

**DATE:** January 2006

## PRODUCT DESCRIPTION

- Hot-rolled product with a guaranteed chemical composition. Suitable for applications requiring good wear resistance after heat treatment.

## SUPPLY CONDITIONS

- Surface finish: Hot-rolled
- Edge Condition: Mill Edge / Trimmed\*
- Tolerances: AS1365
- Flatness: Class A
- Certificate: BlueScope Steel - Analysis only
- As rolled (applications generally require material to be heat treated)

\*Optional supply condition. May be subject to size range restrictions

## TYPICAL USES

- Ground engaging tools
- Plough discs
- Wear/abrasion applications

## FEATURES & BENEFITS

- Abrasion/wear resistance properties on heat treatment
- Excellent hardness/toughness balance after heat treatment
- Boron treated for consistent hardness after heat treatment
- Excellent hardenability - can be hardened in oil or water
- Relatively good formability in the non-heat treated state compared with high carbon grades
- Titanium treated for resistance to grain coarsening on reheating for enhanced final toughness

## WARNINGS

- This grade is supplied in the as rolled condition only. Most applications require the material to be quenched and tempered. The steel properties are dependant on users heat treatment process and must be established and confirmed by user trials and evaluation.
- A mill edge may contain minor surface discontinuities as a result of the rolling process. It is recommended that customers satisfy themselves that the edge is suitable for the application.

## NEAREST OVERSEAS SPECIFICATIONS

SAE/AISI 15B28H, 15B30

### For more information contact BlueScope Steel Direct:

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The information contained in this datasheet is provided by way of general information only, and should not be relied upon by any person. You must seek specific advice as to the suitability of this product for the purpose for which, and the manner in which, you propose to use it. This may involve further independent analysis and testing. BlueScope Steel Limited and its related bodies corporate take no responsibility for any adverse consequences of any nature which arise as a result of reliance on this datasheet.

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<b>CHEMICAL COMPOSITION</b>		
<b>Element</b>	<b>Guaranteed %</b>	<b>Typical %</b>
Carbon	0.25-0.29	0.27
Phosphorus	0.03 max.	0.015
Manganese	1.50 Max.	1.35
Silicon	0.50 max.	0.25
Sulfur	0.02 max.	0.008
Aluminium	0.10 max.	0.030
Titanium	0.06 max.	0.025
Boron	0.0008-0.0030	0.0020
CEQ(IIW)**	0.64 max.	0.51

\*\* CEQ (IIW) =  $C + \frac{Mn}{6} + \frac{(Cr+Mo+V)}{5} + \frac{(Cu+Ni)}{15}$

<b>MECHANICAL PROPERTIES* as rolled (non-heat treated state)</b>		
<b>Tensile (Longitudinal)</b>	<b>Guaranteed Min.</b>	<b>Indicative</b>
Yield Strength (MPa)	-	320 - 400
Tensile Strength (MPa)	-	560 - 640
Elong. on 200mm (%)	-	16 - 28
Hardness (BHN)	-	160 - 220
180° Bend (Transverse)	-	1t

<b>MECHANICAL PROPERTIES* (Indicative for heat treated state - 5mm thick material)</b>		
Best temperatures for austenitising are between 870°C and 920°C. Heat treatment time 1 hour per 25mm of thickness		
<b>Tensile (Longitudinal)</b>	<b>Austenitised at 900°C Oil quenched &amp; tempered at 200°C</b>	<b>Austenitised at 900°C Water Quenched &amp; tempered at 400°C</b>
Yield (0.2% Proof) Strength (MPa)	950-1100	900 - 1050
Tensile Strength (MPa)	1300 - 1600	1100 - 1400
Elong. on 200mm (%)	4 - 7	5 - 8
Hardness (HRC/BHN)	44 - 48 / 415 - 465	40 - 44 / 370 - 415
Charpy Impact Energy (longitudinal +20°C, 10x5mm specimen)	15 - 22J	25 - 38J

- This grade is supplied in the as rolled condition only. Most applications require the material to be heat treated. The properties shown are from limited trials. Actual results are dependent on user's heat treatment process and must be established and confirmed by their own trials and evaluation.

<b>FABRICATING PERFORMANCE</b>	
Bending	Moderate (as supplied)
Welding	WTIA <a href="#">Group 8</a> **

\*\*\* Refer to WTIA Technical Note 1. Hydrogen controlled consumables and processes are essential for good welding. Slow cooling from the welding or preheat temperature is recommended. Post weld heat treatment (stress relief) may be beneficial for high quality work, particularly for components subject to severe service conditions



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