



With over 50 years in the market, our extensive metallurgical experience, world-class standards, strong commitment to quality, and exceptional customer service make us one of the top forging and steel companies in the world.

Our products are present in industries such as energy, transportation, construction and heavy equipment, automotive, industrial and oil and gas.

 **+3,000**
Employees

 **3 divisions**
• Steel • Forge • Aerospace

FRISA Steel's new rolling mill produces rounds and round-cornered square bars in sizes ranging from 3-3/4" to 16" diameter, using stainless, alloy, carbon, and tool steel grades. Our products are proudly melted, cast, and rolled in North America to meet your specifications, standards, and expectations.

 **Steel grades**

STAINLESS		ALLOY		TOOL	CARBON	
410	304	41xx	ASTM A182F5	H11	10xx	ASTM
420	310	43xx	ASTM A182F11	H13	11xx	ASTM A105
F91	316	86xx	ASTM A182F22	P20	15xx	ASTM A350 LF2
F9	17-4		ASTM A707			ASTM A350 LF6
F5	15-5		CrMoV			ASTM A350 F60
F51	347		NiCrMov			ASTM A694V
F53	321		18CrNiMo7-6			ASTM A584B
			34CrNiM06			

*Other grades, modifications and customer specifications are available upon request.

 **Manufacturing process**

ELECTRIC ARC FURNACE (EAF)	Heat size: 110K lbs (50 metric tons) Melting of scrap with Eccentric Bottom Tapping (EBT) Hot heel practice, automatic temperature. measurement and sampling
SECONDARY METALLURGICAL TREATMENT	Ladle furnace Vaccum oxygen degassing station Deslagging station
INGOT CASTING	Bottom-poured ingots with 3-axis positioning car, and automatic casting speed Slide gate with 3 plates and argon injection Argon shrouding between ladle and casting trumpet
HEAT TREATMENT	Annealing furnaces Slow cooling boxes Fully automated line for any of your HT needs
BREAKDOWN MILL (BDM)	Capacity for rolling 300K metric tons / yr Unjamming system for overload protection and load detection Self-centering shapes of grooves
CONTINUOUS MILL	Optimal pass design reduction and high quality and precision tolerance 6 continuous stands in V-H configuration for finish of rounds and squares In-line measuring system to ensure roundness and tolerances
FINISHING LINE	Straightening machine with constant correction and a shotblast machine Surface inspection with inductive heat flux thermography Automated UT bar inspection with phased-array full-body inspection



New Rolling Mill

The new FRISA Steel Rolling Mill is located at our Garcia plant in Nuevo Leon, Mexico, and will utilize ingots produced by the existing 50-ton melt shop, which was installed in 2016. Our products are manufactured to the highest quality standards using our own melting and production facilities in Garcia. By utilizing ingot material as input for the Rolling Mill, we will achieve optimal reduction ratios and ensure center soundness.

SIZES	3-3/4" to 12" rounds		Reduction Ratio \geq 6:1		
	>12 to 16" rounds		Reduction Ratio \geq 4:1		
	4" to 12" squares		Reduction Ratio \geq 6:1		
TESTING	Destructive and non-destructive			UT and surface	
HEAT TREATMENT	Normalizing	Quenching/Tempering	Annealing	Spherodizing	Stress relieving
SURFACE FINISH	As-rolled	Sandblasted	Peeled	Rough-turned	Machined



SPECIFICATIONS

Bearing steels to ASTM A295, A485, A534 and A866
 Aircraft quality steel to AMS 2301 and AMS 2304
 All ASTM A-29 and SAE carbon, resulfurized and rephosphorized steels
 All ASTM A-29 and SAE alloy steels
 Boron steels, micro-alloyed and calcium treated steels
 German (DIN), Japanese (JAS & JIS) and UNS standards
 DNV RP 0034 for oil/gas
 API RP 6HT (API Standard for Heat Treatment)
 For customer-specific, restrictive, or special chemistries, please inquire.
 Tool steel and stainless steel grades and specifications

