# Product Data



PM High Speed Steel

## Chemical composition

Union Electric Åkers

Forged and Cast Rolls

	С	Cr	Мо	W	Со	V
SUPRA1	1.50	4.0	2.5	2.5	-	4.0
SUPRA3	1.28	4.1	5.0	6.4	-	3.1
SUPRA4	1.28	4.2	5.0	6.4	8.5	3.1
SUPRA5	2.48	4.2	3.1	4.2	_	8.0
SUPRA6	2.30	4.2	7.0	6.5	10.5	6.5

#### **Properties**

SUPRA1	7.8	220	24
	Density g/cm3	Young's modulus GPa	Thermal conductivity W/m°C
SUPRA6		≤ 68	
SUPRA5		≤ 65	
SUPRA4		≤ 67	
SUPRA3		≤ 66	
SUPRA1		≤ 64	
		Hardness HRC	

## Comparative properties

	Wear resistance	Toughness	Grindability
SUPRA 1			
SUPRA 3			
SUPRA 4			
SUPRA 5			_
SUPRA 6		—	_

#### Description

Forged high speed steel produced by utilizing powder metallurgy technique. Manufactured according to Union Electric Åkers specification.

The powder metallurgy technique allows design of high wear resistance grades as high alloy levels can be reached without uncontrolled growth of carbides.

SUPRA1 is supplied in through hardened condition.

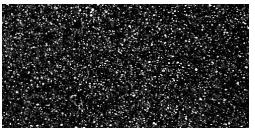
# Applications

Work rolls in 20-high mills for cold rolling of ferrous and non ferrous products.

Work rolls in Z-high mills for cold rolling of ferrous and non ferrous products.

1<sup>st</sup> Intermediate rolls in 20-high mills for cold rolling of ferrous and non ferrous products.

Work rolls in 2-high and 4-high narrow strip mills for cold rolling of ferrous and non ferrous products.



Microstructure PM Steel SUPRA



Microstructure Tool Steel AISI D2, 12% Cr

#### Features & Benefits

- Easy to grind.
- Good polishing ability.
- High toughness.
- High resistance to propagation of micro cracks.
- Even wear across entire roll barrel due to homogenous carbide distribution.
- Powder metallurgy steels maintain the surface finish longer before redressing will be necessary.

**Union Electric Åkers** www.uniones.com

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