

# PROTECTION STEEL BUILDINGS



#### **Protect what is most important**

Can you put value on a person's life? It is hard to do, all we can say for sure is that it is high and the most important thing to protect. When designing and building all types of houses and facilities it is getting more and more obvious that this factor has to be calculated in.

Armox protection steel is produced by SSAB and is already today used as part of or the whole construction in buildings. The protection steel is manufactured to withstand ballistics and blasts while at the same time being workshop friendly.

#### **Examples**

#### Governmental buildings/embassies

These buildings are often under threats and need the extra protection that protection steel can offer.

### Guard posts, panic rooms, tornado shelters and safe rooms

They have to be able to resist bullets, flying objects of all sorts and terrorist attacks.

#### Refuge chambers in underground mines

With the blast protection the workers are kept safe from explosions and rock falls.

#### Blast resistant buildings

According to the clients specifications the buildings has to be ballistic and blast resistant.

#### Secure storage units, doors and containers

To keep persons and belongings safe from threats including bullets and explosions.



## "We have focused on two things, the first thing is security. The metal is (... ) Armox 500T"

Jon Karlung, CEO Bahnhof

- Optimized ballistic/explosion properties.
- Tough, hard and strong, yet workshop friendly.
- Thorougly ballistic tested and positively proven in life threatening situations.
- ► Complete product program ensures that SSAB's experts can help select the best possible solutions for any applications/situation.
- Narrow tolerances with garanteed plus tolerances when requested.

#### **AVAILABLE STEELS AND PROTECTION CLASSES**

| Steel grade          | Thickness range | CET [%]   | CEV [%]   |  |  |
|----------------------|-----------------|-----------|-----------|--|--|
| Armox 370T CL1 & CL2 | 3–100 mm        | 0.46-0.50 | 0.67-0.73 |  |  |
| Armox 440T           | 4-80 mm         | 0.39-0.42 | 0.67-0.73 |  |  |
| Armox 500T           | 3-80 mm         | 0.46-0.50 | 0.67-0.73 |  |  |
| Armox 600T           | 4-20 mm         | 0.58-0.61 | 0.83-0.86 |  |  |
| Armox Advance 4–9 mm |                 | 0.64-0.68 | 0.89-0.96 |  |  |

| EN 1522          |                   |                   |              |                   |                   |                       |                   |                   |                   |
|------------------|-------------------|-------------------|--------------|-------------------|-------------------|-----------------------|-------------------|-------------------|-------------------|
| Protection level | Threat            | Velocity<br>(m/s) | Range<br>(m) | Armox 500<br>(mm) | Armox 600<br>(mm) | Armox Advance<br>(mm) | Ramor 500<br>(mm) | Ramor 550<br>(mm) | Ramor 600<br>(mm) |
| FB4              | .357 Mag FJ/CB/SC | 430±10            | 5            | -                 | -                 | -                     | 2.5               | -                 | -                 |
|                  | .44 Mag FJ/FN/SC  | 440±10            |              |                   |                   |                       |                   |                   |                   |
| FB4+             | 7.62x39 M43       | 720±10            | 10           | 4                 | -                 | -                     | 4                 | 3.7               | 3.5               |
| FB5              | 5,56x45 SS109     | 950±10            | 10           | 6.5               | 5                 | 5                     | 6.5               | 5.9               | 5                 |
| FB6              | 5,56x45 SS109     | 950±10            | 10           | 6.5               | 5                 | 5                     | 6.5               | 5.9               | 5                 |
|                  | 7,62x51 NATO Ball | 830±10            |              |                   |                   |                       |                   |                   |                   |
| FB7              | 7,62x51 NATO AP   | 820±10            | 10           | 14.5              | 12                | 9                     | 14.5              | 13                | -                 |

| NIJ              |                   |                   |              |                   |                   |                       |                   |                   |                   |
|------------------|-------------------|-------------------|--------------|-------------------|-------------------|-----------------------|-------------------|-------------------|-------------------|
| Protection level | Threat            | Velocity<br>(m/s) | Range<br>(m) | Armox 500<br>(mm) | Armox 600<br>(mm) | Armox Advance<br>(mm) | Ramor 500<br>(mm) | Ramor 550<br>(mm) | Ramor 600<br>(mm) |
| II               | 9mm FMJ           | 367±9             | 5            | 3                 | -                 | -                     | 2.2               | -                 | -                 |
|                  | .357 Magnum JSP   | 436±9             |              |                   |                   |                       |                   |                   |                   |
| IIIA             | 9mm FMJ           | 436±9             | 5            | 3                 | -                 | -                     | 2.5               | -                 | -                 |
|                  | .44 Magnum JHP    | 436±9             |              |                   |                   |                       |                   |                   |                   |
| III              | 7,62x51 NATO Ball | 838±9             | 15           | 6.5               | 5                 | 5                     | 6                 | 5                 | 5                 |
| IV               | .30 M2AP          |                   | 15           | 14                | 10                | 9                     | 14                | 13                | -                 |

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