<table>
<thead>
<tr>
<th>Norms, codes, standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norms</td>
</tr>
</tbody>
</table>
Accessibility of lifts for persons including persons with disability
Visible and audible registration feedback, adjustable between 35 dB (A) and dB (A).

Audible signal when lighting up:
- 1 tone upwards
- 2 tones downwards

Force
2.5 N - 5 N

Angle of view
min. 140°
HEIGHT OF FLOOR DESIGNATIONS

30-60

30-45

max. 1200 (preferably 1100)

900 ±25

min. 400

30-45

Visible and audible registration feedback, adjustable between 35 dB (A) and 65 dB (A)

Force
2.5 N - 5 N

Designations like "B", "G", "M" are replaced by numbers

min. 2 x a

a = min. 10 mm

min. 490 mm²/min. ø 20 mm

min. 490 mm²/min. ø 20 mm

The push buttons should protrude some millimeters beyond the car wall

Relief height
min. 0.8 mm

The minimum surface of the active part of the push button 490 mm²/ø 20 mm

ARRANGEMENT XL BUTTONS

Arrangement XL buttons

SCHAEFER
ELEMENTS IN THE LANDING AND IN THE CABIN

Norm compliant Styles/Components

**Examples:**

*Micro-Push Button MT 42*  
Touch plate with tactile marking

*Round Push Button RT 42*  
Touch plate with tactile marking

*Round Push Button RT 42 wg*  
Touch plate with tactile marking

*EPSILON Button EB 42*  
Touch plate with tactile marking

*EPSILON Button Multi EBM 42*  
Touch plate with tactile marking

*Vandalism Button VB 42*  
Touch plate with tactile marking

*Vandalism Button, Metal VB 42 M*  
Label with tactile marking

*Prism Arrow PP 4848 LED*  

*EPSILON Arrow EA 6644*  

*Luminous arrow LP 8080*  

*Processor-Gong PG 42*  

*Display DMD 30 H2*  

*Acoustic Acknowledgement AQ*
**Elements in the Cabin**

**Norm compliant Styles/Components**

**Push Buttons**

Example: Push Button MT 42 with green marking ring for the Building exit floor

Example: Command Button RT 42 Alarm with yellow Bell symbol

**Pictograms**

Example: RA 42 Yellow illuminated pictogram "alarm has been given"

Example: RA 42 Green illuminated pictogram "alarm has been registered"

**Displays**

Norm compliant displays all Displays, except DMD 27, ULD 15

**Acoustic**

Norm compliant elements of acoustics AQ, PG 42, PG 56, SYN 42, SM 84

**Communication**

Norm compliant elements of communication FPM 32, Easy Alarm
IDENTIFICATION EXIT FLOOR

Marking ring Style 42

- Marking ring
- Building exit floor
- Style 42 square, MT 42

- Marking ring
- Building exit floor
- Style 42, RT 42, RT 42 wg, VB 42, VB 42 M

- Marking ring
- Building exit floor
- Style 42 EPSILON, EB 42, EBM 42
IDENTIFICATION EXIT FLOOR

Marking ring Style 56, Style 50

**XL 56**
Style 56

- Marking ring
  - Building exit floor
  - Style 56, MT 56

- Marking ring
  - Building exit floor
  - Style 56, MT 56

**XL 50**
Styles 50

- Marking ring
  - Building exit floor
  - Style 50, B 50 Q

- Marking ring
  - Building exit floor
  - Style 50, B 50 R

MT 56 MB
MT 56 RLR
B 50 Q
B 50 R
Norm EN 81-71
Vandal resistant lifts
The Norm:

- Every elevator is used in one way or another, either without problem or mishandled.
- Elevators, ones built after EN 81-1 and 81-2 offer a standardized protection.
- The norm EN 81-71 entails special measures and security rules about the withstanding protection against vandalism in elevators. *Built in, in the areas that are susceptible to vandalism.*
- The Norm EN 81-71 includes either extra or a variation version for the security of the elevator user.

By the given categories the following relevant facts are noted:

- The level of usage of the lift
- The surrounding area of the lift
- The level of which someone is seen, in the neighboring surroundings
- Security in the building
- Surveillance camera in the elevator
- Opening times, to the building and its elevators
- The vulnerability to the elevator or its user
- The users purpose of the elevator

### VANDAL RESISTANT LIFTS

<table>
<thead>
<tr>
<th>Vandals Tools</th>
<th>Elevator category (Class) after EN 81-71</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pen</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Rope/Thread/Wire</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Key</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Cane</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Chewing Gum</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Human weight (75 kg)</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Lighter X</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Pocket knife (100 mm blade)</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Medium sized screw driver (length 200 mm)</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Bottle cap</td>
<td>1: X, 2: X</td>
</tr>
<tr>
<td>Side cutter (medium sized without additional functions)</td>
<td>1: X, 2: X</td>
</tr>
</tbody>
</table>
ELEVATOR CATEGORY

CLASS 0

- Condo-apartment buildings, small amount of units, that are personally owned
- Office and management buildings in good areas or with controlled entrances
- Normal hotels
- Shopping centers with glass elevators
### ELEVATOR CATEGORY

**CLASS 1**

- Apartment buildings with many units, rentals that are in good areas
- Office and management buildings with a lot of public traffic and without surveillance of elevators
- Low-budget hotels in critical areas
- Glass elevators in train stations and at bus stations in nice areas
- Non-surveillance elevators in shopping malls in good areas

---

**Office building with a lot of public traffic**

*Shopping centers*

*Train stations*
• Apartment buildings, that are mostly all rentals and that are in social critical areas
• All public buildings in social critical areas, without surveillance
• Stadiums and public revenues where large crowds turn out

Concert halls

Football stadiums

Large apartment complexes
SHOCK TESTING

Method

- The test is done with a machine with a weight of 1 kg and a circumference of 10 mm.
- The press head is followed out three times from the height of 0.2 m in category 1 and from 1 m in category 2. The test model is placed in an improper point built in the holder frame and then dropped.
- After the test is carried out, the model has to be in safe and functional working condition.
FIRE TESTING

Method

- The model is built in, just like in a normal situation that this component is used.
- The gas lighter with a flame of 40 mm long is placed in the worst possible angle to examine the worst possible outcome. The test model in category 1 is held for 60 seconds through a flame, and 120 seconds in category 2.
- After the test, the model has to be in safe and functional working order. The marking must also stay readable.
Laboratory test to prove resistance to spray or shower of water, Second index-3, tests for water proof “IPX3”

This IP-code is used for the protection of the function within the box against hurtful function through the area the water can penetrate. The model and the main test are exactly planned out.

- Test agent spray hose, with an angle from +/- 180° both sides direct sprays. The maximum distance is from 200 mm.

- Water-amount-energy 0, 07 l/mm (+/- 5 %) for every opening in the spray head.

- Test time 10 minutes

- After the test the model must be in safe and functional working condition.
Front plate removable with the help of a special tool.
COMPONENTS

EN 81-71 CLASS 1 AND 2 (IP X3)

- Faceplate mounting invisible for the elevator user

VB 42 M

VB 42

Label mat

Label black

PT 56

PT 28
COMPONENTS

EN 81-71 CLASS 1 AND 2 (IP X3)

- Lense with security glass (ESG)
- For displays and luminous fields

- Flap cover stainless steel for key switch
- ES42 Vandal-proof behind the faceplate

- Desk-shaped fixture with XL push buttons
• Norm EN 81-72
## Elements in the cabin

**Car fixture (IPX3)**

- Norm conform displays
  - DMD 30/35/50, LCD, LED 56 in each case with pane wg
- Norm conform elements of acoustic
  - PG 56 (without hole pattern)
- Norm conform elements of communication
  - car intercom freecom
- Norm conform illuminated fields and displays
  - LF 4824 LED, LF 4848 LED,
  - LF 7224 LED, LF 9924 LED,
  - LF 9924 triple, LF 9948 LED,
  - MA 9999, MA 9999 triple,
  - MFD 99, LP 4824 LED,
  - LP 4848 LED in each case with pane wg
- Norm conform Styles
  - RA 42 wg, VD 42
- Norm conform Styles
  - RT 42 wg, VB 42, VB 42 M, B 50 R

**Indicator fixture (IPX3)**

- Norm conform displays
  - DMD 30/35/50, LCD, LED 56 in each case with pane wg
- Norm conform illuminated fields and displays
  - LP 4824 LED, LP 4848 LED, in each case with pane wg

**Landing fixture (IPX3)**

- Norm conform Styles
  - RT 42 wg, RA 42 wg, VB 42, VB 42 M, VD 42

### Elements on the firefighter access level

**Car and Landing**

- Elements in the cabin
  - **Car fixture (IPX3)**: Norm conform displays, Norm conform elements of acoustic, Norm conform elements of communication, Norm conform illuminated fields and displays, Norm conform Styles.
  - **Indicator fixture (IPX3)**: Norm conform displays, Norm conform illuminated fields and displays.
  - **Landing fixture (IPX3)**: Norm conform Styles.

- Elements on the firefighter access level
  - **FIREFIGHTER LIFTS**
    - FIREFIGHTER LIFTS Car fixture (IPX3)
    - FIREFIGHTER LIFTS Element in the cabin Elements on the firefighter access level

---

**VII**

3.2

**SCHAEFER**
Elements on the firefighter access level

- Firefighter key switch fixture (IPX3)
- Firefighter intercom fixture (IPX3)

Handset in machine room

- Machine room intercom

Norm conform firefighter key switch S2 Mae 56
Norm conform element of communication handset

Elements on the firefighter access level

- Handset in machine room

Norm conform element of communication handset
Firefighter intercom firecom

Norm conform Styles
RA 42 wg, VD 42
RT 42 wg, VB 42, VB 42 M

max. 2000 from lift
FIREFIGHTER COMMUNICATION SYSTEM

Firefighter key switch fixture
(firefighter access level)

machine room intercom
(machine room firefighter lift)

to controller

S2 Ma 56
firefighter key switch

51 Ma
Firefighter key switch

firecom

freecom

i-display
enforcement button communication
signalisation

pictogram yellow
alarm activated

pictogram green
alarm registered

firefighter operation

car fixture
(car firefighter lift)

call button
FIREFIGHTER COMMUNICATION SYSTEM

Function description

Service operation:

1. Duplex operation
Establishment of the connection from the cabin (freecom) to the machine room (handset)
- confirm call; pictogram yellow "alarm activated" illuminates
- call accepted by pushing the button # on (handset); pictogram green "alarm registered" illuminates;
  pictogram yellow goes off
- call ended by pushing the button * on (handset)

Connection established from the machine room (handset) to firefighter access level (firecom)
- dial *16 on (handset)
- voice communication is activated; voice acknowledgement illuminated
- call ended by pushing the button * on (handset)

2. Half duplex operation
Establishment of the connection from machine room (handset) to cabin (freecom)
- dial *01 on (handset)
- voice communication only from machine room to cabin; anti-tapping is activated
- deactivating the anti-tapping by pushing the call button
- call ended by pushing the button * on (handset)

Firefighter operation activated:
- turn the firefighter key switch in position "1"; display "Firefighter operation" illuminates
- duplex voice communication is built up between machine room, cabin and firefighter access level
- communication establishment is signalized;
  car fixture: Pictogram green illuminates
  firefighter intercom fixture: voice acknowledgement illuminates
  machine room intercom: connection appears on the display of (handset)

The following functions are possible with the machine room intercom (handset):
- by pushing the button * the firefighter communication is interrupted
- firefighter operation is maintained
- new connection must be obtained within 5 sec.
- by dialing *F1 communication can be established in the cabin
- car: pictogram green illuminates
- firefighter intercom fixture: voice acknowledgement goes off, info lamp blinks
- by dialing *F16 a communication connection to firefighter access level can be established
- car fixture: pictogram green goes off
- firefighter intercom fixture: voice acknowledgement illuminates, info lamp blinks

The following functions are possible with the car intercom (freecom):
- through operation of the call button a call can be made, when there is no communication established
  to the cabin, and the anti-tapping with an established incoming communication is deactivated

The following functions are possible with the firefighter intercom (firecom):
- through operation of the enforcement button a communication establishment to the cabin and to
  the machine room is enforced and the microphone of the car intercom is deactivated

End firefighter operation:
- Firefighter key switch in position "0"
# Firefighter Communication System

## Characteristics

<table>
<thead>
<tr>
<th>General</th>
<th>Supply</th>
<th>24 V DC (± 15 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of users</td>
<td>1 hand held device, 2 intercoms</td>
<td></td>
</tr>
<tr>
<td>Net expansion</td>
<td>max. 250 m with 0.5 mm² &lt;br&gt; max. 500 m with 1 mm²</td>
<td></td>
</tr>
<tr>
<td>Operating voltage of the components</td>
<td>min. 12 V</td>
<td></td>
</tr>
</tbody>
</table>

### Hand Phone (Handset)

<table>
<thead>
<tr>
<th>Power Consumption</th>
<th>Idle Mode</th>
<th>approx. 10 mA &lt;br&gt; Operation State</th>
<th>approx. 40 mA &lt;br&gt; Communication Connection State</th>
<th>approx. 60 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>0 °C ... +40 °C (2h)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Intercoms (Firecom/Firecom)

<table>
<thead>
<tr>
<th>Power Consumption (per device)</th>
<th>Idle Mode</th>
<th>approx. 10 mA &lt;br&gt; Operation State</th>
<th>approx. 50 mA &lt;br&gt; Communication Connection State</th>
<th>approx. 90 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>0 °C ... +65 °C (2 h)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Complete Firefighter Communication System

<table>
<thead>
<tr>
<th>Power Consumption in Firefighter Operation</th>
<th>Idle Mode</th>
<th>approx. 40 mA &lt;br&gt; Operation State</th>
<th>approx. 150 mA &lt;br&gt; Communication Connection State</th>
<th>approx. 250 mA</th>
</tr>
</thead>
</table>

These specifications are applicable without lamps and without auxiliary loads and with a nominal operating voltage of 24 V DC.
- Norm EN 81-73
Lifts under fire emergency conditions
Fixtures according to EN 81-73

This norm is for new lifts for either passenger or goods lifts. It can however also be applied for increasing the level of security with already existing passenger or goods lifts.

⚠️ Attention

This Norm does not apply in the following cases:

- Lifts, that stay in operation during a fire, e.g. firefighter lift according to EN 81-72:2003
- Usage of the lift in the case of evacuation of the building
- Fire in lift shaft

Prohibitory sign on every landing according to ISO 3864-1:2002 min. 50 mm high.

Optional lettering:
Do not use lift in case of fire
Destination landing = Fire emergency landing

In case of fire the lift is brought to this landing. Through national regulations, consultants, architects can stipulate for more emergency landings.

On every emergency landing there must be a display NO ENTRY which operates through normal power supply.

Minimum size of the indicator:
- on the command devices in the landing 25 mm
- with a separate arrangement 50 mm

Norm conform elements:
- MA 42 P
- RA 42
- ED 42
- LF 4848 (not in landing fixture)
- D 50
LIFTS UNDER FIRE EMERGENCY CONDITIONS

Lifts must be taken out of service in case of fire.
With that there are the following possibilities:

- automatic fire detectors and fire alarm systems
- manual

Manual return device
e.g. emergency call fixture BFT 1
- carried out bistable
- marked switching position
- marked for its usage

The manual return device (e.g. BFT 1) must be displayed in the building management center or at the main floor stop.
If the manual return device is openly available, than it must be protected against tampering, e.g. behind a glass pane (e.g. BFT 1), or it must be placed in a protected area.

Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>72 mm</td>
</tr>
<tr>
<td>Height</td>
<td>184 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>66 mm</td>
</tr>
</tbody>
</table>

Cut-out

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>64 mm</td>
</tr>
<tr>
<td>Height</td>
<td>192 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>212 mm</td>
</tr>
</tbody>
</table>

Wiring diagram

Toggle switch

- Connection: 1.5 mm² rigid or flexible
- Switching: 1 alternating contact
- Element: I-switch = 6 A (ohmic load input)
- U-switch = 250 V AC