

## Shielding doors

Two (2) sets of shielding doors installed at the entrance and exit of the scanning hall can block the X-rays to ensure prevention of any danger or injury to the health of personnel working at the site, to drivers, visitors or to the surroundings during the system scanning. The shielding door is 4.00m (W) x 5.00m (H) x 160mm (thickness) metal.

The shielding door (supplied and installed by Nuctech) should be installed inside the scanning area, fixed by pre-embedded steel plates in the upper side and running on a guide rail at bottom.

Total weight of each door is around 20T.

Around 20KVA power supply is needed for driving the 2 sets metal gates.

Metal frame for traffic height limitation should be supplied and installed in front of the entrance shielding door. Traffic height limitation is 4.8m.

All pre embedded items will be supplied and installed by contractor and installations after pouring the concrete will be made by Nuctech (contractor will supply and install pre embedded plates for fixing the doors; and anchor bolts, nuts, springs, washers for fixing the rail track under the doors).

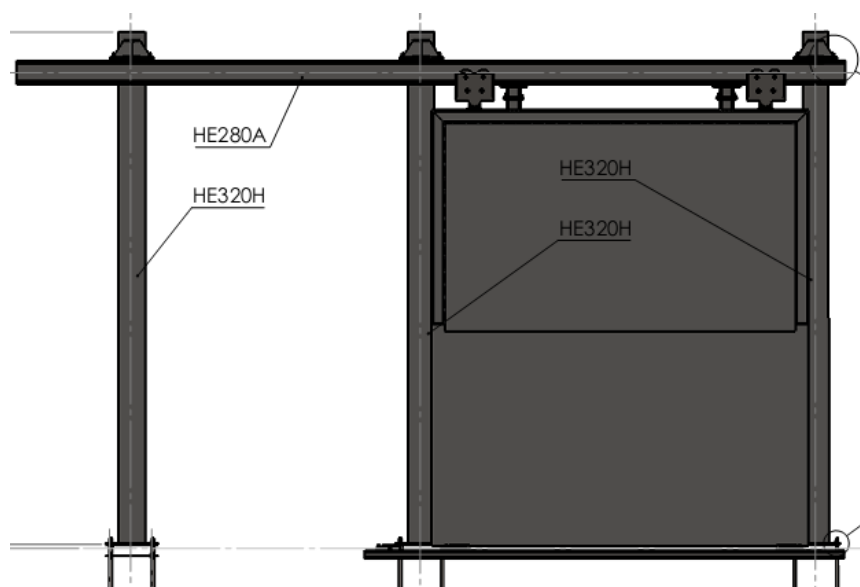
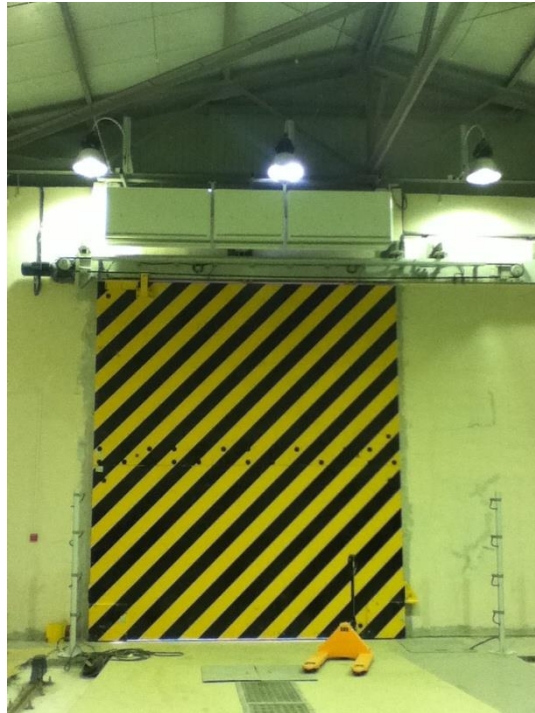


Figure 1 Drawings of shielding doors (for reference only)



**Figure 2 Shielding Door (for reference only)**

The shielding doors include two parts: mechanical and electrical parts. The mechanical parts are mainly composed of steel frame structure door, drive motor and chain, beam and walking gears. The electrical parts are mainly composed of operation box, control cabinet, sensors, sliding cable and accessory and cables.

The shielding doors with steel frame structure, filled with steel plate, can effectively block the X-rays.

The shielding doors run on the rails pre-laid on the ground by the drive motor and chain mounted at the top of the shielding doors and two walking gears installed at the bottom

The running speed of the shielding doors can be up to 0.4 m/s, what ensures the throughput of the system effectively.

Operators can control the shielding doors by the operation box installed at the entrance and exit of the scanning hall or by the button on the computer screen of scanning control operator workstation.

The safety interlock system has been considered in the designing of the shielding doors, the system will be not ready if the shielding doors are open.

In addition, some infrared light sensors are installed the external of the shielding doors.

In the event of any trespassing or accidental access when the shielding doors are in operation, infrared light sensors will give the corresponding signal and the shielding door will be stopped immediately to ensure the personal safety.

Emergency stop buttons have also been installed the external of the shielding doors to ensure the personal safety.

In the event of an emergency when the shielding doors are in operation, the shielding doors will be stopped immediately by pushing any of the emergency stop buttons.

Sound and light alarm system installed at the entrance of the scanning hall can give audible and visual alarm to ensure the personal safety when the shielding doors are in operation.