Test report summary

Strong Fix Door 1600 joules

with Fortress interlock amGard Pro

Report No. TR-14-017

Date: 2014-11-19

Place: Troax Test Center

Purpose

To document the effect of a high energy impact test from inside the hazard zone with a Strong Fix hinged door, the 80x80 post and the ST30 mesh panels and equipped with an amGard Pro switch solution from Fortress Interlocks.

Test material

Panel: ST30 2050x1000

Post: Standard post 80x80

Fixing: Kit hinge

Door lock: Fortress amGard Pro

Floor fixing: Bolted to the test rig

Test procedure

The test was performed in accordance with the pendulum test method stated in ISO 14120:2015 Annex C. Panels and posts were assembled with the Strong Fix system and fastened to the test rig with M12 bolts. The pendulum of 100 kg was adjusted so the impact hit the panel at 1446 mm above the floor, i e 1316 mm from the bottom of the panel (with a 150 mm floor gap). To reach the energy of 1600 J the 100 kg pendulum was raised 1629 mm from the starting point.

Impact energy

Pendulum mass: 100 kg

Pendulum speed: 20 km/h

$$E = \frac{mv^2}{2} = \frac{100*(\frac{20}{3,6})^2}{2} = 1543\ J$$

$$E = mgh = 100 * 9{,}82 * 1.629 = 1600\ J$$

Results

The Strong Fix door and the lock withstands the high energy impact. The door panel absorb all energy and obtain a remaining deformation. The deflection of the door panel was approximately 307 mm in the upper corner and 206 mm in the centre. Despite the high energy impact there was no penetration and no parts departed. Both the posts and the Fortress lock remained intact.

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