



White paper:

Machinery Safeguards – impact resistance, international standards
and total protection



MACHINERY SAFEGUARDS

– impact resistance, international standards and total protection

One recurring question is how strong a machine guard needs to be. There is no clear answer to this. It depends on a combination of factors. Machine guard design is primarily about determining a reasonably predictable load and taking into account the hazards exposed during a risk assessment.

One important aspect of a machine guard is its impact resistance. A machine guard must be able to withstand external impact from, for example, a person or another machine, and adequate internal impact, that is to say, stop work pieces and broken tools from being thrown out of the cell. This is tested using the projectile or pendulum method. Tests conducted in accordance with International Standard SS-EN ISO 14120:2018 (alternatively EN ISO 14120:2015) specify the thickness of the grille/partition, the posts used and the bolts that fasten the system to the floor.

Axelent's machine guards are tested in accordance with the above and comply with current international standards. Axelent also sits on the machine safety committee of the Swedish Standards Institute (SIS), and therewith has a say in future work safety standards at national, international and global level.

Machinery safeguarding is all about functioning total protection, about safety and security for everything and every person on the factory floor. It could be in the shape of a physical barrier, designed as a part of a machine, or permanent guards held in place by screws, nuts or welds. It may also be enclosed guards that prevent access to a hazard zone, or distance guards that prevent or discourage access to a machine from a distance. The strength of the mesh depends on the project in hand, but at the end of the day, a safe workplace is all about a well-thought-out combination of protective measures.

The structure for safety standards in machine areas according to EN ISO 12100:2010:

Type-A standards (basic safety standards) given basic concepts, principles for design and general aspects that can be applied to all machinery;

Type-B standards (generic safety standards), dealing with one safety aspect or one type of safeguard that can be used across a wide range of machinery:
– Type B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise);

– Type B2-standards on safeguards (e.g. two-hand controls, interlocking devices, guards);

Type C-standards (machine safety standards) dealing with detailed safety requirements for a particular machine or group of machines.