

Schindler 330A

Hydraulic elevator installation checklist



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Delivery of equipment

Prior to elevator equipment delivery, an enclosed dry hoistway, a ready machine room, and temporary or permanent three-phase power must be available.

General Contractor

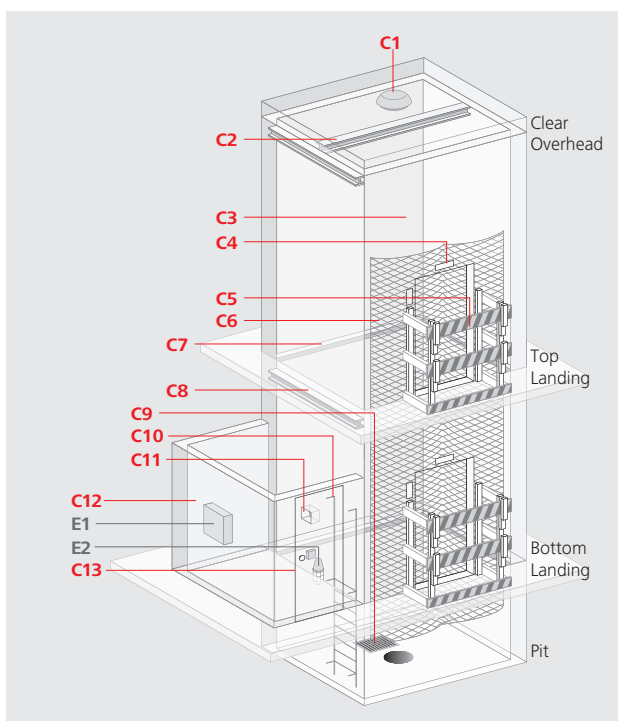
- Provide adequate, rollable access for delivery and material unloading, and a dry place for storage of equipment located near hoistway.
 - Refer to elevator layout. Please verify hoistway finished clear width and depth, pit depth, floor-to-floor heights, and clear overhead.
 - Build a clear, plumb, legal hoistway in accordance with applicable code from top-to-bottom with variations not to exceed 1" (25.4 mm) per 100' (2540 mm).
 - Provide attachment points for elevator rail brackets. Locate per layout.
- C1** – Check local codes for ventilation requirements. Refer also to Ventilation Requirements on reverse side.
- C2** – Supply hoist beam for elevator construction and service work. Beam to run across the width of the elevator shaft. Loads and location per elevator layout. Beam to be removed by General Contractor after elevator installation if minimum overhead cab clearances are not available.

C3 Hoistway walls

- Masonry: Provide opening of +8" (203 mm) on each side and +8" (203 mm) on top of clear opening for installation of door frames and sills by Schindler.
 - Dry wall: Walls at entrance to be built after door sills and frames are set in place.
 - Grout entrances and sills after installation by Schindler.
 - No conduit, duct or piping allowed in the hoistway that is not related to the elevator equipment.
 - Pit and hoistway must be dry at all times.
- C4** – If job requires cutting and patching of walls, floors, etc., and removal of such obstruction for proper installation of the elevator as well as pockets or blockouts for signal fixtures, it is to be done by General Contractor. Refer to elevator layout. Seal all wall penetrations with material approved by code to maintain fire rating.
- C5** – OSHA-approved barricades must be installed with kick board at each opening.
- C6** – Debris netting to be installed to protect each landing entrance from other trades materials and equipment.
- C7** – Attachment points for elevator rail bracket supports (inserts, steel or concrete) are needed at all floor levels and in overhead. Supports between floors may be necessary per code if span is excessive. Coordinate locations with Schindler.
- Bevel all hoistway projections and recesses in accordance with applicable codes.
- C8** – Divider beams are required between adjacent elevators at all floor levels and at 10' (254 mm) above top landing. Locate per layout.
- C9** – Provide drain or sump hole in pit as required by governing local code. Cover for sump shall be level with pit floor. Drains connected directly to sewers shall not be installed in elevator pits. Location to be coordinated with Schindler. Pit must be dry at all times.
- C10** – Provide pit ladder — location per layout.
- C11** – Provide 8" x 8" (203 x 203 mm) blockout for oil line and wire duct. To be sealed by General Contractor. Location to be coordinated with Schindler. For remote machine rooms, provide clear access above ceiling or coordinate with Schindler field supervisor.

Machine room

- C12** – Machine room temperature must be maintained between 55°F (13°C) and 90°F (32°C) for proper operation of equipment.
- No conduit, duct or piping allowed in the machine room that is not related to the elevator equipment.



- C13** – Provide fire-rated, self-closing, self-locking machine room door, fire extinguisher (type ABC), and live analog phone line.
- All oil lines and duct runs for remote machine room will be overhead.

Electrical Contractor

- If sprinklers are required, provide smoke sensing devices at elevator lobbies and/or at top of elevator shaft with electrical conductors terminating at elevator controller in machine room for automatic elevator recall system in the event of a fire.
- E1** – Must immediately confirm the type of three-phase power to the elevator equipment room (208 volt, 230 volt, 240 volt, 460 volt, 480 volt, 575 volt or 600 volt) and provide before work can begin. Refer to Schindler power data sheet for approval.
- Provide a fused, heavy duty, three-phase, lockable disconnect or shunt trip breaker and single-phase lockable disconnect (for car lighting and fan) in machine room with feeder branch wiring to elevator controller. Disconnect size to suit elevator contractor's equipment requirements. All work must be per National Electric Code and ASME A17.1 and any local codes. Locate per layout.
- When the battery lowering/anti-entrapment device is required, provide a dedicated, labeled, 110V, 15A circuit and conduit. When a heat exchanger is required, provide a dedicated, labeled, 110V, 20A circuit with disconnect. Refer to the Schindler power data information for additional information.
- Shunt trip breaker required if sprinkler in pit, hoistway or machine room.
- Provide adequate lighting and receptacle in machine room. Locate per layout.
- E2** – Per the latest National Electrical Code, all receptacles installed in machine rooms, machinery and control spaces, and pits must have Ground Fault Circuit Interrupter Protection (GFCI).
- Provide a light and receptacle in elevator pit. Locate per layout.

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- Supplies telephone in car and travel cable to car.

Machine room design considerations

All wiring (including analog phone line) to machinery space supplied by owner.

Local codes may vary. Consult with your architect/engineer and local Schindler representative.

A properly designed machine room will provide additional noise suppression for the power unit using standard construction material. When possible, locate the power unit away from noise-sensitive areas.

Sound suppression

The following guidelines are to be followed to reduce noise to acceptable levels.

1. The surrounding walls, floor, and ceiling assembly should have a substantial STC (Sound Transmission Class) rating. The higher the STC rating, the better. If noise-sensitive areas are nearby, STC 50 or 55 should be used as the design criteria for the surrounding structure. Concrete block walls will provide STC 42. Two layers of gypsum board on each side of 3 5/8" steel studs at standard spacing (total of four layers, two on each side) with fiberglass batt in the cavity will provide STC 56. All cracks and gaps around the perimeter must be copiously filled with the appropriate acoustical caulking. Wood studs should be avoided, but if they are used, attach drywall with resilient channel or use a staggered stud arrangement.
2. In situations where noise-sensitive areas are not an issue, two layers of drywall (four total) are still recommended and caulk sufficiently around the perimeter. Double-layer drywall with staggered seams works best.
3. The door must have a good STC rating. A rated door and frame assembly are needed if a noise-sensitive area is nearby, requiring low noise levels, such as NV 30 or 30 dBA which is not typical. Ideally an STC 55 door would be best to match the walls. Rated doors may have cam hinges that raise the door and then lower it when it closes to eliminate the gap at the base and a tight seal around the perimeter along with sufficient mass to give the door a good STC rating. Doors with a lower rating (e.g., STC 40), may be adequate for non-noise-sensitive areas (e.g., NC 40-45 or 40-45 dBA), at a substantially reduced cost.
4. If a standard door is used, good sealing hardware is needed to seal around the perimeter of the door.
5. Penetrations through the equipment room wall must be kept to a minimum. When pipes and conduit pass through the walls, they must be sealed with mortar or the appropriate acoustical sealant to prevent noise leaks. A heavy, solid material must be used. Do not use fiberglass.
6. If the walls are concrete block, do not paint them. Unpainted block has about 33% absorption, which is lost with a coat of paint. Fiberglass panels on the ceiling or walls covering 25% of the area are beneficial, but not mandatory.

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7. Vibration isolation of the unit normally will not be needed when the unit is attached to a concrete foundation. If used on an upper floor, 2" deflection springs properly sized and installed are suggested. If used on wooden floors, springs are mandatory.
8. The pipe from the power unit to the hoistway should be "vibrationally" isolated from the wall and the perimeter of the pipe sealed with the appropriate acoustical sealant to prevent acoustical leaks or flanking paths for vibration noise.

Ventilation requirements

The following guidelines are to be followed to maintain acceptable elevator equipment room temperatures:

1. Machine room temperature must be maintained between 55° (13°C) and 104°F (40°C) and less than 85% humidity, non-condensing.
2. A vented door should be avoided. Air removal should be done by ducting the air from the room to the outside if possible. A forced removal of the air to another part of the building or building exterior is needed to keep an air exchange through the equipment room. Intake and exhaust vents should not be located next to each other. This arrangement is highly advantageous since it also keeps the room cooler (e.g., 70° F), which benefits the operation of the power unit and reduces the likelihood of overheating.

3. Minimum machine room ventilation requirements for hydraulic elevators:

Rated HP	BTU/hr	CFM*
15	3740	190
20	4740	240
25	5740	290
30	6740	350
40	8740	450
50	10740	550

* Minimum air at 70° F to be moved in and out of the machine room.

For further information, including location of the Schindler office nearest you, please contact:

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



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



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