

# TEST CERTIFICATE



Certificate No: 462175

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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 : 1429921 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 60" x Coil HOT ROLLED COIL	Inspection: Supplier Certification: Supplier

## ITEMS COVERED BY THIS CERTIFICATE

Pack No	Heat No	Ordered Dimensions	Tested Unit
HHG6229000 # 61049	973606	0.25" x 60" x Coil	HHG6229000
HHG6229100 # 61009	973354	0.25" x 60" x Coil	HHG6229100
HHG6229500 # 61005	973604	0.25" x 60" x Coil	HHG6229500

## 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
973354	L	18	2	57	13	17	13	15	20	1	7	2	1	45	TR	50	27
973604	L	19	1	60	15	16	12	15	25	1	9	2	1	44	TR	60	29
973606	L	18	1	57	15	18	13	15	22	1	9	2	1	45	TR	50	28

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 %
HHG6229000	973606	49900	ReL	69300	F	20
HHG6229100	973354	48700	ReL	68900	F	21
HHG6229500	973604	50800	ReL	70900	F	21

## 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

Gauge Length Lo(F) = 8".

ReL = Lower Yield Stress.

RECEIVED  
29 MAY 2021  
[Signature]