

STEEL



# HyPer30V

165ksi yield strength with impact properties at room temperature (23°C)

HyPer30V is a high performance alloy steel grade with enhanced mechanical properties compared to the standard grade. The chemical analysis and heat treatment schedules of HyPer30V have been specifically designed to give enhanced strength whilst maintaining market leading toughness.

HyPer30V is part of a new family of steel grades from Speciality Steels designed to meet the exact requirements of the most demanding downhole tool and completion equipment environments.

MEMBER OF





## Scope

HyPer30 is available with a yield strength of 165ksi whilst still retaining market leading impact properties.

## Steel manufacture

Steel is manufactured via Electric Arc Furnace, followed by ladle refining and vacuum degassing and is either cast into bottom poured wide end up ingots, or continuously cast.

## Heat treatment

- Furnaces surveyed and calibrated per AMS 2750.
- Austenitised and liquid quenched
- Tempered to meet select strength variant
- Supplied either stress free or stress relieved
- Process route may include a normalising step

## General delivery conditions

- Applicable bar diameters: 3 -8".
- Surface conditions: Black/ Peeled/Smooth Turned.
- Straightness: 1mm in 500mm, 1/8" in 5'.
- Enhanced straightness may be available on request.

## Structure

Grain size will be ASTM 5 or finer.

## Reduction ratio

Reduction ratio will meet 4:1 as a minimum.

## Chemical analysis

C	Si	Mn	P	S	Cr	Mo	Ni	Al	V
0.28	0.20	0.75	-	-	0.75	0.35	1.65	0.015	0.05
0.33	0.30	1.00	0.015	0.005	1.00	0.50	2.00	0.035	0.10

## Mechanical properties

	165ksi Variant 3-8" (mid radial)	
	Minimum	Maximum
0.2 % Proof stress (ksi)	165	
UTS (ksi)	175	
% Elongation	14	
% reduction of area	45	
Hardness HBW	320	392
	Average	Min. Single
CVN @ -23°C (J)	47	41

## Machining tolerances

For 'Machining Quality Bar' to ASTM A29 Tolerances the minimum machining allowance should be as follows:

Ordered Surface condition	Minimum stock removal
Peeled/Smooth Turned	1 % per side
Black	1.6 % per side

## API 6A

Each bar length will be 100 % ultrasonically tested per ASTM A388, with acceptance criteria in accordance with API 6A PSL 3&4.

Note: Above a rolled size 10.5" the central 20 % of the bar will be excluded from ultrasonic testing.

## Technical Support

We have a comprehensive technical support team available to advise on grade selection and product range to achieve the maximum benefit. Customer Technical Support provide specialist advice and help with day-to-day problem solving.

Works based metallurgists and the full resources of our Steel Research and Development Laboratories are available to assist with longer-term developments.

For further information, enquiries or any technical guidance on our range of Oil & Gas products please contact the Commercial Department at the address below.

## LIBERTY SPECIALITY STEELS

7 Fox Valley Way, Stocksbridge,  
Sheffield, S36 2JA, United Kingdom

T: + 44 (0) 114 288 2361  
E: [contactus@specialityuk.com](mailto:contactus@specialityuk.com)

While care has been taken to ensure that the information contained in this publication is accurate, Liberty House Group does not accept responsibility or liability for information which is found to be misleading. ©Copyright 2018 Liberty House Group.  
V1 04/2018.