5.3.5.3 *Mechanical strength*

5.3.5.3.1 Complete landing doors, with their locks, and car doors shall have a mechanical strength such that in the locked position of landing doors and closed position of car doors:

a) when a static force of 300 N, being evenly distributed over an area of 5 cm^2 in round or square section, is applied at right angles to the panel/frame at any point on either face, they shall resist without:

1) permanent deformation greater than 1 mm;

2) elastic deformation greater than 15 mm.

After such a test, the safety function of the door shall not be affected.

b) when a static force of 1 000 N, being evenly distributed over an area of 100 cm^2 in round or square section, is applied at right angles at any point of the panel or frame from the landing side for landing doors, or from the inside of the car for car doors, they shall resist without significant permanent deformation affecting functionality and safety [*see* **5.3.1.4** (maximum clearance 10 mm) and **5.3.9.1**].

For glass doors, *see* **5.3.6.2.2.1 j) 3)**.

NOTE — For a) and b), the probe surface used to apply the test forces can be of soft material to avoid damage to the door coating.

5.3.5.3.2 Horizontal sliding landing and car doors shall be provided with devices for retaining the door panel(s) in position should the guiding element fixed to the door panel fail. All door panels with these devices installed in their complete door assembly shall withstand a pendulum shock test as specified in **5.3.5.3.4 a)** at striking points according to **Table 5** and **Fig. 11** under the worst possible failure conditions of the normal guiding elements.

Retainer should be understood as a mechanical means preventing the door panels from leaving their guides which may be either an additional component or part of the panel/hanger.

5.3.5.3.3 Under the application of a manual force of 150 N in the direction of the opening of the leading landing door panel(s) of horizontally sliding doors and folding doors, at the most unfavourable point, the clearances defined in **5.3.1** may exceed 6 mm, but they shall not exceed:

a) 30 mm for side opening doors;

b) 45 mm in total for centre opening doors.

5.3.5.3.4 In addition, for:

a) landing doors with glass panels;

b) car doors with glass panels;

c) side frames of landing doors that are wider than 150 mm;

the following shall be fulfilled (*see* **Fig. 11**):

Where additional panels to the side of the door frame are used to enclose the well, they should be considered as side frames.

a) when an impact energy equivalent to a falling height of 800 mm of the soft pendulum shock device [*see* **5.14** of IS 17900 (Part 2)] is striking the glass panels or side frames in the middle of the panel or frame width, at striking points according to **Table 5**, from the landing side or from the inside of the car, the following shall be satisfied:

1) they may have permanent deformation;

2) there shall be no loss of integrity of the door assembly. The door assembly shall remain in place with no gaps greater than 0.12 m into the well;

3) after the pendulum test, the doors do not need to be able to operate;

4) for glass elements, there shall be no cracks.

b) when an impact energy equivalent to a falling height of 500 mm of the hard pendulum shock device (*see* **5.14** of IS 17900 (Part 2)) is applied on glass panels bigger than stated in **5.3.7.2.1 a)**, striking in the middle of the door panels or glass panels in frames at striking points from the landing side or from the inside of the car according to Table 5, there shall be:

1) no cracks;

2) no damage on the surface of the glass except chips of 2 mm maximum in diameter.

NOTE — In the case of multiple glass panels, the weakest configuration of the panels can be taken into account.

The worst case shall be tested. If it is not possible to determine the worst case, both or all variants shall be tested.

5.3.5.3.5 Doors/frames with glass shall use laminated glass.

5.3.5.3.6 The fixing of the glass in doors shall ensure that the glass cannot slip out of the fixings, even when sinking.

5.3.5.3.7 The glass panels shall have markings giving the following information:

a) name of the supplier and trade mark;

b) type of glass;

c) thickness (for example, 8/8/0.76 mm).