

ALUMINIUM SPECIFICATION OF 7775KVA / 6531 KVA LOCOMOTIVE TRANSFORMER TANK

DT. 01.02.2020 REV00

**ALUMINIUM ALLOY
CATEGORY-I(6060)
Extrudal-043**

**ALUMINIUM ALLOY
CATEGORY-II(5454)
Peraluman- 260**

**ALUMINIUM ALLOY
CATEGORY-III(6082)
Anticorodal-110/112**

CHEMICAL COMPOSITION

SI.NO.	COMPONENT			
1	ALUMINIUM	97.9% TO 99.3%	94.5% TO 97.1%	95.2% TO 98.3%
2	CHROMIUM	0.05% MAXIMUM	0.05% TO 0.20%	0.25% MAXIMUM
3	COPPER	0.1% MAXIMUM	0.1% MAXIMUM	0.1% MAXIMUM
4	IRON	0.1% TO 0.3%	0.4% MAXIMUM	0.5% MAXIMUM
5	MAGNESIUM	0.35% TO 0.6%	2.4% TO 3.0%	0.6% TO 1.2%
6	MANGANESE	0.1% MAXIMUM	0.5% TO 1.0%	0.4% TO 1.0%
7	SILICON	0.3% TO 0.6%	0.25% MAXIMUM	0.7% TO 1.3%
8	TITANIUM	0.1% MAXIMUM	0.2% MAXIMUM	0.1% MAXIMUM
9	ZINC	0.15% MAXIMUM	0.25% MAXIMUM	0.2% MAXIMUM
10	RESIDUALS	0.15% MAXIMUM	0.15% MAXIMUM	0.15% MAXIMUM

MECHANICAL/ELECTRICAL PROPERTIES

SI.NO.	PROPERTIES			
1	DENSITY	2.7 g/cm ³	2.69 g/cm ³	2.71 g/cm ³
2	YOUNG'S MODULAS	69 G-Pa	70 G-Pa	69 G-Pa
3	ULTIMATE TENSILE STRENGTH	140 - 230 M-Pa	240 - 300 M-Pa	140 - 330 M-Pa
4	YIELD STRENGTH	70 - 180 M-Pa	---	90 - 280 M-Pa
5	THERMAL EXPANSION	23.4 μm/m-K	23.6 μm/m-K	23.4 μm/m-K
6	ELECTRICAL CONDUCTIVITY	---	34% IACS	---
7	THERMAL CONDUCTIVITY	---	130 W/m-K	---

Note : ISO 209-1, 2779, 3335 is to be followed for Chemical and mechanical properties.


07/02/2020
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07/02/2020
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