

TOOLOX³³

PREHARDENED TOOL STEEL

TOOLOX 33 is a quenched and tempered tool steel, designed to have low residual stresses. It is characterized by its extremely good machinability, in combination with a hardness of 300 HBW. The steel is especially suited for plastic moulds, having excellent polishing and photoetching ability.

Other applications are for example rubber moulds, bending tools, recipient sleeves, etc.

TOOLOX 33 is comparable to W.nr 1.2311 / 1.2312 / 1.2738, P20 etc.

Hardness (Guaranteed values)	HBW 280 – 330 (Approx. 27-33 HRC)								
Impact properties (Guaranteed values)	<table border="1"> <thead> <tr> <th>Testing temperature °C</th> <th>Impact energy Charpy-V longitudinal direction; min. J</th> </tr> </thead> <tbody> <tr> <td>20</td> <td> <table border="1"> <tr> <td>≤ 130 mm</td> <td>> 130 mm</td> </tr> <tr> <td>27</td> <td>20</td> </tr> </table> </td> </tr> </tbody> </table>	Testing temperature °C	Impact energy Charpy-V longitudinal direction; min. J	20	<table border="1"> <tr> <td>≤ 130 mm</td> <td>> 130 mm</td> </tr> <tr> <td>27</td> <td>20</td> </tr> </table>	≤ 130 mm	> 130 mm	27	20
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Tensile properties (Calculated values)	Tensile strength approx. 950 - 1125 MPa								
Milling (Guaranteed values)	At a cutting speed of 300 m/min. feed 0,15 mm, 10 min. effective cutting time using a Sandvik Coromill 200 and inserts GC 1025, we guarantee max 0,3 mm edge wear.								
Ultrasonic insp. (Guaranteed values)	Discontinuities giving echoes at least equivalent in amplitude to flat bottom hole 1,5 mm shall be reported according to SSAB Standard V6.								
Etching properties (Guaranteed values)	TOOLOX 33 fulfils the demands according to NADCA 207 - 97.								
Dimensions (Preliminary)	TOOLOX 33 is supplied in plate thicknesses 20-130 mm and as forgings in 300 mm thickness. See stock list on opposite side.								
Delivery condition	Quenched and tempered at min. 590°C								
Heat treatment	TOOLOX 33 is not intended for further heat treatment. If TOOLOX 33 is subjected to any heat treatment above 590°C, after delivery from SSAB Oxelösund AB, no guarantees concerning the properties of the material will be given.								
Testing	Testing in accordance with EN 10 137-1, 10 137-2 and EN ISO 6506-1. Hardness measured on a milled surface, 0,5-2 mm below surface.								
Tolerances	According to EN 10 029 – Thickness tolerances to Class C. – Flatness tolerances to Class N, steeltype L.								
Surface finish	According to EN 10 163-2 – Surface requirements to Class B. – Repair conditions to Subclass 3.								
Fabrication	For information concerning fabrication, please contact SSAB Oxelösund AB.								

