



NESSteel Inc.

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12L14 Cold Roll Steel

12L14 Cold Roll is a resulphurized, rephosphorized screw machine stock with the addition of lead. This addition of lead, plus the high sulphur and phosphorous levels, form lubricating effects resulting in extremely fast machining rates. 12L14 gives a smooth, machined surface and because of its low friction component allows for increased tool life. 12L14 is commonly referred to by the trade name Ledloy™.

ANALYSIS

Carbon (C)	Manganese (Mn)	Lead (Pb)	Phosphorus (P)	Sulfur (S)
0.15	0.85-1.15	0.15-0.35	0.04-0.09	0.26-0.35

12L14 cold roll bars conforms to ASTM A29,A108

MECHANICAL PROPERTIES

Condition	Tensile Strength (PSI)	Yield Strength (PSI)	Reduction of Area	Elongation in 2"	Brinell Hardness
1" Rd, cold drawn	78,000	70,000	50	15	163

The above values are average and may be considered as representative of 12L14

APPLICATIONS

12L14 is used extensively in automatic screw machines for manufacturing numerous parts requiring considerable machining and close tolerances, along with a smooth finish. 12L14 can be used to maximum advantage where considerable machining is required, such as bushings, inserts, couplings and hydraulic hose fittings. With good ductility, 12L14 is suitable for parts involving crimping, bending or riveting.

MACHINABILITY AND WELDABILITY

12L14 has a machinability rating at 193% of B1112. Average cutting speed 325 ft/min. 12L14 is not readily welded due to high sulphur content and is not recommended.

HEAT TREATING

Although 12L14 will respond to conventional treatments, it is not considered to be a case-hardening steel. Better results can be obtained with 1117 or 1018.

TOLERANCES

Rounds

Up to 1-1/2" incl.	0.003
Over 1-1/2 to 2-1/2", incl.	0.004
Over 2-1/2 to 4", incl.	0.005
Over 4 to 6", incl.	0.006

12L14 free machining steel		
Minimum Properties	Ultimate tensile strength, psi	78,300
	Yield Strength, psi	60,200
	Elongation	10.0%
	Rockwell Hardness	B84
Chemistry	Iron (Fe)	97.91 - 98.7%
	Carbon (C)	0.15% max
	Manganese (Mn)	0.85 - 1.15%
	Phosphorus (P)	0.04 - 0.09%
	Lead (Pb)	0.15 - 0.35%
	Sulfur (S)	0.26 - 0.35%