

R13900

040202



BHARAT WIRE ROPES LTD.

Plot No.4, MIDC, Chalisgaon, Village Khadki-BK, Taluka Chalisgaon, Dist.-Jalgaon, Maharashtra, Pin No. 424101
Email:qa@bharatwireropes.com Website:www.bharatwireropes.com CIN:L27200MH1968PLC040468

262451
52

Doc-BWRI/CG/QA/R/06

Rev-01

Rev Date-20-03-2018

MANUFACTURER

M/S BHARAT WIRE ROPES LTD. CHALISGAON

INSPECTION CERTIFICATE 3.1 ACCORDING TO EN10204:2004 & EN10474:2013

No. E-436

Date: 10.05.2019

02034-260-0511

Invoice No. C0000137

Customer	INTERKABEL GMBH
Customer Order Ref.	4500002392, DATE: 08.03.2019
Work Order No	RL/W/2754, DATE: 28.03.2019
Reel Number	040201 TO 040203 (3 REELS)

Nominal Diameter of Rope (mm)	26 ✓
Construction	6X36SW ✓
Strand Construction	14-7+7-7-1
Applied Standard	DIN EN 12385-PT4
Zinc Coating Specification	DIN EN 10244-2
Types of Core	IWRC ✓
Type of Lay & Direction	RHOL ✓
Wire Finish	Galvanized-B ✓
Lubrication	Core & Strand greased, Wiped
Tensile Grade of Steel Wire Rope (N/mm ²)	1960 ✓
Minimum Breaking Load Required (kN)	472.00 ✓
Minimum Zinc Coating (g/m ²)	100
Length of Rope	1000 Mtr. X 3 Reels
Pre Stretching	N/A

TEST RESULTS

Reel No.	040201
Diameter (mm)	26.29
Actual Breaking Load (kN)	490.88 ✓
Actual Zinc Coating (g/m ²)	109
Lay Length (mm)	163

Chemical Analysis of Wire Rod

Component		C	Mn	Si	P	S
Specification		0.81-0.85	0.60-0.90	0.15-0.35	≤0.030	≤0.030
Heat No	F771445	0.82	0.80	0.21	0.013	0.006

Checked By



0000262451

EC Declaration of Conformity

in accordance with EC Machinery Directive 2006/42/EC

Certificate Number: CC4-2019100800452
Location of Issue: Crosby Europe (UK) Ltd.
Station Street, Cradley Heath
West Midlands B64 6AJ, United Kingdom
Phone: 01226 290516 Fax: 01226 240118

Stock No: 1258222

Description of Gear: A347 36/28mm Welded Master Link Assembly (ML - 36x145x275)

Working Load Limit: 23.6t Max. Allowed Proof Load: 579kN t indicates metric tonnes

Comments: Minimum ultimate load is 5 times the WLL. Based on single leg (in-line load), or resultant load on multiple legs with an included angle less than or equal to 120 degrees. Meets the requirements of API-2CCU.

Note: Meets the requirements of EN 1677 part 4, Components for slings - Safety - Part 4 : Links Grade 8. This equipment can meet the requirements of DNV Certification Note 2.7-1, as per DNV certificate for type approval No. S-8359.

We hereby declare that the above mentioned product with CE marking complies with the applicable essential Health and Safety requirements of the EC Machinery Directive 2006/42/EC.

Crosby A347 master links can be used in general service with good rigging practice down to temperatures of -40 °F (-40 °C). DNV type-approved design temperature is -4 °F (-20 °C). Has not been contaminated by Mercury or Asbestos in the manufacturing process.

Number of Pieces: 10 Master Link: 1VH

PICs are based on visual observation

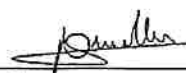
We hereby certify that the above certified based on items being the Crosby product described above meeting the load ratings when used under normal and proper applications.

Mentioned products are in conformity to the Crosby literature available at time of manufacturing, including the following trademarked features:



For Product Delivered To: First Integrated Solutions Ltd
Broadfold Road
Bridge of Don, Aberdeen
Aberdeen United Kingdom

Date: October 08, 2019
Date of Issuance

Signature: 
Arn Smolderen, Quality Assurance

INSPECTION
CERTIFICATE 3.1

TO EN 10204:2004



www.thecrosbygroup.com

Station Street, Cradley Heath
West Midlands B64 6AJ, United Kingdom

Phone: 01226 290516

Fax: 01226 240118

CERTIFICATE NO. TC2-2019100800459

SUPPLIED TO First Integrated Solutions Ltd

YOUR ORDER NO.

QTY	DESCRIPTION
10	1258222 A347 36/28mm Welded Master Link Assembly (ML - 36x145x275), To EN 1677-4

MATERIAL PROPERTIES

ITEM	PIC	HEAT NUMBER	PROOF LOAD APPLIED	IMPACT TEST TYPE: CHARPY V (JOULES) TO ASTM A370-08/ASTM E23-07	
				TEMP °C	AVERAGE
MASTER LINK	1VH	1185269	579 kN	-40	> 27 JOULES
SUBLINK	1VD	E01185269	n/a	-40	> 27 JOULES

MASTER LINK

STEEL SPECIFICATION	C	Mn	P	S	Si	Ni	Cr	Mo	Al
MIN (ML + CPL)	0.18	0.70	-	-	0.20	0.40	0.40	0.15	0.020
MAX (ML + CPL)	0.23	0.90	0.040	0.040	0.35	0.70	0.60	0.25	-

SUBLINK

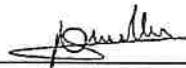
STEEL SPECIFICATION	C	Mn	P	S	Si	Ni	Cr	Mo	Al
MIN (ML + CPL)	0.18	0.70	-	-	0.20	0.40	0.40	0.15	0.020
MAX (ML + CPL)	0.23	0.90	0.040	0.040	0.35	0.70	0.60	0.25	-

REFERENCE TYPE APPROVAL TAS000001V.

WE HEREBY DECLARE THAT THE EQUIPMENT DESCRIBED ON THIS DOCUMENT HAS BEEN TESTED AND EXAMINED,
AND MEETS THE ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF THE MACHINERY DIRECTIVE.

CERTIFIED ON BEHALF OF THE COMPANY

Date: October 08, 2019
Date of Issuance

Signature: 
Quality Assurance

**Sublink of A347 36/28mm Welded Master Link Assembly (ML - 36x145x275)
with PIC: 1VD and Heat #: E01185269**

THIS MATERIAL CERTIFICATE DOCUMENT MEETS THE REQUIREMENT OF INSPECTION CERTIFICATE "TYPE 3.1" PER EN 10204

SCHMOLZ + BICKENBACH GROUP

SWISS STEEL



Inspection Certificate 3.1 / EN 10204

Customer	Crosby Zimmermann		Date of issue	10.10.2018	Certificate No.	401563	
	Rue de Général de Raścās 18		Purchase order	1549024781/50	Order No. SWST	11236182	
	FR-57220 Boulay		Grade	20NiCrMo3	Delivery receipt	25422511	
	Customer No. 00027872		Grade No. SWST	6347	Weight	23400 kg	
			Material specification	DIN 17115	Article No.	3063898	
Heat No.	E01185269	Diameter / mm	28	Diameter tolerance / mm	+/- 0.25	Degree of deformation	37
Product	bar	Length / mm	5800.0	Length tolerance / mm	+1007 -0	Production order	30989427
Cross section	round	Casting Dimension / mm	150x150	Manufacturing route	EEF,LF,CCM	Article No. SWST	61066878
Finishing	straightened						
Order agreements Essai de traction et KV à -20°C à l'état traité-DIN17115							

Chemical Analysis [%]

C 0.21	Si 0.18	Mn 0.83	P 0.007	S 0.007	Ni 0.72	Cr 0.44	Mo 0.22
Cu 0.13	Sn 0.01	Al 0.029	V 0.00	Ti 0.0017	N 0.0102		

Hardenability (calculated)

[illegible]

Tensile test

[illegible]

Charpy Impact test (J)

V1	V2	V3	Avg	Remarks	Hardness					
V1	V2	V3	Avg		V1	V2	V3	V4	Avg	Remarks
54	51	48	51	ISO-V, -20°C, QT 880/30W/400/60						

Inclusion rating

[illegible]

Microstructure

[illegible]

Special values

We certify that these delivered products are in accordance with the order specifications.

Electronic copy in accordance with EN 10204:2004 Remarks:

Quality process manager: Dipl. Ing. Ch. Lutz

EC Declaration of Conformity

in accordance with EC Machinery Directive 2006/42/EC

Certificate Number: CC4-2019100800514

Location of Issue: Crosby Europe (UK) Ltd.
Station Street, Cradley Heath
West Midlands B64 6AJ, United Kingdom
Phone: 01226 290516 Fax: 01226 240118

Stock No: 1262040

Description of Gear: G2130OC 8.5t OC Bolt Type Anchor Shackle 1" Maxtough[®]

Working Load Limit: 8.5t

Max. Allowed Proof Load: 17t

t indicates metric tonnes

Comments: Minimum ultimate strength is 6 times the WLL. Meets the requirements of API-2CCU.

Note: Meets the performance requirements of Federal Specification RR-C-271F Type IVA,
Grade A, Class 3, except for those provisions required of the contractor.
Meets or exceeds all requirements of ASME B30.26.

We hereby declare that the above mentioned product with CE marking complies with the
applicable essential Health and Safety requirements of the EC Machinery Directive
2006/42/EC.

Crosby G2130OC shackles can be used in general service with good rigging practice down to
temperatures of -40 °F (-40 °C). DNV type-approved design temperature is -4 °F (-20 °C).
Has not been contaminated by Mercury or Asbestos in the manufacturing process.

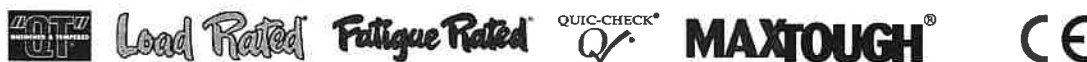
Number of Pieces: 40 Bow: 6VD

PICs are based on visual observation

Certificate based on item being the Crosby product described above.

We hereby certify that the above described material was manufactured and processed in a manner compatible to
meeting the load ratings when used under normal and proper applications.

Mentioned products are in conformity to the Crosby literature available at time of manufacturing, including the
following trademarked features:



For Product Delivered To: First Integrated Solutions Ltd
Broadfold Road
Bridge of Don, Aberdeen
Aberdeen United Kingdom

Date: October 08, 2019
Date of Issuance

Signature: 
Arn Smolderen, Quality Assurance

INSPECTION
CERTIFICATE 3.1

TO EN 10204:2004



www.thecrosbygroup.com

Station Street, Cradley Heath
West Midlands B64 6AJ, United Kingdom

Phone: 01226 290516

Fax: 01226 240118

CERTIFICATE NO. TC2-2019100800515

SUPPLIED TO First Integrated Solutions Ltd

YOUR ORDER NO.

QTY	DESCRIPTION
40	1262040 G2130OC 8.5t OC Bolt Type Anchor Shackle 1" Maxtough®, To EN 13889

MATERIAL PROPERTIES

ITEM	PIC	HEAT NUMBER	STATISTICAL PROOF LOAD	IMPACT TEST TYPE: CHARPY V (JOULES) TO ASTM A370-08/ASTM E23-07	
				TEMP °C	AVERAGE
BOW	6VD	71345	169.4 kN	-20	> 42 JOULES
BOLT	1VL	1-6137	169.4 kN	-20	> 42 JOULES

BOW

STEEL SPECIFICATION	C	Mn	S	P	Si	Al
MIN (ML + CPL)	0.32	0.60	-	-	0.15	0.020
MAX (ML + CPL)	0.38	0.90	0.025	0.025	0.35	-

BOLT

STEEL SPECIFICATION	C	Mn	P	S	Si	Cr	Mo
MIN (ML + CPL)	0.38	0.75	-	-	0.15	0.80	0.15
MAX (ML + CPL)	0.45	1.00	0.035	0.040	0.35	1.10	0.25

CERTIFIED ON BEHALF OF THE COMPANY

Date: October 08, 2019
Date of Issuance

Signature: 
Quality Assurance

Bow of G2130OC 8.5t OC Bolt Type Anchor Shackle 1" Maxtough® with PIC: 6VD and Heat #: 71345

THIS MATERIAL CERTIFICATE DOCUMENT MEETS THE REQUIREMENT OF INSPECTION CERTIFICATE "TYPE 3.1" PER EN 10204

RIVA ACCIAIO S.P.A. STABILIMENTO DI LESEGNO Via Statale, 28 nord 12076 Lesegno(CN) ITALIA Tel. 0174-718111 Fax. 0174-77251 Sede legale e amministrativa: Viale Certosa, 249 - 20151 Milano telefono 02 30700 - telefax 032 38000346 - 38003147 - 38002974 codice fiscale, partita Iva e numero iscrizione Registro Imprese Milano 08521290158		INSPECTION CERTIFICATE																																													
		A03 Certificate number 49368 Certificate date 25/10/2018																																													
WE CERTIFY THAT THE PRODUCT CONCERNING THIS DOCUMENT IS IN ACCORDANCE WITH THE ORDER REQUIREMENTS		B14 Standard Reference UNI EN 10204/2005																																													
B15 Type 3.1		C027 09.11.18 																																													
A05 Customer Data SOFYMETAL S.A. BP 23 Z.I. VALLE DU GIER ZAC 2 69702 GIVORS CEDEX FRANCIA																																															
B02 Steel Grade C35 E/GP CROSBY CG-L-3																																															
B07 Year/Heat number 18/71345																																															
B07 Shape ROUND EN 10060		B09 Dim. 1 X Dim. 2 52,00																																													
B04 Delivery Condition HOT ROLLED ROUND 10060		B09 Length 6,000 - 6,400																																													
A07 Client Order 13114	A08 Confirmation 07 UL027 001	C14 Reduction Rate 12,06																																													
CHEMICAL ANALYSIS - CAST ANALYSIS																																															
C01 C	C02 Mn	C03 Si	C04 P	C05 S	C06 Cr	C07 Ni	C08 Mo	C09 Cu	C10 Sn	C11 Al	C12 Ti																																				
0.375	0.750	0.250	0.016	0.012	0.200	0.070	0.010	0.210	0.009	0.023	0.018																																				
C13 V	C14 Nb	C15 B	C16 Ca	C17 N	C18 O (ppm)	C19 H ₂ (ppm)	C20 CEV																																								
0.003	0.002	0.0000																																													
MECHANICAL PROPERTIES																																															
C01 Test C - Heat L - Rolled T - Drawn ☒	C02 Heat Treatment SPECIMEN NORMALISED	TENSILE TEST <table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.7em;"> <tr> <td style="font-size: 0.6em;">C08 Sample Dim.</td> <td style="font-size: 0.6em;">C10 Test Dim.</td> <td style="font-size: 0.6em;">C12 R_m (MPa)</td> <td style="font-size: 0.6em;">C11 R_e (MPa)</td> <td style="font-size: 0.6em;">C13 A_{5%}</td> <td style="font-size: 0.6em;">C15 Z_W</td> </tr> <tr> <td style="text-align: center;">30</td> <td style="text-align: center;">10</td> <td style="text-align: center;">619</td> <td style="text-align: center;">379</td> <td style="text-align: center;">26.4</td> <td style="text-align: center;">49.7</td> </tr> </table> IMPACT TEST <table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.7em;"> <tr> <td style="font-size: 0.6em;">C41 Test Dim.</td> <td style="font-size: 0.6em;">C40 Type</td> <td style="font-size: 0.6em;">C42 K₁</td> <td style="font-size: 0.6em;">C43 K₂</td> <td style="font-size: 0.6em;">C44 K₃</td> <td style="font-size: 0.6em;">C45 K₄</td> <td style="font-size: 0.6em;">C46 Temp.</td> </tr> <tr> <td style="text-align: center;">10x10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										C08 Sample Dim.	C10 Test Dim.	C12 R _m (MPa)	C11 R _e (MPa)	C13 A _{5%}	C15 Z _W	30	10	619	379	26.4	49.7	C41 Test Dim.	C40 Type	C42 K ₁	C43 K ₂	C44 K ₃	C45 K ₄	C46 Temp.	10x10																
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10x10																																															
JOMINY TEST <table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.7em;"> <tr> <td style="font-size: 0.6em;">C01 mm</td> <td style="font-size: 0.6em;">1</td> <td style="font-size: 0.6em;">2</td> <td style="font-size: 0.6em;">3</td> <td style="font-size: 0.6em;">4</td> <td style="font-size: 0.6em;">5</td> <td style="font-size: 0.6em;">6</td> <td style="font-size: 0.6em;">7</td> <td style="font-size: 0.6em;">8</td> <td style="font-size: 0.6em;">9</td> <td style="font-size: 0.6em;">10</td> <td style="font-size: 0.6em;">11</td> <td style="font-size: 0.6em;">13</td> <td style="font-size: 0.6em;">15</td> <td style="font-size: 0.6em;">20</td> <td style="font-size: 0.6em;">25</td> <td style="font-size: 0.6em;">30</td> <td style="font-size: 0.6em;">C16 DI</td> </tr> <tr> <td style="font-size: 0.6em;">C09 HRC</td> <td style="text-align: center;">55</td> <td style="text-align: center;">53</td> <td style="text-align: center;">48</td> <td style="text-align: center;">41</td> <td style="text-align: center;">34</td> <td style="text-align: center;">30</td> <td style="text-align: center;">26</td> <td style="text-align: center;">25</td> <td style="text-align: center;">24</td> <td style="text-align: center;">23</td> <td style="text-align: center;">22</td> <td style="text-align: center;">21</td> <td style="text-align: center;">20</td> <td style="text-align: center;">18</td> <td style="text-align: center;">17</td> <td style="text-align: center;">16</td> <td style="text-align: center;">1.4</td> </tr> </table>												C01 mm	1	2	3	4	5	6	7	8	9	10	11	13	15	20	25	30	C16 DI	C09 HRC	55	53	48	41	34	30	26	25	24	23	22	21	20	18	17	16	1.4
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C65 Austenitic Grain Size MAC QUAD - EHN 6																																															
C62 Micro Inclusion Rating ASTM E45 - JERKONTORET METODO A S: A1,0 B1,0 C0,5 D1,0																																															
C06 Banded Structure C37 Hardness +AR +A +FP																																															
ADDITIONAL INFORMATION																																															
B03 COMMERCIAL LENGTHS ANTIMIX CONTROL																																															
D51 Remarks IN CONFORMITE A SAE1035						Z04			Z01 Q.C. Manager G. Piumatti																																						
ELECTRONIC DOC VALID WITHOUT SIGNATURE						Z02																																									
A10 DDT Data N° 15040																																															

Bolt of G2130OC 8.5t OC Bolt Type Anchor Shackle 1" Maxtough® with PIC: 1VL and Heat #: 1-6137

THIS MATERIAL CERTIFICATE DOCUMENT MEETS THE REQUIREMENT OF INSPECTION CERTIFICATE "TYPE 3.1" PER EN 10204

OVAKO**CERTIFICATE**

Cert no : 422586-1

Page 1

3.1 EN 10204:2004

Product Steel bar	Order 406340	Customer Crosby Europe NV
Product delivery condition As rolled	Customer's Order No. 26936	2676
Steelgrade SAE4130m	Specification CG-L-2 (M) Rev. 2	Customer specification no. BE-2220 HEIST OP DEN BERG BE

Order Pos 20 Dim 28,00 x 0,00 x 5490

Impact test Charpy V

Cast Number	State	Heat treat temperature		Test temp C	KV Joule			KV Joule			KV Joule			KV av. Joule		
		1	2		min	actual	max	min	actual	max	min	actual	max	min	actual	max
1-6137	Hardened + tempered	900	580	-20	122			121			122			122		

Hardness HB

Cast Number	State	Heattreat temperature		Test temp C	Hardness HB			Hardness HB				
		1	2		min	actual	max	min	actual	max		
1-6137	Hardened + tempered	900	580	20		280			282			
1-6137	As rolled			20		254			250			

Tensile test

Cast Number	State	Heat treat temperature		Test temp C	Yield Str Re N/mm2			Tensile Str Rm N/mm2			Elongation A5 %			Contraction Z %		
		1	2		min	actual	max	min	actual	max	min	actual	max	min	actual	max
1-6137	Hardened + tempered	900	580	20	860			935			18			61		

CAST ANALYSIS %

Cast	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	Cu	Al	Sn	B	DI		
[min]	0.27	0.15	0.60			0.60	0.15	0.15	0.010		0.020			2.7		
[max]	0.33	0.35	0.90	0.025	0.025	1.00	0.25	0.25	0.040	0.35		0.030	0.0010	3.5		
1-6137	0.30	0.25	0.80	0.008	0.009	0.69	0.16	0.16	0.032	0.19	0.030	0.012	0.0003	2.9		

Boxholm	19-01-29	Lars Anhelm	QA	This certificate was computer generated
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Postal Address	Street Address	Telephone	Telefax	Org.no	VAT Reg.no
SE-590 10 Boxholm	Boxholm	+46 142 29 36 00	+46 142 29 37 02	5566906102	SE556690610201
SE-777 80 Smedjebacken	Smedjebacken	+46 240 66 80 00	+46 240 743 62		
Sweden					