



SPAN FORGING PVT. LTD.

Manufacturers of: Steel Forging and Centrifugal Casting

08.08.2012

Method: Fe-10-F

8/8/2012 4:32:07 PM

Comment: low-alloy steel - F

Element concentration

Sample Name:

Grade:

Heat No:

T.S.(R-24SI)7871(360)

S-451

	C	Si	Mn	P	S	Cr	Mo	Ni
	%	%	%	%	%	%	%	%
1	0.0773	0.133	0.348	0.0302	0.0299	0.0485	0.0148	0.0711

	Al	Co	Cu	Nb	Ti	V	W	Pb
	%	%	%	%	%	%	%	%
1	0.0306	< 0.0015	0.0970	< 0.0010	< 0.0010	0.0011	< 0.0100	0.0065

	Sn	As	Zr	Bi	Ca	Ce	B	Zn
	%	%	%	%	%	%	%	%
1	0.0066	0.0057	< 0.0015	< 0.0040	0.00013	< 0.0030	0.00096	< 0.0020

	La	Fe	Sb	Te				
	%	%	%	%				
1	< 0.0010	99.0	0.0061	0.0027				



SHARU STEELS (P) LTD.

B-45 & D-251, Phase-VII, Focal Point, LUDHIANA - 141 010.
E-mail : info@sharusteels.com & sharusteels@connect2.dsl.net

QUALITY ASSURANCE DEPARTMENT
METALLURGICAL TEST REPORT

TEST CERTIFICATE

F-QCD-03



M/S. NOV SARA INDIA PRIVATE LIMITED (UNIT NO.-11)7/1,PRITAN ROAD, DERRADUN,UTTARAKHAND	T.C. No. 1231 Invoice No. Truck No. PB-19E-9A7	Date 09-07-2012
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GRADE	SIZE	HEAT NO.	MANUFACTURING ROUTE	COLOUR CODE	SUPPLY CONDN.	QNTY. M.T.	NO. OF PCS
MS1100	56 MM	S-451	L/HT	YELLOW	AS ROLLED	7870	LOOSE

CHEMICAL COMPOSITION IN PERCENTAGE

	C	Mn	S	P	Si	Ni	Cr	Mo	V	Al	Cu	Sn	Ti	B	Ca
Min.	*														
Max.	*														
Actual	0.02	0.40	0.028	0.025	0.18					0.022					

METALLURGICAL RESULTS

INCLUSION RATING IS : 4163/JK CHART/ASTM E-45A									Aust. Grain Size ASTM No. (E-112)		Gas content (ppm)	
A		B		C		D		Decarb. (MM)	7		D ₂	
T	H	T	H	T	H	T	H				N ₂	
STD												
MAX												
ACTUAL	1.5		1.0		1.0		1.5				H ₂	

MECHANICAL PROPERTIES						MACRO	ULTRASONIC TEST	MIX UP TEST
	U.T.S.	Y.S.	EL %	RA %	Impact Value	Hardness B.H.N. / R _c		
Reqd.							OK	OK
Actual								OK

HARDENABILITY (HRC) AS PER IS : 3848

Distance												
Reqd.												
Actual												

Remarks :

CERTIFIED THAT THE TEST FINDINGS ARE CORRECT & ARE BASED ON ACTUAL RESULTS CARRIED OUT ON SAMPLES DRAWN AS PER Q.A.P.

PREPARED BY

AUTHORISED SIGNATORY