

Certified Material Test Report

Cert #: 403781	Mill Order: 2314806	Heat #: A233624	Issued: 10/25/2023 09:37:50
Work Order: 399523	Sales Order: 293511-1		PO #: 4500558199-2
Load #: 445112	Reference #:	Reference Desc:	End Use: 292652
Size: 4"	Shape: Round	Grade: A36	Length: 20'
Grain Practice: Coarse Grain		Reduction Ratio: 11.6 to 1	Disposition: Rolled Prime

Ladle Chemistry Analysis (ASTM A29)

C	Mn	P	S	Si	Al	Cu	Ni	Cr	Mo	Sn	N	V	Cb/Nb	B	Ca	W	Ti	DI
0.15	0.65	0.016	0.021	0.14	0.001	0.34	0.15	0.20	0.05	0.008	0.0081	0.002	0.002	0.0001	0.0000	0.004	0.001	0.56
Pb	Co	As	Sb	Zr	Bi	H (ppm)	O (ppm)	Ceq	J-Factor									
0.000	0.008	0.004	0.001	0.001	0.000			0.34	198									

Product Check Analysis (ASTM A29)

C	Mn	P	S	Si	Al	Cu	Ni	Cr	Mo	Sn	N	V	Cb/Nb	Ti	B	Ca	O
Front																	
Back																	

Jominy (ASTM A255)

	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12	J14	J16	J18	J20	J24	J28	J32
Calc'd Standard	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	50			
Calc'd Metric																		
	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J12	J14	J16	J18	J20	J24	J28	J32
Front																		
Back																		

Microcleanliness (ASTM E45)

Method A										Method C (SAE J422)				Method E				Microcleanliness (DIN 50602)			
AT	AH	BT	BH	CT	CH	DT	DH	S	O	SAM "B"		SAM "D"		S	O	Tot	M	Tot			

Decarb

Depth		% of Diameter		Grainsize		Macrostructure (ASTM E381)			Magnetic Particle Inspection			
				Austenitic	Ferritic	S	R	C	Frequency		Severity	

Mechanical Properties (ASTM A370)

Tensile Properties						Hardness (BHN)	
Tensile Strength	0.2% Yield Strength	% Elong (2")	% ROA	0.35% EUL Yield Strength	(MR)	(Surf)	
70,900 psi	39,700 psi	31.0	48.0		137	137	

Steel Dynamics - Engineered Bar Products has a quality system in place which has been certified ISO 9001:2015 compliant, including PED certification.

Comments/Specs

ASTM A36-14

Condition: As-Rolled, Hot-Rolled

I hereby certify that the content of this report is correct and accurate, and that all tests and operations performed on this material were in compliance with applicable material specifications and purchaser designated requirements.

Nicholas Sestito
 Nicholas Sestito - Metallurgist (ES)

Any alteration to this report voids Steel Dynamic's warranting of results. No weld repair has been performed on this material. This material is not radioactive and has not been exposed to radioactivity while under the control of Steel Dynamics. This material has not been exposed to mercury while under the control of Steel Dynamics. Unless otherwise noted, this material was melted, continually cast, and rolled in the USA; w/ all testing performed by Steel Dynamics.