

TEST CERTIFICATE



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Customer: MACSTEEL INTERNATIONAL 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 : 1436556 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: ASTMA1011(2018) 50 Product : 0.1874" x 48" x Coil HOT ROLLED COIL	Inspection: Supplier Certification: Supplier

ITEMS COVERED BY THIS CERTIFICATE

Pack No	Heat No	Ordered Dimensions	Tested Unit
HNG6542801 #61027	968492	0.1874" x 48" x Coil	HNG6542801
HNG6542901 #61041 #60991	968491	0.1874" x 48" x Coil	HNG6542901

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
968491	L	17	1	106	12	11	14	16	21	TR	6	3		35			40
968492	L	18	1	116	14	14	14	16	19	TR	5	2		31			50

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

MECHANICAL TESTING

Tensile

Tested Unit	Heat No	ReL psi MPa	Yield point type	Rm psi	Lo	ELONG %
HNG6542801	968492	58900	ReL	79300		
HNG6542901	968491	56300	Rp0.2	78600		

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, ASTM A370

Test Direction Longitudinal.

ReL = Lower Yield Stress.

Rp0.2 = Proof Strength, Plastic Extension. 0.2% prescribed percentage