GENERAL INFORMATION FOR FREIGHT ELEVATORS
CLASS "A", "B" & "C" LOADING
(REFER TO A17.1)

CLASS "A"
GENERAL FREIGHT LOADING
WHERE NO ITEM (INCLUDING LOADED HAND TRUCK) WEIGHS MORE THAN 1/4 RATED CAPACITY
RATING NOT LESS THAN 240 kg/m²

CLASS "B"
MOTOR VEHICLE LOADING
(AUTOMOBILES, TRUCKS, BUSES)
RATING NOT LESS THAN 145 kg/m²

CLASS "C1"
INDUSTRIAL TRUCK LOADING
WHERE FORKLIFT IS CARRIED
RATING NOT LESS THAN 240 kg/m²

CLASS "C2"
INDUSTRIAL TRUCK LOADING
WHERE THE FORKLIFT IS NOT USUALLY CARRIED, BUT IS USED FOR LOADING AND UNLOADING
RATING NOT LESS THAN 240 kg/m²

This loading applies where concentrated load including forklift is more than 1/4 rated capacity but carried load does not exceed rated capacity. This loading also applies where increment loading is used, but maximum load on car platform during loading or unloading does not exceed 150% of rated load.
GENERAL INFORMATION FOR FREIGHT ELEVATORS
CLASS "A", "B" & "C" LOADING
(REFER TO A17.1)

CLASS "C3"

NOTE
THE PICTORIAL FREIGHT LOADING SHOWN FOR THE DIFFERENT CLASSES OF LOADING IS INTENDED FOR BOTH ELECTRIC AND HYDRAULIC ELEVATORS. SOME DIFFERENCES OCCUR IN RAIL FORCES.

OTHER CONCENTRATED LOADING

LOAD INCREMENTS ARE MORE THAN 1/4 RATED CAPACITY. CARRIED LOAD MUST NOT EXCEED RATED CAPACITY

RATING NOT LESS THAN 240 kg/m²

NOTES

1. VERTICAL RAIL COLUMN SUPPORTS AND CROSS TIE MEMBERS ARE REQUIRED AND PROVIDED BY OTHER THAN THE ELEVATOR SUPPLIER WHEN RATED LOAD EXCEEDS 3500 kg. THE SIZE OF THE RAIL COLUMNS ARE DETERMINED BY OTHERS FROM RAIL FORCES FURNISHED BY THE ELEVATOR SUPPLIER.

2. ALTERNATE METHOD OF RAIL COLUMN SUPPORT, AS SHOWN, BY OTHER THAN THE ELEVATOR SUPPLIER WHEN RATED LOAD IS 3500 kg OR LESS, THE SIZE OF THE COLUMNS ARE DETERMINED BY OTHERS FROM RAIL FORCES FURNISHED BY THE ELEVATOR SUPPLIER.

3. MAXIMUM DEFLECTION OF RAIL COLUMN SUPPORTS NOT TO EXCEED 3 mm. SEE A17.1.

GUIDE RAIL FORCES (FOR A SINGLE RAIL) | ELECTRIC ELEVATOR | HYDRAULIC ELEVATOR
--- | --- | ---
R1 | kg | kg
R2 | FOR THESE FORCES, CONSULT ELEVATOR SUPPLIER
R3

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FREIGHT ELEVATORS CLASS A AND CLASS C

VERTICAL SLIDE BIPARTING
REGULAR-TYPE DOORS;
SLIDEUP CAR GATES

CONSULT ELEVATOR SUPPLIER FOR OVERHEAD REQUIREMENT CONFIRMATION WHICH COULD VARY WITH CAR GATE MANUFACTURER

MINIMUM PIT IS THE LARGER OF THESE TWO

SEE ELEVATOR EQUIPMENT PIT REQUIREMENTS UNDER APPLICABLE FREIGHT ELEVATOR DIMENSIONS

All dimensions shown are in millimeters.

MINIMUM RETURN

10x200 PLATE

L75x75x10 (TYPICAL) SIZE TO WITHSTAND IMPACT LOADS 15 mm MAXIMUM PROJECTION

EXTEND CHANNEL JAMB FROM SILL TO BEAM ABOVE OR EXTEND CHANNEL JAMB FROM SILL TO LINTEL WITH ANGLE STRUTS ON SHAFT SIDE FROM LINTEL TO BEAM ABOVE UNLESS SOLID CONCRETE OR BRICK WALL

VERTICAL SECTION

MINIMUM PIT IS THE LARGER OF THESE TWO

SEE ELEVATOR EQUIPMENT PIT REQUIREMENTS UNDER APPLICABLE FREIGHT ELEVATOR DIMENSIONS

MINIMUM RETURN

10x200 PLATE

L75x75x10 (TYPICAL) SIZE TO WITHSTAND IMPACT LOADS 15 mm MAXIMUM PROJECTION

JAMB EXTEND CHANNEL JAMB FROM SILL TO BEAM ABOVE OR EXTEND CHANNEL JAMB FROM SILL TO LINTEL WITH ANGLE STRUTS ON SHAFT SIDE FROM LINTEL TO BEAM ABOVE UNLESS SOLID CONCRETE OR BRICK WALL

VERTICAL SECTION

MINIMUM RETURN

10x200 PLATE

L75x75x10 (TYPICAL) SIZE TO WITHSTAND IMPACT LOADS 15 mm MAXIMUM PROJECTION

JAMB
FREIGHT ELEVATORS CLASS A AND CLASS C
VERTICAL SLIDE BIPARTING
PASS-TYPE DOORS;
SLIDEUP CAR GATES

CONSULT ELEVATOR SUPPLIER FOR OVERHEAD REQUIREMENT CONFIRMATION WHICH COULD VARY WITH CAR GATE MANUFACTURER

MINIMUM PIT IS THE LARGER OF THESE TWO

SEE ELEVATOR EQUIPMENT PIT REQUIREMENTS UNDER APPLICABLE FREIGHT ELEVATOR DIMENSIONS

HOISTWAY SECTION

OBSTRUCTION ABOVE DOOR AND ABOVE CARGATE

DOOR OPENING + 100

400 (MANUAL)
610 (POWER)
MINIMUM SPANDREL HEIGHT

DOOR OPENING + 150

MINIMUM RETURN

330 FOR POWER DOORS
255 FOR MANUAL DOORS

MINIMUM RETURN

180
15
50 MINIMUM

CAR PLATFORM LINE

PLAN AT JAMB

VERTICAL SECTION

EXTEND CHANNEL JAMBS FROM SILL TO BEAM ABOVE OR EXTEND CHANNEL JAMBS FROM SILL TO LINTEL WITH ANGLE STRUTS ON SHAFT SIDE FROM LINTEL TO BEAM ABOVE UNLESS SOLID CONCRETE OR BRICK WALL

SEE DETAIL A

DETAIL A

All dimensions shown are in millimeters.
ELECTRIC FREIGHT ELEVATORS, CLASS A AND CLASS C
FRONT ENTRANCE OR FRONT & REAR ENTRANCES
VERTICAL SLIDE BIPARTING
RATED SPEEDS 0.25–2.50 m/s

NOTE 6

MACHINE ROOM PLAN
(NOTE 12)

NOTE 2

NOTE 1

NOTE 15

15 FRAME PROJECTION
(TYPICAL FRONT & REAR)

(NOTE 8)

SEE "PLAN AT
JAMB" DETAILS ON
PAGES 58 & 59

COUNTERWEIGHT
(NOTE 12)

PLAN VIEW

All dimensions shown are in millimeters.

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ELECTRIC FREIGHT ELEVATORS, CLASS A AND CLASS C
FRONT ENTRANCE OR FRONT & REAR ENTRANCES
VERTICAL SLIDE BIPARTING
RATED SPEEDS 0.25-2.50 m/s

<table>
<thead>
<tr>
<th>SPEED m/s</th>
<th>d3</th>
<th>h1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25-1.00</td>
<td>1800</td>
<td>5000 5500</td>
</tr>
<tr>
<td>1.60</td>
<td>1800</td>
<td>5100 5600</td>
</tr>
<tr>
<td>1.75</td>
<td>1800</td>
<td>5200 5700</td>
</tr>
<tr>
<td>2.50</td>
<td>2400</td>
<td>5650 6150</td>
</tr>
</tbody>
</table>

CAR & HOISTWAY, CLASS A & C LOADING (mm)

(a) The dimensions shown cover a wide range of elevator manufacturers’ requirements and should be used only for general guidance in preliminary planning. For specific dimensions, consult elevator supplier.
MINIMUM MACHINE ROOM DIMENSIONS
CLASS A CLASS C LOADING (mm)

<table>
<thead>
<tr>
<th>RATED LOAD (kg)</th>
<th>d4</th>
<th>b4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>3500</td>
<td>5300</td>
</tr>
<tr>
<td>2500</td>
<td>3800</td>
<td>5600</td>
</tr>
<tr>
<td>3500</td>
<td>4100</td>
<td>5800</td>
</tr>
<tr>
<td>5000</td>
<td>4400</td>
<td>5800</td>
</tr>
</tbody>
</table>

Notes:

1. Supports for elevator machine beams not by elevator supplier. Refer to Machine Support Details.
2. Hoisting beams not by elevator supplier.
3. Minimum pit depth = 1/2 door frame opening height plus 150 mm or dimension "d3", whichever is greater.
4. Refer to Guide Rail Bracket Fastening Details and General Information for Freight Elevators.
5. Pit ladder not by elevator supplier. Hoistway width allows for the installation of a pit ladder with a clearance of 115 mm from centerline of rungs. When additional clearance is required, alternative provisions need to be considered.
6. Location of the main power disconnecting means, the car light disconnecting means and lighting switch shall be in accordance with requirements of NFPA 70.
7. 1100 mm X 2100 mm recommended machine room door size.
8. Car inside dimensions shown are for a single-section car gate.
9. Structural steel frames and sills not by elevator supplier.
10. For regular biparting hoistway doors, the minimum floor height = 1 1/2 door frame opening height plus 150 mm. For floor heights not meeting above dimensions, use pass-type doors.
11. Dimension "b3" may be decreased 50 mm when manually operated hoistway doors are used.

Notes:

12. Machine room shown to accommodate counterweight in position shown. If counterweight moves to opposite side of car, machine room requires opposite hand from plan shown.
13. To accommodate vertical rail column supports that may project inside the hoistway, b3 = b1 + 915 mm. Consult elevator supplier.
14. When seismic requirements apply, additional hoistway space may be required. See General Notes section.
15. Standard railing where required by ASME A17.1/CSA B44.
16. “h1” dimension is based on (h4) of 2400 mm car and door height w/1825 mm car gate.
HYDRAULIC FREIGHT ELEVATORS, CLASS A AND CLASS C
FRONT ENTRANCE OR FRONT & REAR ENTRANCES
VERTICAL SLIDE BIPARTING
RATED SPEEDS 0.40–0.63 m/s

All dimensions shown are in millimeters.

NOTE 1
SILL WALL

NOTE 6
CAR GATE

NOTE 5

NOTE 7

NOTE 12
GATE POSTS

NOTE 1
PIT

NOTE 1
TOP LANDING

NOTE 2
TRAVEL

NOTE 3
BOTTOM LANDING

NOTE 2

ELEVATION

PLAN VIEW

15 FRAME PROJECTION

SEE "PLAN AT JAMB" DETAILS ON PAGES 58 & 59

SEE "PLAN AT JAMB" DETAILS ON PAGES 58 & 59

PLAN VIEW

15 FRAME PROJECTION
(TYPICAL FRONT & REAR)
<table>
<thead>
<tr>
<th>SPEED</th>
<th>d3</th>
<th>h1</th>
</tr>
</thead>
<tbody>
<tr>
<td>m/s</td>
<td>h4=2500</td>
<td>h4=3000</td>
</tr>
<tr>
<td>0.40</td>
<td>1400</td>
<td>1700</td>
</tr>
<tr>
<td>0.63</td>
<td>1400</td>
<td>1700</td>
</tr>
</tbody>
</table>

CAR & HOISTWAY, CLASS A & C LOADING (mm)

<table>
<thead>
<tr>
<th>RATED LOAD (kg)</th>
<th>b1</th>
<th>d1</th>
<th>b3</th>
<th>h4</th>
<th>REGULAR</th>
<th>PASS-TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>d2 (F)</td>
<td>(a)</td>
<td>F/R</td>
<td>d2 (F)</td>
<td>(a)</td>
<td>d2 (F/R)</td>
</tr>
<tr>
<td>2000</td>
<td>1800</td>
<td>3100</td>
<td>2500</td>
<td>2500 or 3000</td>
<td>125</td>
<td>3500</td>
</tr>
<tr>
<td>2500</td>
<td>2100</td>
<td>3300</td>
<td>2800</td>
<td>2500 or 3000</td>
<td>125</td>
<td>3800</td>
</tr>
<tr>
<td>3500</td>
<td>2400</td>
<td>3600</td>
<td>3100</td>
<td>2500 or 3000</td>
<td>125</td>
<td>4000</td>
</tr>
<tr>
<td>5000</td>
<td>3000</td>
<td>3600</td>
<td>3700</td>
<td>2500 or 3000</td>
<td>125</td>
<td>4000</td>
</tr>
</tbody>
</table>

a) The dimensions shown cover a wide range of elevator manufacturers’ requirements and should be used only for general guidance in preliminary planning. For specific dimensions, consult elevator supplier.
Notes:

1. Supports for cylinder in pit not by elevator supplier. Provision for hydraulic cylinder requires a 900 mm X 900 mm square opening in the pit floor and a well hole with dimension of the travel plus 2150 mm.
2. Consult elevator supplier for limitations for maximum travel.
3. Minimum pit depth = 1/2 door frame opening height plus 150 mm or dimension "d3", whichever is greater.
4. Refer to Guide Rail Bracket Fastening Details and General Information for Freight Elevators.
5. Pit ladder not by elevator supplier. Hoistway width allows for the installation of a pit ladder with a clearance of 115 mm from centerline of rungs. When additional clearance is required, alternative provisions need to be considered.
6. Car inside dimensions shown are for a single-section car gate.
7. Structural steel frames and sills not by elevator supplier.
8. For regular biparting hoistway doors, the minimum floor height = 1 1/2 door frame opening height plus 150 mm. For floor heights not meeting above dimensions, use pass-type doors.
9. Dimension "b3" may be decreased 50 mm when manually operated hoistway doors are used.
10. To accommodate vertical rail column supports that may project inside the hoistway, b3 = b1 + 915 mm. Consult elevator supplier.
11. When seismic requirements apply, additional hoistway space may be required. See General Notes section.
12. Standard railing where required by ASME A17.1/CSB B44.
13. "h1" dimension is based on (h4) of 2400 mm car and door height w/ 1825 mm car gate.

MACHINE ROOM REQUIREMENTS

- Minimum machine room size for a single elevator is 2100 mm X 3300 mm X 2400 mm high.
- Recommended machine room door size is 1100 mm X 2100 mm.
- It is recommended that the machine be located adjacent to the hoistway and at or near the bottom terminal landing. Consult elevator supplier for exact size and location.
- Location of the main power disconnecting means, the car light disconnecting means and lighting switch shall be in accordance with requirements of NFPA 70.