

BRINELL H34 Failed
 HERE IS TEST RESULTS
~~XXXXXXXXXXXXXXXXXXXX~~

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27.8-316
 Rev. 4

BRINELL HARDNESS

Specifications: SP-03-1222, Rev 0
 Procedure: ASTM E10-08
 ASTM A833-08

Equipment Manufacturer: GE DYNAMIC CAL DUE:
 12/16/2021

Client: MISSISSIPPI TANK
 W.O. / Job #: 1129-004011

Maximum Hardness: _____

Weld Number	Line / Spool ID	Processing Stage	Location	Test Bar Indent Diameter (mm)	Work Piece Indent Diameter (mm)	TEST PEICE	Based on Maximum Hardness Above	
							Accept	Reject
		<input checked="" type="checkbox"/> Other Condition <input type="checkbox"/> Before PWHT <input type="checkbox"/> After PWHT	HAZ			217		
			CAP					
			HAZ					
		<input checked="" type="checkbox"/> Other Condition <input type="checkbox"/> Before PWHT <input type="checkbox"/> After PWHT	HAZ			226		
			CAP					
			HAZ					
		<input checked="" type="checkbox"/> Other Condition <input type="checkbox"/> Before PWHT <input type="checkbox"/> After PWHT	HAZ			220		
			CAP					
			HAZ					
		<input checked="" type="checkbox"/> Other Condition <input type="checkbox"/> Before PWHT <input type="checkbox"/> After PWHT	HAZ			196		
			CAP					
			HAZ					
		<input type="checkbox"/> Other Condition <input type="checkbox"/> Before PWHT <input type="checkbox"/> After PWHT	HAZ					
			CAP					
			HAZ					
		<input type="checkbox"/> Other Condition <input type="checkbox"/> Before PWHT <input type="checkbox"/> After PWHT	HAZ					
			CAP					
			HAZ					

Technician Signature: _____
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Date: 2/4/2021

AISI A514 Grade E Alloy Steel (UNS K21604)

Written by AZoM

Sep 13 2012

Topics Covered

Introduction
Chemical Composition
Physical Properties
Mechanical Properties
Other Designations

Introduction

Alloy steels contain different varieties of steels that exceed the composition limits of Mn, C, Mo, Si, Ni, Va, and B set for carbon steels. They are designated by AISI four-digit numbers. They respond more quickly to mechanical and heat treatments than carbon steels.

The following datasheet gives more details about AISI A514 grade E alloy steel.

Chemical Composition

The following table shows the chemical composition of AISI A514 grade E alloy steel.

Element	Content (%)
Iron, Fe	96
Chromium, Cr	1.7
Manganese, Mn	0.55
Molybdenum, Mo	0.5
Silicon, Si	0.28
Copper, Cu	0.3
Carbon, C	0.12 - 0.20
Titanium, Ti	0.07
Boron, B	0.003

Physical Properties

The physical properties of AISI A514 grade E alloy steel are given in the following table.

Properties	Metric	Imperial
Density	7.85 g/cm ³	0.284 lb/in ³

Mechanical Properties

The mechanical properties of AISI A514 grade E alloy steel are outlined in the following table.

Properties	Metric	Imperial
Tensile strength	760-895 MPa	110000-130000 psi
Yield strength (@ strain 0.200%)	690 MPa	100000 psi
Bulk modulus (typical for steel)	140 GPa	20300 ksi
Shear modulus (typical for steel)	80.0 GPa	11600 ksi
Elastic modulus	190-210 GPa	27557-30458 ksi
Poisson's ratio	0.27-0.30	0.27-0.30
Elongation at break (in 50 mm)	18%	18%
Hardness, Brinell (@ thickness 9.50 mm/ 0.374 in, for plates)	235-293	235-293
Hardness, Knoop (converted from Brinell hardness)	289	289
Hardness, Rockwell B (converted from Brinell hardness)	98	98
Hardness, Rockwell C (converted from Brinell Hardness)	26	26
Hardness, Vickers (converted from Brinell hardness)	278	278

Other Designations

Other designations that are equivalent to AISI A514 grade E alloy steel include:

- ASTM A514 (E)
- ASTM A517 (E)