

**NOV SARA ENGINEERING SPECIFICATION****SECTION SES 26 – 805****ISSUE "A",****EFF. DATE: 23.08.2016****REV "0"****Page 1 of 3**

**MATERIAL SPECIFICATION FOR AISI 12L14**  
**BRIGHT MILD STEEL**

Rev	Reason of change	Date	Made By	Reviewed By	Approved By	Status
0	Initial release	23-08-2016	M N	AS	KKD	Release

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## **1.0 PURPOSE**

**1.1** It is the purpose of this material specification to list in concise form of the material requirement for AISI 12L14.

**1.2** This material specification is intended to aid the purchasing department in procuring and the vendor in supplying a material which meets the needs of its intended use, and the quality control department in the inspection and release of incoming material.

## **2.0 REQUIREMENTS**

**2.1** The requirements of specification SES 26-590, SES 26-740 & SES 26-744 shall apply in addition to the following specific requirements.

**3.0 Chemical composition:** Chemical composition limits are listed below. An analysis of each heat of steel is made by the manufacturer, preferably from a ladle sample taken at or near the time of pouring. The listed elements shall be reported in weight percent.

ELEMENTS	COMPOSITION RANGE (%)
Carbon (C)	0.15 (max.)
Manganese (Mn)	0.80 - 1.20
Silicon (Si)	0.10 (max.)
Sulphur (S)	0.35 (max.)
Phosphorous	0.09 (max.)
Lead	0.15 – 0.35

**4.0 Mechanical Properties:** Mechanical property requirements are listed below. Each heat shall be tested and the listed mechanical properties shall be reported.

MECHANICAL PROPERTIES	RANGE
TENSILE STRENGTH	(400 – 630) MPa
YIELD STRENGTH	(290 – 500) MPa
ELONGATION IN 2" Gauge Length	9 % Min.
BRINELL HARDNESS	(115 – 185) BHN

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#### **5.0 HEAT TREATMENT: -**

PROCESS	ATMOSPHERE/MEDIA	TEMPERATURE	TIME AT TEMPERATURE
Annealing	Air	(890-920 °C)	½ hour per inch of maximum through Thickness. One hour minimum.
<b><u>Note:</u></b> Maximum holding time shall not exceed Five times (5X) the minimum holding time. In all case, holding time shall not start until parts or materials have reached specified heat treatment temperature. The 5X rule does not apply to the separate QTC (e.g. ER 5”)			
Furnace cool to below 400 °C			

#### **6.0 DOCUMENTATION REQUIRED**

- 6.1** Each shipment shall be accompanied by material certifications for each lot of material, certifications must be positively relatable to the lot of material represented.
- 6.2** Recheck of Chemical properties to be carried out by SARA SAE.