SGS METLAB

REPORT NUMBER:	19 - 4386 A	
Date Received:	Date Tested:	Date Issued:
19 November 2019	26 November 2019	26 November 2019

TEST REPORT IN ACCORDANCE WITH EN 10204 3.1 OF SAMPLE AS SUPPLIED			
Customer:	Walter Meano Engineering (Pty) Ltd	**Material:**	BS 970 (83) Grd 655M13 (EN 36A)
Order no:	E 20436		Nearest chemical equivalent
Address:	PO Box 797		
	Germiston	**Description:**	Crank Forging
	1400		
Telephone:	011 873 8620		
Email:	wme@mweb.co.za	**Identification:**	Sample A
Attention:	D. Börner		

CHEMICAL ANALYSIS		Test Temperature		21 °C												
Element		**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Mo**	**Ni**	**Al**	**Cu**	**Nb**	**Ti**	**V**	**Sn**	**Sb**
Specification Requirement*	**Max**	0.16	0.60	0.35	0.035	0.040	1.00		3.75							
	Min	0.10	0.35	0.10			0.70		3.00							
Sample Tested		0.29	0.64	0.21	0.036	0.052	0.93	0.001	3.72	0.001	0.04	0.001	0.001	0.01	0.004	0.001

Results expressed in %

§ Any results marked thus are not included in the SANAS scope of accreditation for this laboratory.

Test results, conforms to the specifications provided			19 - 4386 A SGS J Botha 001
Test results, does not conform to the specs provided			
No requirements provided for:	X		
REMARKS:		**WITNESS BY: N/A**	**TECHNICAL SIGNATORY**

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Method	Standard/specification it is based on	Technical activity instruction	Uncertainty of measurement	Decision rule
Tensile test (ambient temp)	ASTM E8, ISO 6892-1 Method B, EN 10002-1, ASTM A370	Mech 30, 34, 39, 43,	10MPa; 13MPa; 9MPa; 7 MPa respectively	Unless otherwise required by the client, uncertainty of measurement is not considered when determining conformity to the applicable standard or specification. When such a decision rule is specified and agreed upon with the client, it will be stated on the report for the applicable method (s)
Tensile test (elevated temp)	ASTM E21, EN 10002-5	Mech 33	7 MPa	
Impact testing	ASTM E23, EN 10045-1, ISO 148-1	Mech 29	2J at low values; 9J at high values.	
Bend testing	ASME IX (QW 160), AWS D1.1 4.8.3.3, EN 15614-1 7.4.3, ASTM A370	Mech 34 & 39	Not applicable	
Compression test	ASTM A370	Mech 47	Available upon request	
Vickers Hardness testing	ASTM E92, ASTM E384, SANS 6507-1	Met 01	HV10:±17.3; HV5:±25.8; HV0.3:±31.5	
Brinnel Hardness testing	ASTM E10, ASTM A370	Met 02	HBW 5/750: ±17.6; HBW:±12.4	
Rockwell B & C Hardness	ASTM E18; ISO 6508-1	Met 03	HRB:±7.3; HRC:±2.5	
Portable hardness testing (Vickers, Rockwell & Brinnel)	ASTM E110, ISO 6506-1	Met 16	Available upon request	
Evaluation of weld and other macro etches (incl Sulpher prints)	AMS W6858A, API 1104, AREMA Chp 4, AS NZS 1554, AS NZS 2980, ASME IX, ASTM E1180, ASTM E381, ASTM E340, AWS D1.1, AWS D1.2, AWS 1.6, EN 1321, EN 14587, EN 14730, EN 30042, ISO 13847, ISO 14555, ISO 4968, ISO 5817	Met 7 & 26	Not applicable	
Grain size and microstructure	ASTM E112 (comparison method)	Met 10 & 11	Not applicable	
Inclusion content	ASTM E45 method A	Met 09	Not applicable	
Intergranular corrosion	ASTM A262 Pract A & E	Met 08	Not applicable	
Decarburization depth	ASTM E1077 par 7.2	Met 06	Available upon request	
Salt spray testing (QFog)	ASTM B117, ISO 9227	Met 04	Not applicable	
Chemical Testing	ASTM E415	Chem 70 & 71	Available upon request	

Other methods as agreed with the client: None

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