

Test report summary

Smart Fix 1600 joules ST PC

Report No. TR-17-015

Date: 2017-10-25

Place: Troax Test Center

Purpose

To document the effect of a high energy impact test from inside the hazard zone with Smart Fix machine guard system, the 60x40 post and the ST PC polycarbonate panels.

Test material

Panel: ST PC 3 mm 2050x1000 mm

Post: Standard post 60x40

Fixing: Smart Fix bracket

Floor fixing: Fixed with bolts 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 Smart Fix system and fastened to the test rig. The pendulum of 100 kg was adjusted so the impact hit the panel at 1466 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

$$E = mgh = 100 * 9,82 * 1,629 = 1600 \text{ J} \quad E = \frac{mv^2}{2} = \frac{100 * (\frac{20}{3,6})^2}{2} = 1543 \text{ J}$$

Results

The Smart Fix wall with PC panels performed well in the test and withstands the high energy impact. The centre panel and the posts absorb all energy and obtain a remaining deformation. Despite the high energy impact there was no penetration and no parts departed. The Smart Fix bracket shows no deformation.



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