



ADAPTATIONS OF IGV PRODUCTS TO EN81.20 - EN81.50

ADAPTATIONS TO EN81-20 - EN81-50

The 2014/33/UE Lift Directive fundamentally amended the previous 95/16/EC Directive aiming at **ensuring a higher safety level.**

- All Member States had to transpose into their national law the Directive by 19th April 2016
- The 95/16/EC Directive was repealed on 20th April 2016.
- EN81.1 and 81.2 standards will be cancelled on 31st August 2017

The IGV Group team of technicians and engineers committed to ensuring the application of the new EN81.20 and EN81.50 standards, in compliance with the essential health and safety requirements of the 2014/33/UE Lift Directive.

A collective effort requiring dedication and commitment in order to make the products we offer to our customers extremely safe for users and operators, to prevent entrapment risks, to provide better lighting and take into consideration new calculations for the car load/car surface area ratio.

IGV Group offers safe products to its customers, which are already compliant to the requirements of EN81.20 - EN81.50 European standards.

EN81-20 - What's New?

Safety measures for users and technicians have been improved.

Some examples:

- Increased requirements with regard to landing door and car door resistance
- Prevention of door impact on passengers entering/leaving the car
- Increased requirements with regard to shaft walls
- Increased requirements with regard to the rescue of entrapped persons
- Increased requirements with regard to refuge areas on the car roof and in the pit
- Increased requirements with regard to the car roof balustrade
- Increased requirements with regard to the prevention of the risk of entrapment on roof and in the pit
- Increased requirements with regard to the positioning of the device for landing door unlocking
- Inspection station in the pit in order to prevent the use of ladders and/or special tools to reach the components under the car (and prevent operations by third parties)
- Specific requirements to bypass landing door and car door contacts during maintenance and rescue operations

The main adaptations applied to IGV products are listed below:

- New requirements for shaft and car lighting
- Amendment to the calculation of the car load v/s car surface ratio
- Greater importance to the exchange of information for building interfaces (acting forces, fireproof elements, ventilation, access to machine spaces and landing doors...)
- New definition of refuge areas and free spaces in the shaft pit and headroom

ADJUSTMENTS TO MEET THE REQUIREMENTS OF EN81-20

Lighting of shaft and machinery room, accesses...

- 50 lux at 1 m above the car roof within its vertical projection along the shaft
 - 50 lux 1 m above the pit floor everywhere a person can stand, work and/or move within the working areas
 - 200 lux in machinery spaces and diverting pulleys at floor level at places where persons can work and 50 lux at floor level where persons move between working areas
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Landing and car doors

- 300 N over 5 cm²:
 - elastic deformation ≤ 15 mm
 - permanent deformation ≤ 1 mm
 - 1000 N over 100 cm²:
 - No significant damage affecting safety integrity and operation
 - Pendulum impact testing:
 - Permanent deformation is allowed. It shall not affect system integrity, there shall be no openings > 0.12 m. It is not necessary that doors still operate
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Car door locking mechanism

- The locking mechanism of the car door is considered as a safety component and shall be assessed according to clause 5.2 of EN 81-50:2014
 - The locking device of the car door is included in the IGV standard supply
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Car walls

- 300 N towards car exterior over 5 cm²:
 - elastic deformation ≤ 15 mm
 - permanent deformation ≤ 1 mm
 - 1000 N over 100 cm²:
 - permanent deformation < 1 mm
 - Glass walls (full or partial):
 - Stratified glass
 - Pendulum test
(not required if the glass components are included in Table 9 and are framed on all sides)
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Shaft walls

- 1000 N over 0.30x0.30 mm towards interior and exterior
 - elastic deformation ≤ 15 mm
 - permanent deformation ≤ 1 mm
 - Stratified glass
 - 1000 N over 0.30x0.30 mm towards interior and exterior
 - No permanent deformation
-

Pit devices

- STOP button, maintenance pushbutton box
 - Access ladder according to standard
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Pit floor resistance

- Under the guide rails take into consideration also the weight of any components fixed to guide rails

Pit

- After fixing guide rails, buffers etc, the pit shall be insulated against water infiltrations
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Safeguard of the environment (hydraulic)

- The space where the control unit and pit are contained shall be water resistant so as that all the fluid in the machinery is retained in case of loss or leaks
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Car roof

- Standing surface for one or more people
 - Plate with number of persons and position
 - Toe board (0.10 m high) around the car roof edge or between outer edge and balustrade, when the balustrade exists.
 - The balustrade height shall be:
 - 0.70 m if the distance between the inner edge of the balustrade and the wall shaft is ≤ 0.50 m
 - 1.10 m if the distance between inner edge of the balustrade and the shaft wall is > 0.50 m
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Headroom spaces

- Pictogram for maintenance operator in standing or crouching position
 - New definition of distances between the lowest parts of the shaft ceiling and components on car roof
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Pit spaces

- Plate with number of persons and position
 - Standing surface for one or more persons
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Machinery spaces

- Height of machinery spaces is at least 2.1m
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Work space on car top

- Openings to exit the shaft when carrying out maintenance operations from the car roof at least 0.50 m x 0.7 m or trap on car roof
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Safety edge (always)

- protection device for door reopening (photocell barrier) for detection of obstacles with 50mm minimum diameter
 - Height: from 25mm to min. 1600 mm
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Key height on panel max. 2.00 m



- Altezza chiave su anta max. 2,00 m
 - Key on lintel: Door height - 2 m
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Electric panel

- Bypass device of landing and car doors: the bypass can be used only during the emergency or inspection operation and is signalled in the car by a sound signal (55 dBA at 1 m below the car) and by a flashing light under the car
 - Prevention of standard operation of the lift with fault contacts of the door circuit
 - Communication system between machine room, pit and headroom
 - System to test independently each brake element from outside the shaft
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FROM THE STANDARD - HEADROOM SPACES

Table 3 - Dimensions of refuge spaces in headroom

Type	Posture	Pictogram	Horizontal dimensions of the refuge space (m x m)	Height of the refuge space (m)
1	Upright		0.40 x 0.50	2.00
2	Crouching		0.50 x 0.70	1.00

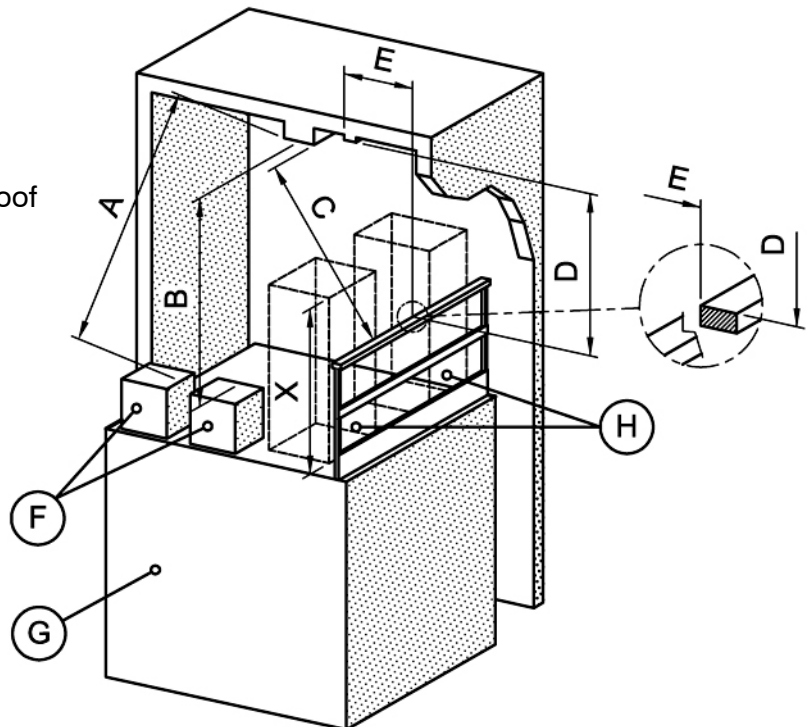
Key for pictograms

- ① Black colour
- ② Yellow colour
- ③ Black colour

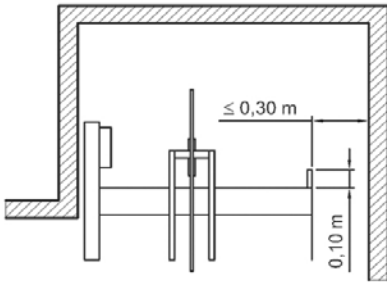
Figure 5 - Minimum distances between components fixed on car roof and the lowest parts of the shaft ceiling

Key

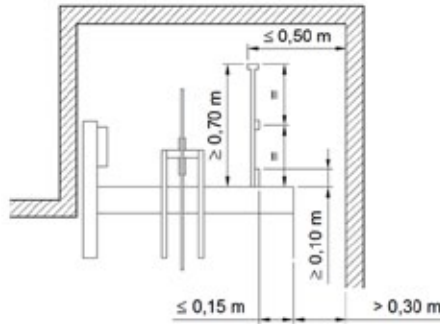
- A Distance ≥ 0.50 m (5.2.5.7.2 a)
- B Distance ≥ 0.50 m (5.2.5.7.2 a)
- C Distance ≥ 0.50 m (5.2.5.7.2 c) 2)
- D Distance ≥ 0.30 m (5.2.5.7.2 c) 1)
- E Distance ≤ 0.40 m (5.2.5.7.2 c) 1)
- F Highest parts installed on the car roof
- G Car
- H Refuge space(s)
- I Height of refuge spaces (Table 3)



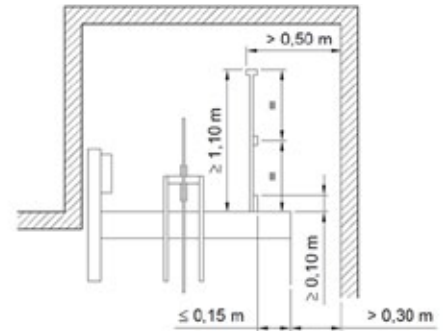
Balustrade on car roof - Height



No balustrade required but a toe-board 100 mm minimum high






Balustrade required, 700 mm minimum height and a toe-board 100 mm minimum height



Balustrade required, 1100 mm minimum height and a toe-board 100 mm minimum height

FROM THE STANDARD - PIT SPACES

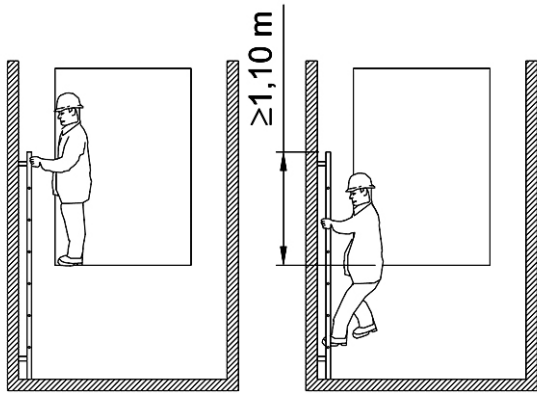
Table 4 - Dimensions of refuge spaces in the pit

Type	Posture	Pictogram	Horizontal dimensions of the refuge space (m x m)	Height of the refuge space (m)
1	Upright		0.40 x 0.50	2.00
2	Crouching		0.50 x 0.70	1.00
3	Laying		0.70 x 1.00	0.50

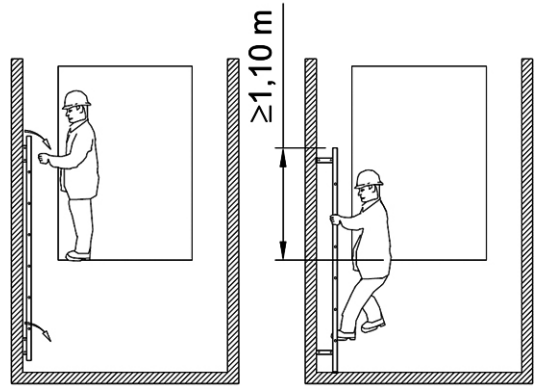
Key for pictograms

- ① Black colour
- ② Yellow colour
- ③ Black colour

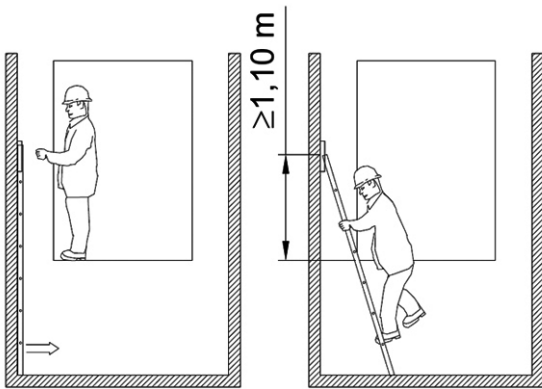
Figure F.1 - Types of pit access ladder



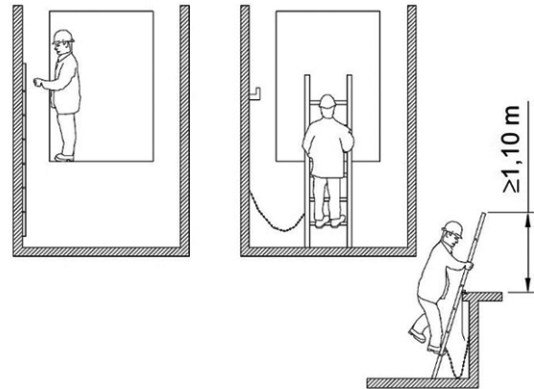
Type 1 - Fixed pit ladder



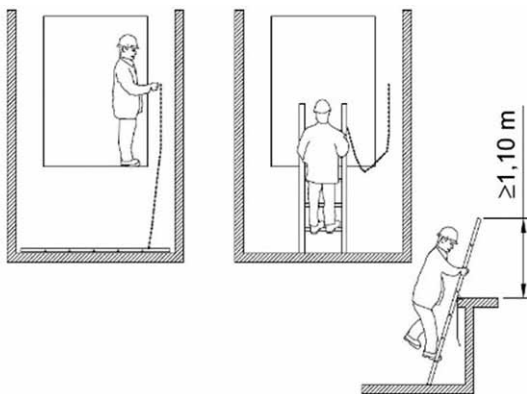
Type 2a - Retractable pit ladder



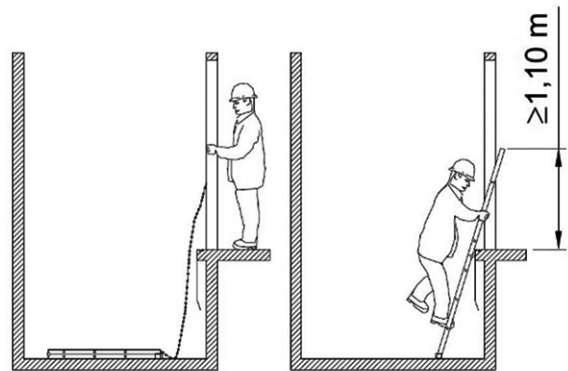
Type 2b - Retractable pit ladder



Type 3a - Movable pit ladder



Type 3b - Movable pit ladder



Type 4 - Foldable pit ladder



Leading company in the production of customised products since 1966

Founded by Giuseppe Volpe in 1966, IGV Group is worldwide renown for the design and production of Domuslift lifting platforms and lifts with reduced pit and headroom. IGV exports to more than 70 countries 65% of its total production, representing the excellence of Made in Italy. For more than 50 years, IGV has been designing and manufacturing thousands of solutions for the vertical mobility, specialising in bespoke systems and exporting worldwide the Made in Italy style and innovative technology.

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IGV Group

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