

Schedule of Technical Requirements for Sealed Window Glass Unit.

1.0 SCOPE

- 1.1 This standard prescribes the requirements and the method of sampling and test for sealed window glass unit as per the contract drawing.

2.0 MATERIAL

The material shall be made as per contract drawing.

- 2.1 The toughened glass shall be as per IS:25530-1990.
- 2.2 Polycarbonate sheet shall be as per UL-94-V0 rating.
- 2.3 The aluminium frame between the glass & Polycarbonate sheet shall be anodised and phosphated in dark colour preferably black or brown. It shall be hollow & contain suitable desiccant. Firm shall indicate the expected life of window unit.
- 2.4 Butyl rubber based adhesive used for hermetically sealing of two sheets of glass separated by a metal spacer should not age with time. It should remain flexible enough to withstand the normal temperature variations which is expected in AC coach. It should not become hard and rigid.

3.0 APPROVAL OF ADVANCE SAMPLE

- 3.1 This clause is applicable only for the first supply from new vendor. The supplier shall be required to submit the detail manufacturing process and test certificates from reputed test houses. Testing shall generally be carried out as per clause-5&6. In addition mandatory test as specified in specifications referred in clause 2.1 & 2.2 shall also be carried out.

The supplier shall be required to furnish following information alongwith the sample submitted for inspection:-

- a) The expected life of sealed window unit.
- b) Life of desiccant.
- c) Method of cleaning of polycarbonate sheet.



#### 4.0 SAMPLING OF SEALED WINDOW GLASS UNIT

4.1 Five percent but not less than five units shall be selected at random from each lot. Each of units selected under lot shall be inspected for dimensional tolerance, thickness, crack, warp and finish. The effective sealing of the unit shall be checked only if samples meet the requirement of the clause.

4.2 When the samples are found OK as per clause 4.1, the sealing shall be tested as per procedure laid down in clause 6. If sample passes the test whole lot shall be accepted. Number of defectives permissible are nil. If any of the sample does not pass the requirement of this clause, the whole lot shall be liable to be rejected.

4.3- Atleast one sample of 6"x6" out of 100 pcs. shall be supplied by the supplier.

#### 5. TEST OF THERMAL TRANSMITTANCE

5.1 Maximum K value shall be 2.7 Kcal/hr/m<sup>2</sup>/degree centigrade.

#### 6.0 TEST FOR SEALING OF UNIT

6.1 Take a small cup of copper having 60mm dia at base. Fill it with mixture dry ice and acetone. Place it over the tope of sealed unit for about 8-10 minutes. Remove the cup and observe the formation of moisture on the unit. No condensation should be observed after the cup is removed. This test may be carried out at 4-5 different locations. The temperature of dry ice and acetone mixture should be within -35 to -45 degree C.

#### 7.0 PACKING CONDITIONS

7.1 Since the sealed window unit is fragile material, the packing of each unit should preferably be done in wooden cases.

#### 8.0 MARKING

8.1 Manufacturers name shall be indelibly marked on the upper right hand corner of toughened glass on each window unit.