

9545

Sample Res

Sample Result Name	Type	Measure Date Time	Recalculation Date Time	Origin
9548 (41947)R-54 LCS	Unknown	Tuesday, June 10, 2014	3:27:21 PM	Measured
Method Name	Method Version	Operator Name	Check Type	Check Status
Fe-30-MO		SARA SAE	None	Not Used
Grade Verification Name	Grade Verification Similarity	Correction Type	Type Corr Sample Name	Grade Search Name
	0	None		
Grade Search Similarity	Type	Status	Outlier Removal	
0	None	Not Used		

Sample Name
9548 (41947)R-54 LCS

	C Conc %	Si Conc %	Mn Conc %	P Conc %	S Conc %	Cr Conc %	Mo Conc %	Ni Conc %	Al Conc %	Co Conc %	Cu Conc %	Nb Conc %	Ti Conc %	V Conc %	W Conc %	Pb Conc %	Sn Conc %	As Conc %	Zr Conc %	
4	0.054	0.090	0.48	0.036	0.034	0.069	<0.003	0.044	0.032	<0.005	0.061	<0.005	<0.0010	<0.002	<0.040	<0.010	0.009	<0.005	<0.003	
5	0.053	0.090	0.47	0.033	0.034	0.071	<0.003	0.043	0.020	<0.005	0.061	<0.005	<0.0010	<0.002	<0.040	<0.010	0.012	<0.005	<0.003	
6	0.052	0.089	0.47	0.037	0.037	0.070	<0.003	0.046	0.024	<0.005	0.062	<0.005	<0.0010	<0.002	<0.040	<0.010	0.011	<0.005	<0.003	
Rep	0.053	0.090	0.47	0.036	0.035	0.070	0.003	0.044	0.025	<0.005	0.061	<0.005	<0.0010	<0.002	<0.040	<0.010	0.011	<0.005	<0.003	
Min Cal	0.006	0.005	0.004	0.003	0.002	0.005	0.003	0.005	0.003	0.005	0.002	0.005	0.0010	0.002	0.040	0.010	0.002	0.005	0.003	
Mean	0.053	0.090	0.47	0.036	0.035	0.070	<-0.007	0.044	0.025	<0.004	0.061	<-0.019	<-0.005	<-0.002	<-0.042	<0.007	0.011	<0.003	<0.001	
Max Cal	3.00	5.04	18.12	0.18	0.30	36.00	10.20	55.2	6.24	21.60	7.44	3.60	3.60	12.00	7.32	0.13	0.27	0.13	0.19	
	Ca Conc %	B Conc %	Fe Conc %																	
4	0.004	0.001	99.0																	
5	0.004	0.002	99.0																	
6	0.004	0.001	99.0																	
Rep	0.004	0.001	99.0																	
Min Cal	0.0005	0.0005																		
Mean	0.004	0.001	99.2																	
Max Cal	0.016	0.025																		

on in lab
Perfected

R-54 198 pcs.



JSW STEEL LIMITED - SALEM WORKS

Works: pottaneri Village, Mecheri Post - 636 453, salem, india

QR / QA / 54

Registered Office: "JSW CENTRE" Bandra Kuria Complex, Bandra (East), Mumbai - 400 051

TEST CERTIFICATE

Certificate No. : 18040

Customer Name: JSW Steel Ltd Depot - Rajkot, Veraval

Cust. Address : Survey NO. 171/1, Plot NO. - 2

Rajkot, Gujarat-111111, India

Date : 25.12.2013

SO No : 400104436

SO Date : 18.12.2013

Truck No.: TN34Q7144

Po Number: EMAIL

Po date : 18.12.2013

Packing Slip No : 700589493

Ex. Invoice No : 1320052179

Heat No	Grade	Size (mm)	Length (mm)	ML (mm)	No. of Bundles	No. of PCS	Weight	Prod STD No
E41947	SAE 1008	100.00 mm DIA	6,000.00 mm	0 mm	9	63	21.510 MT	QDQA06 660

TOC NO : SUN_FORGE_SAE_1008_0_0_SFPL_019_13_14, 14.06.2013, 14.06.2013

Process Route : BF_EOF_LRF_VD_CCM_EMS_BM

Billet/Bloom Size : 340MM_400MM

Reduction Ratio : / - 17.32 : 1

CHEMICAL ANALYSIS

Element	C%	Si%	Mn%	P%	S%	Cr%	Mo%	Ni%	B ppm	V%	Cu%	Pb%	Sn%	Ti%	Nb%	Zr%	As%	Sb%	Al%	Ca ppm	CE%
MIN			0.250																		
MAX	0.0800	0.200	0.400	0.030	0.0500																
Actual	0.050	0.100	0.280	0.009	0.006	0.030	0.003	0.021	3	0.005	0.012	0.000	0.004	0.0013	0.000	0.000	0.000	0.000	0.036	28	0.106

Other Elements :

Gas Levels

N ppm : [/] - 75

O ppm : [/] - 10.2

H ppm : [/] - 1.00

MECHANICAL PROPERTIES :

Test Cond.	YS	UTS	ELONG.	RA	As Rolled	As Quenched	As Quenched	As Q&T
			%	%				
MIN								
MAX								
Actual								

Impact Test Temp

Impact Test Type

Impact Notch Type

Impact Test Cond.

J **Kgm/cm2

Edge Radius (mm)

*Energy - T1

**Strength - T1

*Energy - T2

**Strength - T2

*Energy - T3

**Strength - T3

MIN

MAX

ACTUAL

Test Temp

Upset Percentage

Upsetability

Ideal Diameter (DI) : [/] -

JOMINY HARDENABILITY

Distance																					
MIN (HRC)																					
MAX (HRC)																					
AVG (HRC)																					

METALLURGICAL PROPERTIES & PHYSICAL INSPECTION

Surface Inspection	Step Down Test	BFT Test	MPI Test	Segregation Test	Spark Test	Spectra Test	Ni-Spot Test
Actual OK			OK		OK	OK	
Macro Etch Test	Micro Structure	CN	CZ Looser	CZ Closer	GBC Level	Supply Condition	
Actual C2R2S2	Ferrite - Pearlite	/	/	/		AS ROLLED	
Grain Size	Decarb (mm)	Banding (µm)	A	B	C	D	DOS µm
Actual 7.00	0.240 mm	1.00	0.50			1.00	

Inclusion Rating Test Standard : ASTM E45 A

Grain Size Standard : ASTM E112

Decarb Standard : SAE J419

Macro Etch Test Standard : ASTM E381

Tensile Test Standard :

Jominy Test Standard :

VW COLOR CODE : WHITE

CUSTOMER COLOR CODE :

SPECTION CERTIFICATE 3.1 ACCORDING TO EN 10204 : 2004

Remarks : Spark test is 100% OK, Mobile Spectra Test is 100% OK, Metascope Test is 100% OK

WE HEREBY CERTIFY THAT THE MATERIAL SHIPPED UNDER THIS TEST CERTIFICATE DID NOT COME IN DIRECT CONTACT WITH ANY MERCURY, OMIUM & HEXAVALENT CHROMIUM CONTAINING DEVICES, FREE FROM RADIO ACTIVE CONTAMINATION EMPLOYING A SINGLE BOUNDARY OF CONTAINMENT DURING THE MANUFACTURING PROCESS TESTS, INSPECTION AND STORAGE.

WE CERTIFY THAT CONTENTS OF THIS REPORT ARE CORRECT AND ACCURATE AND MEET THE REQUIREMENTS OF THE PURCHASE ORDER, TECHNICAL DELIVERY CONDITION, GENERAL STEEL REQUIREMENTS AND THE MATERIAL CERTIFICATION REQUIREMENTS.

For JSW STEEL LIMITED