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	SECTION SES 26 – 325	
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**ASTM A-216 Gr WCB MATERIAL SPECIFICATION FOR LOW CARBON STEEL
FOR LOW PRESSURE HAMMER UNION**

1.0 SCOPE

1.1 ASTM A-216 Gr. WCB carbon steel castings 36 KSI minimum yield strength for standard service.

2.0 REQUIREMENTS

2.1 The requirements of specification S.E.S. 26-590 shall apply in addition to the following specific requirements.


- 2.1.1 **Chemical composition:** Chemical composition limits are listed below. An analysis of each heat of steel be 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. Reporting of residual elements is not required, but total residuals must not exceed 1%.

ELEMENTS	COMPOSITION RANGE (%)
Carbon (C)	0.30 (max)
Manganese (Mn)	1.00 (max)
Silicon (Si)	0.60 (max)
Phosphorus (P)	0.040 (max.)
Sulphur (S)	0.045 (max.)

- 2.1.2 **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, PSI	70,000 (483 MPa) Min.
YIELD STRENGTH, PSI	36,000 (248 MPa) Min.
ELONGATION IN 50mm Dia	22% Min.
REDUCTION IN AREA	35% Min.
HARDNESS	212 BHN (16 HRC) Max.



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2.1.3 HEAT TREATMENT

PROCESS	ATMOSPHERE/MEDIA	TEMPERATURE	TIME AT TEMPERATURE
Normalizing	Air	1600 °F (870 °C)	1/2 hour per inch of maximum through Thickness.
Slow cool to room temperature			

