SWEBOR ARMOR™ 550
BALLISTIC PROTECTION STEEL
DATASHEET

MATERIAL
Swebor Armor™ 550 is advance 550HB protection steel. Specifically chemical composition with addition of nickel, chromium and molybdenum with carefully managed production from the melt, rolling to heat treatment sequence give Swebor Armor™ 550 advance combination of hardness, strength, bendability, weld ability and ballistic performance.

APPLICATION
Swebor Armor™ 550 can be used in most protection application i.e civil armored vehicles (limousines, SUVs, trucks), CIT-vehicles, police cars, security doors and walls, bank counters, shoot catches, etc. SweborArmor 550B has advance ballistic performance. In comparison with 500HB protection steel Swebor Armor™ 550 offers same protection properties at lower thickness which guarantee same protection level at lower weight. Regardless higher hardness Swebor Armor™ 550 still remains easy to handle in the workshop with excellent bending and welding properties.

CHEMICAL COMPOSITION (in wt. %)

<table>
<thead>
<tr>
<th>MAX</th>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>Cr</th>
<th>Ni</th>
<th>P</th>
<th>S</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0,32</td>
<td>0,80</td>
<td>0,60</td>
<td>0,80</td>
<td>3,00</td>
<td>0,015</td>
<td>0,003</td>
<td>0,004</td>
</tr>
</tbody>
</table>

*The steel is grain-refined / All values are in max. wt. %

DELIVERY CONDITION
Quenched + Tempered

HARDNESS
The hardness is measured according to DIN EN ISO 6506-1. The measurement takes place 1 mm underneath the plate surface. Swebor Armor™ 550 reaches hardness values between 530 and 560 HB.

MECHANICAL PROPERTIES (TYPICAL VALUES)

<table>
<thead>
<tr>
<th>YIELD STRENGTH $R_{p0.2}$ (N/mm²)</th>
<th>TENSILE STRENGTH $R_m$ (N/mm²)</th>
<th>ELONGATION $A_5$ (%)</th>
<th>IMPACT STRENGTH $Kv$ -40°C (J)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>1800</td>
<td>10</td>
<td>22</td>
</tr>
</tbody>
</table>

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VERSION 1.3
GENERAL WORKING INFOS
Due to its chemical composition Swebor Armor™ 550 has good welding characteristics. Furthermore it reaches good properties for cold bending, sawing, mechanical cutting as well as milling. In order not to lose its typical characteristics, especially its hardness, Swebor Armor™ 550 must not be heated above 200°C.

CONSULTANCY
In order that Swebor Armor™ 550 withstands the different customer specific challenges, a careful production and operational planning is required. To verify actual ballistic protection properties, tests must be performed for each application. Therefore it is highly recommended to ask for professional advice, which can be obtained by our expert staff or by third-party specialists of our cooperating partners.

DIMENSION RANGE

<table>
<thead>
<tr>
<th>THICKNESS (mm)</th>
<th>WIDTH (mm)</th>
<th>LENGTH (mm)</th>
<th>NORMAL STOCK DIMENSION (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,00 - 2,49</td>
<td>1000 - 1150*</td>
<td>1500 - 7000</td>
<td>1000 x 3000</td>
</tr>
<tr>
<td>2,50 - 2,99</td>
<td>1000 - 1300*</td>
<td>1500 - 4000</td>
<td>1000 x 3000</td>
</tr>
<tr>
<td>3,00 - 6,50</td>
<td>1000 - 1550</td>
<td>1500 - 8000</td>
<td>1500 x 3000</td>
</tr>
<tr>
<td>7,00 - 20,00</td>
<td>1000 - 1550</td>
<td>1500 - 6100</td>
<td>1500 x 3000</td>
</tr>
</tbody>
</table>

*1500mm width might be possible. Discussion required

BALLISTIC RECOMMENDATIONS SWEBOR ARMOR™ 550

<table>
<thead>
<tr>
<th>AMMUNITION CALIBER</th>
<th>TYPE</th>
<th>TEST CONDITION</th>
<th>VELOCITY (m/s)</th>
<th>RECOMMENDED THICKNESS (mm)</th>
<th>NORMS VPAM EN 1522/1063</th>
<th>STANAG 4569/AEP55 AND OTHERS</th>
<th>ADD. INFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,62x39</td>
<td>FMJ/PB/FeC</td>
<td>10</td>
<td>720 ±10</td>
<td>3,7</td>
<td>6</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

5,56x45 FMI/PB/SCP
7,62x51 FMI/PB/SC
5,56x45 FMI/PB/SCP
5,56x45 FMI/PB/HC
7,62x39 API BZ FMI/PB/HCl
7,62x51 AP FMI/PB/HC

*Smaller plate thickness possible

FMJ Full Metal Jacket
CB Coned Bullet
RN Round Nose
PB Pointed Bullet
FN Flat Nose
SC Soft Core
FP FeC Fe-Core (non hardened)
SCP Soft Core Penetrator
I Incendiary

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