Protection & security

THERE ARE MANY GOOD REASONS
TO CHOOSE OUR STEEL PROFILES

ALL ABOUT STANDARDS
AND CLASSIFICATIONS

HOW WE TEST OUR STEEL PROFILES

OUR SECURITY
COMBINATIONS

STÅLPROFIL

We make buildings secure and people safer

Stålprofil delivered the steel profiles for the City Tunnel in Malmö. The profiles meet the very high standards and safety classes.

Our steel profiles are neither seen nor heard, but make all the difference where it really matters. They can be found inside doors, entrances and glass partitions everywhere: shopping centers, hospitals, government buildings, football arenas and office buildings, to name just a few examples.

Wherever you find our steel profiles, you also find people

Everywhere we look, we see that society's safety and security demands are on the increase. And it's for the sake of people that we're experts on safety and security issues. Security in public buildings, at workplaces and in shopping malls. And safety in the sense of minimizing the extent of damage and injury when an unforeseen event occurs, or even in preventing an event from occurring. And it's not only about the increase in crime, but just as much about safety and security in e.g. infrastructure projects, incineration plants and maritime transportation.

There are many good reasons to choose our steel profiles

One obvious reason is the experience we possess. This, combined with our desire to make the impossible profile possible, has gotten us where we are today. We find solutions that meet the standards and requirements that apply to your project.

But experience also means responsibilities and capabilities. We've acted as consultants in many different contexts; we have many major projects behind us and we've developed special profiles in close cooperation with authorities and test labs.

You can always rest assured that our steel profiles are properly tested to meet both national and international laws and regulations. Documentation and certification are essential to us – no profile leaves our factory without living up to our promises.

Stålprofil delivered steel profiles for the Swedish Public Employment Service's head office in Stockholm.

New standards lead to new solutions

One good example of how thinking about security has changed is the way security doors with comprehensive capabilities used to be the first choice. But how safe and secure do you really feel with zero visibility and limited light penetration? As the demand for safety has grown in society, the interest in safe glass structures has also increased. Light and visibility are important for increasing the sense of security people enjoy, and this is possible without compromising safety.

Stålprofil delivered steel profiles to the Humanist building in Gothenburg.

Burglar resistance

Our burglar-resistant steel profiles undergo ongoing tests and we have many different type approval certificates issued by RISE. We test our designs according to EN-1627 standards. Our profiles can delay or prevent break-ins, by making walls, floors and ceilings difficult to break through without using the noisiest methods to force entry. We also have burglary-rated glass partitions able to create open, safe and bright spaces without compromising on security.

DID YOU KNOW THAT

A door fitted with steel profiles lasts longer with a single lock than a door in an aluminum partition.

Burglar resistance tests

We test our designs according to EN-1627 standards using established norms and pre-defined tools.

What makes a door secure?

Steel profiles from Stålprofil increase a door's burglar resistance compared to doors made from other materials. To further increase security, consider fitting:

1. More than one lock point
2. Door jamb security plate
3. Correct lock case

EXTRACT FROM EN 1627 AND 356

LEVEL	GLASS	TOOLS	RESISTANCE	TEST TIME
RC1 N	-	own body	-	-
RC2 N	-	simple tools: screwdriver, pliers, wedges, hacksaw, jigsaw	3 min	15 min
RC2	P4A: 3 × steel balls, drop height 9000 mm	simple tools: screwdriver, pliers, wedges, hacksaw, jigsaw	3 min	15 min
RC3	P5A: 9 × steel balls, drop height 9000 mm	hand drill, screwdriver, pry bar	5 min	20 min
RC4	P6B: 31–50 blows with an ax	saw, ax, pry bar, hammer, power drill, chisel, hacksaw	10 min	30 min
RC5	P7B: 51–70 blows with an ax	power tools such as drill, circular saw, angle grinder	15 min	40 min
RC6	P8B: More than 70 ax blows	power tools more powerful than RC5	20 min	50 min

Stålprofil delivered steel profiles to Sweco in Gothenburg.

Breakout security

Our unique profile systems are not only used to make doors burglar resistant. Sometimes it's just as important they have features that do the opposite. For example, it's important for personnel in young offender and criminal correctional institutions to feel safe. Our profile systems are used in many of Sweden's correctional institutions. The systems are tested individually by correctional care and security experts.

Bullet resistance

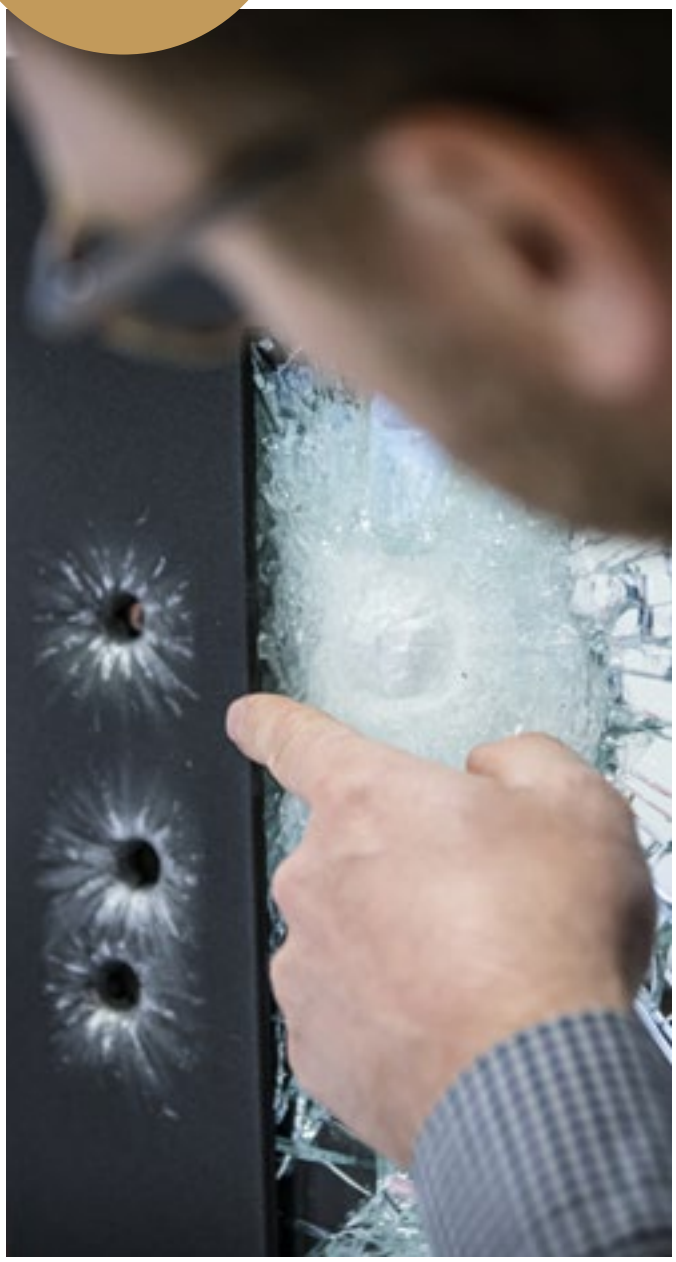
We have steel profiles with approved designs in all EN 1522 bullet resistance classes in accordance with national and international standards and regulations. In the case of bullet resistance, our profiles systems, glass, and fittings are subject to high standards. We carry out tests in test labs and at our factory in Uddevalla, and we also test the components and structures that may constitute weak points such as glass attachment points, corner joints, thresholds and door jambs, hinges, and lock cases with cylinders. Our profiles meet FB 4 NS standards without extra reinforcement. Our classifications are spalling-free = NS

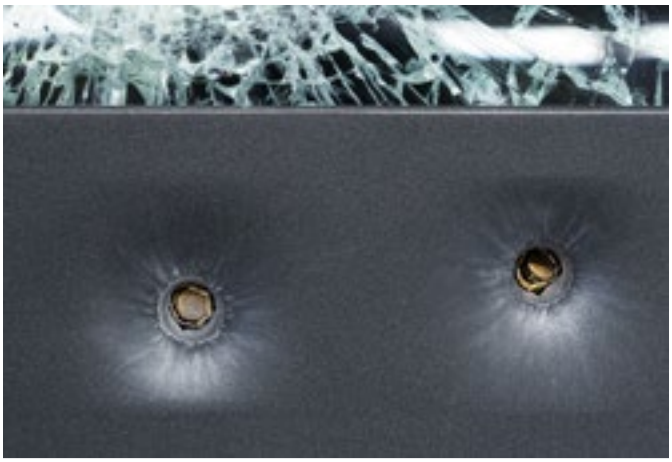
DID YOU KNOW THAT

We are able to carry out our own preparatory tests at our facility in Uddevalla.

Want to know more?

Visit our website at stalprofil.se for more information, images and videos.





Bullet resistance tests

When we carry out bullet resistance tests on our designs, we do so by shooting at all the weak components in partitions from several different angles. This allows us to ensure the right protection. Official tests are carried out in collaboration with RISE.

EXTRACT FROM EN 1522 AND 1063

LEVEL	GLASS	CALIBER	BALL (WEIGHT)	DISTANCE	VELOCITY
FB1	BR1	22 LR	2.6 x/- 0.1	10 +/- 0.5	360 +/- 10
FB2	BR2	9 mm	8 x/- 0.1	5 +/- 0.5	400 +/- 10
FB3	BR3	.357	10.2 x/- 0.1	5 +/- 0.5	430 +/- 10
FB4	BR4	.357 Magnum 44 Rem. Magnum	10.2 x/- 0.1 15.6 x/- 0.1	5 +/- 0.5 5 +/- 0.5	430 +/- 10 440 +/- 10
FB5	BR5	5.56 x 45	4 x/- 0.1	10 +/- 0.5	950 +/- 10
FB6	BR6	5.56 x 45 7.62 x 51 (soft core)	4 /- 0.1 9.5 x/- 0.1	10 +/- 0.5 10 +/- 0.5	950 +/- 10 830 +/- 10
FB7	BR7	7.62 x 51 (hard core)	9.8 x/- 0.1	10 +/- 0.5	820 +/- 10
FSG	SG2	caliber 12/70	31 x/- 0.1	10 +/- 0.5	420 +/- 10

The steel profiles in the Forensic Psychiatric Center in Trelleborg meet very high safety standards.

Blast resistance

Our profile systems are resistant to wear and external influence. There is a need for blast resistance in a variety of environments. This includes the oil and gas industry and in infrastructure such as terminals for gas-driven buses and tunnels for high-speed trains. There are also high security standards for certain civil and public buildings, such as government buildings and embassies.

We supply blast-resistant steel profiles to meet comprehensive safety standards. We guarantee standards by means of open air blast tests, where we vary the distance, duration and mass of the blast charge. These factors all affect each other and determine the safety level of the profile system accordingly.

Approved blast test carried out at Bofors in Karlskoga.

Blast classification

Our profile systems are resistant to wear and external influence.

We supplied blast-resistant steel profiles to meet the comprehensive safety standards in the City Tunnel in Malmö.

Fire protection

If there's one thing we know from start to finish, then it's fire protection. With more than 300 tests behind us, we have extensive experience. The high temperature properties of steel make it excellent for fire protection and our fire-rated profile systems have type approval certificates for signage from fire resistance class E 30 up to EI120. Our fire resistance classes can also be combined with smoke-tight integrity S_a or S_{200}. When you select a type-approved partition, or an external door partition CE marked as per EN-16034, you can be sure it has the correct dimensions, approved materials, and has been assembled correctly.

One of our strengths compared with our competitors is our ability to combine several different ratings, e.g. burglar, fire and bullet resistance.

Fire resistance tests are usually carried out in collaboration with RISE.

Stålprofil has delivered steel profiles to many of Sweden's hospitals. Seen here: Södertälje Hospital.

The steel profiles in the Humanist building in Gothenburg also meet fire resistance standards.

Fire resistance classes in a nutshell:

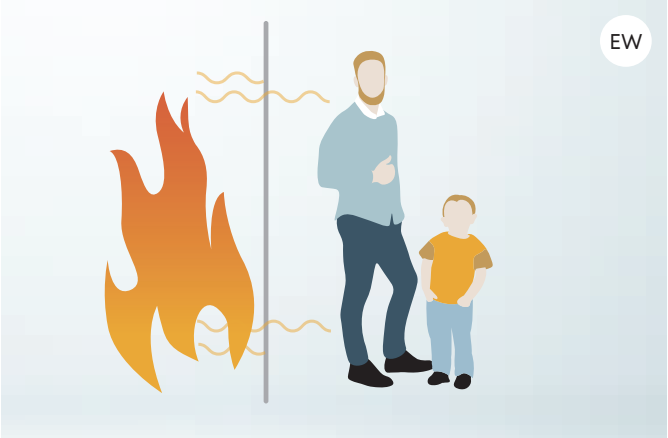
Buildings are divided into fire cells in order to prevent the spread of fire and smoke. Doors and wall partitions in a fire compartment boundary must be type-approved; external fire protection doors must be CE marked according to EN-16034. This means they must be tested and approved by a certified fire laboratory and that each labeled fire partition is produced by a manufacturer under third party inspection, e.g. RISE.

We can help you combine different types of protection. One and the same door using Stålprofil steel profiles, can have multiple fire classes. For example, $EI_2$30 / EW90 / E120.

What determines the standard?

It is the whole entity that counts. In other words, the door frame, door leaf and fittings are tested and given a technical fire resistance class. Thus to achieve the correct function, it's important to follow the manufacturer's assembly instructions and to use the right combination of doors, glass and fittings that are tested and approved together. As of November 1, 2019, all external fire doors must also be CE marked according to EN-16034.

It's also very important to consider the choice of glass and how it will be installed. We'll be happy to help you; we have extensive experience in the field, our systems are approved for many different types of glass and we work with multiple manufacturers.



FIRE RATING ACCORDING TO EN 13501-2:2006									
FIRE RESISTANCE CLASS	DURATION IN MINUTES								
E	15	20	30	45	60	90	120	180	240
EI_1	15	20	30	45	60	90	120	180	240
EI_2	15	20	30	45	60	90	120	180	240
EW	-	20	30	-	60	-	-	-	-

Fire resistance class E

Integrity, isolation from flames, no requirement for heat radiation or thermal insulation

E, which stands for integrity, is the lowest fire rating. The integrity standard for this class means that fire in the form of flames must not pass through the structure and ignite close-by materials on the other side. There is a high risk of fire spreading due to heat radiation.

Fire tests are carried out at temperatures between 800–1000 C°, which are common in fires in buildings. Unless the design prevents the spread of heat, high temperatures are reached extremely quickly, and it will become impossible to pass along the intended evacuation route.

It's therefore important to consider overall fire protection. For example: If you choose fire resistance class E because it's cheaper, and combine it with e.g. sprinklers for increased fire protection, you risk other problems.

Fire resistance class EW

Integrity, flame isolation, limited heat radiation (may not exceed 15 kW/m2)

W stands for the restriction of radiation at a distance of around one meter from the door on the side that is not exposed to fire. Fire resistance class W limits heat from spreading and prevents flames from propagating. Cannot be used independently, but is always combined with fire resistance class E.

EW is an improved class E.

Fire resistance class EI

Fire resistance class gas-tight integrity and isolation – stops heat spreading

I, which stands for isolation, means that the fire resistance class meets a standard for maximum temperature rise on the non-fire side of 140 C° and maximum 180 C° at occasional points. This fire resistance class prevents heat from spreading and is always combined with the E standard. The European standard for fire doors has versions EI_1 and EI_2, depending on where the temperature is measured during testing. EI_1 is a somewhat tougher standard than EI_2.

We recommend fire resistance class EI as heat radiation in the other fire resistance classes can quickly lead to the spread of fire or injury from heat radiation to persons evacuating the building.

Numbers indicate time in minutes

Fire resistance classes E, EW, and EI are always followed by a number that indicates time in minutes. In fire resistance class EI30, you have 30 minutes to evacuate the building without injury from heat radiation. In fire resistance class EW120, the emergency services have 120 minutes in which to fight the fire and save as much as possible.

STÅLPROFIL

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