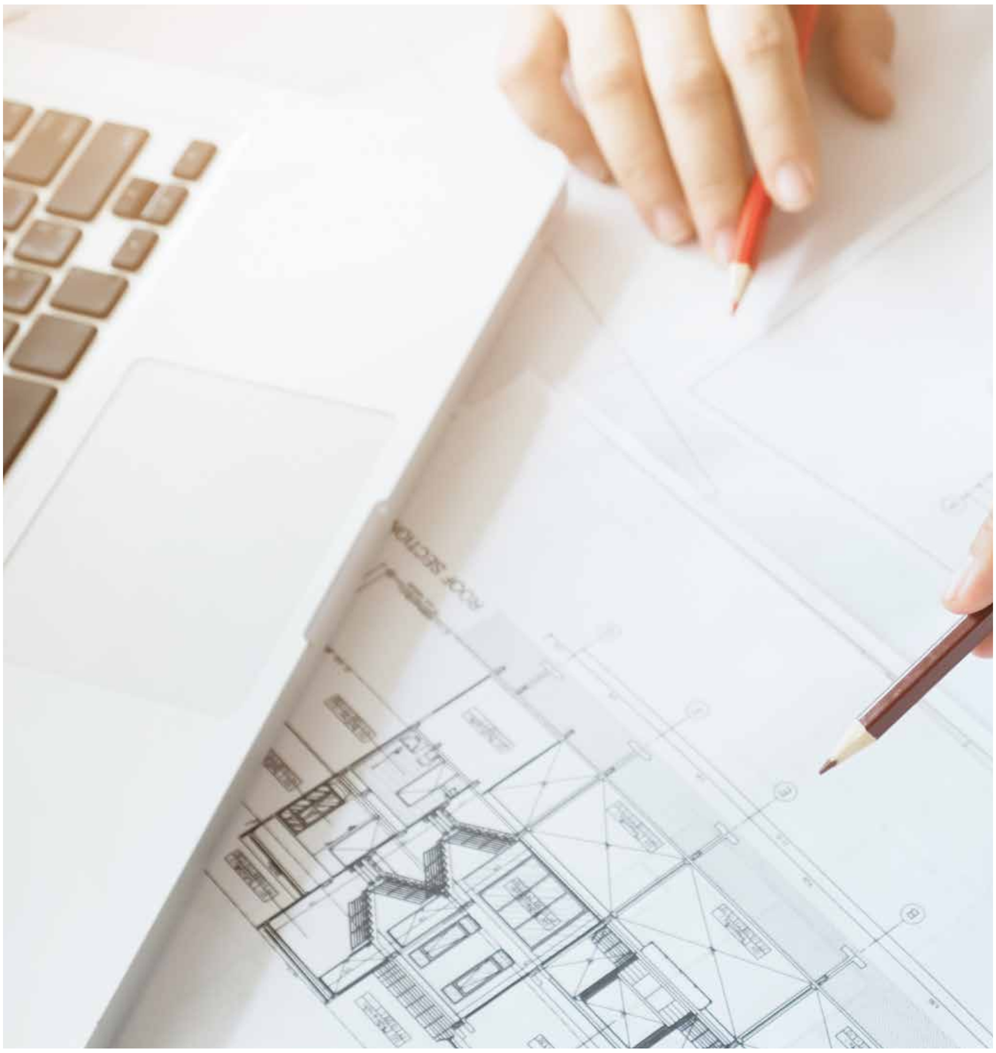


Building Planning North America.
For a perfect people stream.

Schindler

From the outline to the skyline.
Your vision comes true.

In the high-rise elevator business, passenger comfort and safety always come first. The design of a building significantly influences the elevator system and its performance. Correct planning is essential to ensure the building's functionality, efficiency and longevity. With Schindler, through early engagement with our customers, this critical process is made easier all the way from the physical plot on which the building sits in the urban environment till the inside of the elevator hoistways.

Some of the key considerations during the building planning stage and topics that we aim to cover here are:

Planning considerations
Single- and double-deck elevators

Planning parameters
Single- and double-deck elevators

Seismic / Earthquake

Building Sway

Chimney Effect

Piston Effect

When we view the world's most impressive skylines, high-rise buildings appear to stand still, however this is rarely the case. Buildings often sway and move due to strong winds, temperature changes and even seismic activity. Schindler's advanced safety features aim to minimize the disturbance on the building and its occupants while ensuring safe transportation.

Intelligent building planning reduces and even eliminates the piston and chimney effects which can occur in inadequately designed hoistways and dramatically affect the elevator ride quality and passenger comfort.

Schindler's pioneering traffic management simulation software allows the customer during the planning phase to understand our approach and to select the most efficient transportation solution, which guarantees a continuous stream of people and goods throughout the whole building.

Schindler 7000 planning considerations.
Single-deck elevators.
A17.1-2013 or later.

Overall

- Hoistway dimensions are minimum clear inside dimensions. Horizontal tolerance for plumb hoistway is:
  - travel height <= 590' (180 m): +/- 1"
  - travel height > 590' (180 m) and <= 820' (250 m): +/- 1¾"
  - travel height > 820' (250 m) m and <= 1640' (500 m): +/- 2"

Dimensions are based on:

- Roller guides
- 2:1 roping for speeds up to 800 fpm
- Single-speed center opening doors
- 1" cab wall decoration thickness

Please contact your local Schindler Representative:

- If you need smaller dimensions
- With counterweight safety gear
- Different door type
- Areas in seismic zone 3
- Any additional questions or information

Codes and regulations

All dimensions are based on ASME A17.1-2013 code or later and for information only. These dimensions cannot be used for construction purposes without Schindler confirmation. Dimensions may change for earlier code years.

Schindler 7000 planning parameters North America.

Front opening, counterweight behind.

Single-deck passenger cab: non seismic.

Load	Persons	Speed	Travel height	Cab dimensions	Door	Shaft	Machine room	Cab height	Overhead clearance	Pit depth
				BK x TK	BT x HT	BS x TS	BO x TO x HO	HK	HSK	HSG
lbs (kg)	Persons	fpm (mps)	ft (m)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)
2'500 (1'135)	15	500 (2.54)	260 (80)	6'-9 7/8'' x 4'-4'' (2'080 x 1'320)	3'-6'' x 7'-0'' (1'067 x 2'134)	8'-8 3/4'' x 6'-10 1/8'' (2'660 x 2'085)	8'-8 3/4'' x 13'- 3/4'' x 8'-6 3/8'' (2'660 x 4'285 x 2'600)	9' (2'745)	16'-6 3/8" (5'040)	6'-8 3/4" (2'050)
		700 (3.56)	400 (122)					9' (2'745)	17'-8 5/8" (5'400)	7'-7" (2'310)
		800 (4.06)	500 (152)					9' (2'745)	19'-3 1/2" (5'880)	10'-2 1/2" (3'110)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	8'-10 1/4'' x 6'-10 1/8'' (2'698 x 2'085)	8'-10 1/4'' x 13'- 3/4'' x 10'-6'' (2'698 x 4'285 x 3'200)	9' (2'745)	20'-1 3/4" (6'140)	10'-5 1/4" (3'180)
		1'200 (6.10)	800 (244)				8'-10 1/4'' x 13'- 3/4'' x 12'-1 5/8'' (2'698 x 4'285 x 3'700)	9' (2'745)	21'-5 1/2" (6'540)	11'-7" (3'530)
		1'600 (8.13)	1'000 (305)				8'-10 1/4'' x 13'- 3/4'' x 13'-9 3/8'' (2'698 x 4'285 x 4'200)	9' (2'745)	24'-1" (7'340)	16'-6 7/8" (5'050)
3'000 (1'360)	18	500 (2.54)	260 (80)	6'-9 7/8'' x 4'-9 7/8'' (2'080 x 1'470)	3'-6'' x 7'-0'' (1'067 x 2'134)	8'-8 3/4'' x 7'-4'' (2'660 x 2'235)	8'-8 3/4'' x 14'-6 5/8'' x 8'-6 3/8'' (2'660 x 4'435 x 2'600)	9' (2'745)	16'-6 3/8" (5'040)	6'-7 7/8" (2'030)
		700 (3.56)	400 (122)					9' (2'745)	17'-8 5/8" (5'400)	7'-6 1/8" (2'290)
		800 (4.06)	500 (152)			8'-10 1/4'' x 7'-4'' (2'698 x 2'235)	8'-10 1/4'' x 14'-6 5/8'' x 8'-6 3/8'' (2'698 x 4'435 x 2'600)	9' (2'745)	19'-4 5/8" (5'910)	10'-2 1/2" (3'110)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)		8'-10 1/4'' x 14'-6 5/8'' x 10'-6'' (2'698 x 4'435 x 3'200)	9' (2'745)	20'-1 3/4" (6'140)	10'-5 1/4" (3'180)
		1'200 (6.10)	800 (244)				8'-10 1/4'' x 14'-6 5/8'' x 12'-1 5/8'' (2'698 x 4'435 x 3'700)	9' (2'745)	21'-5 1/2" (6'540)	11'-7" (3'530)
		1'600 (8.13)	1'000 (305)				8'-10 1/4'' x 14'-6 5/8'' x 13'-9 3/8'' (2'698 x 4'435 x 4'200)	9' (2'745)	24'-1" (7'340)	16'-6" (5'030)
3'500 (1'588)	21	500 (2.54)	260 (80)	6'-9 7/8'' x 5'-6 1/8'' (2'080 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	8'-8 3/4'' x 8'-2 1/4'' (2'660 x 2'495)	8'-8 3/4'' x 15'-4 7/8'' x 8'-6 3/8'' (2'660 x 4'695 x 2'600)	9' (2'745)	16'-1/8" (4'880)	6'-7 7/8" (2'030)
		700 (3.56)	400 (122)					9' (2'745)	17'-3 1/2" (5'270)	7'-6 1/8" (2'290)
		800 (4.06)	500 (152)			8'-10 1/4'' x 8'- 1/4'' (2'698 x 2'445)	8'-10 1/4'' x 15'-2 7/8'' x 8'-6 3/8'' (2'698 x 4'645 x 2'600)	9' (2'745)	18'-10 3/8" (5'750)	10'- 7/8" (3'070)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)		8'-10 1/4'' x 15'-2 7/8'' x 12'-1 5/8'' (2'698 x 4'645 x 3'700)	9' (2'745)	19'-11" (6'070)	10'-3 5/8" (3'140)
		1'200 (6.10)	800 (244)					9' (2'745)	21'-5 1/2" (6'540)	11'-5 3/8" (3'490)
		1'600 (8.13)	1'000 (305)				8'-10 1/4'' x 15'-2 7/8'' x 13'-9 3/8'' (2'698 x 4'645 x 4'200)	9' (2'745)	24'-1" (7'340)	16'-6" (5'030)
4'000 (1'815)	25	500 (2.54)	260 (80)	7'-10 1/8'' x 5'-6 1/8'' (2'390 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	9'-10 3/8'' x 8'-2 1/4'' (3'008 x 2'495)	9'-10 3/8'' x 15'-4 7/8'' x 10'-6'' (3'008 x 4'695 x 3'200)	9' (2'745)	16'-1 3/8" (4'910)	6'-7 7/8" (2'030)
		700 (3.56)	400 (122)					9' (2'745)	17'-4 1/4" (5'290)	7'-6 1/8" (2'290)
		800 (4.06)	500 (152)				9'-10 3/8'' x 15'-4 7/8'' x 12'-1 5/8'' (3'008 x 4'695 x 3'700)	9' (2'745)	18'-11 5/8" (5'780)	10'- 7/8" (3'070)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	9'-10 3/8'' x 8'- 1/4'' (3'008 x 2'445)	9'-10 3/8'' x 15'-2 7/8'' x 13'-9 3/8'' (3'008 x 4'645 x 4'200)	9' (2'745)	19'-11" (6'070)	10'-3 5/8" (3'140)
		1'200 (6.10)	800 (244)					9' (2'745)	21'-5 1/2" (6'540)	11'-5 3/8" (3'490)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-1" (7'340)	16'-6 7/8" (5'050)

Single-deck passenger cab: seismic.

Load	Persons	Speed	Travel height	Cab dimensions	Door	Shaft	Machine room	Cab height	Overhead clearance	Pit depth
				BK x TK	BT x HT	BS x TS	BO x TO x HO	HK	HSK	HSG
lbs (kg)	Persons	fpm (mps)	ft (m)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)
2'500 (1'135)	15	500 (2.54)	260 (80)	6'-9 7/8'' x 4'-4'' (2'080 x 1'320)	3'-6'' x 7'-0'' (1'067 x 2'134)	8'-8 3/4'' x 6'-10 3/4'' (2'660 x 2'103)	8'-8 3/4'' x 14'-1 3/8'' x 8'-6 3/8'' (2'660 x 4'303 x 2'600)	9' (2'745)	16'-6 3/8" (5'040)	6'-8 3/4" (2'050)
		700 (3.56)	400 (122)					9' (2'745)	17'-8 5/8" (5'400)	7'-7" (2'310)
		800 (4.06)	500 (152)					9' (2'745)	19'-3 1/2" (5'880)	10'-2 1/2" (3'110)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	8'-10 1/4'' x 6'-10 3/4'' (2'698 x 2'103)	8'-10 1/4'' x 14'-1 3/8'' x 10'-6'' (2'698 x 4'303 x 3'200)	9' (2'745)	20'-1 3/4" (6'140)	10'-5 1/4" (3'180)
		1'200 (6.10)	800 (244)				8'-10 1/4'' x 14'-1 3/8'' x 12'-1 5/8'' (2'698 x 4'303 x 3'700)	9' (2'745)	21'-5 1/2" (6'540)	11'-7" (3'530)
		1'600 (8.13)	1'000 (305)				8'-10 1/4'' x 14'-1 3/8'' x 13'-9 3/8'' (2'698 x 4'303 x 4'200)	9' (2'745)	24'-1" (7'340)	16'-6 7/8" (5'050)
3'000 (1'360)	18	500 (2.54)	260 (80)	6'-9 7/8'' x 4'-9 7/8'' (2'080 x 1'470)	3'-6'' x 7'-0'' (1'067 x 2'134)	8'-8 3/4'' x 7'-4 3/4'' (2'660 x 2'253)	8'-8 3/4'' x 14'-7 1/4'' x 8'-6 3/8'' (2'660 x 4'453 x 2'600)	9' (2'745)	16'-6 3/8" (5'040)	6'-7 7/8" (2'030)
		700 (3.56)	400 (122)					9' (2'745)	17'-8 5/8" (5'400)	7'-6 1/8" (2'290)
		800 (4.06)	500 (152)			8'-10 1/4'' x 7'-4 3/4'' (2'698 x 2'253)	8'-10 1/4'' x 14'-7 1/4'' x 8'-6 3/8'' (2'698 x 4'453 x 2'600)	9' (2'745)	19'-4 5/8" (5'910)	10'-2 1/2" (3'110)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)		8'-10 1/4'' x 14'-7 1/4'' x 10'-6'' (2'698 x 4'453 x 3'200)	9' (2'745)	20'-1 3/4" (6'140)	10'-5 1/4" (3'180)
		1'200 (6.10)	800 (244)				8'-10 1/4'' x 14'-7 1/4'' x 12'-1 5/8'' (2'698 x 4'453 x 3'700)	9' (2'745)	21'-5 1/2" (6'540)	11'-7" (3'530)
		1'600 (8.13)	1'000 (305)				8'-10 1/4'' x 14'-7 1/4'' x 13'-9 3/8'' (2'698 x 4'453 x 4'200)	9' (2'745)	24'-1" (7'340)	16'-6" (5'030)
3'500 (1'588)	21	500 (2.54)	260 (80)	6'-9 7/8'' x 5'-6 1/8'' (2'080 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	8'-8 3/4'' x 8'-2 7/8'' (2'660 x 2'513)	8'-8 3/4'' x 15'-5 1/2'' x 8'-6 3/8'' (2'660 x 4'713 x 2'600)	9' (2'745)	16'-1/8" (4'880)	6'-7 7/8" (2'030)
		700 (3.56)	400 (122)					9' (2'745)	17'-3 1/2" (5'270)	7'-6 1/8" (2'290)
		800 (4.06)	500 (152)			8'-10 1/4'' x 8'- 1'' (2'698 x 2'463)	8'-10 1/4'' x 15'-3 5/8'' x 8'-6 3/8'' (2'698 x 4'663 x 2'600)	9' (2'745)	18'-10 3/8" (5'750)	10'- 7/8" (3'070)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)		8'-10 1/4'' x 15'-3 5/8'' x 12'-1 5/8'' (2'698 x 4'663 x 3'700)	9' (2'745)	19'-11" (6'070)	10'-3 5/8" (3'140)
		1'200 (6.10)	800 (244)					9' (2'745)	21'-5 1/2" (6'540)	11'-5 3/8" (3'490)
		1'600 (8.13)	1'000 (305)				8'-10 1/4'' x 15'-3 5/8'' x 13'-9 3/8'' (2'698 x 4'663 x 4'200)	9' (2'745)	24'-1" (7'340)	16'-6" (5'030)
4'000 (1'815)	25	500 (2.54)	260 (80)	7'-10 1/8'' x 5'-6 1/8'' (2'390 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	9'-10 3/8'' x 8'-3'' (3'008 x 2'513)	9'-10 3/8'' x 15'-5 1/2'' x 10'-6'' (3'008 x 4'713 x 3'200)	9' (2'745)	16'-1 3/8" (4'910)	6'-7 7/8" (2'030)
		700 (3.56)	400 (122)					9' (2'745)	17'-4 1/4" (5'290)	7'-6 1/8" (2'290)
		800 (4.06)	500 (152)				9'-10 3/8'' x 15'-5 1/2'' x 12'-1 5/8'' (3'008 x 4'713 x 3'700)	9' (2'745)	18'-11 5/8 (5'780)	10'- 7/8" (3'070)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	9'-10 3/8'' x 8'-1'' (3'008 x 2'463)	9'-10 3/8'' x 15'-3 5/8'' x 13'-9 3/8'' (3'008 x 4'663 x 4'200)	9' (2'745)	19'-11" (6'070)	10'-3 5/8" (3'140)
		1'200 (6.10)	800 (244)					9' (2'745)	21'-5 1/2" (6'540)	11'-5 3/8" (3'490)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-1" (7'340)	16'-6 7/8" (5'050)

The planning parameters are indicative only and subject to change without prior notification.

Schindler 7000 planning considerations.
Double-deck elevators.
A17.1-2013 or later.

Overall

- Hoistway dimensions are minimum clear inside dimensions. Horizontal tolerance for plumb hoistway is:
  - travel height <= 590' (180 m): +/- 1"
  - travel height > 590' (180 m) and <= 820' (250 m): +/- 1¾"
  - travel height > 820' (250 m) m and <= 1640' (500 m): +/- 2"

Dimensions are based on:

- Roller guides
- 2:1 roping for speeds up to 800 fpm
- Single-speed center opening doors
- 1" cab wall decoration thickness

Please contact your local Schindler Representative:

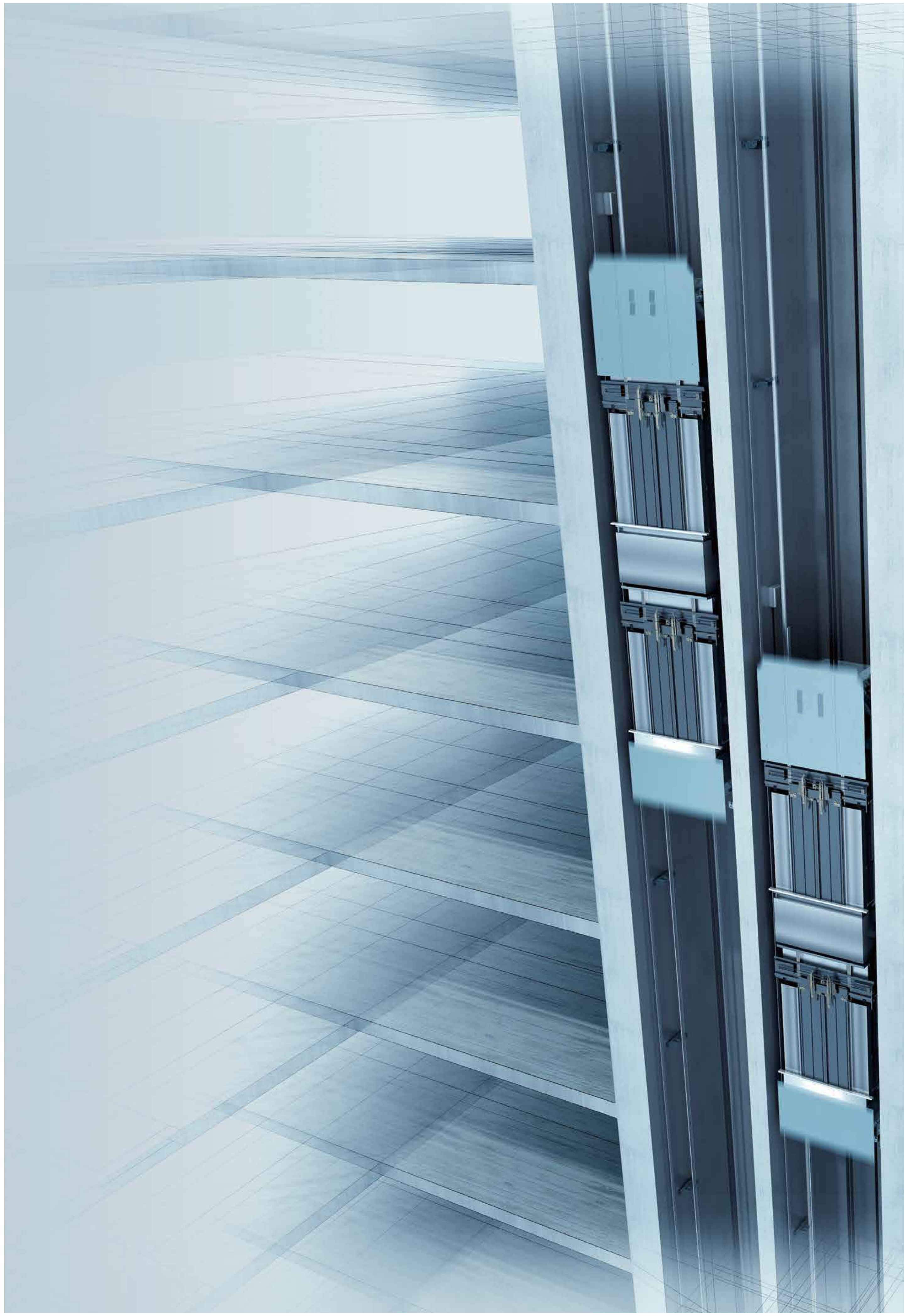
- If you need smaller dimensions
- With counterweight safety gear
- Different door type
- Areas in seismic zone 3
- Any additional questions or information

Double-deck prerequisites

The lower deck does not serve the highest floor level.
The upper deck does not serve the lowest floor level.
Vertical distance between the two decks [HEDD]:
HEDD min.: depending on structural cab height
HEDD max.: 19' - 8" (6000 mm)

Codes and regulations

All dimensions are based on ASME A17.1-2013 code or later and for information only. These dimensions cannot be used for construction purposes without Schindler confirmation. Dimensions may change for earlier code years.



Schindler 7000 planning parameters North America.

Front opening, counterweight behind.

Double-deck passenger cab: non seismic.

Load	Persons	Speed	Travel height	Cab dimensions	Door	Shaft	Machine room	Cab height	Overhead clearance	Pit depth
				BK x TK	BT x HT	BS x TS	BO x TO x HO	HK	HSK	HSG
lbs (kg)	Persons	fpm (mps)	ft (m)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)
2 x 3'000 (2 x 1'360)	2 x 18	500 (2.54)	260 (80)	6'-9 7/8'' x 4'-9 7/8'' (2'080 x 1'470)	3'-6'' x 7'-0'' (1'067 x 2'134)	9'-1 1/4'' x 7'-4'' (2'776 x 2'235)	9'-1 1/4'' x 14'-6 5/8'' x 10'-6'' (2'776 x 4'435 x 3'200)	9' (2'745)	16'-7 5/8" (5'070)	10'-7 1/8" (3'230)
		700 (3.56)	400 (122)					9' (2'745)	17'-9 3/4" (5'430)	11'-3 7/8" (3'450)
		800 (4.06)	500 (152)				9'-1 1/4'' x 14'-6 5/8'' x 12'-1 5/8'' (2'776 x 4'435 x 3'700)	9' (2'745)	19'-5 7/8" (5'940)	13'-3 1/2" (4'050)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)		9'-1 1/4'' x 14'-6 5/8'' x 12'-9 1/2'' (2'776 x 4'435 x 3'900)	9' (2'745)	20'-5 1/4" (6'230)	
		1'200 (6.10)	800 (244)					9' (2'745)	20'-11 5/8" (6'390)	13'-11 3/8" (4'250)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-2 7/8" (7'390)	16'-10" (5'130)
2 x 3'500 (2 x 1'588)	2 x 21	500 (2.54)	260 (80)	6'-9 7/8'' x 5'-6 1/8'' (2'080 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	9'-1 1/4'' x 8'- 1/4'' (2'776 x 2'445)	9'-1 1/4'' x 15'-2 7/8'' x 12'-1 5/8'' (2'776 x 4'645 x 3'700)	9' (2'745)	16'-6 7/8" (5'050)	10'-7 1/8" (3'230)
		700 (3.56)	400 (122)					9' (2'745)	17'-9" (5'410)	11'-5" (3'480)
		800 (4.06)	500 (152)					9' (2'745)	19'-5 1/8" (5'920)	13'-4 5/8" (4'080)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	9'-1 1/4'' x 8'-2 1/4'' (2'776 x 2'495)	9'-1 1/4'' x 15'-4 7/8'' x 12'-9 1/2'' (2'776 x 4'695 x 3'900)	9' (2'745)	20'-6 1/8" (6'250)	13'-5 3/8" (4'100)
		1'200 (6.10)	800 (244)					9' (2'745)	20'-11 5/8" (6'390)	14'- 1/2" (4'280)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-3" (7'390)	16'-11 1/8" (5'160)
2 x 4'000 (2 x 1'815)	2 x 25	500 (2.54)	260 (80)	7'-10 1/8'' x 5'-6 1/8'' (2'390 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	10'-1 1/2'' x 8'- 1/4'' (3'086 x 2'445)	10'-1 1/2'' x 15'-2 7/8'' x 13'-9 3/8'' (3'086 x 4'645 x 4'200)	9' (2'745)	16'-8 3/4" (5'100)	10'-10 3/4" (3'320)
		700 (3.56)	400 (122)					9' (2'745)	17'-11" (5'460)	11'-7" (3'530)
		800 (4.06)	500 (152)					9' (2'745)	19'-6 5/8" (5'960)	13'-6 1/4" (4'120)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	10'-1 1/2'' x 8'-2 1/4'' (3'086 x 2'495)	10'-1 1/2'' x 15'-4 7/8'' x 12'-9 1/2'' (3'086 x 4'695 x 3'900)	9' (2'745)	20'-6" (6'250)	
		1'200 (6.10)	800 (244)					9' (2'745)	20'-11 5/8" (6'390)	14'-1 1/4" (4'300)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-3" (7'390)	17'-0" (5'180)

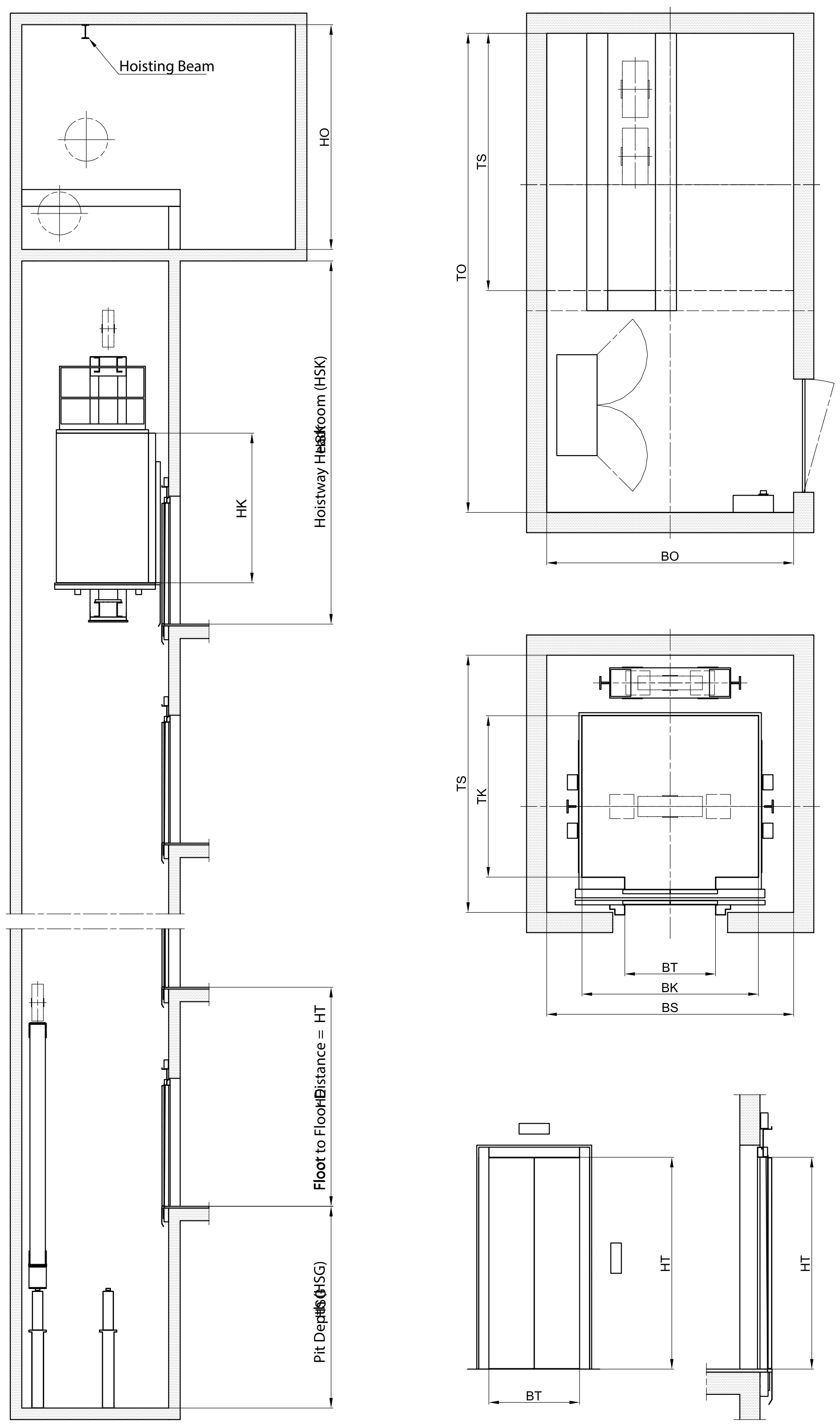
Double-deck passenger cab: seismic.

Load	Persons	Speed	Travel height	Cab dimensions	Door	Shaft	Machine room	Cab height	Overhead clearance	Pit depth
				BK x TK	BT x HT	BS x TS	BO x TO x HO	HK	HSK	HSG
lbs (kg)	Persons	fpm (mps)	ft (m)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)	ft-in (mm)
2 x 3'000 (2 x 1'360)	2 x 18	500 (2.54)	260 (80)	6'-9 7/8'' x 4'-9 7/8'' (2'080 x 1'470)	3'-6'' x 7'-0'' (1'067 x 2'134)	9'-1 1/4'' x 7'-4 3/4'' (2'776 x 2'254)	9'-1 1/4'' x 14'-7 3/8'' x 10'-6'' (2'776 x 4'454 x 3'200)	9' (2'745)	16'-7 5/8" (5'070)	10'-7 1/8" (3'230)
		700 (3.56)	400 (122)					9' (2'745)	17'-9 3/4" (5'430)	11'-3 7/8" (3'450)
		800 (4.06)	500 (152)				9'-1 1/4'' x 14'-7 3/8'' x 12'-1 5/8'' (2'776 x 4'454 x 3'700)	9' (2'745)	19'-5 7/8" (5'940)	13'-3 1/2" (4'050)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)		9'-1 1/4'' x 14'-7 3/8'' x 12'-9 1/2'' (2'776 x 4'454 x 3'900)	9' (2'745)	20'-5 1/4" (6'230)	
		1'200 (6.10)	800 (244)					9' (2'745)	20'-11 5/8" (6'390)	13'-11 3/8" (4'250)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-2 7/8" (7'390)	16'-10" (5'130)
2 x 3'500 (2 x 1'588)	2 x 21	500 (2.54)	260 (80)	6'-9 7/8'' x 5'-6 1/8'' (2'080 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	9'-1 1/4'' x 8'-1'' (2'776 x 2'464)	9'-1 1/4'' x 15'-3 5/8'' x 12'-1 5/8'' (2'776 x 4'664 x 3'700)	9' (2'745)	16'-6 7/8" (5'050)	10'-7 1/8" (3'230)
		700 (3.56)	400 (122)					9' (2'745)	17'-9" (5'410)	11'-5" (3'480)
		800 (4.06)	500 (152)					9' (2'745)	19'-5 1/8" (5'920)	13'-4 5/8" (4'080)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	9'-1 1/4'' x 8'-3'' (2'776 x 2'514)	9'-1 1/4'' x 15'-3 5/8'' x 12'-9 1/2'' (2'776 x 4'664 x 3'900)	9' (2'745)	20'-6 1/8" (6'250)	13'-5 3/8" (4'100)
		1'200 (6.10)	800 (244)					9' (2'745)	20'-11 5/8" (6'390)	14'- 1/2" (4'280)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-3" (7'390)	16'-11 1/8" (5'160)
2 x 4'000 (2 x 1'815)	2 x 25	500 (2.54)	260 (80)	7'-10 1/8'' x 5'-6 1/8'' (2'390 x 1'680)	3'-6'' x 7'-0'' (1'067 x 2'134)	10'-1 1/2'' x 8'-1'' (3'086 x 2'464)	10'-1 1/2'' x 15'-3 5/8'' x 13'-9 3/8'' (3'086 x 4'664 x 4'200)	9' (2'745)	16'-8 3/4" (5'100)	10'-10 3/4" (3'320)
		700 (3.56)	400 (122)					9' (2'745)	17'-11" (5'460)	11'-7" (3'530)
		800 (4.06)	500 (152)					9' (2'745)	19'-6 5/8" (5'960)	13'-6 1/4" (4'120)
		1'000 (5.08)	600 (183)		4'-0'' x 7'-0'' (1'219 x 2'134)	10'-1 1/2'' x 8'-3'' (3'086 x 2'514)	10'-1 1/2'' x 15'-5 5/8'' x 12'-9 1/2'' (3'086 x 4'714 x 3'900)	9' (2'745)	20'-6" (6'250)	
		1'200 (6.10)	800 (244)					9' (2'745)	20'-11 5/8" (6'390)	14'-1 1/4" (4'300)
		1'600 (8.13)	1'000 (305)					9' (2'745)	24'-3" (7'390)	17'-0" (5'180)

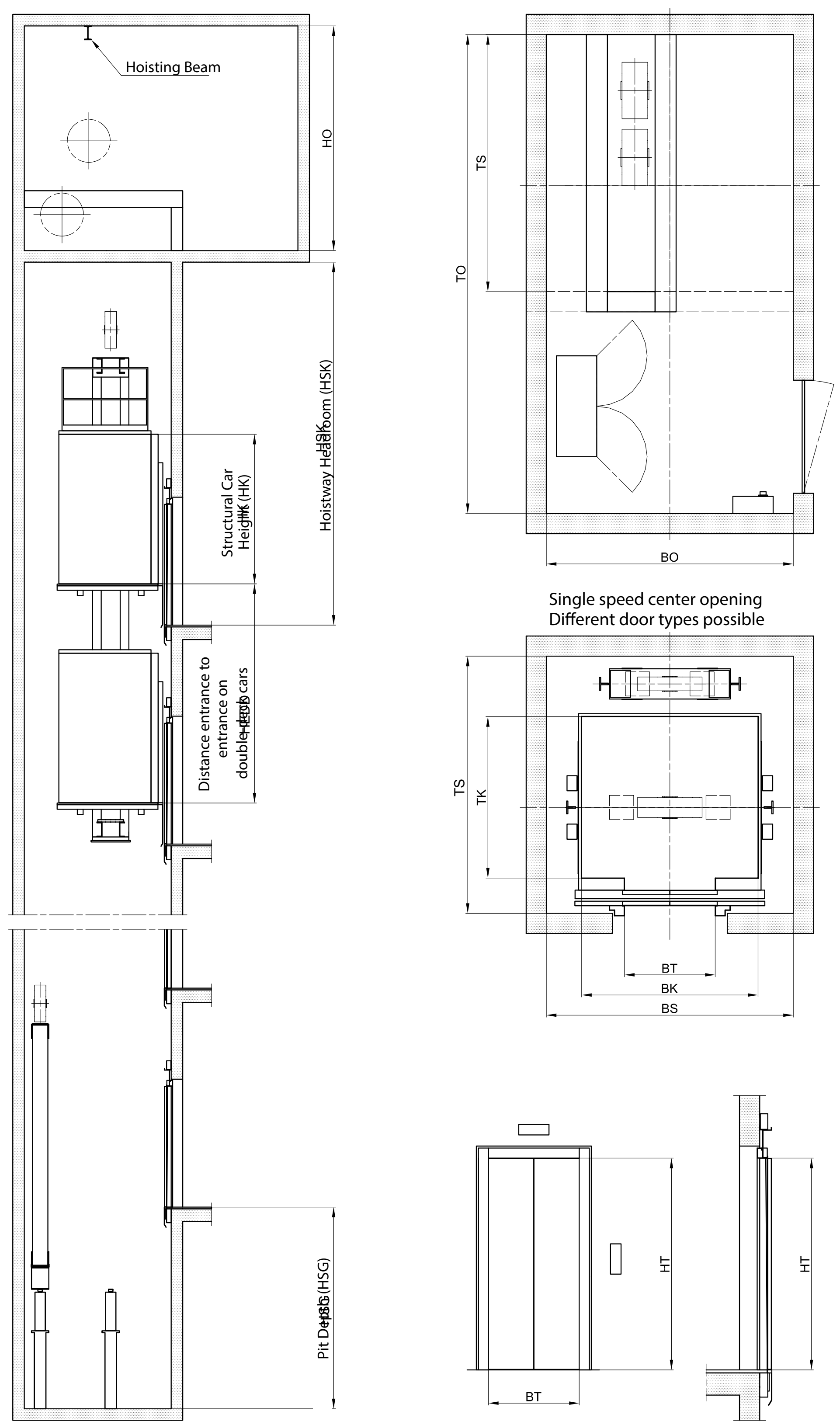
The planning parameters are indicative only and subject to change without prior notification.

Schindler Planning Parameters.
Hoistway and machine room layout.

Single-deck elevators



Double-deck elevators



BK Structural cab width
BO Width of machine room
BS Hoistway width
BT Clear width of landing door
GQ Capacity
HE Floor-to-floor distance
HEDD Distance from sill to sill on double-deck cabs
HK Structural cab height
HO Height of machine room
HSG Depth of hoistway pit
HSK Hoistway headroom (top floor to ceiling)
HT Clear height of landing door
TK Structural cab depth
TO Depth of machine room
TS Depth of hoistway

Disclaimer
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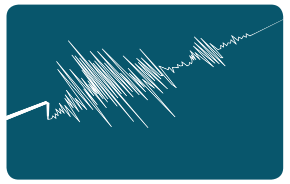
Intelligent all-round planning.
For perfect traffic performances.

Major buildings in world cities rely on Schindler's proven technology for reliable performance. By combining the Schindler 7000 with our high-rise building expertise we already formulate in the planning phase the ideal solution for your needs.

Seismic / Earthquake



An earthquake is the shaking of the surface of the earth, resulting from the sudden release of energy in the earth's lithosphere that creates seismic waves. Earthquakes can range in size from those that are so weak that they cannot be felt to those violent enough to toss people around and destroy whole cities.

Earthquakes produces different types of seismic waves, which travel through rock with different velocities:
- Longitudinal P-waves (shock- or pressure waves)
- Transverse S-waves (both body waves)
- Surface waves (Rayleigh and Love waves)

In the earth's interior, the shock- or P-waves travel much faster than the S-waves. S-waves and later arriving surface waves do main damage compared to P-waves. P-wave squeezes and expands material in the same direction it is traveling. S-wave shakes the ground up and down and back and forth.

Supported by the ongoing urbanization, more and more buildings and even entire cities are being built on regions at risk from earthquakes. Therefore, not only the building itself, but also the elevator system running within building needs to cope and to be designed to withstand with this natural caused hazard.

Schindler 7000 fulfills all international codes (such as EN81-77 and A17.1 enforcing seismic risk zones or IBC/NBCC approach) specifying seismic requirement towards the elevator system. The applied seismic detection system does detect the earlier arriving P-waves and activates the seismic control feature. The control sends the cabs to the next landing floor and opens the door to release passengers. Passengers and elevator installations are protected as best as possible from the effects of an earthquake.

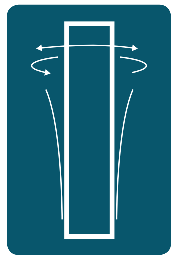
<u>The countermeasures</u>

<u>Machine room:</u>
- Elevator components, e.g. control cabinets, hoisting motor etc., is secured in their position so that they cannot be shifted or tilted by acceleration forces
- Rope retaining guards are avoid rope crossing or other rope damage

<u>Hoistway:</u>
- Elevator components, e.g. compensation rope tension devise, buffers, etc. are secured in their position so that they cannot be shifted or tilted by acceleration forces
- Pope retaining guards are provided
- Protection against entanglement of ropes

<u>Cab and counterweight:</u>
- Various construction measures
- Counterweight displacement switch

Building sway



The high-visibility buildings of today's world cities appear to stand still. But tall buildings can move. Building sway has to be considered for structures higher than 820' (250 m) and for slim towers of more than 492' (150 m). Depending on the shape and construction type, most high-rises move laterally. Turbulence created in skyscraper canyons may even be strong enough to generate twist along the entire height. When they sway, observation towers mostly move in circles.

Building sway is caused by:

<u>Wind loads</u>
Wind loads, forces that act horizontally on structures causing buildings to sway, are the most typical reason for building sway. Imbalances in the pressure distribution on a building's surface may even result in twisting motion, and wind passing around a building may generate swirling whirlpools resulting in sway and twist. Tall buildings are designed for a certain amount of lateral loading and sway.

<u>Ambient conditions</u>
Temperature differences because of partial sun exposure may cause buildings to deform. Sun exposed sides of buildings get warmer than shady sides and elongation of building material may cause structures to bend.

Temperature differences between hot summers and cold winters may have an influence on the height of the building. In winter, the building may be shorter than in summer. In comparison to wind loads, structural deformation caused by ambient conditions is almost static.

The building experiences no measurable frequency and usually the deformation is smaller compared to heavy wind load deflections.

<u>Earthquakes</u>
Earthquakes may have the biggest impact on building sway. High potential seismic risk zones are governed by special building codes and elevator codes considering the risks of earthquakes.

<u>Impact on elevators</u>
Building sway has to be considered for structures higher than 820' (250 m) and for slim towers of more than 492' (150 m).

The swinging frequency of the building may coincide with the inherent amplitude of suspension ropes, compensation ropes, governor ropes and traveling cables and result in resonance. Frequency analysis show whether further measures have to be taken.

Bending and deformation of hoistways may have an impact on the mechanical components of the elevator.

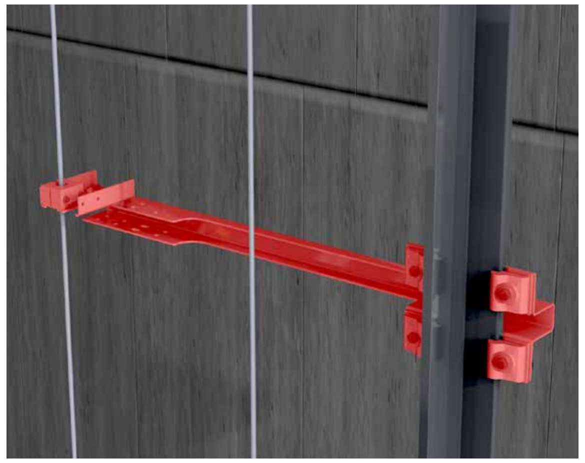
In addition to that, the following statements can be considered:

- When the building starts to sway, Schindler 7000 controls, connected to a sway detector, activates special features
- The travel speed will be reduced accordingly
- High sway will send the elevator to the evacuation floor. There, it will be emptied and placed in its parking position
- For medium and low sway, the elevator does not park at floors if the rope length or traveling cables correspond to their wavelength
- Schindler 7000 cabs, counterweights and brackets are designed for all seismic applications

The oscillation of a high-rise building affects the performance and safety of its elevators. For this reason, Schindler pays serious attention to this potential hazard and proposes measures to reduce the impact of building sway on the elevator system, thereby increasing its safety and operational availability.

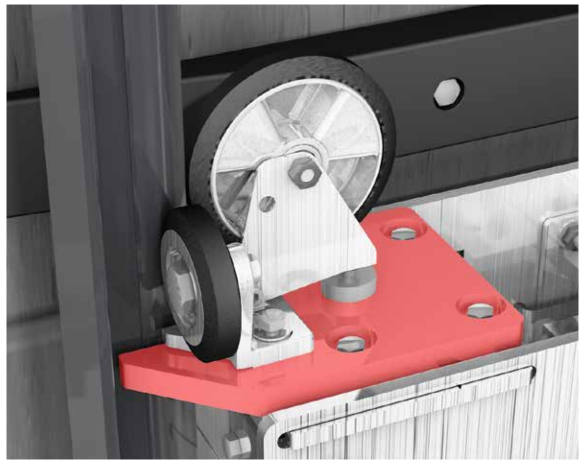
Building sway.
Countermeasures.

1 Traveling Cable Protection
The travelling cable is fixed at mid-height and guided in the bottom half of the hoistway.

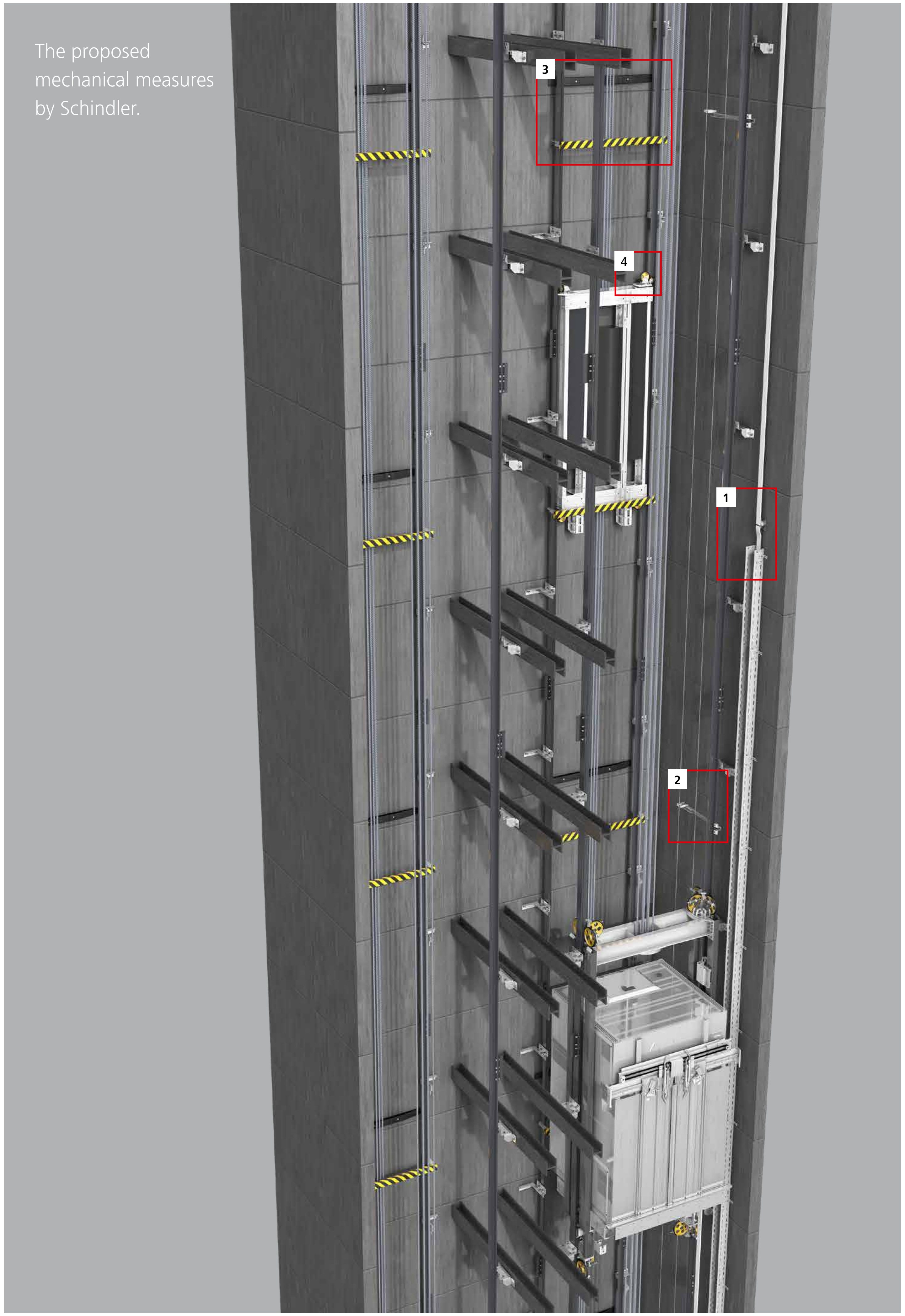


2 Governor Rope Guide
The passive side of the governor rope for the cab and counterweight is specially guided along the hoistway.

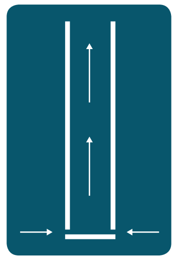
3 Rope Protection with Intermediate Tie-Brakes
A special rope protection prevents the ropes from striking the rough surface of the hoistway rear wall. Intermediate tie brackets located between the cab and the counterweight shall be provided to prevent counterweight suspension- and compensation-ropes from hitting the cab.



4 Counterweight Retainer Plates
Retainer plates prevent the counterweight from derailment if excessive force is applied to the guide.



Chimney effect



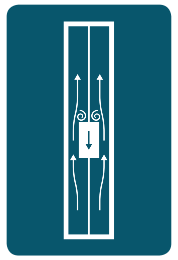
The chimney effect means the vertical movement of air in the hoistway caused by atmospheric conditions. It is a natural phenomenon, driven by different factors:
- Air flow from the parking garage and from the lobby entrance through the elevators hoistway up to the top of the building. There it escapes via the air ducts and the door of the machine room.
- Air flow from the main lobby with its large entrance door
- Existence and height of vertical pathways for air transfer within buildings
- Internal and external temperature differences

The countermeasures
In principle, hoistways shall be separated from the rest of the building by following measures:
- Hoistways shall be completely within the core and constructed of reinforced concrete
- Loading / unloading areas shall be airtight by means of interlockable access doors
- Lobby entrance shall be equipped with revolving doors
- Upper elevator lobbies shall be separated from the rest of the floor, e.g. gates or air locks
- Machine rooms shall be separated from the rest of the building

The chimney effect can severely impair the operation of a building. To avoid such issues, our engineers provide skilled support in the building design phase.

Basically, the key to success is correct architecture and layout.

Piston effect



An elevator cab traveling in a single hoistway can be compared to a piston moving in a cylinder. When an elevator travels at high speed in a narrow hoistway, the air ahead of the cab is compressed and flows around the cab. The main issue is, that there is no 'piston sealing' between cab and hoistway. Either up or down ride, the pressure difference between front and rear therefore accelerates the air to the back of the cab. This may result in additional noise and ear pressure.

Schindler takes account of the piston effect and proposes countermeasures to ensure the required comfort levels.

The countermeasures
- Sealing the elevator cab doors reduces the noise, so turbulence is radically reduced
- Specially applied sealing on the door-frame eliminates the vibrations from the landing door-panels and unpleasant noise
- Air vents in hoistway walls help balance uneven pressure between parallel elevator hoistways
- When two elevators in a dual hoistway descend simultaneously – especially in parallel – the piston effect is emphasized by even more air pressure ahead of the cab. Schindler's highly-developed elevator control system avoids this situation: The cabs are not allowed to travel at the same time in the same direction

Schindler 7000.
We pulse the skyline.

Schindler is a member organization of the U.S. Green Building Council.

Schindler has received renewal to ISO 9001 and ISO 14001 certifies.

Schindler prints with vegetable-based ink on paper containing post-consumer waste fiber.

Schindler Elevator Ltd.
Large Project Division

Zugerstrasse 13
6030 Ebikon
Switzerland
Phone + 41 41 445 31 31

lpd@schindler.com
www.schindler.com

Schindler Elevator Corporation
U.S. Headquarters

20 Whippany Road
Morristown, NJ 07960
USA
Phone + 1 973 397 6500

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