MATERIAL IDENTIFICATION REPORT

Report Number	LW19-0830 MI	**Test Date**	28/05/2019
Customer	**New Bridge Services Pty Ltd**		
Customer Address	72 Peet St, Pakenham VIC 3810		
Requested By	Bert Pedro	**Purchase Order**	COD
Accredited Laboratory	LMATS Melbourne Laboratory		
Job Description	Grade identification on 1 off pin sample		
Identification	160 mm long, ϕ39 mm solid pin sample		
Material Specification	To be identified		
Test Specification	AS 1391:2007 – tensile test; TP-CT-02 – OES chemical analysis; AS 1815.1:2007 – Rockwell hardness test		
Sampling	Sample supplied by the client		

CHEMICAL ANALYSIS RESULTS

Test Method	TP-CT-02 Chemical analysis by O.E.S.
Equipment	SpectromaxX LMM05 A/N L554
Specimen Data	surface ground to P#60 grit using coated SiC abrasive paper
Test Personnel	Anh Nguyen
Test Results	Refer to Table 1

Table 1 Chemical analysis results

Identification	Analysis results – Elements (Average %)												
	Fe	**C**	**Si**	**Mn**	**P**	**S**	**Cr**	**Mo**	**Ni**	**Al**	**Cu**	**Ti**	**V**
39 mm Solid Steel Pin	≈Bal	0.46	0.19	0.54	0.02	0.01	0.04	0.001	0.01	0.003	0.02	0.002	0.001
AS 1442-2007 Table 5 Grade 6	**≈Bal**	**0.40-0.50**	**0.10-0.40**	**0.50-1.00**	**0.040**	**0.040**	-	-	-	-	-	-	-

Reported concentration levels are maximum limit, unless specified as a range.
Any statements of compliance are made taking into consideration the measurement uncertainty as appropriate. Measurement uncertainty can be obtained by contacting the laboratory.

Remarks The chemical composition of the sample met specification requirements outlined in AS 1442-2007 Table 5 Grade 6.

report: LW19 0830 MI

Materials Engineer

Nikolas Hildebrand
3/06/2019

All samples will be discarded after 6 weeks, unless requested

LMATS Pty Ltd
ABN: 41 107 100 925
www.lmats.com.au
admin@lmats.com.au
☑ Melbourne ☎ 03 9399 9199
☑ Sydney ☎ 02 9648 1989
☑ Brisbane ☎ 07 3875 2070
☑ Albury ☎ 0437 690 841
☑ Newcastle ☎ 02 4906 8652
☑ Perth ☎ 08 9418 6380

LMATS
Laboratories for Materials Advanced Testing Services

ROCKWELL HARDNESS TEST

Test Date	28/05/2019
Test Method	AS 1815.1:2007
Test Equipment	Avery Rockwell hardness tester A/N L187
Test Temperature	Ambient
Test Indentor	1.5875mm Ø Hard metal ball
Test Force (Kgf)	100
Test Surface	Ground to P#120
Test Technician	Anh Nguyen
Test Results	Refer to Table 2

Table 2 Rockwell Hardness results

Identification	Hardness readings (HRB)	Average Hardness (HRB)
39 mm Solid Steel Pin	96, 96, 95	96

Remarks To be evaluated by the client.

TENSILE TEST

Test Date	28/05/2019
Test Method	AS 1391 – 2007 (ISO 6892-1)
Test Specimen	Machined along the longitudinal, axial, reduced section
Gauge Length (mm)	62.0
Test Technician	Prakash Salian
Test Results	Refer to Table 3

Table 3 Tensile Test results

Identification	Test specimen dimensions (mm)	Cross-sectional area (mm^2)	Max Force (kN)	Ultimate Tensile Strength (MPa)	0.2% Proof Stress (MPa)	Elongation (%)	Reduction of Area (%)
39 mm Solid Steel Pin	Ø12.45	121.74	79.0	649	353	21.8	N/A
AS 1442-2007 Table 5 Grade 6				**≥600**	**≥300**	**≥14**	**N/A**

Fracture Position Specimen fractured in the central third of the gauge length

Results The tensile results of the sample met the specification requirements outlined in AS 1442-2007 Table 5 Grade 6.