

ARORA IRON & STEEL ROLLING MILLS (P) LTD.

DHANDARI KHURD, NEAR PHASE-VII, FOCAL POINT, LUDHIANA- 141 010.

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METALLURGICAL TEST REPORT

Customer Address: M/S -FORGE (INDIA) PVT . LTD							Material Process Route Specification			Billet Route EAF-LRF-VD-CCM-AMLC-EMS-RM Standard					Test Certficate No. Date Invoice No.			92530 18-03-2018 11614			
#60 , SECTOR-5 , PARWANOO-H.P.						Heat N	lo.		A05361 SAE8620					Weight (MT.) Input/Billet Size Reduction Ratio			3.485 130x130 mm 21:1				
							Supply Size Supply Condition Colour Code			32 MM Ø AS HOT ROLLED PINK					No's of Pcs No's of Bundle Multiple			NA NA			
										TEST	RES	ULT									
						C	HEMI	CAL A	NALY	SIS (AS	STM E	415-	14/15	8811	-1998)						
E	lement		C%	Mn%	Si%	5%	P%	Cr%	Ni%	Mo%	V%	Al%	Cu%	Ti%	Sn%	В%	Ca%	Co%	CE%	S+P (%)	
pec.	M	in	0.180	0.700	0.200	i e	250	0.400	0.400		. +:		# .		<u> </u>		5	A.F		-	
Ma			0.230	0.900	0.350		0.040	100000000000000000000000000000000000000		0.250	0.5	77.	-	0.7		3	-		1.8		
А	chieve	d	0.190	0.840	0.260	0.026	0.015	0.570	0.425	0.205	0.006	0.020	0.170	-	12	.27	-	-	-	-	
						H	IARDE	NABI	LITY T	EST (IS	5:3848	B, AST	M A25	5, SA	E J406	5)					
D	istance		4/16"						Ac.										6 X		
pec.	M	lin	35			La is				15							1 46	and the		1 1 1 B	
HRC)	М		39	177														Tice Y	4 7	ng phys	
Achi	eved (F	HRC)	36.5														100	artell	100		
							Me	chani	cal Dr	onerti	21) 20	1608	/ ASTI	Λ Δ3	70)						
			Ton	cila	V	eld	_			uction	es (13				101	D.L.	Value	Su	rface Har	dness	
Pri	ramete	Tensile ers Strength			to the	nath	The state of the s			March Control of the		The state of the s	Impact Strength O/Charpy V-notch/U-n			THE COLUMN		As Rolled			
ruidileters		13	(Kg/mm ²)		(Kg/mm ²)		(%)		1997	(%)		(Joules)			(Inch) (mm)		(BHN)				
Spec. Mi		lin			-		1000		-	-		-									
		ax -																			
		d -							- 12								183/187				
									B.AA.	-11											
		-	Inali	usion Da	Ai /10	. 4163	/ ACTA	LEAGA		allogra	pnic	_	Grain Size	0		Depth o	.6		ficro Struc	rturo	
		Inclusion Rating (IS : 4163 WROST FIE								iui t)		IS 4748 /			Decarburization			White Structure			
aram	eters	Туре А				В		С		D	DS	ASTM E112		IS 6396/ASTM E1077							
		Series	Thin	Thick	Thin	Thick	Thin	Thick	Thin	Thick	US	-	(No.)		Com	plete	Partial	Uniform	Banding	Structure	
	Min			2	-	_		-		-	-	THE SE									
Spec. Ma		lax	TIQ I									100			0.01			3 - 5			
		ii ii	1.0	0.5	0.5	0.0	0.0	0.0	1.0	0.0		6.0	to	6.5		7 1		30 6	15 micron	and the same of th	
Achieved		u	1.0	0.5	0.5	0.0	0.0	0.0	1.0	0.0		0.0	10	0.5			122	100	max	te+Bainite	
						Cont.	2002	10					. T	0 01							
- 2-									_				e Test				Toot		Upsettir	200	
Parameters Spec.		Internal Soundness ASTM E381			SS	3	rep Down Test		1000	IS 1335		Magnetic Particle Inspectin		Ultrasonic ASTM A388 / I				Test			
		ASTIVI ESSI				IS 4075		13 13332		IS 10138			ASTIV			IS 11169					
								- W. LL				de principal de la									
Achieved		Be	Better than C2,R1,S1			Satisfactory			Satisfactory				100%			100%					
П					- 0				3-1		1411	r				nat Chi	3 19			1 -	
			Dimensional				Spark Test			X-RF		Gas Analysis Report									
Parameters		Tolerance				11-									Test method-Le						
		IS 3739										O ₂ (ppm)		N ₂ (ppm)			H ₂ (ppm)				
Spec.							100%			100%			13.0		75.2		1.28				
Armi	Achieved		As per IS 3739 Grade 1				100%			100%			15.0		/3.2			1.28			
	nJ .										R	7							1		
emar											6)					1	1	10		
			repared						J.		6)					4=1	ved By	V, 0	(140)	

In case of any quality issue, please inform Head-Quality Assurance at bdchawla@arorairon.com, Mobile No. +919914503980