Test report summary

Smart Fix 309 joules ST PC

Report No. TR-14-006
Date: 2014-10-01
Place: Troax Test Center

Purpose

To document the effect of an energy impact test from inside the hazard zone with Smart Fix machine guard system, the 60x40 post and the ST PC panels with a 2 mm polycarbonate sheet glued to the panel frame.

Test material

Panel: STPC 2050x1200 mm
Post: Standard post 60x40
Fixing: Smart Fix bracket
Floor fixing: Fixed to the test rig with M10 bolts

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 in the Troax test rig. The test rig pendulum of 80 kg was adjusted so the impact hit the panel at approximately 1500 mm above the floor. To reach the energy of 309 J the 80 kg pendulum was raised 390 mm from the starting point.

Impact energy

Pendulum mass: 80 kg
Pendulum speed: 10 km/h

$$E = \frac{mv^2}{2} = \frac{80*(\frac{10}{3,6})^2}{2} = 309\,J$$

$$E = mgh = 80 * 9{,}82 * 0.39 = 309\,J$$

Results

The installation with PC panel with 2 mm thick polycarbonate sheet assembled in Smart Fix system withstands the energy impact. The centre panel and the posts absorb the energy and obtain some remaining deformation. There was no penetration and no parts departed. The Smart Fix bracket shows no deformation.

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