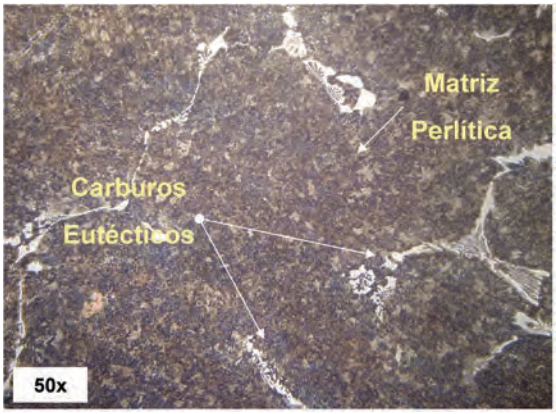
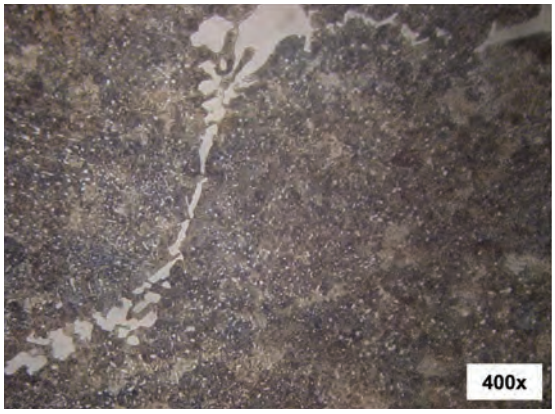
SCA

CAST STEEL





CHARACTERISTICS

This is the alloy line of cast steel that Fundición San Cayetano has developed to meet the most diverse applications in the steel industry. Depending on the alloying elements and heat treatment cycles, the microstructure can be made by eutectic and secondary M3C-type carbides, as well as by more complex eutectic carbides as the M7C3-type. The carbide phase, regardless of its type, is supported by a Perlite matrix. The characteristics of the latter constituent together with the volume fraction of carbide phase, are the ones which finally determine most of the physical and mechanical properties of these steels; including hardness.

SCA alloys are especially designed to confer high toughness and thermal fatigue resistance in applications such as roughing stands and adequate toughness / resistance commitment to wear in applications such as intermediate and finishing stands.

The addition of CS alloy to the cast steel family, with Chromium content of up to 5%, came to meet high performance expectations of universal mills due to its excellent wear resistance and thermal fatigue. These qualities mainly reflect to intense secondary precipitation of fine globular carbides that occurs in the matrix after the thermal treatment cycles.

TABLE OF USES

MILLS														
										Universal				
	Blooming	Billets			Structural Profiles			Tubes		Roughing		Edger	Finishing	
SC		Desb.	Int.	Term.	Desb.	Int.	Term.	Expan.	Perf.	Horiz.	Vert.		Horiz.	Vert.
A1	•	•			•			•		•				
A2			•			•								
A3			•	•		•	•							
A4			•			•					•			
A5				•		•	•				•	•	•	•
A6	•	•			•				•					
CS													•	•

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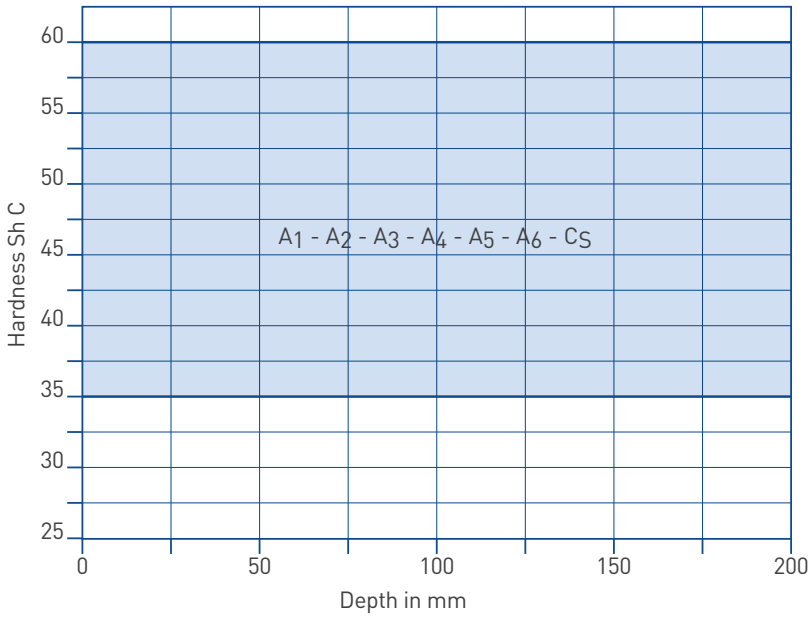
CHEMICAL COMPOSITION

SCA	C	Si	Mn	Cr	Ni	Mo	Hardness Sh C	Significant alloying
A1	0.50 - 1.50	0.30 - 0.70	0.50 - 1.00	0.70 - 1.30	< 0.40	0.30 - 0.60	35/43	Cr, Mo
A2	1.50 - 2.00			0.80 - 1.45	1.20 - 2.05	0.20 - 0.50	40/48	Cr, Ni, Mo, Medum and % C
A3	1.80 - 2.30						40/50	
A4	1.00 - 1.60						40/53	
A5	1.20 - 1.80		1.20 - 1.70	1.10 - 1.70	1.00 - 2.00	0.15 - 0.60	47/58	Cr, Ni, Mo, Mn
A6	0.30 - 0.90		0.20 - 0.90	0.80 - 2.00	1.00 - 1.80	0.15 - 0.50	38/43	Cr, Ni, Mo Bajo% C
CS	1.40 - 2.20		0.60 - 1.20	3.50 - 5.00	0.80 - 1.50		47/60	Cr, Ni, Mo, Mn

MECHANICAL PROPERTIES

SC	Tensile Strength Kg/mm2	Flexural Strength Kg/mm2	Elongation %
A1	65-95	130-160	1-2
A2	40-50	70-80	0.80-1.20
A3	60-80	110-140	1-2
A4	>50	>80	0.80-1.80
A5	50-60	80-110	1-2
A6	65-95	130-160	1-3
CS	50-60	80-110	1-2

HASRNESS GRADIENT



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FINAL PRODUCT