

Part NO.	1741	SECTION :-	60H4	HAET NO :-	51987	INVOICE NO.-	SE244-12063
...	24/12/24	STEEL SUPPLIER :-	SLR	REC.QTY :-	216014	INVOICE DATE:-	19/12/24
DE :-	SSB MAR	STEEL TC NO :-	24120.841	NO. OF BARS :-			

Process / Mfg Route	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%Al	%Cu	%As	%Sb	%V	%Pb	%Ca	%Nb	%Ti	%B
...	0.33	0.8	0.15	0.015	—	1.0	—	—	0.02	—	—	—	—	—	—	—	—	—
...	0.4	1.1	0.4	0.03	0.02	1.3	0.3	0.1	0.05	0.3	—	—	—	—	0.001	—	—	0.005
Tc Value	0.37	1.08	0.25	0.023	0.012	1.29	0.07	0.007	0.027	0.02	0.001	0.0015	0.006	0.001	0.0006	0.001	0.004	0.0005
tro Value	0.39	1.07	0.25	0.022	0.015	1.278	0.016	0.002	0.024	0.007	—	—	0.003	—	—	0.004	0.006	0.0004

Bar Size	(As per WI...)	Qty : 10 % Of Total Heat												
f Bar Checked	10	Diameter/Section Size(in mm)												
		S.NO.	1	2	3	4	5	6	7	8	9	10	11	12
		60	59.9	59.8	59.7	59.6	59.5	59.6	59.5	59.4	59.5	59.6		

Gas Content (PPM): As per Mill Tc	N2	H2	O2
Min	60	—	—
Max	726	2.5	20
Value	686	1.11	14.2
Mill Tc			

Steel Supply Condition: AS ROLLER

MACRO	(i)	Internal soundness Sample : (ASTM E381 or as per customer)	S2	R2	C2
		Value Obs.	52	22	22
	(ii)	Dendrite structure O1 sample :			
	(iii)	Step Down Test Sample : (IS4075 or as per customer)	OK		

Micro structure As Rolled :	Micro structure : (or as per customer)
Mill Tc	Uniform F + P
SSB	F + P

ULTRASONIC TEST (AS PER ASTM A388) : Mill Tc 100% OK

INCLUSION RATING (IS 14163 /ASTM: E45A OR REQUIRED BY CUSTOMER)										
	A		B		C		D		DS	
	Sulphide		Aluminate		Silicate		Oxide			
	TN	TK	TN	TK	TN	TK	TN	TK	TN	TK
Cust Spec.If Any	2.0	1.5	2.0	1.0	0.5	0.5	1.0	1.0		
Mill Tc	1.0	0.5	0.5	0	0	0	0.5	0		
SSB	1.0	0.5	0.5	0	0	0	0.5	0.0		

GRAIN SIZE :	Spec. :-	5-8	Mill Tc	7.0	SSB	6.5
(ASTME112 / IS-4748)						

JOMINY HARDENBILITY	Distance	5/5	53	55	57	59	511	513	515	526	525	536
IS-3848 / ASTM A255	Specified	52-58	52-58	51-57	50-56	47.5-55	45.5-54	44-54	42.5-53	39.5-52	37.5-48	36-46
(As per required by Customer)	Mill Tc	57.1	55.8	54.7	53.7	52.5	51.6	50.2	46.3	42.6	38.2	37
	Observed	57	56	54	52	50	50	48	46	42	39	36

MECHANICAL PROPERTIES : (If Required in TDC /Customer)	As per IS:1608/ ASTM A 370			As per IS: 1757		
	U.T.S	Y.S	N/mm2	%EL	IMPACT VALUE	IMPACT VALUE
	N/mm2 /MPA		/MPA		CHARRY	I ZOD
Specified	880-1080	605 min.	2	25		
Observed	1037	364	21.2	83.1		

As Rolled Hardness	1	2	3	4	5
(BHN (Max / Min)	214	216	219	221	223
(If Required in TDC / Customer)					

VISUAL :	(i)	Surface Condition	100 % Bars Checked	OK (Rust, Crack, Gas (H2g))
	(ii)	Heat No.	100 % Bars Checked	OK (51987)
	(ii)	Color Code.	100 % Bars Checked	OK (orange)

REDUCTION RATIO : Specify BLOOM SIZE - 200 X 200 REDUCTION RATIO : 14.15:1
(If Required in TDC / Customer) As Per Mill TC

) DECARB LEVEL : (AS PER IS 6396 / ASTM E1077) (If Required in TDC /Customer)	Specified	0.26			
	Observed	PD	0.15	FD	

UPSETIBILITY TEST (AS PER IS 10167) :

Test Certificate verified for Each Heat no :	Available & Ok	Not Available	Not Conforming
	OK		

TDC / Customer STD	SSB/TDC/	Mill Tc No.	Mill Tc Date	Verified By :
(If Required in TDC / Customer)				

MIX-UP TEST	Verified By Mobile Spectro / X-Ray Gun/Spark Test
(If Required in TDC / Customer)	Accepted <input checked="" type="checkbox"/> Rejected <input type="checkbox"/>

Other Remarks

Checked By Approved By

