

## TECH SPECS OF ACM,VINYL ,PET-G & Steel Structure

### **A. LIST OF APPROVED MANUFACTURE ,SUPPLIERS FOR RAW MATERIALS**

1. Hot Rolled Angles, Channels - SAIL, VIZAG STEEL, Tata,Jindal.
2. M S Plates - do-
3. CRCA Sheet - TATA, SAIL
4. GJ Sheet -TATA Steel
5. Wire Rope -Reputed Make
6. Stainless Steel Sheet -Salem Steel,
7. Aluminum Section -Jindal, Agarvansi Or Equivalent Reputed Sources
8. Aluminum extrusion - do-
9. Aluminum Sheet -Hindalco ,INDAL
10. Aluminum composite Material - Alcoa, Mitsubishi, Alcan,Alstrong, Alubond,Alucob,Aludecor or As approved by HQ
11. PET –G--Spectar-M/s Eastman, VIVAK of M/s Bayer Malilbu Polymers or as approved by HQ
12. Polycarbonate Sheet -GE Lexena of M/s SABIC, Makrolan of M/s Bayer or as approved by HQ
13. Flex - As Approved by HQ
14. Vinyl's -Avery,3MAs Approved by HQ
15. Tedlar Flim -Dupont Or As Approved by HQ
16. Primers -Manufactured Or Reputed
17. Paints - Manufactured Or Reputed
18. FRP Matt - Manufactured Or Reputed
19. FRP Resins - Manufactured Or Reputed
20. Fasteners - Manufactured Or Reputed
21. Electrical Wires -Reputed Make
22. Electrical Protection Devices -Reputed Make

## B. PET G

### Optical Specification

Haze	ASTM D 1003	%	%	<1	<1
Light Specular Transmit ion	ASTM D 1003	%	%	86	86
Diffuse	ASTM	%	%	88	88
Gloss 60 Deg Angel	ASTM	Unit	Unit	159	159
Colors, b* CIELBS ILLUMINATES	ASTM	Unit	Unit	<1	<1
Yellowness CIELAB, Illuminate	ASTM	Unit	Unit	<1.5	<1.5

There is no need to pre heat the PET-G materials as in the case of Acrylics and polycarbonate materials. Finished thermoform piece should be with smooth plane surfaces without dust mark Dishing, scratches, cracks, Webbing or bridging marks. The Finished part should have consistent gloss.

## C. MATERIAL AND OTHER SPECIFICATION

### **ACM (ALUMINIUM COMPOSIT MATERIAL)**

One of the most important used in RVI is ACM. The fabrication techniques of ACM are as per manufacture guidelines. It may be noted that the most Important feature of ACM Flatness and Sheen. It is important that these features are

Protected during manufacturing. The ACM Comprise of two skins of aluminum sandwiched with an inner core of low density polyethylene.

Over all Thickness : 3 MM

Inner Core : 2.4 MM

Aluminum Skin : 0.3 MM

Surface finish front side : PVDF Kynar 500 (70:30) Or LUMIFLON Based Coating Apex 25 Micron

Fabrication : Routing Grooving and folding as per manufacturers Recommendation. Use the sub structure where required

Protection :The Peel Of Protective Film Shall remain in place until the installation is fully complete or Certified

- Water proofing of all joints to be done from rear using silicone. This work is precision one as a silicon has staining Characteristics.
- For 90\* bends the v groove to be rooted should have 120\* angle to have neat bend
- All weaves to be folded on wooden template.
- All ACM joints should be but joint folded in sided on to support.

## **D. VINYLS**

### **1. For Screen painting**

Design to be printed on 3M or Avery make vinyls using automatic and semiautomatic screen painting platform with the inks and clear coat as suggested by Vinyl manufactures. The final graphic displaying vinyl to be aged sealed

The opacity of such graphics and vinyl combined on a back lit surface, will carry 5 years warranty for outdoor / indoor application from vinyl supplier only. In order to have combined warranty for vinyl and screen printing from vinyl manufacturer i.e. 3M or Avery, screen printing and printer shall be as per vinyl manufacture advice. These screen printed vinyl will have gasoline resistance property as these are to be fixed in "all the time vapor present area "The warranty, be against print quality failure, color fading adhesionness and shrinkages, etc.

### **2 For the application**

Blue	3 M Scotch cal 3630-337 Or Avery 5581 QM
Yellow	3 M Scotch Cal 3630- 125 Or Avery 5507 QM

These vinyls will be translucent type and will carry a warranty of 5 yrs. For outdoor/indoor application. This warranty will be from manufactures and will be against colour fading, adhesion loss, loss of gloss, shrinkages, Etc

### **3 STANDERD PROPERTIES**

#### **3.1 IS Standards for materials and process to be complied with**

Design Condition	IS 875
Structrual Design and Fabrication	IS 800
Erection and Installation	IS 801
Structural Steel	IS 2062
Hallow Steel Section	IS 4923
Fastners	IS 1149
Welding Electodes	IS 814
Aluminium Sheet	IS 737
Steel Poles	IS 4923
Structural Steel Work	IS 226
Bolting	IS 1363

## **E. INSPECTION AND WARRANT**

### **1. INSPECTION WORK**

- BPCL reserved the right to get ACM sample checked and tested by original supplier for its original verification.
- Dimensional checks including flatness and levelness will be done after erection of items at RPO. All correlations with code will also be done at RPO.
- If the quantity of material or workmanship is not libale to pay any compensation for this .
- Vender will submit proof of ACM procurment from approved source.
- ACM peel cover will be removed at the RPO,after the item is erected this will be done in the presence of BPCL staff.

### **2 Warrant for ACM Vinyl.**

The engineer concured will pass the bill after getting warranty from ACM and Vinyl manufactures.

### **3 FIBERGLASS REINFORCED PLASTIC(FRP)**

Thickness	:3mm unless otherwise specified
Resin	:UV Stabilized Isopathalic Ployster Resin
Matt Chopped Strand	:450 GSM 0.9mm x 2 Layers
Surface Matt	:0.9 mm x 2 layers
Gel Coat	:Isopathalic Polyester resin mixed with Aersil Powder
Serface Finished	:PU Primer,PU Paint

### **4 POWDER COATING**

wherever powder coating is specified use pure polyster powder for coating after due pretreatment paint and powder coation should confirm to

ASTM D-523-60	:	Gloss 60 Deg
ASTM D-5870	:	Cross Hatch Adhesion
ASTM 3363	:	Impact Resistance
ASTM B 117	:	Salt Spray Resistance
ASTM D 2247	:	Humidity Resistance

### **5 For Pre Treatment**

The pre-treatment process is defined as under

#### **a) Pre-treatment process sequence for MS Component**

- Step 1 - De-greasing
- Step 2 -Water Rinse
- Step 3 -De-Rusting
- Step 4 - Water Rinse
- Step 5 -Activation
- Step 6 -Zinc Phosphate
- Step 7 -Water Rinse
- Step 8 -Passivation
- Step 9 -Drying
- Step 10 -Painting as Specified:  
PU Or Powder coated pure polyester.

**b) Pre –Tretment process for Aluminium Component:**

- Step 1 - De-greasing
- Step 2 -Water Rinse
- Step 3 -Chromiumtizing
- Step 4 - Water Rinse
- Step 5 -Drying
- Step 6 -Passivation
- Step 7 - Painting as Specified:  
PU Or Powder coated pure polyester.

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