

FLOW TECHNOLOGY LTD
TEST CERTIFICATE
VERIFIED TRUE
COPY OF ORIGINAL

Certificate of Conformity.

Test Cert/Order # 7502017123

Inspection Certificate Meeting the Requirements of:

BS EN 10204.3.1



ZAPP (GB) LTD
UNIT 1 THORNCLIFFE DISTRIBUTION CENTRE
BROOKDALE ROAD
CHAPELTOWN SHEFFIELD
S35 2PW

Customer / Contract Details.

Customer: **Flow Technology Ltd**

Customer P/O # **011740/DB**

Packing List: **7510024953**

Detail of Product Supplied.

Product Specification: **ASTM A479 316/316L**
BSEN10088 1.4401/1.4404

Product Description: **76.20mm x 38.10mm**

Line Item	Quantity	Unit	Product Dimensions	Heat #	Batch #
1	245	Kgs	76.20 x 38.10	67529016	G012409A20

Chemical Analysis.

C%	Si%	Mn%	P%	S%	Cr%	Mo%	Ni%
0.013	0.414	1.302	0.031	0.026	16.706	2.025	10.178
Ti	N%	Cu	Co				
0.002	0.04	0.424	0.185				

Mechanical Properties.

Proof Stress 0.20%	proof stress 1%	UTS (Tensile)	Unit	Elongation %	Reduction of Area %	Impact Tests				Impact Test Temp	Hardness	
534	566	651	Mpa	5D	42	75						HRBW 92 HBW 217

Additional.

Visual & Dimensional Checks ;

Satisfactory

ZAPP (GB) LTD, Sheffield. We certify that the contents of this report are correct, accurate & all test results / operations meet the requirement of the specification. Certified that the supplies / services detailed meet.



Special Requirements ;

NACE MR0175

Authorised by:

ZAPP (GB) LTD

Date: 08.12.15
Tracy Barnes

 Bollinghaus Steel, SA DIN EN ISO 9001:2008 TÜV CERT No. 01 100 030458	Abnahmeprüfzeugnis/Mill Test Certificate/Certif. de Qualidade		No.: / Nr.: /Nr.:					
	EN 10204:2004 / 3.1		0000108261					
Unsere Innere Verweisung /Our Int. Ref/ N/ ref Int		Datum / Date / Data						
5600027178 000010		28.08.2015						
Normen / Standards / Normas								
grade 1.4404, acc to BS EN 10088-3:2014, BS EN 10272:2008-01, NACE MR 0175, valid as Type 316, acc to ASTM A479/A479M-15, execution as per EN 10058:2003, but with size tolerances: width/thickness -0/+1.0 mm, surface condition as per EN 10163-2 class B								
Kunde / Customer / Cliente		Endgültiger Kunde / Final Customer / Cliente Final						
Zapp (GB) Ltd. Unit 1 The Thorncliffe S35 2PW Sheffield		Zapp (GB) Ltd. Unit 1 Brookdale road S35 2PW Sheffield						
Bestell Nr./Order Nr./ Enc.Nr. 7511005558		Bestell Nr./ Order Nr./ Enc.Nr. 7511005558.5						
Produktgruppe / Product Group / Grupo Produto		Gewicht / Weight / Peso		Bunde / Bundle / Atados				
AISI 316/L FLAT 77,5 X 39,5 MM		3.493 kg		03				
Werkstoff-Nr. Material-no. Qualidade 1.4404		Werkstoff-Normbezeichnung / Material standard grade / Norma do material X 2 CrNiMo 17-12-2						
Beschreibung / Description / Descrição								
Stainless steel flat bars, hot rolled, heat treated, pickled.								
Schmelzen Nr. Cast nr. / Fusão nr.		Chemische Analyse in % / Chemical composition in % / Análise química em %						
67529016		C: 0.013	Si: 0.414	Mn: 1.302	P: 0.031	S: 0.026	Cr: 16.706	Ni: 10.178
EAF+AOD		Mo: 2.025	Co: 0.185	Cu: 0.424	N: 0.040	Ti: 0.002	W: 0.020	V: -
Proben Nr. Test no. Amostra no.	DIN EN 10045		ISO 6892-1			Einschnürung Reduction of area Coef. Estricção		
	Kerbschlagarbeit Impact Test Resiliência		Streckgrenze Yield point Tensão limite	Dehngrenze 1% point Limite de extensão	Zugfestigkeit Tensile strength Tensão de rotura		Dehnung Elongation Alongamento	
	{Charpy V}		Rp 0,2 %	Rp 1,0%	Rm		A {A5/4D}	
	[J]		[MPa]	[MPa]	[MPa]		[%]	
3047341.03.01	224		316	361	623	63.9	76.9	
3047341.03.02	220		332	376	639	60.2	74.1	
Visuelle Kontrolle Visual inspection Inspeção visual		<input checked="" type="checkbox"/> Ok		DIN EN 6506-1 Härte Hardness Dureza		160 [HB]		
DIN EN 10058 Maßkontrolle Dimensional inspection Inspeção dimensional		<input checked="" type="checkbox"/> Ok		DIN EN ISO 3651 - 2A Korrosionsbeständigkeit IC Test Corrosão intermetálica		<input checked="" type="checkbox"/> Ok		
Verwechslungsprüfung Test of identity Teste de identificação		<input checked="" type="checkbox"/> Ok		Werkstoffverständiger Quality Control Representative Inspector da Qualidade		Solution annealing 1050 °C (Water quenched)		
Makroskopische Untersuchung Macrographic test		<input checked="" type="checkbox"/> Ok		 David Reis (g-DR)				
Material free from segregation defects.		<input checked="" type="checkbox"/> Ok				Bollinghaus Steel, SA		
Bemerkungen / Remarks / Observações				Hiermit bestätigen wir, dass das Material der oben genannten Spezifikation entspricht.				
Country of origin: Portugal. No weld repair done. Material is free of mercury and radiation contamination. Certified acc. PED 97/23/EC-EN 764-5 and AD 2000 W0 Notified Body 0035 - TÜV Rheinland Industrie Service GmbH 01 202 926/Q-02 0040				We confirm that this material meets the specification according the mentioned standards. Confirmamos que este material respeta as especificações de acordo com as normas referidas.				



NDT Limited

MATERIALS
TESTING

MALTRAVERS ROAD
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www.ndt.ltd.uk



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TEST REPORT

Date Recd 21.09.15 Date Of Test 22.09.15 Test No. M116798

Customer : Zapp (GB) Ltd Report No. M116798
Unit 1 The Thorncliffe Distribution Centre Order No. T04012
Chapelton
Sheffield
S35 2PW

Sample(s) 1 off test piece.

Size. 76.20mm x 38.10mm
Cast No. 67529016
Batch No. G012409A00

Material Specification. BSEN 10088-3 1.4401 / 1.4404

TENSILE TEST: BS EN ISO 6892-1: 2009 : A224

Test Piece dia mm	Area mm ²	0.2% Proof Stress MPa	1.0% Proof Stress MPa	Tensile Strength MPa	EI % On 5D GL	R of A %
10.07	79.64	534	566	651	42.0	75

HARDNESS TEST: ASTM E10-14

217 HBW 10/3000

HARDNESS TEST: ASTM E18-14

92 HRBW

A. R. Walker
Metallurgical Laboratory Manager

The results relate only to the item(s) tested
This test report shall not be reproduced except in full, without the written approval of the laboratory

END OF REPORT