



## MATERIAL

Swebor Armor™ 440 is a low alloyed ballistic protection steel. Chemical composition paired with its carefully controlled heating, rolling, cooling and heat treatment sequences give Swebor Armor™ 440 its good combination of hardness,  $R_{p0,2}/R_m$  ratio, elongation, weldability, bending, blast and ballistic protection ability. Steel is equivalent to MIL - DTL - 12560 class 4 selection with tighter chemical composition range for better material performance.

## APPLICATION

Swebor Armor™ 440 can be used in most protection applications i.e. civil armored vehicles (limousines, SUVs or trucks) and military applications. Swebor Armor™ 440 has good resistance against penetration and blast but still remains easy to handle in the workshop.

## CHEMICAL COMPOSITION (in wt.%)

MAX	C	Si	Mn	Cr	Ni	P	S	B	Mo	CE(IIW) / CET**
	0,25	0,60	1,40	1,20	0,50	0,025	0,005	0,002	0,35	0,46 / 0,30

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

\*\*Typical for 12 mm thick plate

## DELIVERY CONDITION

Quenched + Tempered. Plates can be delivered in raw or sandblasted surface condition.

## HARDNESS

The hardness is measured according to DIN EN ISO 6506-1. The measurement takes place 1 mm underneath the plate surface. Swebor Armor™ 440 reaches hardness values between 420 and 470 HB.

## MECHANICAL PROPERTIES (TYPICAL VALUES)

YEILD STRENGTH $R_{p0,2}$ (N/mm <sup>2</sup> )	TENSILE STRENGTH $R_m$ (N/mm <sup>2</sup> )	ELONGATION $A_5$ (%)	ELONGATION $A_{50}$ (%)
1150	1450	12,0	14
IMPACT STRENGTH $K_v$ @ -40 °C (J)			
Thickness from 6 - 8 mm		Thickness from 8,1 - 12 mm	Thickness from 12,1+ mm
11		17	22

## **GENERAL WORKING INFOS**

Due to its chemical composition Swebor Armor™ 440 has good welding characteristics due to its low carbon equivalent. Furthermore it reaches good properties for cold bending, sawing, mechanical cutting as well as milling.

## **CONSULTANCY**

In order that Swebor Armor™ 440 withstands the different customer specific challenges, a careful production and operational planning is required. In this respect 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.