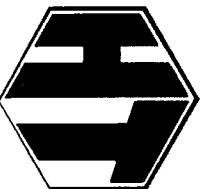


**Customer**  
 FLOW TECHNOLOGY LTD  
 HALF HOUSE LANE  
 HOVE EDGE  
 BRIGHOUSE  
 WEST YORKS. HD6 2PH

**Delivery Address**  
 FLOW TECHNOLOGY LTD  
 HALF HOUSE LANE  
 HOVE EDGE  
 BRIGHOUSE  
 WEST YORKS. HD6 2PH



**HI-TECH**  
 Special Steels Limited  
 Rotherham Road, Loughborough Common,  
 Dinnington, Sheffield S25 3PH  
 Tel: Dinnington (01909) 564545  
 Fax No: (01909) 550682

Report No. 041411  
 Test No. 348524  
 Despatch Note No. 055901  
 Our Ref. 103062  
 Customer PO No. 014529/JS  
 Date 13/11/17  
 Specification BS EN 10088-3 1.4404

Page 1 of 1  
**TEST CERTIFICATE**

Item	Quantity	Weight Kg	Part No.	Heat No.	Batch No.
001	4	291.0		56170108	P219517
		Total			

**Description**  
 2.1/2" X 2" FINISHED BAR  
 CONFORMING TO NACE MR0175  
 12 METRES

**A. HEAT TREATMENT SUPPLY CONDITION**  
**B. TEST PIECE TREATMENT CONDITION**  
 MELTING PRACTICE EAF+AOB TEST COUPON SIZE



Tensile Tests					Units			Impact Tests					Hard-ness
Temp °C	* 0.20% Proof Result	Maximum Stress Result	Spec-Min	Result	%Elong 50MM Result	Spec-Min	% Reduction of Area Result	Spec-Min	Temp °C	ENERGY	SHEAR %	LATERAL EXPANSION	Hard-ness
20	L	466	200	620	500	46	30	74	50	1	2	3	MIN AV

**Component Hardness**

Heat No.	C	Si	Mn	S	P	Cr	Ni	Mo	Cu	Ti	Co	N	Al
56170108	0.019	0.520	1.49	0.028	0.031	16.630	10.070	2.010	0.53	0.003	0.346	0.051	0.006

Signature: [Handwritten Signature]  
 Position: Certification Dept

FLOW TECHNOLOGY LTD  
 TEST CERTIFICATE  
 VERIFIED TRUE  
 COPY OF ORIGINAL

 Bollinghaus Steel, SA DIN EN ISO 9001:2008 TÜV CERT No. 01 100 030458	Abnahmeprüfzeugnis/Mill Test Certificate/Certif. de Qualidade EN 10204:2004 / 3.1		No.: / Nr.: /Nr.: 0000128175												
	Unsere innere Verweisung /Our Int. Ref/ N/ ref int 5600034904 000020		Datum / Date / Data 28.04.2017												
<b>Normen / Standards / Normas</b> 1.4401/1.4404 acc. to EN 10088-3:2014, TYPE 316/UNS31600 and TYPE 316L/UNS 31603 acc. to ASTM A276/A276M-16a, ASTM A479/A479M-16a, ASTM A262-15 Pract. E, NACE MR0175-2016 and NACE MR0103-2015, execution as per EN 10058:2003, with size tolerances +0/-1 mm. S-content: 0.015% - 0.030%															
<b>Kunde / Customer / Cliente</b> Hi-Tech Special Steels Limited Rotherham Road S25 3RF Sheffield			<b>Endgültiger Kunde / Final Customer / Cliente Final</b> Hi-Tech Special Steels Limited Rotherham Road S25 3RF Sheffield												
Bestell Nr./Order Nr./ Enc.Nr. 005250			Bestell Nr./ Order Nr./ Enc.Nr. 005250.3												
<b>Produktgruppe / Product Group / Grupo Produto</b> AISI 316/L FLAT 65,5 X 53 MM		<b>Gewicht / Weight / Peso</b> 2.964 kg		<b>Bunde / Bundle / Atados</b> 03											
Werkstoff-Nr. Material-no. Qualidade 1.4404		<b>Werkstoff-Normbezeichnung / Material standard grade / Norma do material</b> X 2 CrNiMo 17-12-2													
<b>Beschreibung / Description / Descrição</b> Stainless steel flat bars, hot rolled, annealed, pickled															
Schmelzen Nr. Cast nr. / Fusão nr.		<b>Chemische Analyse in % / Chemical composition in % / Análise química em %</b>													
56170108		C	0.019	Si	0.520	Mn	1.490	P	0.031	S	0.028	Cr	16.630	Ni	10.070
EAF+AOD		Mo	2.010	Co	0.346	Cu	0.530	N	0.051	Ti	0.003	Al	0.006	-	-
Proben Nr. Test no. Amostra no.	<b>ISO 148-1</b>			<b>DIN EN ISO 6892-1</b>											
	Kerbschlagarbeit Impact Test Resiliência {Charpy V}			Streckgrenze Yield point Tensão limite Rp 0,2 %	Dehngrenze 1% point Limite de extensão Rp 1,0%	Zugfestigkeit Tensile strength Tensão de rotura Rm	Dehnung Elongation Alongamento A5    4D		Einschnürung Reduction of area Coef. Estricção Z						
	[ J ]			[ MPa ]	[ MPa ]	[ MPa ]	[ % ]	[ % ]	[ % ]						
	3061250.02.01			216	362	403	667	59.6	62.6	71.1					
3061250.02.02			218	355	399	662	60.3	64.0	72.0						
Visuelle Kontrolle Visual inspection Inspeção visual		<input checked="" type="checkbox"/> OK	<b>DIN EN ISO 6506-1</b> Härte Hardness Dureza 167 [ HB ]		<b>DIN EN ISO 3651 - 2A</b> Korrosionsbeständigkeit IC Test Corrosão Intermetálica <input checked="" type="checkbox"/> OK		Wärmebehandlung Heat treatment Tratamento térmico Solution annealing 1050 °C (Water quenched)								
<b>DIN EN 10058</b> Maßkontrolle Dimensional inspection Inspeção dimensional		<input checked="" type="checkbox"/> OK	Korngröße Grain size Tamanho de grão -		Werksachverständiger Quality Control Representative Inspector da Qualidade  Nuno Silva (N-NS)										
Verwechslungsprüfung Test of Identity Teste de identificação		<input checked="" type="checkbox"/> OK	Makroskopische Untersuchung Macrographic test Material free from segregation defects.		<input checked="" type="checkbox"/> OK										
<b>Bemerkungen / Remarks / Observações</b> Country of origin: Portugal. No weld repair done. Material is free of mercury and radiation contamination. Certified acc. PED 2014/68/EU and AD 2000 W0 Notified Body 0035 - TÜV Rheinland Industrie Service GmbH 01 202 926/Q-02 0040					Hiermit bestätigen wir, dass das Material der oben genannten Spezifikation entspricht. We confirm that this material meets the specification according to the mentioned standards. Confirmamos que este material respeta as especificações de acordo com as normas referidas.										



**Special Testing Ltd**  
 Bacon Lane, Sheffield S9 3NH  
 Tel: 0114 244 1061  
 Fax: 0114 244 0444 Works  
 Fax: 0114 244 5566 Acc/Admin  
 www.specialtesting.co.uk

**Test Certificate 348524**

AUTHENTICATION CODE 7C3DC50A3AE5  
 ROLLS ROYCE APPROVED LABORATORY  
 Approval No. 11191

CUSTOMER  
 HI-TECH SPECIAL STEELS LTD  
 ALLOY & METAL WORKS, ROTHERHAM RD  
 LAUGHTON COMMON DUNNINGTON  
 SHEFFIELD S25 3RF  
 DATE RECEIVED 14 June 2017  
 TEST DATE 19 June 2017



CUSTOMER ORDER NO	PRD6277	TEST NUMBER	348524	IDENTITY	P41901	CAST*	TEST PIECE FROM*			56170108	ALL REQUIREMENTS MIN UNLESS STATED		
SPECIFICATION	BS EN 10088-3 1.4404	0.2% PROOF	466	1.0% PROOF	493	UTS	620	ELONG ON	60mm	46.0	74.0	COMMENTS	12.5mm below
TENSILE: BS EN ISO 6892-1:2016 A224								%					
OR TEMP	SECTION	AREA SQ	UNIT	REQUIREMENTS	RESULTS	DESIGNATION	REQUIREMENTS	RESULTS					
L RT	10.02mm	78.90mm <sup>2</sup>	MPa			HBW 10/3000		191					
HARDNESS: BS EN ISO 6506-1 2014													
BRINELL (Mid-Radial)													

END OF CERTIFICATE

REPRESENTING\*

No copy is authentic without the embossed seal and signature. This certificate can be authenticated at [www.specialtesting.co.uk](http://www.specialtesting.co.uk) with the code 7C3DC50A3AE5

This certificate shall not be reproduced, except in full, without the written approval of the laboratory.

For and on behalf of  
**SPECIAL TESTING LTD**  
 A Member of the Special Steel Group of Companies

Steve Pearce  
 Certification Manager

*Steve Pearce*

Test results do not in any way confer approval of the quality of manufacture of the material. All results are subject to uncertainty of measurement budgets. Details available upon request.  
 Information marked \* is supplied by the customer.