

	BMR HVAC LTD.	ISSUE NO.	7	31/12/2020
	Aluminum Tube Engineering Specification for Vendor	SPEC NO.	BMR-1001-ALT	
	SHEET NO. 1 OF 3			

1. SCOPE:

- 1.1. This specification is applicable to the Aluminum tube used for roll bond panel.
- 1.2. Any deviation from the laid down specification is to be approved by BMR HVAC LTD before dispatch of material.

2. CHEMICAL COMPOSITION:

The chemical composition of the Aluminum tube to be graded 'O' hard as per IS 737-2008 and BY STANDARD: GB/3880-2006 & GB/T3880-2006

CHEMICAL COMPOSITION IN %							
Alloy ISO Designation	Al (Min)	Copper	Silicon	Iron	Manganese	Zink	Magnesium
1050	99.5	0.5	0.3	0.4	0.05	0.05	-
1060	99.6	0.05	0.25	0.35	0.03	0.06	-
1070	99.7	0.03	0.2	0.25	0.03	0.06	-

3. PHYSICAL PROPERTIES:

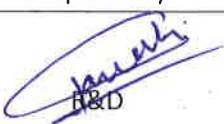

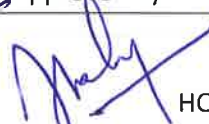
- 3.1. Condition annealed as per IS 737-2008

PHYSICAL PROPERTY				
Alloy ISO Designation	Condition	Tensile Strength Min Mpa	Tensile Strength Max Mpa	Elongation %
1050	O	55	95	29
1060	O	-	95	29
1070	O	-	95	29

4. DIMENSIONS:

OD	6.35 mm ± 0.05	7.94 mm ± 0.05	6.80 mm ± 0.05	7.94 mm ± 0.05	7.94 mm ± 0.05
Thickness	0.95 mm ± 0.05	0.60 mm ± 0.05	0.60 mm ± 0.05	0.70 mm ± 0.05	0.95 mm ± 0.05

Note: Tube thickness to be maintained at USL side.

Prepared By	Checked & Approved By	
 B&D	 HOD QA	 HOD R&D

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5. EDDY CURRENT TEST:

All tube should be 100% eddy current tested in accordance with ASTM E243 of tube.

6. EXPANSION TEST:

Must be capable of having its outer diameter expanded by 40% on hardened and ground tapered steel pin having a 600 included angle. The expanded tube does not show cracking or rupture visible to unaided eye.

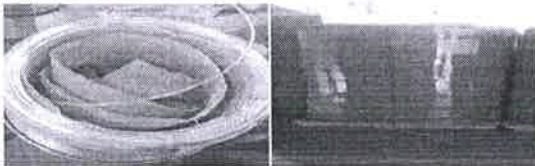
7. CLEANLINESS:

- 7.1. Al tube shall be sufficiently clean. Internal residue shall be less than 0.038 gm/m²
- 7.2. The finished roll shall be clean and free from defects like scratches, dents & oxidation.

Moisture: The moisture content in tube shall not exceed 13 mg / liter of internal volume when tested by Coulometric karl Fischer method.

8. PACKING:

- 8.1. The coil to be packed on wooden crust after covering with waterproof plastic sheet.
- 8.2. Tube shall be packed in such a way that to prevent damages and humidity entry during transit.
- 8.3. Both end of tubes shall be closed by seal cap after N2 Purging +ve pressure 4.0 Kg/cm² which as a special feature of moisture penetration in order to prevent inside of tube discoloration.
- 8.4. Spool & Pallet Details






Spool Dimension; OD: 760mm, ID: 390mm, Height: 300mm, Weight: 86 Kg

Pallet Dimension: Qty of spool: 6 nos, Height: 2030 mm (Including wooden pallet), Pallet Weight: 530Kg

8.5. Each coil shall have marking of

- Manufacturer name
- Customer name
- Size/Length/Temper
- Net & Gross weight
- No. of defects marking
- Coil no.
- Mfg/Packing date (Must ensure traceability)
- Specification
- Part No/ Item No.

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R&D 	HOD QA 	HOD R&D 

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9. Documents:

Each lot supply shall comply with the following documents:

- 8.1 Dimensional report
- 8.2 Chemical property test report
- 8.3 Physical property test report

Change History:

SN	Change Details	Effective date
1	Update in issue no. 1 & 2: issue no. 3: Al tube 6.8 added, grade 1060 & 1070 added	24.02.20
2	New update issue no.4 : 7.4 mm OD tube added, Expansion requirement added	18.03.20
3	New update issue no.5:7.94mm with 0.95thk removed &with 0.60 thk added	17.09.20
4	New update issue no 6: Spool & pallet dimension added.	17.11.20
5	New update issue no. 7: 7.94mm with 0.95 thk added & 7.4mm removed.	31.12.20

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