

TECHNICAL SPECIFICATIONS

PLATFORM STAIRLIFTS

SH200i

SH300i



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1. General description

1.1. Application

Lifting platform intended for the transport of persons with impaired mobility along stairs with a single straight flight or along an accessible inclined plane.

The stairlift has a platform for the transport of passengers using both manual and motorized wheelchairs. It may also be used by persons with impaired mobility sitting on the optional tip-up seat.

The different options in the lifting platform include fully automatic models, which allow the user to operate the platform autonomously.

Model SH200i

The dimensions and rated load are appropriate for users with manual wheelchairs, as well as with motorized compact and maneuverable wheelchairs mainly for indoor use and which are not necessarily intended to overcome obstacles (class A according to the european standard EN 12184).

The larger platform dimensions are sufficient to allow the wheelchair to turn on the platform surface in case of front entrance. Additionally both the dimensions and the rated load are appropriate for users with motorized wheelchairs which are sufficiently compact and maneuverable for indoor use and which may overcome some obstacles outdoors (class B according to the european standard EN 12184); also appropriate for users with middle sized scooters.

1.2. Regulations

The lifting platform complies with all the requirements of the 2006/42/EC Machinery Directive and may therefore be commercialized in all countries in the European Union, and it is designed with a safety level according to the harmonized european standard EN 81-40.

1.3. Characteristics

Rated load

Model	Load (kg)
SH200i	225
SH300i	300

Rated speed

0.1 m/s

Travel

Up to 8 meters.

Angle

Angle of inclination of the path in relation to the horizontal line between 20° and 45°.

Type of drive

Indirect acting hydraulic drive.

Electric characteristics

230 V \pm 5% single-phase 50/60 Hz

Other single-phase voltages available.

The consumed power at full load may reach 900 W (3.9 A at 230 V).

2. Detailed description

2.1. Drive

Indirect acting hydraulic drive with a 2:1 relation, cable suspension and simple cylinder drive.

Suspension with 2 cables with a 6 mm diameter; the layout of the cables is 6x37-FC, the wires are galvanized and with a 1770 N/mm² resistance.

Instantaneous safety gear of the roller type, actuated by breakage or slackening of the suspension cables.

2.2. Machine

The installation of the lifting platform does not require a machine room. Both the hydraulic power unit and the control board are installed inside a compact cabinet, intended to be installed adjacent to the guide either on the lower or on the upper landing level.

As an option, the cabinet may be installed at a maximum distance of 10 meters from the guide assembly. Enquire in case of greater distances.

The machine cabinet is not prepared to be installed outdoors.

Hydraulic power unit

Hydraulic power unit with an external motor and gear pump. The valve block includes a pressure gauge with a protection valve and a manual hand pump as well as a manual descent push button as means for emergency actuation. The block also includes a minimum operation pressure valve for the manual descent to avoid the slackening of the suspension cables. A return filter and a shut-off valve are also included in the power unit.

Control board

The following electric components may be found inside the machine cabinet: main switch, motor circuit breaker, contactors, transformer, battery packs and the board for the control of the functions of the overload detection system and of the emergency power supply system.

2.3. Guiding and installation

Guiding

The guide assembly consists of a soldered structure made of UF80.40.4 profiles used for guiding on which the cylinder, the suspension system and the carriage are supplied already installed.

Depending on the travel, the guide assembly may be supplied in one or two sections.

Wall fixation (standard)

Anchorage are supplied for the fixation of the guide assembly to one of the side walls in the staircase. Mechanical anchorages are supplied as standard for fixation of the guide to a concrete or solid brick wall.

As an option, chemical anchorages may be supplied for the fixation of the guide to other types of walls, for example hollow brick walls.

The reaction forces transmitted to the shaft are specified in the assembly instructions.

Fixation to steps (optional)

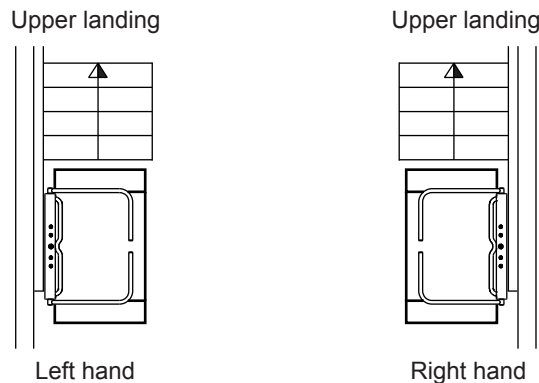
Metal pedestals are supplied to support the guide assembly; chemical anchorages are supplied for the fixation of these pedestals to the steps of the stairs.

For stairs with the most usual step sizes, one fixation pedestal is supplied for every 3 steps, plus an additional pedestal on the lower landing level for the SH200i model, and two additional pedestals for the SH300i model. Different pedestal layouts are possible depending on the model of the platform and on the specific sizes of the steps of the stairs.

The pedestals allow for some minor adjustment of the position of the guide, which makes up for small deviations or differences in size between the different steps in the stairs.

The reaction forces transmitted to the steps of the stairs are specified in the assembly instructions.

Hand



2.4. Hydraulic installation

The hydraulic installation is supplied completely pre-assembled; only the connection between the hydraulic power unit installed in the cabinet and the guide is required, using a hydraulic flexible pipe. When the machine is installed in the intended position adjacent to the guide assembly, a distribution channel is supplied to accommodate the pipes between the guide and the cabinet so that they remain hidden.

When the machine is installed on the upper landing the hydraulic installation includes a rigid pipe section from the upper to the lower part of the guide, and additionally a flexible pipe section for the connection to the cylinder.

Flexible double metal mesh hydraulic hoses, individually tested for pressure together with the corresponding connectors; the result of the test is marked on the pipe.

2.5. Electrical installation

The electrical installation is supplied completely pre-assembled, with the wiring in the vehicle and in the guide assembly fully installed. Only the connection between the vehicle and the guide assembly is required (with plug in connectors), together with the connection between the machine and both the guide assembly and the landing push button panels.

The electrical installations of both the vehicle and the guide assembly are waterproof.

Landing push buttons

Two landing push buttons panel models are available: a model for recessed installation on the wall on each landing level (standard supply), or a model with a box for surface mounting (optional).

The recessed push button panels include push buttons which are waterproof on the face side, installed on a stainless steel faceplate.

The surface mounted push button panels include push buttons which are waterproof installed on an also waterproof connection box.

As an option, wireless landing push button panels for a cable-free installation.

The following elements are included in the push button panels:

- Key enabling switch for restriction of use.
- Call push button for the lifting platform, with light indication of the actuation.
- Push button for the automatic folding of the barrier arms and platform. The motorized folding of the platform is optional.

2.6. Vehicle

Vehicle with a platform for wheelchairs, with protection arm barriers along the full perimeter of the platform, folding ramps along the access edges of the platform and a roll-off guard to prevent from falling on the non-access edge of the platform. Antislip material both on the surface of the platform and the ramps, to make access to the platform easier.

The platform and the protection barrier arms are fully foldable so that the staircase can be left completely free when the lifting platform is not being used. The protection barrier arms fold downwards, while the platform and ramps fold upwards thus enveloping the barrier arms.

The barrier arms are motorized and operation is fully automatic, both during access and during the folding of the platform.

High resistance plastic shell on the upper side of the side protection of the platform on the side of the guide assembly with an integrated handrail.

Manual folding of the platform, counterbalanced with compression springs. Motorized folding of the platform is available as an option. This option is indispensable when it is required that a single user may be able to use the lifting platform without help from anybody else.

Commands

Integrated in the upper plastic shell and positioned at an appropriate height for wheelchair users. The following elements are included:

- Key enabling switch for restriction of use.
- Independent push buttons for ascent and descent, with light indication of the actuation of the push button.
- Emergency stop push button with light indication of actuation of the button.
- Overload indicator, with acoustic and light indications.

Accesses

Depending on the available spaces for access to the platform at the lower landing level, two platform layouts are available: 180° and 90°.

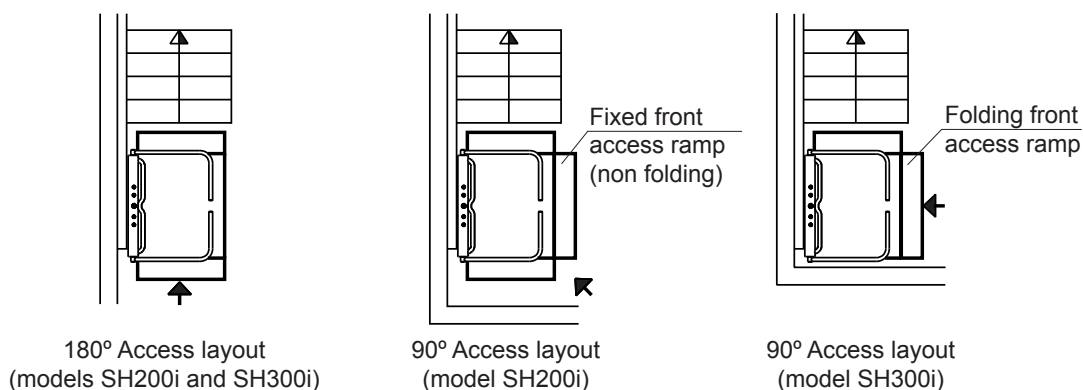
In the 180° access layout, entrance to the platform is in the direction of motion of the platform stairlift both for the SH200i and the SH300i models.

In the 90° access layout, model SH200i includes an additional fixed front access ramp so that entrance at the lower landing is diagonal to the direction of motion.

In the SH300i model with the 90° access layout, the larger surface of the platform permits the wheelchair to turn on the platform itself and entrance is thus through the folding front ramp perpendicular to the direction of motion.

There is an upgrade kit available to adapt the vehicle between the 180° and 90° access layouts, even after the lifting platform has been supplied.

See the recommended minimum dimensions for access in each of the models in section "3. Dimensions for installation".



Platform dimensions

Depending on the model. See dimensions in section "3. Dimensions for installation".

Model	Width (mm)	Depth (mm)
SH200i	750*	900
SH300i	900	1250

(*) As an option, platform widths of 700 and 650 mm are available, for installation in stairlifts with very reduced width. These platform widths may not be compatible with the use of some wheelchair models.

Options

Plug in cable operated hand control in the vehicle for users with mobility limitations in the arms or for use by a companion from outside the lifting platform.

Tip-up seat on the vehicle for users with impaired mobility without a wheelchair.

Waterproof cover for the protection of the vehicle in the folded position against water and vandalism during long periods of inactivity.

2.7. Finishings

Epoxy-polyester paint in colour RAL 7035 for the soldered structures in guide and vehicle, as well as for the pedestals for the fixation to the steps. Metal enclosures of guide assembly and vehicle in galvanised steel sheet, and ramps in aluminium; both enclosures and ramps painted in polyester paint in the same colour.

Barrier arms and tip up seat in epoxy-polyester paint in colour RAL 7005.

Black antislip strips in platform and access ramps.

Upper plastic shell in colour RAL 7005.

Options

Metal sheet enclosures, platform and vehicle access ramps, guide, protection barrier arms and tip-up seat in other colours in the RAL chart.

Finishing with high resistance to oxydation with cataphoresis treatment in the soldered structures of the guide and vehicle and in the protection barrier arms.

2.8. Control

Control based on integrated electronics with microcontroller, with the following main characteristics:

- Movement of the platform with hold to run control, both from the vehicle push buttons and from the landing push button panels.
- Priority of the vehicle commands over the landing push button panel commands.
- Landing detection with final limit switches.
- Automatic control of the positioning of the protection barrier arms and the platform access ramps, both from the landing push button panels and from the vehicle push buttons.
- Movement of the vehicle is subject to the horizontal position of the barrier arms and to the lifted position of the access ramps.
- Releveling on the upper landing level irrespective of the position of the protection barrier arm on the access edge of the platform.
- Control of the folding operation of the protection barrier arms and of the platform from the landing push button panels. Automatic folding of the platform is optional.
- Descent operation to the lower floor with automatic opening of the protection barrier arms in case of loss of power supply.

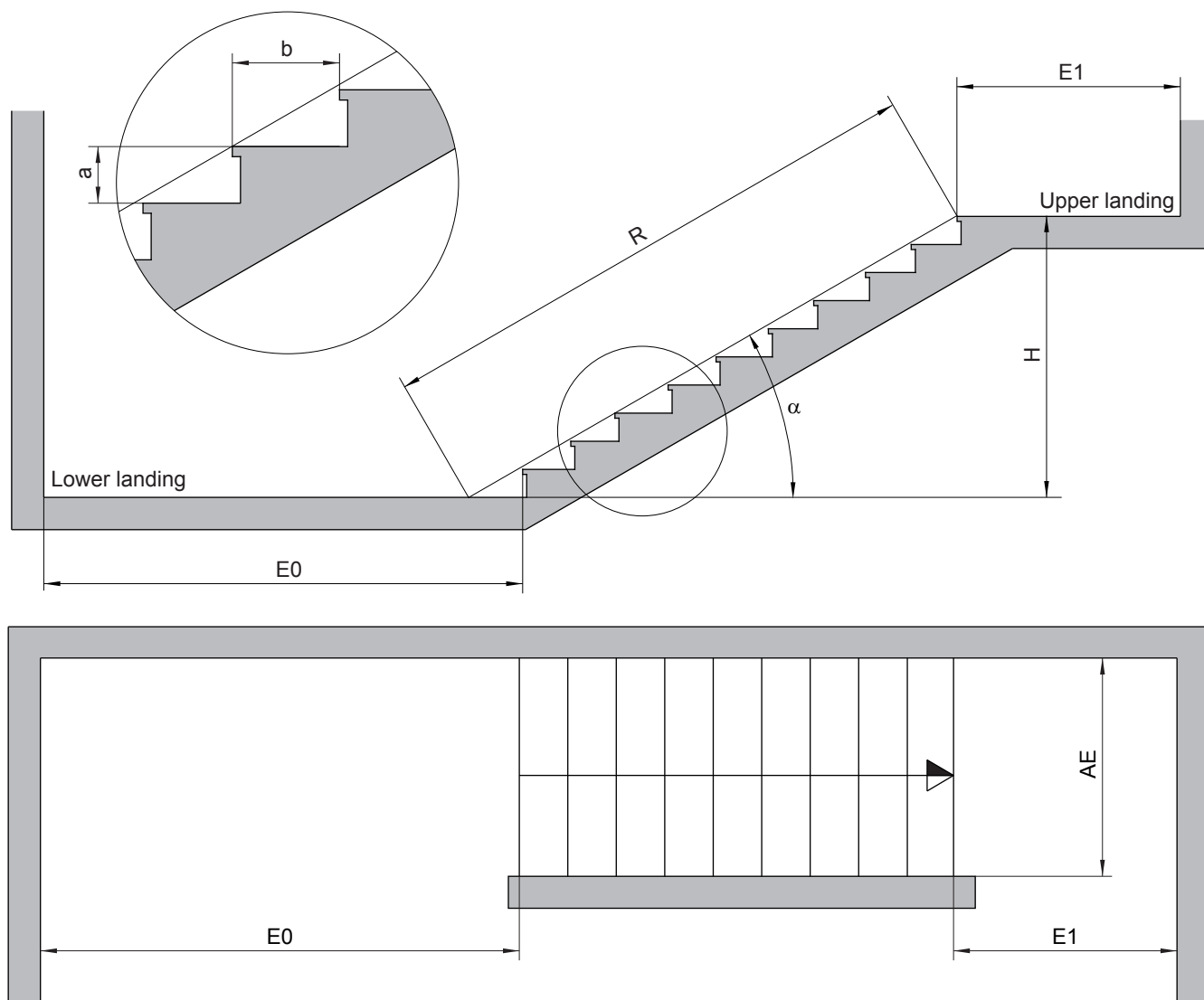
2.9. Safety elements

Among all the safety and protection measures included in the platform stairlift, the following may be highlighted:

- Mechanical locking of the protection barrier arms and access ramps with electric control.
- Safety valve as a means of protection against free fall in case of rupture of the piping.
- Safety gear as means of protection against free fall actuated by breakage or slackening of the suspension means, with electric control of the safety gear actuation.
- Upper final limit switch.
- Load control system with pressure transducer.
- Stop push button in platform.
- Manual descent push button in the hydraulic power unit for rescue in case of breakdown.
- Manual hand pump in the hydraulic power unit for the unlocking of the safety gear.
- Manual unlocking of the protection barrier arms and ramps with the triangular safety unlocking key for rescue in case of breakdown.
- Obstacle detection device both in ascent and descent integrated with the access ramps and in the tray under the platform floor. Movement of the vehicle in the opposite direction in case of obstacle is allowed.

3. Dimensions for installation

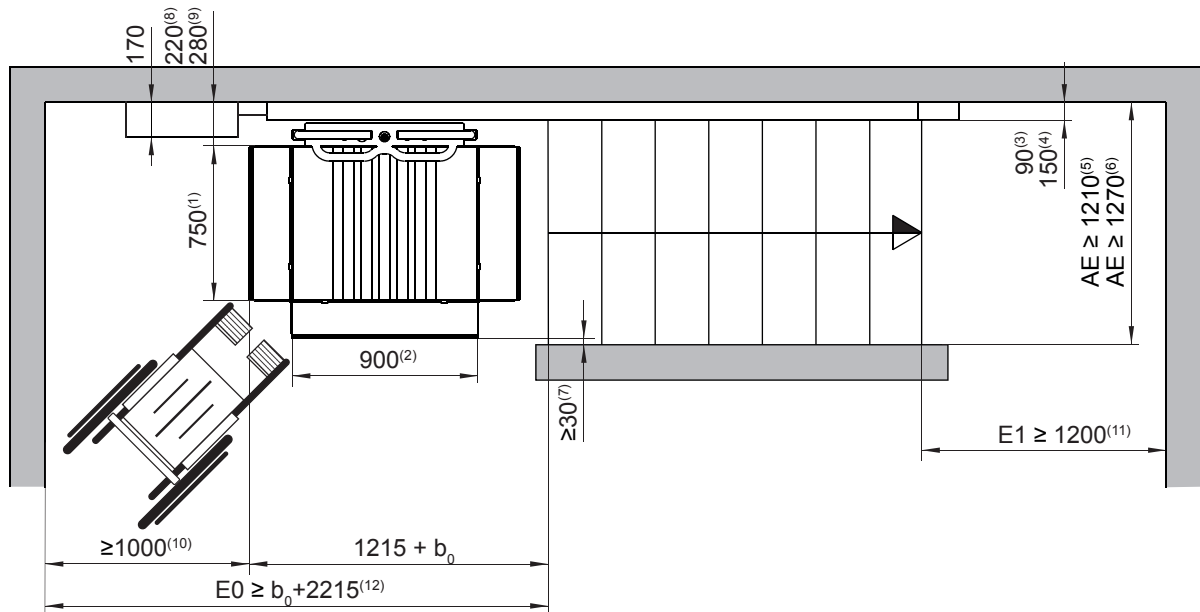
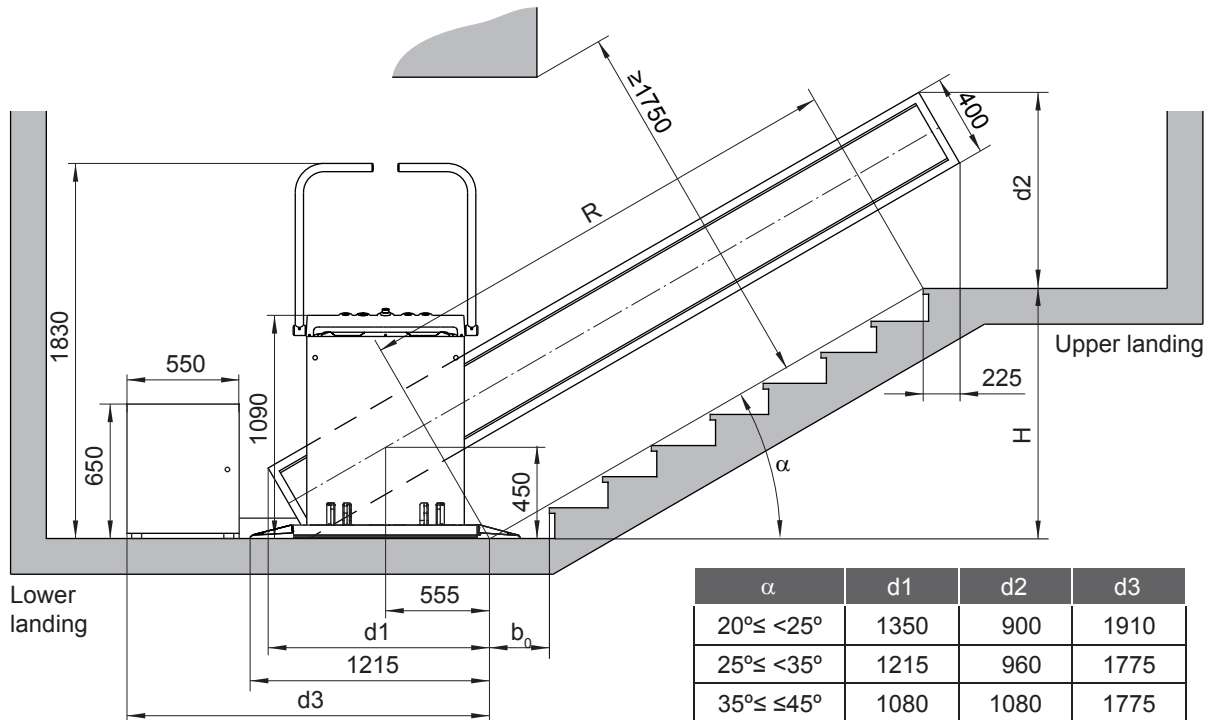
3.1. Stairs



- a Riser of the step, measured between the most prominent edges
- b Thread of the step, measured between the most prominent edges
- H Height difference. Difference in height between the upper and lower landing levels, and resulting from the addition of the measures of the riser of all the steps. It is recommended to measure the complete height difference as well as those of each individual step as a verification
- R Travel. Length of the line drawn from the edge of the upper step until the lower landing floor level and which passes through the edge of the most prominent step of the complete stair
- α Angle of the stairs
- E0 Available space at the lower landing for the installation of the platform stairlift and to allow for access of the wheelchair to the platform
- E1 Available space at the upper landing to allow for access of the wheelchair to the platform
- AE Free width of the stairs

- (1) Width of the platform. Reduced widths of 650 and 700 mm available as an option
- (2) Depth of the platform
- (3) Width of guide with wall fixation
- (4) Width of guide with fixation to steps
- (5) Minimum width of stairs with wall fixation and standard width of platform
- (6) Minimum width of stairs with fixation to steps and standard width of platform
- (7) Minimum play between the vehicle side and the wall
- (8) Distance platform-wall with wall fixation
- (9) Distance platform-wall with fixation to steps
- (10) Recommended value 1500 mm
- (11) Recommended value $E0 \geq b_0 + 2715$

90° Access



H Height difference

R Travel

α Angle of the stairs

E0 Minimum space for access at lower landing

E1 Minimum space for access at upper landing

AE Minimum width of the stairs

d1 Space for the guide at lower landing (max. value according to table)

d2 Space for the guide at upper landing (max. value according to table)

d3 Space for the machine at lower landing (value according to table)

available as an option

(2) Depth of the platform

(3) Width of guide with wall fixation

(4) Width of guide with fixation to steps

(5) Minimum width of stairs with wall fixation and standard width of platform

(6) Minimum width of stairs with fixation to steps and standard width of platform

(7) Minimum play between the vehicle side and the wall

(8) Distance platform-wall with wall fixation

(9) Distance platform-wall with fixation to steps

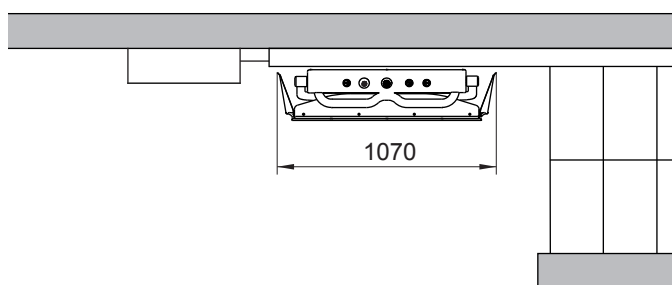
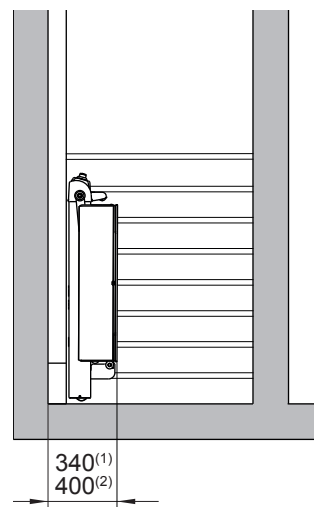
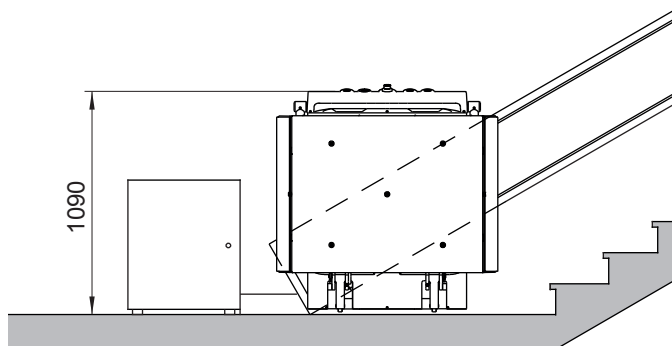
(10) Recommended value 1200 mm

(11) Recommended value 1500 mm

(12) Recommended value $E0 \geq b_0 + 2415$

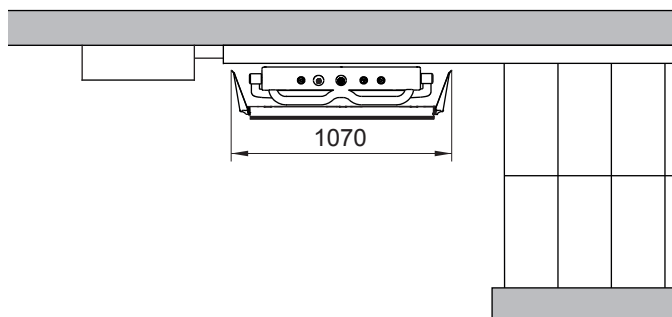
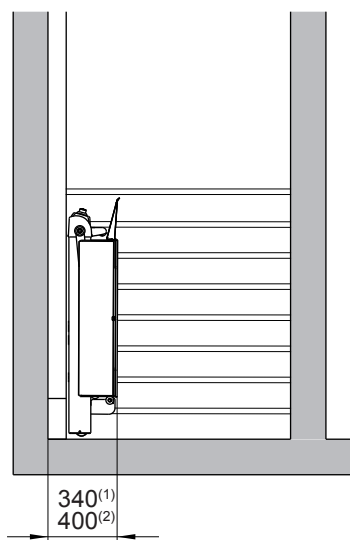
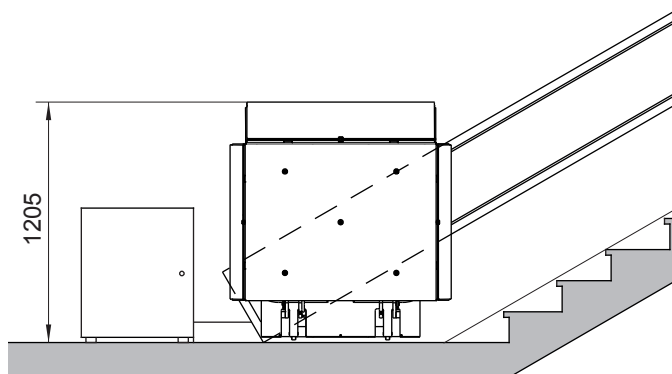
(1) Width of platform. Reduced widths of 650 and 700 mm

Folded platform dimensions, 180° access



- (1) Wall fixation
- (2) Fixation to steps

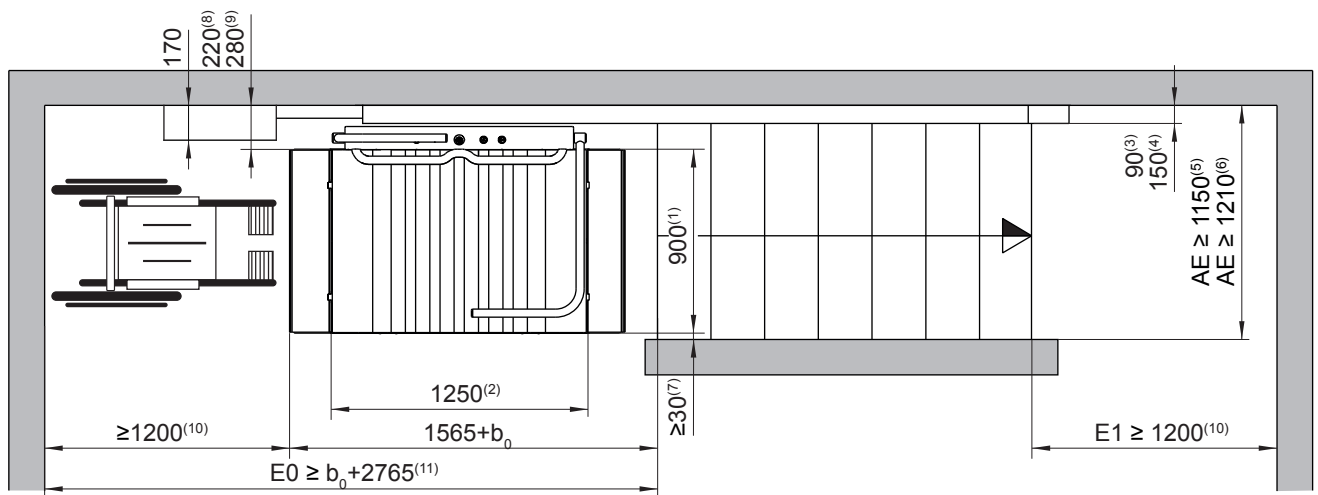
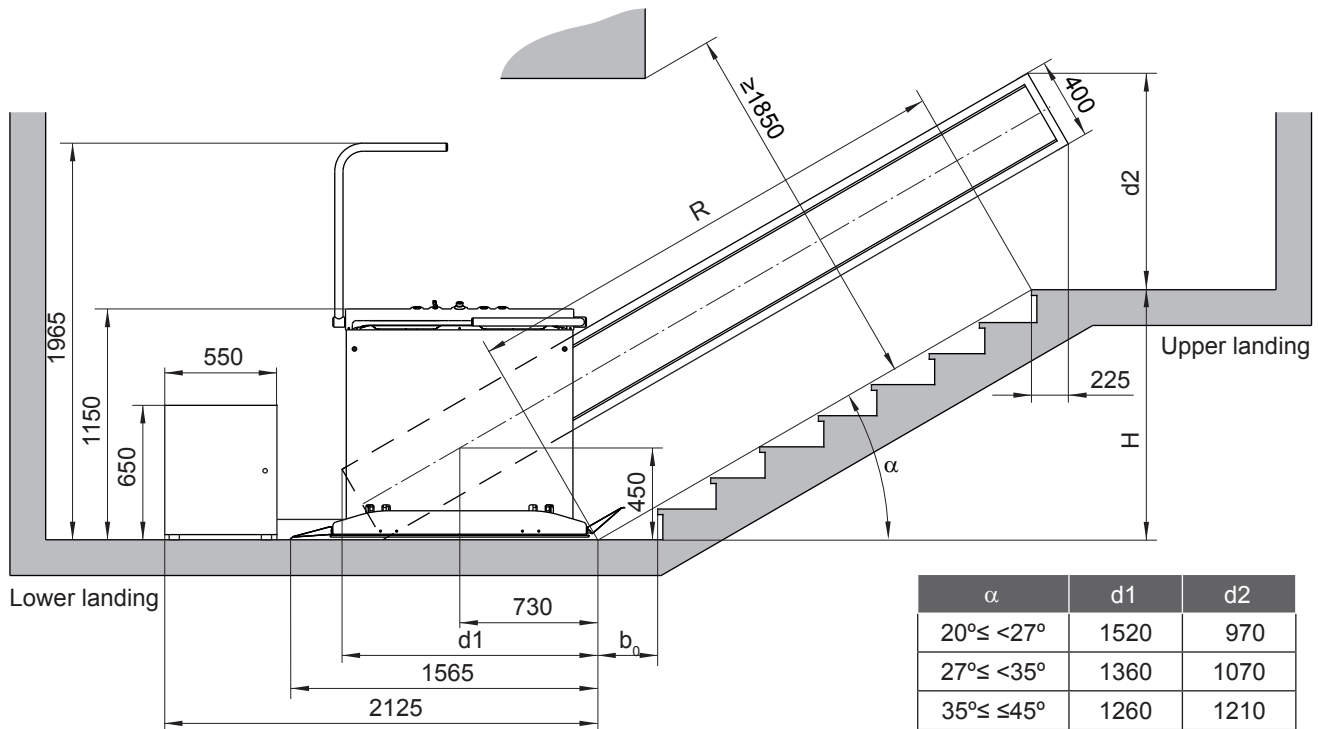
Folded platform dimensions, 90° access



- (1) Wall fixation
- (2) Fixation to steps

3.3. Model SH300i

180° Access



H Height difference

R Travel

α Angle of stairs

E0 Minimum space for access at lower landing

E1 Minimum space for access at upper landing

AE Minimum width of stairs

d_1 Space for the guide at the lower landing (max. value according to table)

d_2 Space for the guide at the upper landing (max. value according to table)

⁽¹⁾ Width of platform

⁽²⁾ Depth of the platform

⁽³⁾ Width of guide with wall fixation

⁽⁴⁾ Width of guide with fixation to steps

⁽⁵⁾ Minimum width of stairs with wall fixation

⁽⁶⁾ Minimum width of stairs with fixation to steps

⁽⁷⁾ Minimum play between the vehicle side and the wall

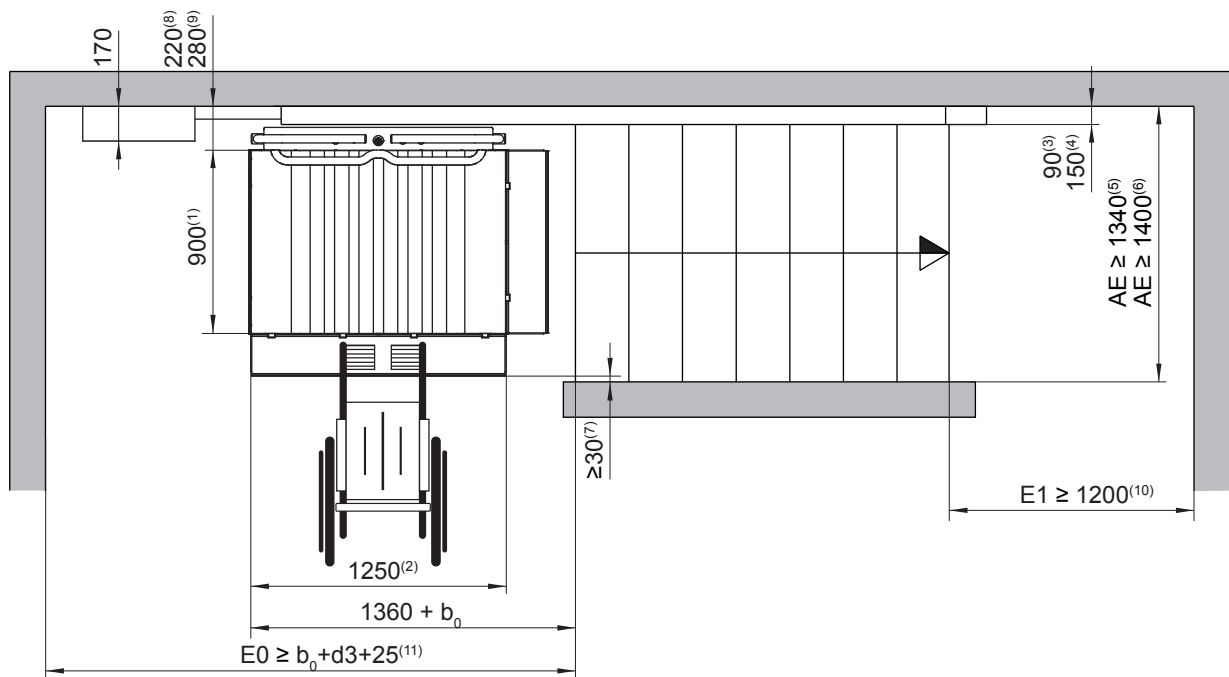
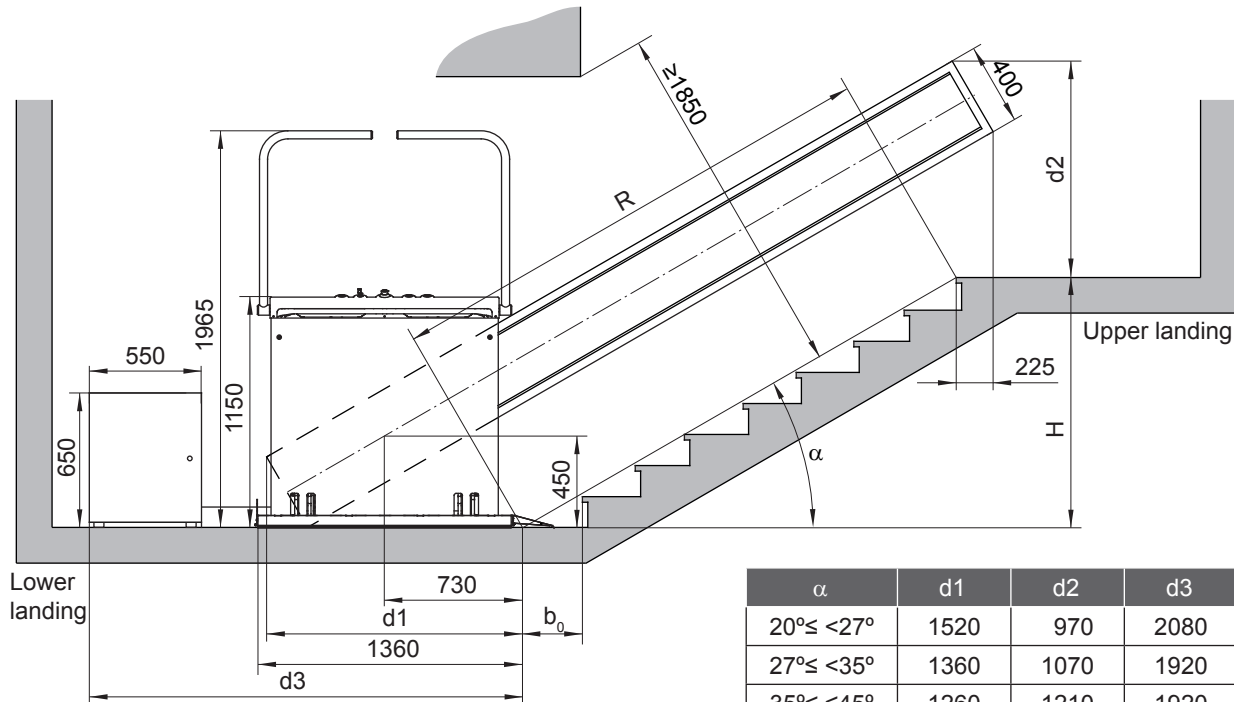
⁽⁸⁾ Distance platform-wall with wall fixation

⁽⁹⁾ Distance platform-wall with fixation to steps

⁽¹⁰⁾ Recommended value 1500 mm

⁽¹¹⁾ Recommended value $E0 \geq b_0 + 3065$

90° Access



H Height difference

R Travel

α Angle of stairs

E0 Minimum space for access at lower landing

E1 Minimum space for access at upper landing

AE Minimum width of the stairs

d1 Space for the guide at the lower landing (max. value according to table)

d2 Space for the guide at the upper landing (max. value according to table)

(1) Width of the platform

(2) Depth of the platform

(3) Width of guide with wall fixation

(4) Width of guide with fixation to steps

(5) Minimum width of stairs with wall fixation

(6) Minimum width of stairs with fixation to steps

(7) Minimum play between the vehicle side and the wall

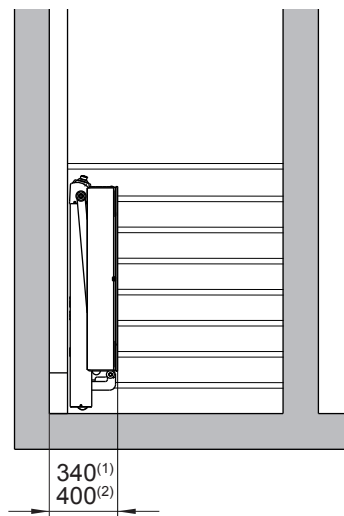
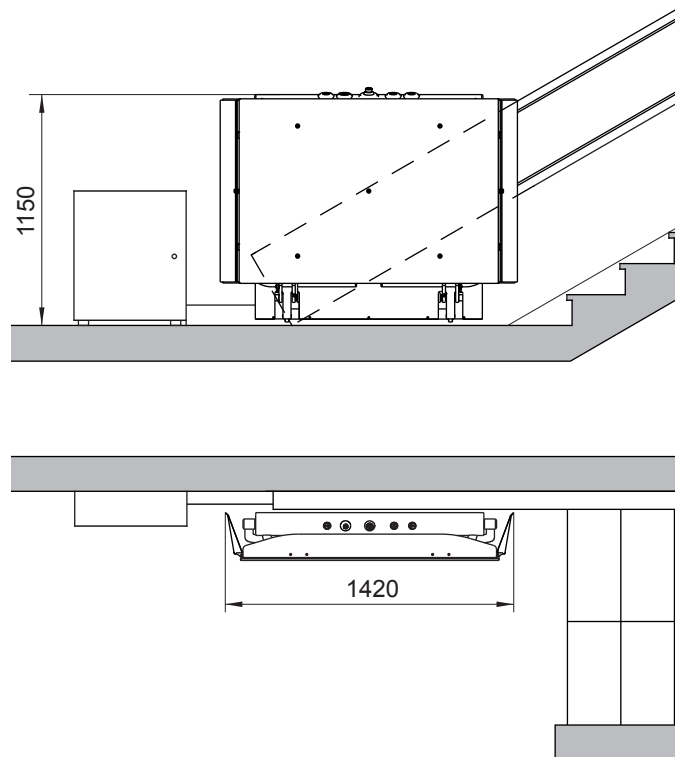
(8) Distance platform-wall with wall fixation

(9) Distance platform-wall with fixation to steps

(10) Recommended value 1500 mm

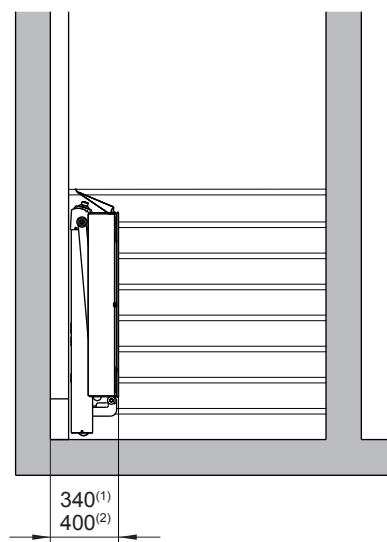
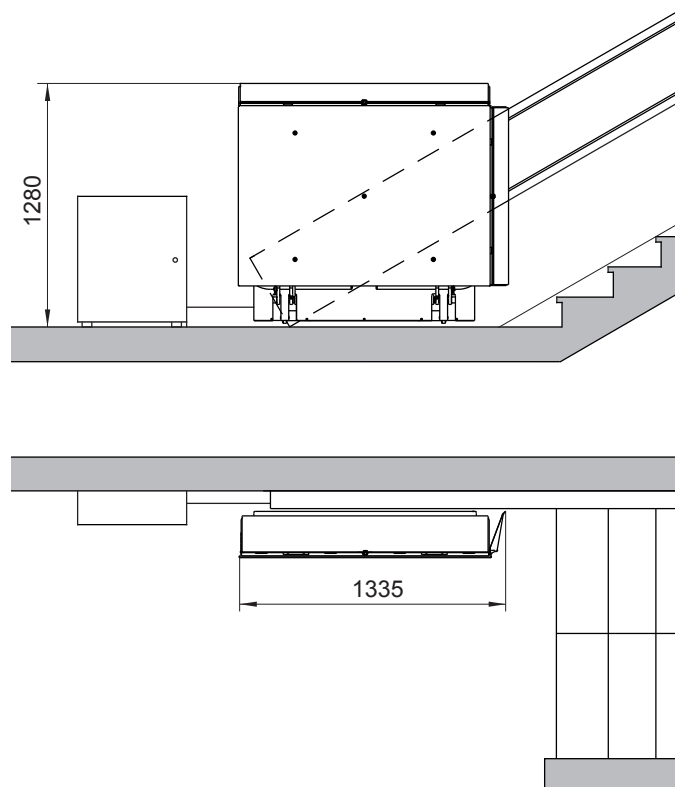
(11) $E0 \geq b_0 + 1520$ with cabinet at upper landing

Folded platform dimensions, 180° access



- (1) Wall fixation
- (2) Fixation to steps

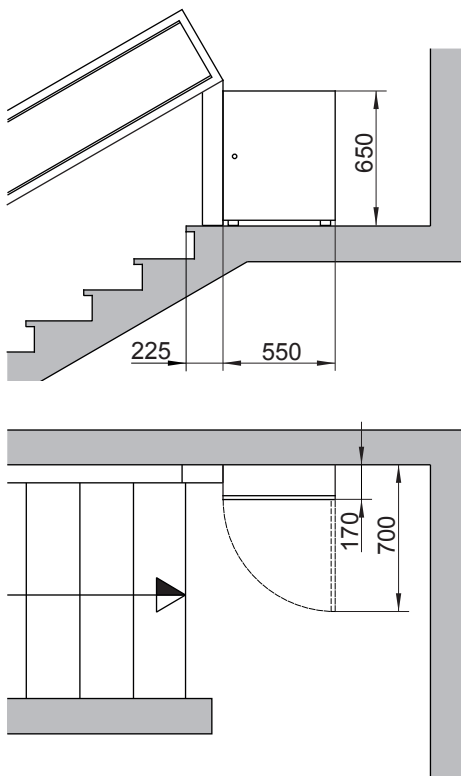
Folded platform dimensions, 90° access



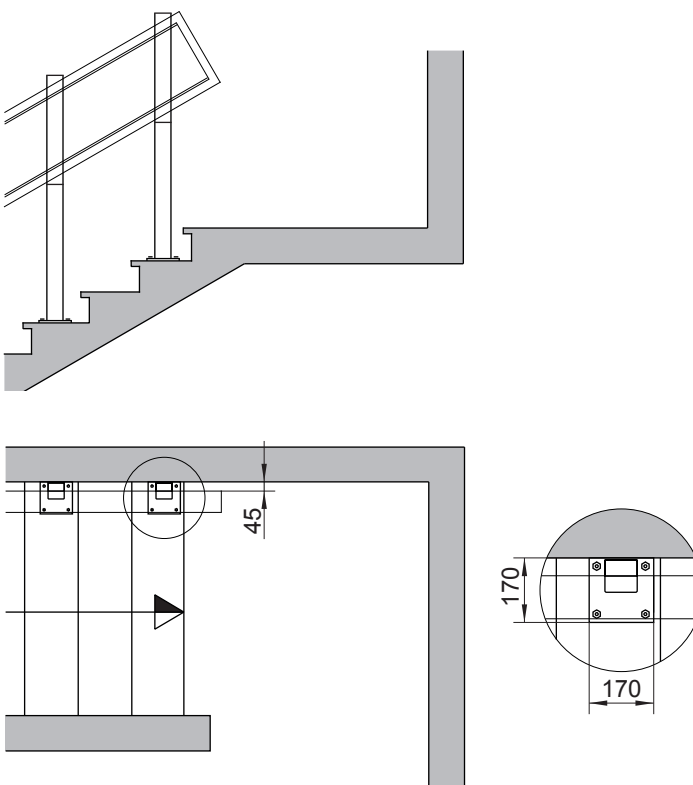
- (1) Wall fixation
- (2) Fixation to steps

3.4. Cabinet and fixation pedestals

Cabinet on upper landing level



Pedestals for fixation to steps





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