TEST CERTIFICATE

BHARAT ALUMINIUM COMPANY LIMITED, KORBA
BALCO NAGAR KORBA, CHHATTISGARH, INDIA, PIN-495684
TELEPHONE:+ 91-7759-252227

BUYER:	**J M & CO GULALWADI Maharashtra**				
INVOICE NO:	**F22412208538**	**DATE OF INVOICE:**	**12.09.2024**	**QUANTITY:**	**6.390 MT**

Batch No	Material	Description	Length (mm)	Width (mm)	Thickness (mm)	Alloy	Temper	Net. Wt (MT)
3107802004	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	6.00	19000	M	0.285
3107802005	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	6.00	19000	M	0.286
3107802006	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	6.00	19000	M	0.285
3107802007	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	6.00	19000	M	0.285
4008703001	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.476
4008703002	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.318
4008703003	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.318
4008703004	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.317
4008703005	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.317
4008703006	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.317
4008703007	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.318
4008703008	HPGP302	Unalloyed Hot Rolled Plate Trimmed- GEQ	2,440.00	1,220.00	20.00	19000	M	0.318
7269501103	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.56	19000	H2	0.290
7269501104	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.56	19000	H2	0.278
7269501105	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.56	19000	H2	0.289
7269501204	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.56	19000	H2	0.282
7269501205	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.56	19000	H2	0.273
7269502204	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.71	19000	H2	0.279
7269502205	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.71	19000	H2	0.278
7269502206	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.71	19000	H2	0.288
7269502207	CCGP102	Unalloyed Cold Rolled PT Coil -GEQ As ma		915.00	0.71	19000	H2	0.293

Note:
In Batch/Coil No. XXXXXXYYYY - XXXXXX is Heat No., YYYY-Bundle No.

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TC No: BALC/1101/F22412208538 **TC Issue Date:12.09.2024**

CUSTOMER:	**SHEET ROLLING SHOP, BHARAT ALUMINIUM COMPANY LIMITED**
LOCATION:	**QUALITY ASSURANCE LABORATORY - METAL**
FACILITY:	**PERMANENT**

TEST PARAMETER	TEST METHOD FOLLOWED
1. CONDUCTIVITY	IS 5082-1998
2. TENSILE STRENGTH	IS 1608 Part 1: 2022
3. ELONGATION	IS 1608 Part 1: 2022
4. CHEMICAL ANALYSIS	ASTM E 1251-17a

The Chemical composition & Mechanical proeprties is confirming to specification.

1-IS 737:2008 for sheet & strip for general engineering purpose.
2-IS 736:1986 for plate for general engineering purpose.
3-IS 5082:1998 for plate & sheet for electrical application.
4-IS 5052:1993 for temper designation of Aluminium & its alloy

CHEMICAL COMPOSITION(In %), Environmental Condition: Temp.23+ /-5℃
PHYSICAL PROPERTIES & Environmental Condition: Temp. 23+ /-5℃ (Mechanical) & 27+ /-1℃ (Electrical).

Material Code	Batch No	Cu	Mg	Si	Fe	Mn	Ti	Zn	Cr	Other	Al * (by diff)	UTS N/MM2	%EL on 50mm GL	PS N/MM2	Bend Test	Elect. Cond %IACS
HPGP302	3107802004	0.0046	0.0019	0.09	0.27	0.0660	0.0107	0.0030	0.0000	0.03	99.523	123.50	20			
HPGP302	3107802005	0.0046	0.0019	0.09	0.27	0.0660	0.0107	0.0030	0.0000	0.03	99.523	123.50	20			

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Material Code	Batch No	Cu	Mg	Si	Fe	Mn	Ti	Zn	Cr	Other	Al * (by diff)	UTS N/MM2	%EL on 50mm GL	PS N/MM2	Bend Test	Elect. Cond %IACS
HPGP302	3107802006	0.0046	0.0019	0.09	0.27	0.0660	0.0107	0.0030	0.0000	0.03	99.523	123.50	20			
HPGP302	3107802007	0.0046	0.0019	0.09	0.27	0.0660	0.0107	0.0030	0.0000	0.03	99.523	123.50	20			
HPGP302	4008703001	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
HPGP302	4008703002	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
HPGP302	4008703003	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
HPGP302	4008703004	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
HPGP302	4008703005	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
HPGP302	4008703006	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
HPGP302	4008703007	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
HPGP302	4008703008	0.0202	0.0002	0.35	0.34	0.0020	0.0143	0.0020	0.0000	0.03	99.241	88.27	32			
CCGP102	7269501103	0.0108	0.0006	0.23	0.30	0.0060	0.0119	0.0020	0.0000	0.03	99.408	132.46	4		OK	
CCGP102	7269501104	0.0108	0.0006	0.23	0.30	0.0060	0.0119	0.0020	0.0000	0.03	99.408	132.46	4		OK	
CCGP102	7269501105	0.0108	0.0006	0.23	0.30	0.0060	0.0119	0.0020	0.0000	0.03	99.408	132.46	4		OK	
CCGP102	7269501204	0.0108	0.0006	0.23	0.30	0.0060	0.0119	0.0020	0.0000	0.03	99.408	128.77	4		OK	
CCGP102	7269501205	0.0108	0.0006	0.23	0.30	0.0060	0.0119	0.0020	0.0000	0.03	99.408	128.77	4		OK	
CCGP102	7269502204	0.0105	0.0006	0.29	0.30	0.0060	0.0097	0.0020	0.0000	0.03	99.351	139.20	5		OK	
CCGP102	7269502205	0.0105	0.0006	0.29	0.30	0.0060	0.0097	0.0020	0.0000	0.03	99.351	139.20	5		OK	
CCGP102	7269502206	0.0105	0.0006	0.29	0.30	0.0060	0.0097	0.0020	0.0000	0.03	99.351	139.20	5		OK	
CCGP102	7269502207	0.0105	0.0006	0.29	0.30	0.0060	0.0097	0.0020	0.0000	0.03	99.351	139.20	5		OK	

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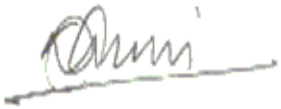
balco

Opinion & Interpretation: (If any)

Reviewed By- Chemical
Shift In Charge



Reviewed By- Mechanical & Electrical
Shift In Charge

Authorized Signatory
Technical Manager

Note:

1. MPa=1 MN/m2=1 N/mm2=0.102 kgf/mm2, 1PPM = 1/10,000%.
2. The results relate only to the samples tested in as received condition for applicable parameter.
3. Test Certificate shall not be reproduced except in full, without written approval of the laboratory.
4. This is a electronically signed certificate hence does not require signature.
5. In above mentioned batch number first six digit represents heat number and last four digit represent bundle number of the repective heat number.
6. Sampling done by customer and not by Quality Assurance laboratory.
7. No deviation from the method.
8. Customer reference is taken verbal.
9. Statement of conformity is not required by customer. So decision rule will not be employed.
10. Sample length for conductivity testing is 90x90 mm. Total sample length required for Mechanical & Electrical testing is 300x300 mm.
11. Sample diameter required is from 50 mm to 63 mm and height required is from 6 mm to 13 mm for Chemical analysis.
12. Apart from the permanent location facility, no other temporary or mobile facilities are available for lab to analyze the samples.

*****END OF REPORT*****