

Fixed ladder with safety cage on the back 4047

The 4047 fixed ladders with safety cage on the back were designed for access to buildings, systems, machinery and anywhere there is a need to safely access fixed structures.

Ladder width: m. 0,51 **NOMINAL CAPACITY** maximum uniform capacity distributed over m. 2.0 = 150 kg.

Technical Information

Before starting the installation and before each use it is mandatory to observe all the precautions described carefully in this instruction manual describing the installation, use, maintenance and inspection of the 4047 fixed ladder system with aluminium back protection cage.

Damage caused by failure to comply with these instructions and safety precautions will void the warranty and the manufacturer will not be liable for any damage resulting from such failure.

DECLARATION OF CONFORMITY

It is hereby declared that all SCA 4047 configurations are built in accordance with Italian legislation in compliance with Legislative Decree no. 81 of 9 April 2008.

It also states that all SCA 4047E configurations available on request are made in accordance with European standard EN14122-4:2016 when the upright with cage hoops is in position to European standard EN14122 [see page.7] and only when the installer can guarantee hold equal to 3 kN (about 300 kg.) for each fixing point and implementation is declared in accordance with legislation.

Frigerio Carpenterie S.p.A.

CAUTION:

State of the art installation according to Italian standard Leg. Decree no. 81 requires that:

- the cage is present starting from a minimum height off the ground of m. 2,10 up to a maximum height of m. 2.50
- ascent is interrupted by a rest platform SCA 4047 PR or by a doubling module SCA 4047 MRP every 6 m. maximum in height when the distance off the ground to the exit platform exceeds m. 10.

State of the art installation according to European standard EN14122 requires that:

- the cage is present starting from a minimum height off the ground of m. 2,30 up to a maximum height of m. 3.00
- ascent is interrupted by a rest platform SCA 4047 PRS or by a doubling module SCA 4047 MRPE every 6 m. maximum in height when the distance off the ground to the exit platform exceeds m. 8.

N.B. Fixed ladders with safety cage installed in Italy must only comply with the Italian standard Leg. Decree no. 81, while if installed in Europe they must only comply with the European standard EN14122.

WARNINGS: The assembly and dismantling operations of the fixed ladder 4047 with safety cage on the back must always be carried out:

By at least two operators in good physical-psychological conditions and equipped with specific equipment such as lifting platforms, fixed scaffolding or scaffolds (for heights to the landing platform over m. 2).

N.B. For use of the 4047 fixed ladder with safety cage on the back at a height over m. 5 to the exit platform , it is compulsory to use specific, non-slip P.P.E. and provide adequate training.

N.B. the decree of the Region of Veneto no. 97 on 31/01/2012 includes rest platforms and doubling every maximum m. 4, while the decree of the Region of Tuscany no. 62/R05 includes the obligation to use non-slip P.P.E. when the ladder exceeds m. 3 to the exit platform.

Preliminary operations

Each 4047 type ladder is supplied with a specific technical drawing used as a reference for assembly and positioning on site of the ladder. Before starting assembly of the ladder, it is good practice to:

- ❖ Ensure conformity to original status standards
- ❖ Ensure safe movement of the materials and have the free space in the work zone and under the user to ensure there are no obstacles in the event of falling
- ❖ Ensure the user manual is available for staff appointed for assembly
- ❖ Check intactness and perfect functionality of the elements to compose.
- ❖ Check the actual measurement of the **"Height to platform"** corresponds with that indicated on the drawing.
- ❖ Ensure you have material and equipment available necessary for fixing the bolts to the wall.

Cage elements

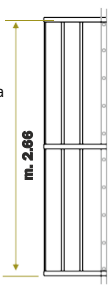
The cage represents a safety mesh where the horizontal elements are represented by hoops **AO** with a flat, aluminium profile, while the vertical elements are represented by the rods **AS** with a hollow aluminium profile.

The mesh must be applied on the ladder so that the maximum distance between the two consecutive hoops is not greater than cm 150 and that the distance between one vertical rod and the next does not exceed 40 cm.

Fixing of the hoops on the ladder is independent of the position of the bolts and takes place using specific u-shaped screws in stainless steel equipped with self-locking gripper clamps.


SCA 4047 G26S/G26E
INTERMEDIATE CAGE
Length m. 2,66, it is fixed in the distance that includes 10 rungs and ensures safety for a vertical length of m. 2,73 of the ladder.

Composed of:
no. 3 hoops **SCA 4047 AO**
no. 6 rods **SCA 4047 AS2,6**




SCA 4047 G25S/G25E
INTERMEDIATE CAGE
Length m. 2,38, it is fixed in the distance that includes 9 rungs and ensures safety for a vertical length of m. 2,52 of the ladder.

Composed of:
no. 3 hoops **SCA 4047 AO**
no. 5 rods **SCA 4047 AS2,6**




SCA 4047 G22S/G22E
INTERMEDIATE CAGE
Length m. 2,10, it is fixed in the distance that includes 8 rungs and ensures safety for a vertical length of m. 2,24 of the ladder.

Composed of:
no. 3 hoops **SCA 4047 AO**
no. 2 rods **SCA 4047 AS2,6**




SCA 4047 G19S/G19E
INTERMEDIATE CAGE
Length m. 1,82, it is fixed in the distance that includes 7 rungs and ensures safety for a vertical length of m. 1,96 of the ladder.

Composed of:
no. 3 hoops **SCA 4047 AO**
no. 9 rods **SCA 4047 AS1,6**




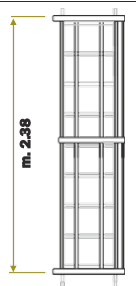
SCA 4047 G16S/G16E
INTERMEDIATE CAGE
Length m. 1,54, it is fixed in the distance that includes 6 rungs and ensures safety for a vertical length of m. 1,68 of the ladder.

Composed of:
no. 3 hoops **SCA 4047 AO**
no. 6 rods **SCA 4047 AS1,6**



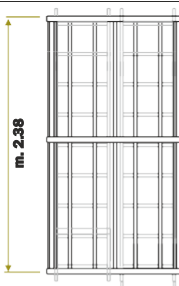
SCA 4047 G14S/G14E
INTERMEDIATE CAGE
Length m. 1,26, it is fixed in the distance that includes 5 rungs and ensures safety for a vertical length of m. 1,40 of the ladder.

Composed of:
no. 2 hoops **SCA 4047 AO**
no. 6 rods **SCA 4047 AS1,4**

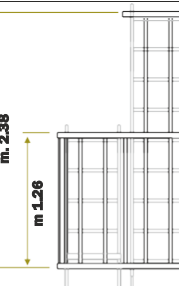
SCA 4047 GULLS/GULE
SIDE EXIT CAGE
Length m. 2,38, it is fixed in the distance that includes 9 rungs and ensures safety for a vertical length of m. 2,52 of the ladder.

Composed of:
No. 2 hoops **SCA 4047 AO**
no. 1 hoop **SCA 4047 AOT**
no. 5 rods **SCA 4047 AS2,5**



SCA 4047 GSDES/GSDE
DOUBLING CAGE
Length m. 2,38, it is fixed in the distance that includes 9 rungs and ensures safety for a vertical length of m. 2,52 of the ladder.

Composed of:
no. 3 double hoops **SCA 4047 AOD**
no. 9 slats **SCA 4047 AS2,5**

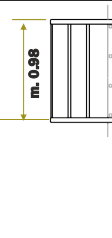


SCA 4047 GLLS/GLLE
SIDE INSPECTION CAGE
Length m. 2,38, it is fixed in the distance that includes 9 rungs and ensures safety for a vertical length of m. 2,52 of the ladder.

Composed of:
no. 1 hoop **SCA 4047 AO**
no. 2 double hoops **SCA 4047 AOD**
no. 4 slats **SCA 4047 AS2,5**
no. 5 rods **SCA 4047 AS1,4**


SCA 4047 G11S/G11E
INTERMEDIATE CAGE
Length m. 0,98, it is fixed in the distance that includes 4 rungs and ensures safety for a vertical length of m. 1,12 of the ladder.

Composed of:
no. 2 hoops **SCA 4047 AO**
no. 6 rods **SCA 4047 AS1,4**



SCA 4047 G08S/G08E
INTERMEDIATE CAGE
Length m. 0,70, it is fixed in the distance that includes 3 rungs and ensures safety for a vertical length of m. 0,84 of the ladder.

Composed of:
no. 2 hoops **SCA 4047 AO**
no. 6 rods **SCA 4047 AS0,8**



Single components for cage

SCA 4047 AS0,8 : cage rod m 0,70

SCA 4047 AS1,1 : cage rod m 0,98

SCA 4047 AS1,4 : cage rod m 1,26

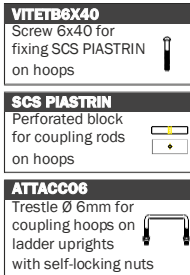
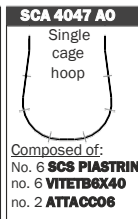
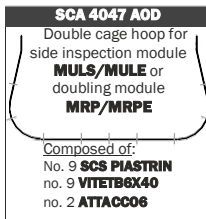
SCA 4047 AS1,6 : cage rod m 1,54

SCA 4047 AS1,9 : cage rod m 1,82

SCA 4047 AS2,0 : cage rod m 2,10

SCA 4047 AS2,5 : cage rod m 2,38

SCA 4047 AS2,6 : cage rod m 2,66



Ladder elements

The ladder elements are made of aluminium with vertical uprights in rectangle profile mm 58x25 and have square rungs mm 30x30 in aluminium with anti-slip surface, fixed on the ladder by a double edging, inside and outside the vertical upright. The ladders are equipped with connector pins already mounted and facing downwards, while in the opposite ends are pre-drilled to accommodate connection of the next ladder element.

All the ladder elements used have an external width mm 510 and avail of an internal clearance of mm. 490.

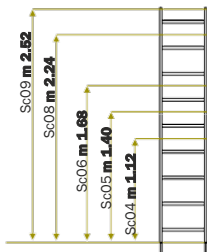
Ladder modules and their composition

INTERMEDIATE LADDERS

They are always applied on the intermediate sections to the ladder configuration

They are available from 4 to 9 rungs availing of no. 2 joining pins SCS FASCEGLIU already assembled which must always be turned downwards.

- SCA 4047 SC04** - 4 rungs
- SCA 4047 SC05** - 5 rungs
- SCA 4047 SC06** - 6 rungs
- SCA 4047 SC08** - 8 rungs
- SCA 4047 SC09** - 9 rungs

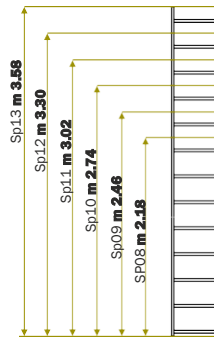


STARTING LADDERS

They are always applied to the starting section on the ground of the ladder configuration.

They are available from 8 to 13 rungs and avail of an end with first step placed a reduced step of 80 mm.

- SCA 4047 SP08** - 8 rungs
- SCA 4047 SP09** - 9 rungs
- SCA 4047 SP10** - 10 rungs
- SCA 4047 SP11** - 11 rungs
- SCA 4047 SP12** - 12 rungs
- SCA 4047 SP13** - 13 rungs

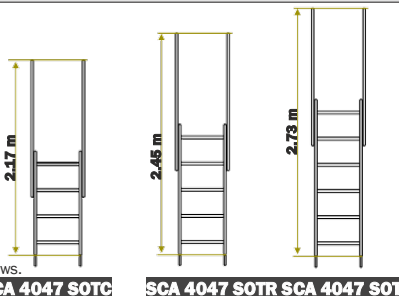


END LADDERS

They are always applied in the end position of the ladder configuration.

They are available from 4 to 6 rungs and avail of:

- no. 2 joining pins SCS FASCEGLIU already assembled which must always be turned downwards.
- no. 2 side railings SCA 4047 COR already assembled using through screws.



SCA 4047 SOTC

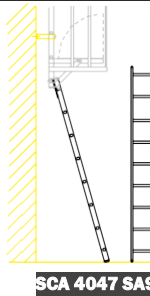
SCA 4047 SOTR SCA 4047 SOTI

REMOVABLE END LADDER

It is always applied in the starting position on the ground of the ladder configuration.

Created with a reduced width and up to 9 rungs. It can be lifted and coupled inside the first upper module and, if necessary, blocked with a lock. It avails of:

- no. 2 coupling hooks in galvanised steel
- no. 2 non-slip feet



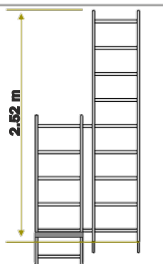
SCA 4047 SA9

SCA 4047 MLL

SIDE INSPECTION LADDER

Applied corresponding to an intermediate side section for ladder configuration. The inspection platform can be planned on the right or left hand side.

Composed of:
no.1 SCA 4047 SC09
no.2 ladder SCA 4047 SP06
no.1 platform SCA 4047 PR
no. 2 bars SCA 4047 VMS

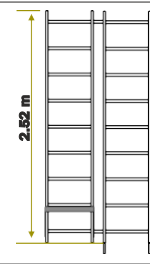


SCA 4047 MSD

SECTION DOUBLING LADDER

Applied corresponding to doubling of the ladder configuration sections. Doubling can be planned on the right or left hand side.

Composed of:
no.1 SCA 4047 SP09
no.2 ladder SCA 4047 SC09
no.1 platform SCA 4047 PR
no. 2 bars SCA 4047 VMS



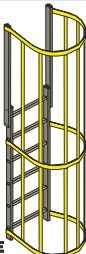
Complete composition modules

SCA 4047 MOT SCA 4047 MET

END MODULE
module m. 2.73
last rung m 1,55
cage m 2,66

Composed of:

no. 1 end ladder
SCA 4047 SOT
no. 1 complete cage
SCA 4047 G26S/G26E

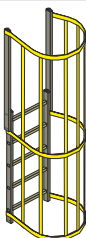


SCA 4047 MOTR SCA 4047 METR

END MODULE
module m. 2.45
last rung m 1,27
cage m 2,38

Composed of:

no. 1 end ladder
SCA 4047 SOTR
no. 1 complete cage
SCA 4047 G25S/G25E



SCA 4047 MOTC SCA 4047 METC

END MODULE
module m. 2.17
last rung m 0,95
cage m 2,10

Composed of:

no. 1 end ladder
SCA 4047 SOTC
no. 1 complete cage
SCA 4047 G22S/G22E



Using these 9 complete composition modules of cage, you can create all the standard configurations planned with the height of the exit surface from m 3,19 to m 16,06 according to the compositions described on pages 8 and 9.

SCA 4047 MIS SCA 4047 MES

INTERMEDIATE MODULE
module m 2.52

Composed of:

no. 1 intermediate ladder
SCA 4047 SC09
no. 1 complete cage
SCA 4047 G25S/G25E



SCA 4047 MIS2 SCA 4047 MES2

INTERMEDIATE MODULE
module m 2.24

Composed of:

no. 1 intermediate ladder
SCA 4047 SC08
no. 1 complete cage
SCA 4047 G22S/G22E



These modules can be supplied with the safety cage assembled or with the safety cage already pre-assembled on the single ladder module, at the client's specific request.

N.B: The complete single modules published on this page do not include the fixing bolts, which however are included in each complete ladder configuration described on page 8 and 9.

SCA 4047 MP4 SCA 4047 MPE4

STARTING MODULE
module m 3.58
cage m 1,26

Composed of:

no. 1 end ladder
SCA 4047 SP13
no. 1 complete cage
SCA 4047 G14S/G14E



SCA 4047 MP3 SCA 4047 MPE3

STARTING MODULE
module m 3.30
cage m 0,98

Composed of:

no. 1 end ladder
SCA 4047 SP12
no. 1 complete cage
SCA 4047 G11S/G11E

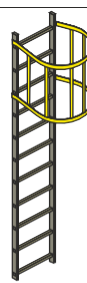


SCA 4047 MP2 SCA 4047 MPE2

STARTING MODULE
module m 3.02
cage m 0,70

Composed of:

no. 1 end ladder
SCA 4047 SP11
no. 1 complete cage
SCA 4047 G08S/G08E

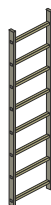


SCA 4047 MP1 SCA 4047 MPE1

STARTING MODULE
module m 2.18

Composed of:

no. 1 end ladder
SCA 4047 SP08



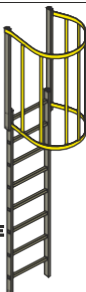
Through these four single modules formed by one ladder section and its safety cage, it is possible to realise the first 4 standard configurations provided with height to the exit platform from m 2,07 to m 3,18 according to the first four compositions described on page 8.

SCA 4047 MU1

SINGLE MODULE
module m. 3.23
last rung m 2,05
cage m 1,26

Composed of:

no. 1 starting ladder
SCA 4047 SP08
no. 1 complete cage
SCA 4047 G14S/G14E
no. 2 railings
SCA 4047 COR

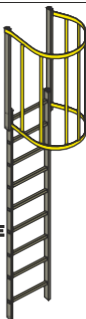


SCA 4047 MU2

SINGLE MODULE
module m. 3.51
last rung m 2,33
cage m 1,26

Composed of:

no. 1 starting ladder
SCA 4047 SP09
no. 1 complete cage
SCA 4047 G14S/G14E
no. 2 railings
SCA 4047 COR

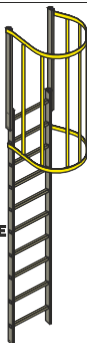


SCA 4047 MU3

SINGLE MODULE
module m. 3.79
last rung m 2,61
cage m 1,54

Composed of:

no. 1 starting ladder
SCA 4047 SP10
no. 1 complete cage
SCA 4047 G16S/G16E
no. 2 railings
SCA 4047 COR

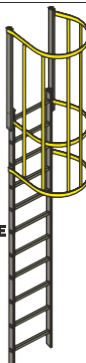


SCA 4047 MU4

SINGLE MODULE
module m. 4.07
last rung m 2,89
cage m 1,82

Composed of:

no. 1 starting ladder
SCA 4047 SP11
no. 1 complete cage
SCA 4047 G19S/G19E
no. 2 railings
SCA 4047 COR



Complete modules ACCESSORIES

They can be used with each ladder configuration planned (on page 8 and 9), for insertion and positioning to replace any intermediate module SCA 4047 MIS already present, at the same height.

If, however, these accessory modules are used within customised configurations (that is, placed at heights differing from those provided for the intermediate modules SCA 4047 MIS already present), you must always refer to the position and height indicated on the specific technical drawing provided with the ladder.

SCA 4047 MRP/MRPE

SECTION DOUBLING INTERMEDIATE MODULE

module m 2,52
cage m 2,38

Composed of:

no. 1 double ladder module

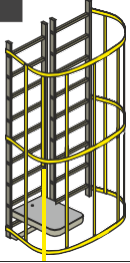
SCA 4047 MSD

no. 1 double cage

SCA 4047 GSDS/GSDE

no. 1 rest platform

SCA 4047 PRC



SCA 4047 MIL/MEL

SIDE INSPECTION INTERMEDIATE MODULE

module m 2,52
cage m 2,38

Composed of:

no. 1 inspection ladder module

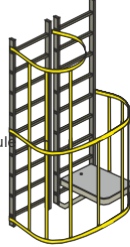
SCA 4047 MLL

no. 1 inspection cage

SCA 4047 GLLS/GLLE

no. 1 rest platform

SCA 4047 PRC



SCA 4047 MULS/MULE

SIDE EXIT INTERMEDIATE MODULE

module m 2,52
cage m 2,38

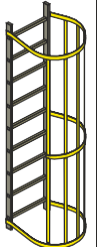
Composed of:

no. 1 intermediate ladder

SCA 4047 SC09

no. 1 cage with side exit

SCA 4047 GULS/GULE



These modules can be supplied with the safety cage assembled or with the safety cage already pre-assembled on the single ladder module, at the client's specific request.

N.B: The complete single modules published on this page do not include the fixing bolts, which however are included in each complete ladder configuration described on page 8 and 9.

Components ACCESSORIES

After fixing the ladder to the wall, any accessory components can be assembled such as: intermediate rest platforms, anti-intrusion doors, landing step, exit handles, exit gate, ladders and landing platforms.

Intermediate rest platform and anti-intrusion platform

SCA 4047 PR/PRS

FOLDING INTERMEDIATE REST PLATFORM

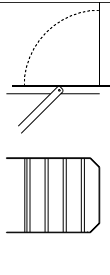
SCA 4047PR

surface m 520 x 520

SCA 4047PRS

surface m 520 x 600

Rest platform with aluminium frame and surface in aluminium profile.

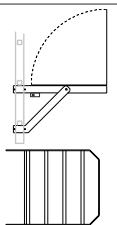


SCA 4047 PRC

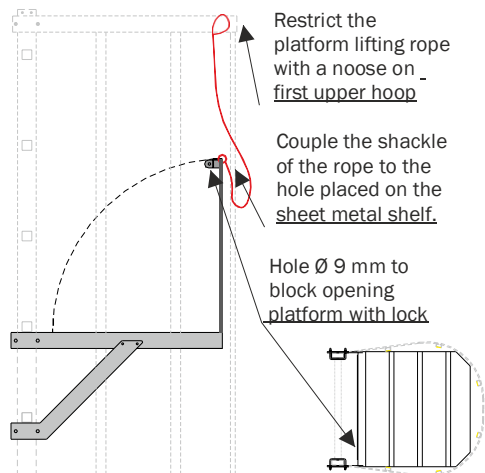
ANTI-INTRUSION FOLDING PLATFORM

surface m. 520 x 520

Folding, rest platform with aluminium frame and surface in aluminium profile which can be closed with lock (not supplied)



Fix the folding platform at the desired height (or according to drawing instructions), using the specific stainless steel, u-shaped screws.



To climb down:

- keeping two rungs over the trapdoor and pull the rope to open the trapdoor.
- after climbing down, ensure the trapdoor is closed
- if necessary, block the trapdoor with a lock (PR only)

To climb up:

- remove any anti-intrusion lock
- lift the trapdoor and climb up.
- after climbing up, ensure the trapdoor is closed

Assembly Instructions modules 4047 WARNINGS

- Damaged components must not be used.

Secure all the ladder elements, comparing the table of the components, in the event of missing elements, replacement is forbidden with elements that are not originals manufactured by FRIGERIO.

The initial phase consists of preparing the single ground modules, complete with safety cage, starting with pre-assembly of each hoop of the cage by screwing all the **SCS PIASTRIN** blocks with the respective **VITETB6x40** screws as described in [Fig.1] but without tightening them.

Preparation on the ground of the end modules MOTC/METC - MOTR/METR - MOT/MET

There are three different end modules that differ in length depending on the ladder configuration purchased

- Lay the ladder on the ground and direct the ladder considering the joining pins must be turned downwards, then install the exit end railings at the opposite end [Fig.5],
- First install the lower **AO** hoop by resting the hoop profile under the first lower rung [Fig.2],
- Install the intermediate **AO** hoop just below the point where the exit railing profile is fixed [Fig.2],
- Assemble from bottom to top the 6 vertical rods **AS2,6**, **AS2,5** and **AS2,2** by sliding them along the blocks [Fig.3],
- Install the end **AO** hoop by resting the hoop profile at the height of the rods [Fig.5] and [Fig.6],
- Carry out the check [Fig.4] before firmly tightening all the u-shaped nuts that hook the hoops to the uprights of the ladder and all the screws of the blocks that fix the vertical rods on each hoop.

Preparation on the ground of the intermediate modules MIS/MES - MIS2/MES2

There are two different intermediate modules that differ in length depending on the ladder configuration purchased

- Lay the ladder on the ground and orientate it considering the joining pins must be turned downwards.
- First install the upper **AO** hoop by resting the hoop profile over the first upper rung [Fig.2],
- Install the intermediate **AO** hoop at the central height to the module [Fig.2],
- Then, install the lower **AO** hoop by resting the hoop profile under the first lower step [Fig.2],
- Connect the 6 vertical rods **AS2,6** or **AS2,5** sliding them along the blocks [Fig.3],
- Carry out the check [Fig.4] before firmly tightening all the u-shaped nuts that hook the hoops to the uprights of the ladder and all the screws of the blocks that fix the vertical rods on each hoop.

Preparation on the ground of the starting modules MP1 - MP2/MPE2 - MP3/MPE3 - MP4/MPE4

All the starting ladders have one "shorter" end which must always be turned towards the ground.

There are four different starting modules depending on the ladder configuration purchased, of these only MP1 is formed by the ladder alone and does not require preparation as required by the modules MP2, MP3 and MP4:

- Lay the ladder on the ground and orientate it considering the shortened end must be turned downwards
- First install the upper **AO** hoop by resting the hoop profile over the first upper rung [Fig.2],
- Connect from top to bottom the 6 vertical rods **AS0,8** or **AS1,1** or **AS1,4** sliding them along the blocks [Fig.3],
- Position the lower **AO** hoop by resting the hoop profile at the height of the rods.
- Carry out the check [Fig.4] before firmly tightening all the u-shaped nuts that hook the hoops to the uprights of the ladder and all the screws of the blocks that fix the vertical rods on each hoop

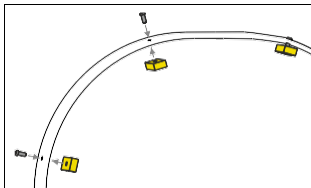
N.B. If you have to apply the removable small ladder **SA** the starting module will consist of the only ladder equipped with anchoring hooks, which will be attached to the first upper intermediate module.

Preparation on the ground of the single starting modules MU1 - MU2 - MU3 - MU4

All the starting ladders have one "shorter" end which must always be turned towards the ground. There are four different single starting modules that represent the four configurations useful for the heights to exit platform which range from m. 2,10 to m. 3,21.

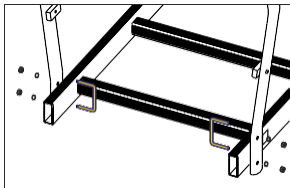
- Lay the ladder on the ground and direct it considering the shortened end must be turned downwards, then install the exit end railings at the opposite end [Fig.5],
- For MU1 and MU2 first install the lower **AO** hoop at the height under the last upper rung [Fig.2],
- For MU3 and MU4 first install the lower **AO** hoop at the height under the 9th rung starting from the ground [Fig.2],
- Only for MU4 also install the intermediate **AO** hoop at the height under the last upper rung [Fig.2],
- Connect from bottom to top the 6 vertical rods **AS1,4** or **AS1,6** or **AS1,9** by sliding them along the blocks [Fig.3]
- Position the upper **AO** hoop by resting the hoop profile at the height of the rods [Fig.5] and [Fig.6],
- Carry out the check [Fig.4] and firmly tightening all the u-shaped nuts that hook the hoops to the uprights of the ladder and all the screws of the blocks that fix the vertical rods on each hoop

N.B. The vertical rods of the safety cage should always be assembled inside the hoop



[Fig.1] - PREPARATION OF THE "AO" HOOPS

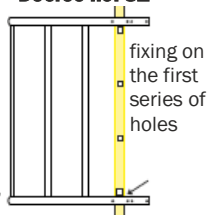
For each hoop, corresponding to the hoops on the curved part, insert from external to internal no. 6 screws VITE TB6x40 and screw them in on the respective hooking block, instead positioning the hoop on the internal part but without tightening.



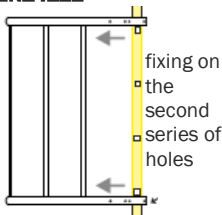
[Fig. 2] - INSTALLATION AND POSITIONING OF THE "AO" HOOPS

- 1) Rest the internal right and left sides of the flat profile of the **AO** hoop on the external right and left sides of the profiles assembled on the ladder,
- 2) On both sides, insert the stainless steel trestles **ATTACCO6** from inside the upright of the ladder externally to meet the two holes near the end of the **AO** hoop and tighten the respective bolts and washers by blocking so that the hoop is at the right height.

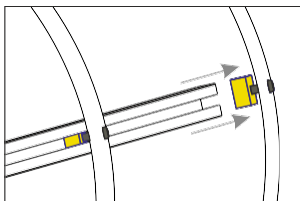
Position the hoops according to Italian standard Leg. Decree no. 81



Position the hoops according to European standard EN14122



N.B. The hoop is prepared for use both for ladders with Italian standard Leg. Decree no. 81 and for ladders with European directive EN 14122 varying the fixing position.

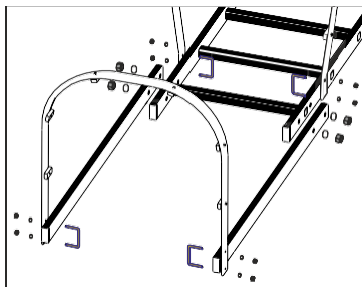
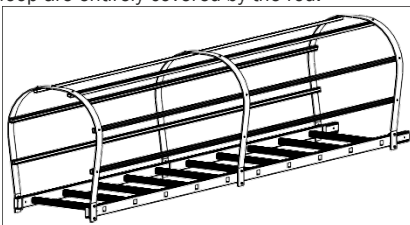


[Fig. 4] - ADJUSTMENT AND FINAL CONTROL

Once the vertical rods are inserted, adjust the distance between the hoops so that the length of the rods is entirely between the external ends of the upper hoop and the lower one.

[Fig. 3] - INSERTION OF VERTICAL RODS "AS"

Insert the rods from the side described by sliding them along the coupling blocks already previously semi-screwed on the hoop flush with the hoop profile so that the blocks from the first and last hoop are entirely covered by the rod.

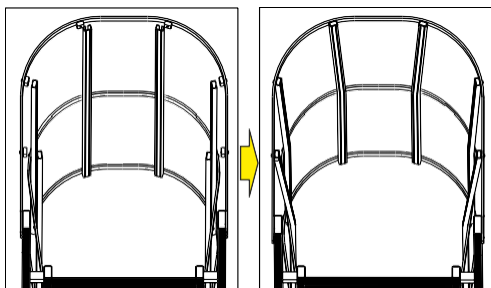


[Fig. 5] - APPLICATION OF THE EXIT RAILINGS AND THE HOOPS ON THE END MODULE

Install the railings on the end ladder module coupling the rectangular profile of the railing on the external surface of the ladder using the specific through screws corresponding to the holes already present and firmly tighten all the bolts.

[Fig. 6] - INSERTION OF THE VERTICAL RODS ON THE WIDENED END HOOP

The end railings are installed on the outside of the ladder therefore the upper **AO** hoop will be slightly widened compared to the lower hoops and the vertical rods must therefore be slightly externally forced to meet the coupling blocks of the end hoop.



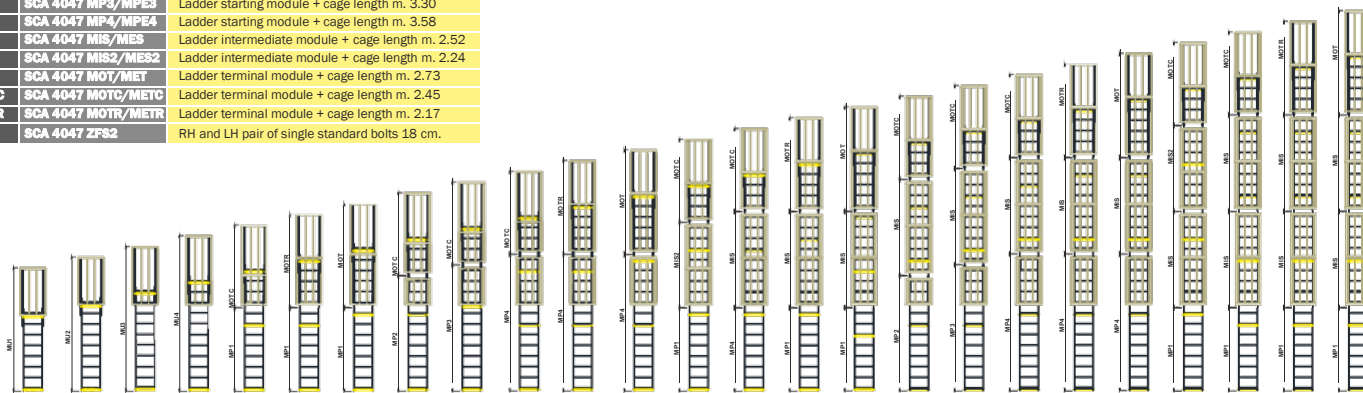
LADDER CONFIGURATIONS WITH HEIGHT TO EXIT PLATFORM UP TO m 10 (Leg. Degree no. 81) LADDER CONFIGURATIONS WITH HEIGHT TO EXIT PLATFORM UP TO m 8 (En14122)

Intermediate rest platforms or section doubling modules not compulsory

KEY AND SPECIFICATIONS		
Abbreviation	Item Codes	Description
MU1	SCA 4047 MU1	Single module for configuration SCA 4047-1
MU2	SCA 4047 MU2	Single module for configuration SCA 4047-2
MU3	SCA 4047 MU3	Single module for configuration SCA 4047-3
MU4	SCA 4047 MU4	Single module for configuration SCA 4047-4
MP1	SCA 4047 MP1/MPE1	Starting module ladder only length m. 2.18
MP2	SCA 4047 MP2/MPE2	Ladder starting module + cage length m. 3.02
MP3	SCA 4047 MP3/MPE3	Ladder starting module + cage length m. 3.30
MP4	SCA 4047 MP4/MPE4	Ladder starting module + cage length m. 3.58
MIS	SCA 4047 MIS/MES	Ladder intermediate module + cage length m. 2.52
MIS2	SCA 4047 MIS2/MES2	Ladder intermediate module + cage length m. 2.24
MOT	SCA 4047 MOT/MET	Ladder terminal module + cage length m. 2.73
MOTC	SCA 4047 MOTC/METC	Ladder terminal module + cage length m. 2.45
MOTR	SCA 4047 MOTR/METR	Ladder terminal module + cage length m. 2.17
ZFS2	SCA 4047 ZFS2	RH and LH pair of single standard bolts 18 cm.

N.B. FOR THE VENETO REGION ONLY

the decree of the Region of Veneto no. 97 on 31/01/2012 includes rest platforms and doubling every maximum m. 4

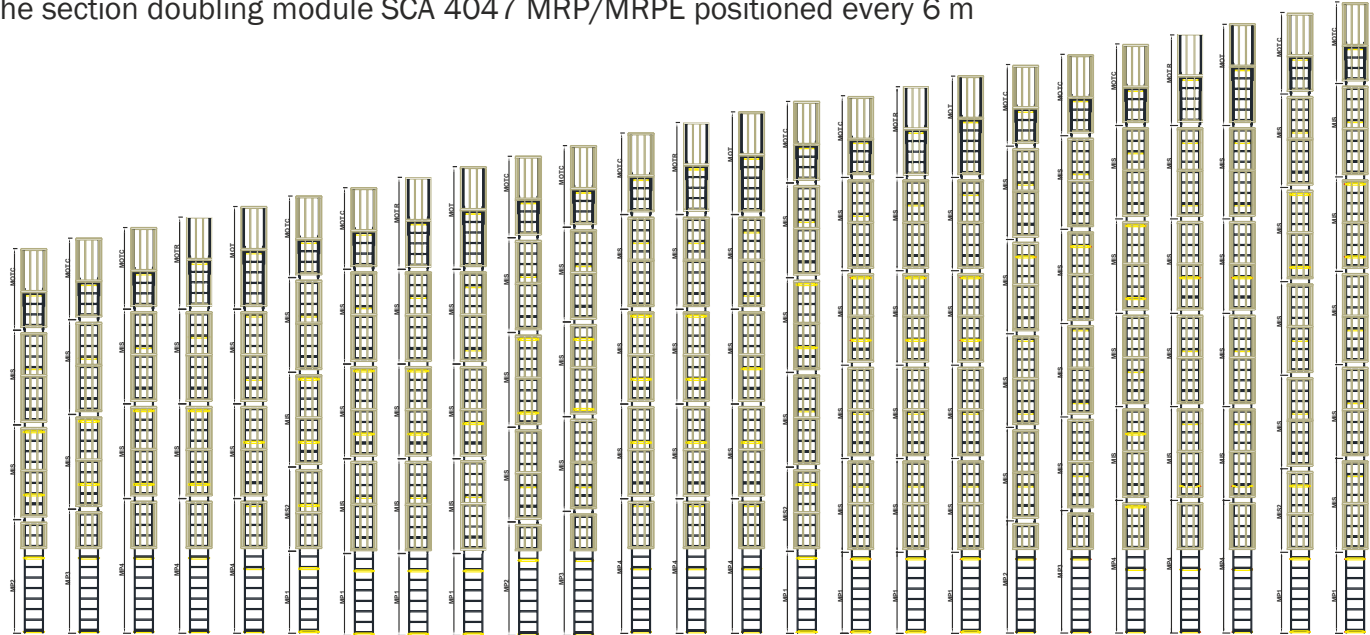


Intermediate rest platform or section doubling module NOT REQUIRED

Article code	Height to platform																									
	to m: from m:																									
MP1	2.34	2.62	2.90	3.18	3.46	3.74	4.02	4.30	4.58	4.86	5.14	5.42	5.70	5.98	6.02	6.54	6.82	7.10	7.38	7.66	7.94	8.22	8.50	8.78	9.06	
MP2	2.07	2.35	2.63	2.91	3.19	3.47	3.75	4.03	4.31	4.59	4.87	5.15	5.43	5.99	6.27	6.85	7.13	7.41	7.39	7.87	7.95	8.23	8.51	8.81	8.79	
MP3																										
MP4																										
MIS																										
MIS2																										
MOT																										
MOTR																										
MOTC																										
ZFS2	2	2	3	3	1	3	3	3	3	1	4	4	4	1	4	4	4	4	4	4	4	4	4	4	4	4

LADDER CONFIGURATIONS WITH HEIGHT TO EXIT PLATFORM OVER m 10 (Leg. Degree no. 81) LADDER CONFIGURATIONS WITH HEIGHT TO EXIT PLATFORM OVER m 8 (En14122)

With an obligation of having the intermediate rest platform SCA 4047 PR/PRS or the section doubling module SCA 4047 MRP/MRPE positioned every 6 m



Intermediate rest platform or section doubling module COMPULSORY - Request separately art. SCA 4047 PR/PRS or SCA 4047 MRP/MRPE

Height to platform	Intermediate rest platform or section doubling module COMPULSORY - Request separately art. SCA 4047 PR/PRS or SCA 4047 MRP/MRPE																											
	to m: 9.34	9.82	9.90	10.15	10.46	10.74	11.02	11.30	11.58	11.86	12.14	12.42	12.70	12.98	13.26	13.54	13.82	14.10	14.38	14.66	14.94	15.22	15.50	15.78	16.06			
from m:	9.07	9.35	9.63	9.91	10.19	10.47	10.75	11.03	11.31	11.59	11.87	12.15	12.43	12.71	12.99	13.27	13.55	13.83	14.11	14.39	14.67	14.95	15.23	15.51	15.79			
Article Code	SCA 4047 26	SCA 4047 27	SCA 4047 28	SCA 4047 29	SCA 4047 30	SCA 4047 31	SCA 4047 32	SCA 4047 33	SCA 4047 34	SCA 4047 35	SCA 4047 36	SCA 4047 37	SCA 4047 38	SCA 4047 39	SCA 4047 40	SCA 4047 41	SCA 4047 42	SCA 4047 43	SCA 4047 44	SCA 4047 45	SCA 4047 46	SCA 4047 47	SCA 4047 48	SCA 4047 49	SCA 4047 50			
MRP	1					1		1			1				1			1		1					1			
MRP		1								1									1									
MRP			1								1									1								
MRP				1								1									1							
MRS	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4			
MRS						1									1													
MOT					1				1									1										
MOTR				1				1					1						1				1					
MOTO	1	1	1			1				1		1			1			1		1		1		1	1			
ZFes	6	6	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	9	9			

Instructions for fixing the ladder to the wall

All standard configurations require that the starting ladder remains raised off the ground a few centimetres to prevent, with possible normal thermal expansion, the ladder exerting pressure on the ground.

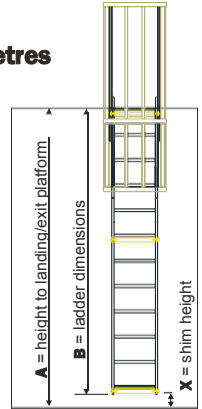
In accordance with the relevant regulations, it is necessary to carry out implementation according to the following conditions:

- 1) Install the ladder by positioning the last rung of the ladder at the same height as the landing platform.**
- 2) Keep a distance off the ground and the first rung of the ladder, from 0 cm to 30 cm.**

To guarantee this, each pre-configured standard configuration is adaptable to all heights of the landing platform within the range of the chosen ladder configuration:

Assembly of 4047 ladders with the height to landing platform under 5 metres

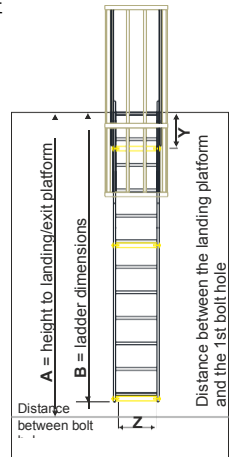
- Position the single pre-assembled modules on the ground, join them according to the right sequence and install the bolts respecting the distances indicated in the drawing,
- Check the real distance between the ground and the exit platform we call **A** and measure the distance of ladder dimensions we call **B**, then calculate the height at which the lower end of the ladder off the ground will have to be located as: **X = (A - B)**,
- Rest the ladder on the ground at the erection point, a sufficiently large shim to support both ends of the ladder and as high as the resulting measurement **X**,
- Lay the complete ladder on the ground in a position perpendicular to the installation wall and corresponding to the shim identified,
- Firmly tighten the end of a rope around the first upper rung of the end module,
- the operator at a height pulls the other end of the rope so that the ladder, resting on the shim, compass-lifts to the vertical position resting on the wall,
- Now, you can drill the wall corresponding to the bolts resting on the wall.



Assembly of 4047 ladders with the height to landing platform over 5 metres

In these cases even small differences in positioning of the bolts closer to the ground can generate large differences in height, resulting in the ladder being too tilted on one side. To avoid this, we recommend pre-drilling the wall, starting from the top, using the plumb line and using special equipment (such as lifting platforms, fixed scaffolding or scaffolds),

- Measure the distance **Y** as the vertical distance between the last rung and the wall fixing hole of the first upper bolt.
- Measure the distance **Z** as the horizontal distance between the fixing holes in the wall of the right and left bolt.
- The operator is at a height in the position on which he intends to apply the holes of the right or left bolts, to lower the plumb line from above so that the wall operator, using special equipment (such as lifting platforms, fixed scaffolding or scaffolds), can make the first hole at the vertical distance **Y** from the height of the landing platform and consequently all the lower holes, respecting the distances between the bolts indicated in the drawing.
- Repeat to make the holes on the opposite side of the ladder, at the horizontal distance **Z** from the holes already made and at the same vertical height as the holes already made.
- On the ground, position the single modules with cage assembled and complete with fixing bolts installed on the ladder according to the distances indicated in the drawing,
- Install the starting module from the ground first, blocked by at least two pairs of bolts fixed to the wall at the holes already made,
- Then the operator at a height uses a rope to lift one by one the upper modules according to the right sequence to lower them above the module previously installed, while the operator below, using special equipment (such as lifting platforms, fixed scaffolding or scaffolds), reaches the joining point of the modules, facilitates the insertion of the pins and locks with the appropriate fixing screws.
- Fix the module to the wall by tightening the dowel screws on the fixing bolts at the holes made.



Assembly of 4047 ladders with support plate on ground or equipped with removable small ladder

If the ladder is required with a ground fixing plate or equipped with removable starting ladder as an accessory **SA**, it is necessary to use the fixing heights indicated on the specific drawing provided.

Assembly instructions for the wall fixing bolts

To install the ladder in compliance with current regulations, it is essential to respect the distances between the fixing bolts indicated in the drawing to avoid that when installing the wall modules, one or more steps of the ladder are located at the height where the bolt is to be fixed.

In the event of obstruction (ducts, electrical cables) the bolts can be moved vertically in both directions with respect to the ladder section, but maintaining a maximum distance not exceeding m. 2,0 each and taking care that they do not interfere with the rungs of the ladder and the cage hoops.

NB In the technical drawing, the distances between the bolts are indicated at the centre of the bolt or at the height of the hole for fixing to the wall.

Specific screws and plugs that can be used for fixing the hooks to the wall (not supplied)

Steel plugs Ø 12 mm
 Chemical plugs Ø 12 mm for masonry
 Perforating large screws Ø 12 mm for solid wood

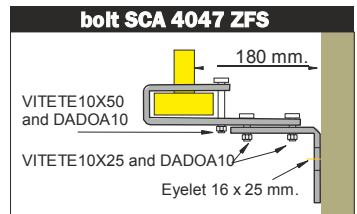
FIXINGS CHECK

The operator installing the wall fixtures using the appropriate plugs indicated in the box on the side must ensure fixing hold equal to 3 kN (about 300 kg.) for each fixing point

- Fixtures on steel surfaces can be made with through threaded fittings provided with gripper bolt.
- Expansion fixings for concrete surfaces with a minimum cement quality of C20/25.
- Other hardware not covered in these pages must be discussed and verified by structural engineers.

STANDARD BOLTS

The standard bolts **SCA 4047 ZFS** are fixed on the ladder using specific u-shaped screws supplied [Fig.7] and allow a distance to be maintained of 18 cm between the ladder and the wall.



BOLTS WITH EXTENSION

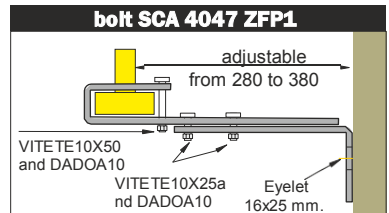
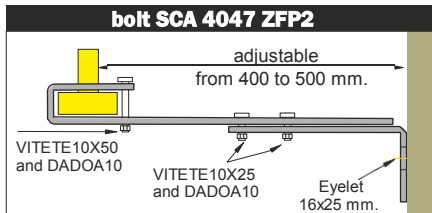
If the fixing surface is not regular or the distance between the ladder and the wall must be over 18 cm., you can use specific adjustable bolts:

SCA 4047 ZFP1

from 28 cm. to 38 cm.

SCA 4047 ZFP2

from 40 cm. to 50 cm.



N.B. Each bolt with extension SCA 4047 ZFP1 or SCA 4047 ZFP2 can be supplied only on specific request and to replace the standard bolt SCA 4047 ZFS

Maintenance and Periodic Checks

The Frigerio 4047 fixed ladders with or without safety cage at the back are built to last over time and do not require special maintenance, however periodic annual checks are recommended to inspect the tightness of the screws and the good condition of the materials.

The frequency of these checks can depend on the use and conditions of the ladder:

- Annual: occasional use in indoor surroundings - Weekly: heavy use and/or in outdoor surroundings.

CHECK:

- that the base sections or end element are not damaged by impact.
- that the hardware has not been loosened, with particular attention on the screws and plugs fixing the bolts to the wall and the ladder.
- that there are no rust-corroded elements (especially for ladders over 10 years): possibly replace the rusted hardware and/or renew the protective treatment.

It is recommended to document checks and actions carried out on a special record.

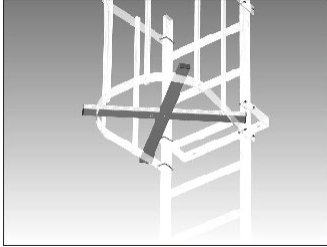
Assembly of anti-intrusion grid - GRAI

- 1 - Fit the cross on the cage as pictured on the side while keeping the eye screw downwards;
- 2 - Insert the shortest piece of profile into the screw on the cross and insert the washer and the wing nut for fixing,
- 3 - Finally, attach the padlock to the eyelets (lock not provided).

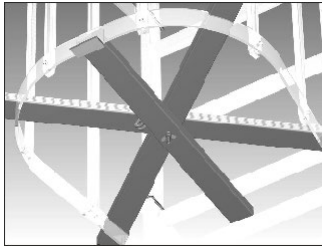
SCA 4047 GRAI

Anti-intrusion grid in aluminium, can be dismantled and closed with a lock.

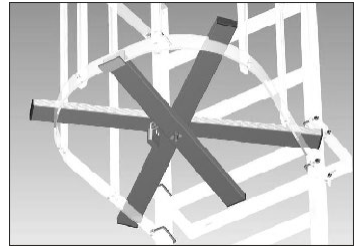
(1)



(2)



(3)



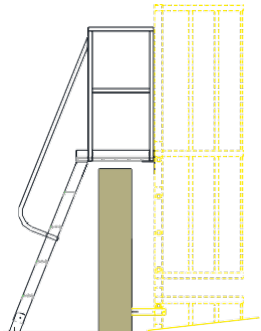
Landing ladders SV - SPN - SPS and landing platforms PP

Used to bridge the difference in height between the height of the exit from the fixed ladder with cage and the roof or covering level

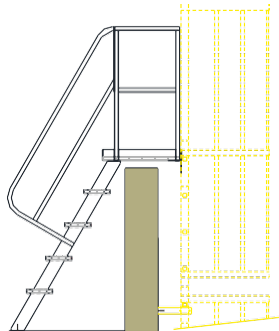
N.B. Mandatory when the height difference is greater than the height of a regulatory step of 30 cm.

N.B. If you need an exit from the ladder with landing on a platform **SCA 4047 PP** coupled to the landing ladders **SCA 4047 SV**, **SCA 4047 SPN** or **SCA 4047 SPS**, identify the suitable standard ladder configuration considering a greater height by adding the minimum distance of 6 cm.

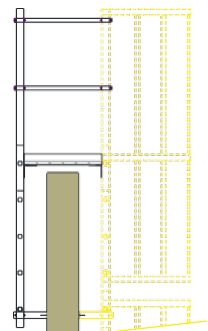
N.B. This type of landing solutions are only supplied following checking by our technical office that releases the drawing for design and installation.



SCA 4047 SPN/2-3-4-5-6
SCA 4047 PP/5-6-8-10-12



SCA 4047 SPS/2-3-4-5-6
SCA 4047 PP/5-6-8-10-12



SCA 4047 SV/7-10-12-16-18
SCA 4047 PP/5-6-8-10-12

Important notes

- ▶ The ladder must only be used for the planned use.
- ▶ No changes are permitted without the manufacturer's written approval.
- ▶ During installation and use, the safety standards must be respected of the work and on accident prevention.

The manufacturer cannot be held in any way liable in the event of: improper assembly and misuse, unsafe use of ladders, lack of knowledge or non-compliance with this manual and/or the safety regulations outlined by law, unauthorised changes, use of non-original components, staff untrained/uniformed for the type of work.