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4145H Alloy Steel Round Bar

MATERIAL SPECIFICATIONS

PREPARED BY: H POPE

REVISION DATE: 03/15/2013

MATERIAL	ALLOY ROUND BAR 4145H Modified	HOT ROLLED OR FORGED
	12-24' RANDOM LENGTHS	SIZES 1 to 40 inch
		ROUGH TURNED

SPECIFICATIONS	ALL SPECIFICATIONS WITH LATEST YEAR REVISIONS A1SI 4145H Mod. ASTM A255, ASTM A322, ASTM A370, API Spec. 7 EN 10204 3.1
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<u>CHEMICAL ANALYSIS</u>	<u>MECHANICAL PROPERTIES</u>
Aluminum Al 0.010 /0.040	Tensile Strength 140,000 psi
Carbon C 0.42 /0.49	(U.T.S.)
Chromium Cr 0.90 /1.20	Yield Strength 110,000 psi
Copper Cu 0.350	(Yield) 0.2% Offset
Manganeses Mn 0.85 /1.20	Elongation 14%
Molybdenum Mo 0.25 /0.35	(Ei. or Elong.)
Nickel Ni 1.000	Reduction of Area 45%
Phosphorous P 0.020	(R.A. or Red.)
Silicon Si 0.15 /0.35	Hardness
Sulfur S 0.025	Brinell 285-340 BHN
Vanadium Va not reported	
	Impact Charpy-V min 40 ft/lb at -75 Deg. F

All singular chemistry values are
MAXIMUM unless otherwise noted

All mechanical properties are
MINIMUM unless otherwise noted

OTHER TEST(S) AND/OR REQUIREMENTS

REPORT CHARPY-V-NOTCH IMPACT TESTING TO ASTM A370 AT 40 FT/LB -75 DEG. F
THE CHARPY-V-NOTCH ROOT SHALL BE AT LEAST 1/4T FROM ENDS OF QTC
IMPACT TEST TEMPERATURE , SAMPLE SIZE OF SPECIMENS INCLUDING LATERAL EXPANSION MUST BE REPORTED.

REPORT ULTRASONIC TESTED TO API Spec.7-1
REPORT REDUCTION RATIO
REPORT FINISH CONDITION, MELT AND HOT WORKING PRACTICES (FORGED OR ROLLED)
REPORT HEAT TREATMENT METHOD, SOAKED TIME AND TEMPERATURE
REPORT HARDNESS PER ASTM A255
REPORT GRAIN SIZE PER ASTM E112 (SIZE 6 minimum)
NO WELD OR WELD REPAIR STATEMENT
FREE FROM RADIOACTIVE CONTAMINATION STATEMENT
GRADE AND HEAT NUMBER MUST BE METAL STAMPED ON ENDS OF BAR
LABEL AFFIXED TO BOTH ENDS OF BAR MUST SHOW: CUSTOMER REF NUMBER, GRADE, HEAT, SIZE, WEIGHT, LENGTH.

IMPORTANT:

ORIGINAL CERTIFICATES OF CHEMICAL & PHYSICAL ANALYSIS REQUIRED TWO (2) WEEKS BEFORE SHIPMENT ARRIVES
ALL TEST REPORTS MUST STATE COUNTRY OF ORIGIN
TEST REPORTS MUST HAVE THE SIGNATURE NAME AND TITLE/POSITION PRINTED
ALL TEST REPORTS MUST BE SIGNED BY AUTHORIZED PERSON.