


Document source: NZ Steel

Customer: <b>MACSTEEL INTERNATIONAL</b> Customer Order No: 113275 EndUser Reference: 168349	Supplier: New Zealand Steel Limited A BlueScope Company 131 Mission Bush Road, Glenbrook, South Auckland Postal: Private Bag 92121, Auckland 1142, New Zealand Telephone: (09) 375 8111 Auckland Fax: (09) 375 8959 Sales Order No : 1429918 Printed On : 15/04/2020
 <p>All tests reported herein have been performed in accordance with the laboratory's scope of accreditation</p>	I certify that the original records of the company show that the Item(s) referred to on this certificate conform to the specifications as stated. S. BESTER - NEW ZEALAND STEEL APPROVED SIGNATORY Mechanical LAB 965 D. GRANGER - NEW ZEALAND STEEL APPROVED KTP Chemical LAB 101
Specification: <b>ASTMA36(2019)</b> Product : 0.25" x 48" x Coil HOT ROLLED COIL	Inspection: Supplier Certification: Supplier

**ITEMS COVERED BY THIS CERTIFICATE**

Pack No	Heat No	Ordered Dimensions	Tested Unit
#61046 HHG6542000, HHG6542100 #609AS	976814	0.25" x 48" x Coil	HHG6542000
HHG6542300 #61033	976808	0.25" x 43" x Coil	HHG6542300
HHG6571600 #61035	976784	0.25" x 48" x Coil	HHG6571600
HHG6634500 #61044	976784	0.25" x 48" x Coil	HHG6634500

**CHEMICAL ANALYSIS**

Percentage of element by mass

(L=Cast, P=Product, S=Soluble, -T=Total, CEV = Carbon Equivalent Value )

Heat No	L/P	x100			x1000								x10000	x100			
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	Al-T	B	N	CEV
976784	L	17	1	59	13	17	13	17	20	TR	12	1	1	29	TR	60	27
976808	L	19	2	61	15	21	13	17	16	TR	8	3	TR	52	TR	70	30
976814	L	19	1	61	17	17	12	17	23	TR	10	1	1	53	TR	50	29

TR composition: Si (TR) < 0.01%, Mo/Nb/Ti (TR) < 0.001%, B (TR) < 0.0001%

CEV = C+Mn/6

**MECHANICAL TESTING**

**Tensile**

Tested Unit	Heat No	ReL psi MPa	Yield point type	Rm psi	Lo	ELONG %
HHG6542000	976814	50300	ReL	71400	F	23
HHG6542300	976808	47900	ReL	67900	F	22
HHG6571600	976784	53100	ReL	71200	F	23
HHG6634500	976784	48200	ReL	68200	F	22

**COMMENTS**

Steel produced through the basic oxygen steelmaking process by New Zealand Steel. Steel is fine grained, fully killed, continuously cast. - Heat analysed from ladle - Results relate to test on a representative sample of the items covered in this test certificate. - This certificate may not be reproduced except in full. - NZ Steel, Chemical Laboratory IANZ Accreditation Number 101, KTP Mr David Granger. - NZ Steel, Mechanical Laboratory IANZ Accreditation Number 965, Approved Signatory Mr Schalk Bester. NZ Steel Laboratories are accredited by, International Accreditation New Zealand (IANZ), a signatory to the International Laboratory Accreditation Cooperation mutual Recognition Agreement.

Test methods for chemical analysis were, ASTM E415: 2017 & JIS G1253: 2002.

New Zealand Steel operate a quality management system conforming to AS/NZS ISO 9001: 2015 as assessed by Telarc Ltd Registration Number: 82.

**MECHANICAL COMMENTS**

Test methods for Mechanical analysis were, ASTMA370

Gauge Length Lo(F) = 8"

ReL = Lower Yield Stress.

