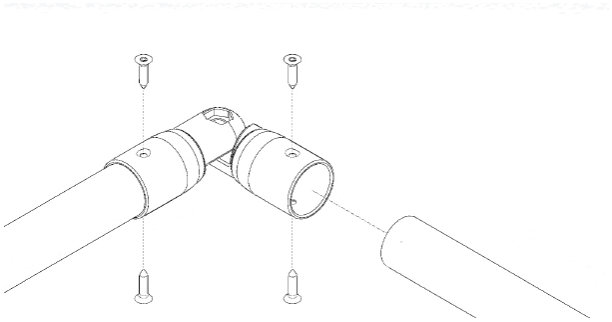
- insert the handrail 50 mm in the desired element
- insert 1 4.2x19 mm self-tapping screw to fasten the elements
- insert the other handrail in the other end of the element by 50 mm
- insert 1 4.2x19 mm self-tapping screw to fasten the elements



Forming angles on the cross beam 4.5.9

Whenever the development of the rail also involves the cross beam, insert the round corner transmission art. SK13 for both horizontal and vertical direction changes, proceeding as follows:

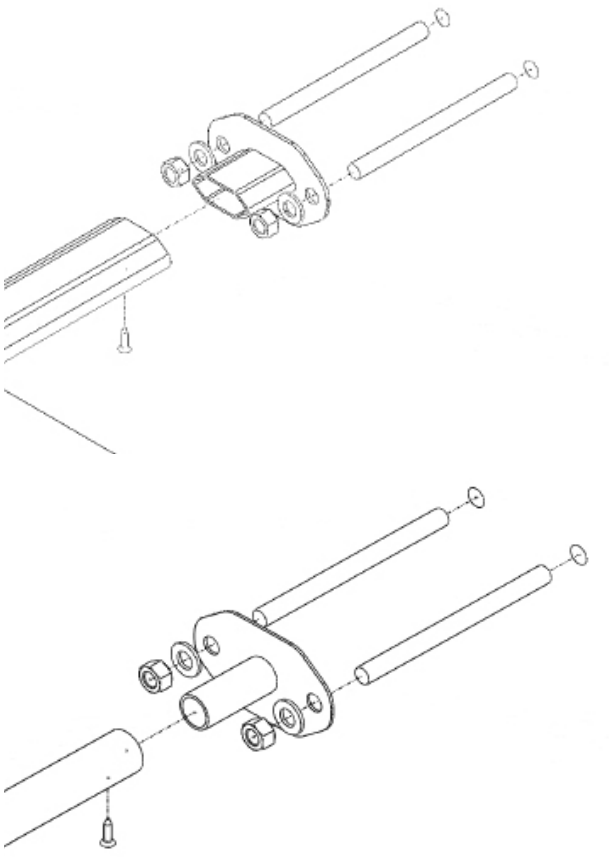
- insert the cross beam in the corner transmission 30 mm
- insert 1 4.2x19 mm self-tapping screw to fasten the elements
- insert the other cross beam in the other end of the element 30 mm
- insert 1 4.2x19 mm self-tapping screw to fasten the elements



Closing the railing to the wall 4.5.10

Whenever the ends of the railing must be directly mounted to the wall, insert the polygonal cap for fastening art. SK10 on the handrail or the round cap for fastening art. SK14 on the cross beam. The procedure is the same even with different components:

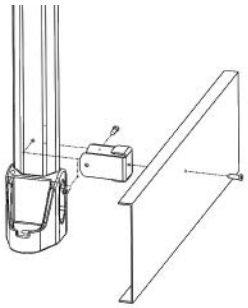
- insert the handrail or cross beam on the corresponding cap until contact is made with the plate
- drill elements at the bottom with 1 Ø 4 countersunk hole
- insert 1 4.2x16 mm countersunk screw to fasten the two elements
- drill two Ø 14 holes in the wall at a distance of 90 mm (use caps as samples) at a minimum length of 6 cm with a rotopercussion drill
- insert the mechanical anchor and tighten at a torque of 70 Nm



Closing the railing with caps 4.5.11

Whenever the ends of railings remain free (max 50 cm), insert polygonal cap art. SK09 in the handrail or the round cap art. SK15 in the cross beam as follows:

- insert the cap in the handrail or the cross beam until contact is made with the cap plate
- drill elements at the bottom with 1 Ø 4 countersunk hole
- insert 1 4.2x19 mm countersunk screw to fasten the two elements



Toe-clip board installation 4.5.12

In the event that the structure does not have a perimeter plenum, railings are also equipped with a toe-clip board to prevent material from falling over persons, according to the following procedure:

- for each upright, position toe-clip board art. SK17, with the flat side turned inward, using 2 4.2x19 mm countersunk screws (1 per upright side) with Ø 4 drilling
- position the board with wings turned outward
- drill the board and the support with 1 Ø 4 countersunk hole
- insert 1 4.2x19 mm countersunk screw to fasten the toe-clip board to the support

Toe-clip board joint 4.5.13

To restore toe-clip board continuity, insert two consecutive rods of the toe-clip board joint art. SK18 as follows:

- drill the toe-clip board according to the joint template with 4 Ø 7 holes (2 for each rod)
- insert 2 M6x16 hex head screws per side and fasten relative self-locking nuts to end stop on the toe-clip board without tightening to allow at least 1 cm of sliding on the joint

System sealing 4.5.14

Sealing of the line consists of positioning the tamper-proof seal with the identifier seal art. C35 in the following manner:

- insert the identifier seal at the railing access point

Sign installation 4.5.15

Closing of assembly is completed with installation of the sign art. CA00, mandatory at each access point, displaying the information described above.

5. Guarantees

Duration 5.1

A 10 year guarantee is given from the date of the delivery note on all stainless steel pieces making up the **Allukemi Sky**™ system.

Exclusion 5.2

The guarantee will only be granted if:
the material was installed and has been used in accordance with the installation instructions and the technical instructions of Genesi Italia.

The guarantee will not be granted in cases where:
- the products are made from galvanised or zinc plated steel
- safety products include parts or accessories of external origin
- in this case the agreed guarantee will be that of the supplier of the above parts

The guarantee is excluded when the defect is caused:
- by an intervention or a change made to the original system without the written permission of the manufacturer/ distributor
- by use that is irregular or that does not conform to the intended use of the equipment
- by defective installation not in compliance with drawings or performed to code
- by a client's failure to communicate special conditions (pollution, temperature, number of users, etc.) regarding equipment use
- by an underestimation of support resistance generating the destruction or non-compliance of our equipment
- by the adding to our systems of parts produced by the buyer or from other sources other than Genesi Italia
- by an event of force majeure or any event outside the control of the seller such as wars, lightning, etc.

Limitations 5.3

In all cases our guarantee is limited to the replacement or repair of elements or equipment that are formally recognised as defective by our technical service. If the repair is entrusted to a third party, this can only be performed after acceptance by Genesi Italia of the repair quote.

Any returning of equipment must be undertaken with the consent of Genesi Italia.

The guarantee only applies to elements returned and as such does not include the costs of removal and re-installation of the equipment in the group in which it is integrated.

The repair, replacement or modification of parts or equipment during the guarantee period can determine extension of the guarantee.

Responsibility 5.4

Genesi Italia will be responsible, under the conditions of common law, for the material damage caused by your equipment or by your personnel.

Repair of the material damage attributable to the seller is expressly limited to a sum that does not exceed the value of the equipment involved, subject of the order.

By express convention, the seller and the customer mutually waive requiring the repair of the indirect and intangible damage of any kind, such as operating losses, loss of earnings, costs of delay, reminder, removal and reinstallation of the equipment, loss of future contracts, etc.

Renewal 5.5

This guarantee of 10 years may be renewed at the request of the customer, after a technical inspection carried out, upon payment, by our services of the equipment installed.

Testing and maintenance 5.6

As far as possible, before each use, perform a visual examination of the components of the system.

In case of doubt, ask the installing company or a maintenance engineer, authorised and responsible for this type of intervention, for an inspection.

Allukemi Sky™ systems do not require maintenance. Should this be deemed necessary there is the option of this annual maintenance being performed by one of our staff authorised and qualified for this type of intervention.

In the event of a fall the system shall be the subject of necessary maintenance by a competent and qualified technician.

Jurisdiction 5.7

The applicable law is Italian legislation and the place of jurisdiction is in Bergamo (Italy) that will have exclusive jurisdiction over any dispute arising out of, or in some way related to, the products covered by this Manufacturer's Instructions.

6. References.

Manufacturer's Instructions 6.1

Manufacturer's Instructions - Maintenance

Regulations 6.2

Technical standards 6.2.1

EN ISO 14122-3:2010
Permanent means of access to machinery – Safety of machinery – Stairs, stepladders, railings.

National regulations 6.2.2

Legislative decree 81/2008 and subsequent additions and modifications
Consolidated text on health & safety

Local regulations 6.2.3

Circ. 4 /SAN/2004 of the Lombardy Region
Update of Title III of the Local Regulations of Hygiene, transposition of the integration to Title III of the Regional Hygiene Law drawn up by the ASL of Bergamo

Decree of the President of the Regional Executive no. 62 of 23.11.2005 of the Region of Tuscany
Implementing regulation of art. 82, paragraph 16 of Regional Law no. 1 of the 03.01.2005 relating to the technical instructions on preventive and protective measures for the access, transit and execution of works at height in conditions of safety

Decree of the president of the province no. 7-114/ Leg. of 25.02.2008 of the Province of Trento
Technical regulations for the prevention of accidents as a result of falls from heights during routine maintenance on roofs

Decree of the Regional Government no. 2774 of 22.09.2009 in the Region of Veneto
Technical instructions on preventive and protective measures to be implemented in buildings for the access, transit and execution of maintenance works at height in conditions of safety

Regional law no. 5 of 15.02.2010 of the Region of Liguria
Rules for the prevention of falls from heights on construction sites.

Decree of the Regional Government no. 1284 of 28.10.2011 in the Region of Umbria
Approval guidelines for the prevention of falls from heights

Internet sites 6.3

www.Genesiitalia.it
Official site of the exclusive distributing company

www.uni.com
Italian national site of unification

7. Manufacturer and Distributor.

Manufacturer **7.1**

Fisa srl
via Donizetti, 109/111
24030 - Brembate di Sopra - Bg

Distributor **7.2**

Genesi Italia
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Rev. 04 - February 2015

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Genesi Italia, Be **Safe**