



CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1

Certificato nr. MEST174460 / 2017 /

Nach/According to/Selon

Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
SIN GHEE HUAT CORPORATION LTD
32 PENHAS ROAD, HX01-01
208191 - SINGAPORE 208191 - SG

Stato di fornitura: Forged - Annealed Peeled
Lieferzustand
Delivery state
Etat de livraison

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: VSL2017-267/P001894

Bestell
Your order
Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice



Conferma ordine nr: E117012865

Werkst./Our Order/Ref nr.

Qualità: 410
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'essayeur

MR

Avviso di Spedizione: D-VI17035048

Lieferanzeiger/Packing list/B.L.

Marca: VAL1B/1
Markenbezeichnung
Brand / Nuance

Punzonatura: 410
Kennzeichnung
Marking
Marquage

SPECIFICHE:

Note:

Anforderungen / Requirements / Exigences

Aufzeichnungen / Notes / Notes

410-RB-HRA-K12 01 410 A (0)
ASME SA276 2015 S41000 A (1)
ASME SA479 2015 S41000 A (2)

(0)SGH-410-RB-HRA-K12
(1)SECTION II PT.A 2015 EDITION
(2)SECTION II PT.A 2015 EDITION

ASTM A276 2017 S41000 A
ASTM A370 2017
ASTM A479 2017 S41000 A

Tolleranza: ASTM A484-16 TABLE 3

Tolleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0010	Round	304,800	4100/ 4100	273245		2322,0	720606840

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüfung auf lieferbarem produkt test a l'etat de fourniture Prueba sobre el material así como entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprovette Larg diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
Valori richiesti	min	max		275	-	485	20	45	-	223
Anforderungen/Required values Valeurs demandées										
A	12,5	20	L	376		615	26	67		176

Sample quenched - Hardenability

Tipo Trattamento	Temperatura	Raffreddamento	Permanenza	Tipo Trattamento	Temperatura	Raffreddamento	Permanenza	Tipo Trattamento	Temperatura	Raffreddamento	Permanenza
Wärmebehandlung Heat Treatment Traitement Thermique	Temperatur Temperature Temperature	Abkühlung Cooler Refroidissement	Haltezeit Permanence Maintien	Wärmebehandlung Heat Treatment Traitement Thermique	Temperatur Temperature Temperature	Abkühlung Cooler Refroidissement	Haltezeit Permanence Maintien	Wärmebehandlung Heat Treatment Traitement Thermique	Temperatur Temperature Temperature	Abkühlung Cooler Refroidissement	Haltezeit Permanence Maintien
Quenching	950°C	AIR	30'								
1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangentiale											
TEST	Provetta/ Probestab Specimen/Eprovette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction	Allungamento Bruchdehnung Elongation Allongement	Strizione Einschnürung Reduction of area Striction	Resilienza Kerbschlagarbeit Impact Value Resilience		Durezza Härte Hardness Dureté HRC
	Valori richiesti Anforderungen/Required values Valeurs demandées		min max	-	-	-	-	-	-	35,0	
B	9.525	20	L							47,2	

Mechanical properties according to ASTM A370.

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SIN GHEE HUAT CORPORATION LTD.

Vicenza, 14/12/17

VCQ008 - MEST174460

(Mod MCE2)

WSP005AC1CF4/4048/04BCD1EEF8E360330

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M.RIZZOTTO

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Commande

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Werks/Our Order/Ref nr.

Avviso di Spedizione: D-VI17035048

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MR

Punzonatura: 410

Kennzeichnung
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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min 0,080 max 0,150	- 1,00	- 1,00	11,50 13,50	- 0,040	- 0,030	-	-	-	-	-	-	-	-	-	-
C %	Si %	Mn %	Cr %	P %	S %											
273245	0,132	0,45	0,43	11,94	0,019	0,001										

Ultrasonic volumetric test according to ASTM A388: pass.

Reduction ratio = 9,9 : 1

Annealing temperature: 800°C for 10 h

Allegati / Anlagen / Enclosure / Attachments :

GT17001044

Sono state soddisfatte tutte le condizioni richieste

Die gestellten Anforderungen sind erfüllt

The material has been furnished in accordance with the requirements

Le matériel a été trouvé conforme aux exigences

Controllo antimescolanza: OK

Verwechslungsprüfung: spectralanalytisch durchgeführt

Antimixing testing performed: OK

Contrôle antimélange fait: r.a.s.

Controllo visivo e dimensionale: soddisfa le esigenze

Besichtigung und Ausmessung: ohne Beanstandung

Visual inspection and dimensional checks:satisfactory

Contrôle visuel et dimensions: satisfaisant

Melted and manufactured in Italy

No welding or weld repair

Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2008, IATF 16949 : 2016, AS 9100C

The Quality Management System is Certified acc. Pressure Equipment Directive '97/23/EC' Annex 1, s. 4.3 and 2014/68/EU by TUEV and LLOYD'S. Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.

Maximal and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.

The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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SIN GHEE HUAT CORPORATION LTD.

Vicenza, 14/12/17

VCQ008 - MEST174460

(Mod. MCE2)

WSP06AC1CF44D4804PCD1EEF8E5963300

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M. RIZZOTTO

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**Acciaierie
Valbruna S.p.A.**

36100 VICENZA (Italia) - Viale della scienza, 25 Z.I.
Stab. 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT17001044**

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Diagrammi di trattamento termico

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 720606840

Note Dettaglio :

Lot Number

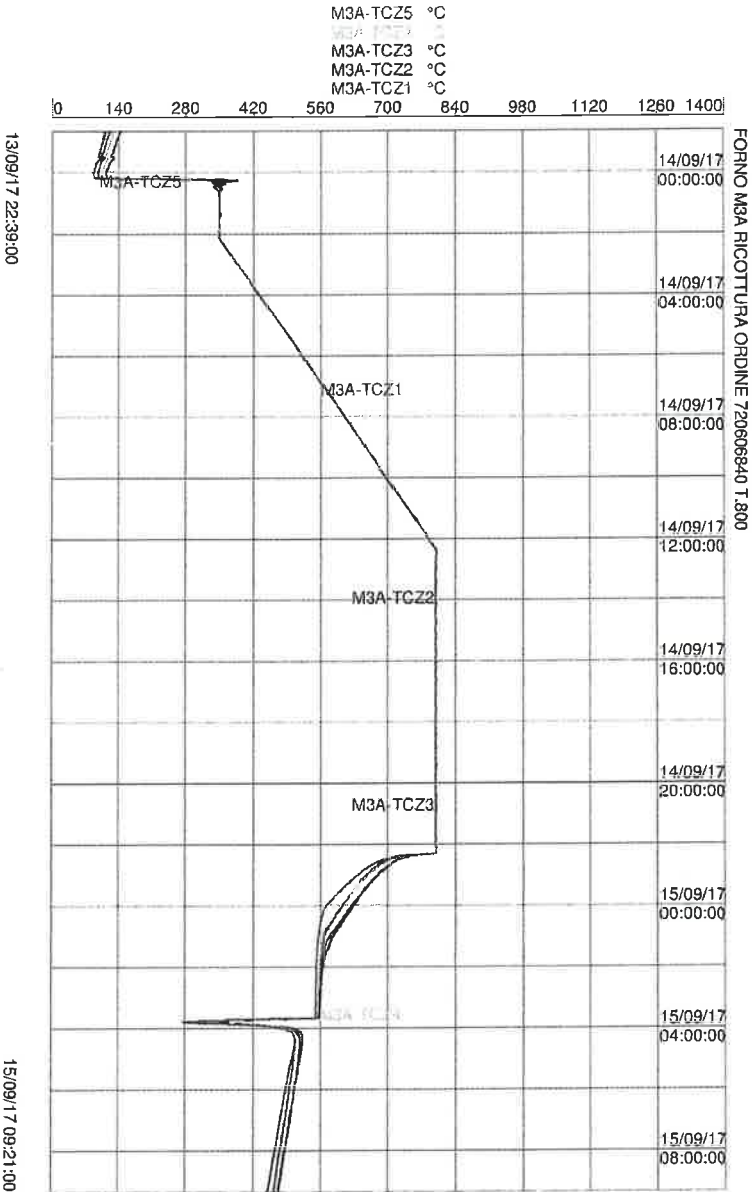
Detail Notes

Note:

Notes

TEMPERATURE (°C)

TIME (HOURS)



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SIN GHEE HUAT CORPORATION LTD.



Approved by: *M. K. K. K.*

Acciaierie Valbruna S.p.A.

Sede Amministrativa e Direzione Generale: Viale della Scienza, 25 - 36100 VICENZA (ITALIA)
Sede Legale: Via Volta, 4 - 39100 Bolzano - R.E.A. n.191346 - P.IVA IT 02866820240
Registro Imprese e Codice Fiscale 01595620061 - Capitale Sociale € 200 000 000 int. vers.



Estimeed
SIN GHEE HUAT CORPORATION LTD
Singapore

Vicenza, 19/09/18

Re: Molybdenum content for grade 410

With reference to the heats listed in the attachment and concerning grade AISI 410, we confirm that Mo content for all of them is 0,60% max.

Best Regards,

ACCIAIERIE VALBRUNA S.p.A.
GARANZIA QUALITA'
Marcello Fizzotto

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SIN GHEE HUAT CORPORATION LTD.

Stabilimenti:

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20032 CORMANO (MI) - Via Bizzozzero, 125 - Tel. 02 66106550 - FAX 02 66100654
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60027 OSIMO (AN) - Via Chiusa, 6 - Fax: Aspio Terme - Tel. 071 7108956 - Fax 071 7108957
43010 BIANCONESE DI FONTEVIVO (PR) - Via Aline, 10 - Tel. 0521 615260 - Fax 0521 615170
31050 MONASTIER DI TREVISO (TV) - Via Sardo, 10 - Tel. 0422 898129 - Fax 0422 791169

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No	Size	Heat No
1	45,00	264327
2	50,80	265531
3	254,00	265881
4	88,90	266249
5	215,90	266532
6	50,80	266777
7	114,30	267260
8	177,80	267611
9	63,50	269492
10	127,00	269712
11	101,60	269746
12	76,20	270493
13	190,50	271512
14	95,25	273008
15	63,50	273008
16	304,80	273245
17	45,00	273375
18	215,90	274020
19	139,70	274687
20	50,80	275049
21	88,90	275609
22	76,20	275722
23	101,60	275722
24	25,40	275723
25	120,65	427229
26	152,40	427733
27	152,40	427903

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