ANNEXURE - I
TECHNICAL SPECIFICATIONS

1. SPECIFICATIONS FOR FLEX SUBSTRATE AND VINYL TO BE USED FOR SIGNAGE

1.1. **FASCIA-FLEXIBLE SUBSTRATE**: The properties are given in Table 1. It shall have UV resistors added while manufacturing to prevent the whiteners turning yellow due to constant exposure to UV rays. The flexible substrate shall be warranted for 5 years to retain the white Color (i.e yellowing), plasticizer migration, wicking for a period of at least 5 years and similarly the vinyl shall be warranted against peel off, fading, shrinkage, cracking and crazing.

1.2. **GRAPHICS**: Graphics shall be computer-cut with translucent cast vinyl matching the Canara Blue and Canara yellow Colour. **The Colour specification for the signage: Light European Blue and Marigold to match the existing color (copy enclosed).**

The Colour specification for the signage :

Colour	Pantone number
Orange	1665C
Yellow	113C
Black	Process Black C

1.3. **TABLE 1- PHYSICAL PROPERTIES OF FLEXIBLE SUBSTRATE**

Property	**Metric Units (Range)**
Service Temperature range	**-20* Cto + 70 * C**
Light Transmission (opacity)	Minimum 21% +/- 2%
Tensile strength Range Tear weft (Cross Direction) Tear Warp (Machine Direction) Tensile Weft (Cross Direction) Tensile Wrap (Machine Direction)	 Minimum 15.00 kg / cm Minimum 17.00 kg / cm Minimum 20.00 kg / cm Minimum 26.00 kg / cm
Characteristics Substrate	Polyester scrim embedded in a white pigmented vinyl
Thickness and weight	0.050 cm +/- 0.070 cm – weight minimum 650 GSM

1.4.**TABLE 2 - PHYSICAL PROPERTIES OF TRANSLUCENT VINYL**

Property	**Metric Units (Range)**
Tensile Strength	0.8 - 0.9 kg / cm at 23*C
Applied Shrinkage	Shall not exceed 2 %
Service temperature range	- 30*c to +75*C
Adhesion Strength (acrylic and uncoated, clear Poly carbonate	Minimum 0.7 kg / cm
Film Characteristics	
Film	0.050 mm, translucent vinyl
Thickness (film & adhesive)	3 to 4 mil (0.08 to 0.105 mm)
Adhesive type and color	Permanent Clear Pressure Sensitive Adhesive
Liner	Synthetic / Poly coated Liner or equivalent subject to submission of certificate in this regard from reputed testing centre
Application surfaces	Flat, without rivets
Minimum application temperature	16*C

The testing of the Flexible Substrate and Translucent Vinyl for the above physical properties shall be carried out as per the relevant ASTM Specifications.

1 (A)- SIGN BOARD BOX SPECIFICATIONS

I. **SIGN BOARD CABINET STRUCTURE-FRAME WORK**: The Box (structure) should be fabricated using square MS tube 1" x 1" of 18 gauge with primer and enamel painted. ISI grade GI Sheet of 24 gauge duly powder coated for sides, top and bottom and 26 gauge for back should be used. Thickness of back-lit sign board should be minimum 7" to 8". Bird-proof vent holes to be provided on the GI sheets provided on the sides of the board to dissipate hot air. Aluminium drip cap with 2" projection to be provided on the top front edge of the sign board to protect the fascia from rain. All internal metal portions of the sign cabinet to be painted with white colour enamel paint.

II. **SIGN BOARD CABINET SUPPORT:** The sign cabinet should be provided with suitable arrangements for fixing to existing wall surface or existing supporting structures available with suitable clamps, brackets, anchor bolts etc. The arrangements should be adequate to support the weight of the cabinet and to keep it firmly in position. The minimum requirement is that the signage frame work shall be anchored to the sunshade below using 'L' angle of 25mmx25mmx5mm thick equal angle in L shape at an interval of every 10 feet. Further the board should be anchored from top to the back wall using suitable steel/GI wire of minimum 8mm thick. All exposed clamps,

brackets etc shall be painted with two coats of synthetic enamel paint over a coat of primer. Nothing extra will be paid for fixing the cabinet in position.

III. **WELDING SPECIFICATIONS:** Branded welding rods should be used for welding the joints. Welding rod should be preheated prior to welding. Preheating the welding rods enables uniform & smooth flow of the welding material in the joints. If welding is done with preheated rod there will be no formation of open fissures in the joint due to smooth flow of welding material. Open fissures cause weakening of joints. Welding has to be done across the full cross section of the MS hollow pipe.

IV. **PROTECTION OF THE FRAME:** The entire frame of the sign board cabinet post welding has to be grinded around the welding joints to remove spurs and undulations if any created during welding. Post grinding the joints, the MS pipe has to be painted with zinc chromate primer and 2 coats of synthetic enamel paint of white shade.

V. **FASTENERS:** The fasteners used shall be uniform and at such spacing that it does not spoil the appearance of the signage looking from the bottom or the sides. The head of the screw shall have capping of stainless steel.

2. **PROCESS OF PASTING VINYL STICKERS OVER THE FLEX SUBSTRATE:** The pasting vinyl stickers over the flex substrate shall be undertaken with all care and techniques such as using pre mask tapes to the vinyl before initiating the fixing of the same over the flex, it shall be ensured that vinyl is properly aligned to the flex without any gaps at the outer edges, there are no air bubbles, etc., The workmanship shall be of high standards and engineering.

3. <u>TECHNICAL SPECIFICATIONS OF ULTRA VIOLET WIDE FORMAT PRINTING:</u>

Ink Specification	The Printing on face material must be done with UV Wide Format Digital Printer with ISO Certifications Inks only. Ink Layer should not peel, crack from base substrate used in the intended print application. Inks must be designed for outdoor application with excellent print durability. Print Substrate can be printed with minimum 1000 dpi resolution for excellent quality printing. I. Print Head: 7 to 12pl and above II. Number of print Heads: minimum 20 and above Minimum Ink configuration should be 8 color or more printing process - Cyan, Magenta, Yellow, Black, Light Cyan, Light Magenta etc. Inks to maintain excellent print quality and color production consistency.

Note: Three-layer prints with Colour + white + Colour ink on flex Substrate.

Final construction of sign face – The design to be printed on flexible substrate and applied with cast overlaminate having luster finish. The overlaminate will protect the inks from fading and provides excellent durability.

Physical properties of Overlaminate –

- Characteristic :Vinyl Cast
- Thickness 2 mils
- Gloss: Luster
- Liner : Kraft paper
- Lamination Temperature:60 to +100 °F (15 to +38 °C) In Use Temperature Range -65 to +225 °F (-54 to +107 °C)
- Chemical Resistance • Resists mild alkalis, mild acids, and salt • Excellent resistance to water (does not include immersion) • Resists occasional fuel spills.

4. TECHNICAL SPECIFICATIONS OF BIODEGRADABLE COTTON SIGN BOARD:

FRONTLIT SIGN BOARD:

- Base: Cotton Black Back Coated fabric
- Weight: minimum 300 GSM ± 15 %
- Surface Finish: White High-Glossy with black back
- Ink for printing: Ultraviolet (UV) Wide Format Digital Printer with ISO Certifications Inks only
- Print Head: 7 to 12pl and above
- Number of print Heads: minimum 18 and above
- Warranty Period: minimum period of One year from the date of installation of sign boards.
- Features & Benefits:
  - Biodegradable & Eco-friendly
  - Good water resistance for outdoor purpose
  - High physical strength to withstand stretching and stapling during framing
  - Black back to resist light passing through material.

Make: Arvind Ltd/ Q-Print Media or any other specific approved by the Bank and certified by any Government authorized Textile Research Association in India.

The Bank reserves the right to get the samples of Biodegradable Cotton Coated Fabric tested by any Govt. Testing Centre / National Test House and their test

results shall be binding. The Bidder entrusted with the work shall provide to the branch/office samples (of size 60 cm x 60 cm for biodegradable Cotton Coated Fabric for each branch) for the purpose of testing to verify whether the biodegradable Cotton Coated Fabric are conforming to prescribed in the bid document. Samples of such material shall be out of the materials actually put to use in the signage. The seal and signature of the contractor shall be affixed at bottom left corner of the sample. The Bidder while quoting the rates shall take into account this requirement and quote the rates accordingly. No separate charges will be paid for providing such samples. If the sample fails to satisfy the specifications, no payment will be made to the Bidder towards the cost of such works carried out.

5. TECHNICAL SPECIFICATIONS OF ALUMINIUM COMPOSITE PANEL (ACP) SIGN BOARD:

Sl No	ACP Signage Cabinet Specification	
1	Frame	25mmx25mm, 1.6mm Thick MS Pipe, Double Frame, Anti Rust Red Oxide Coating on all surface of MS Pipe.
2	Back Covers	0.8mm Pre-Coated GI Sheet, Welding, Screws, Bond etc.
3	Channel Letter	2.5/3 inch Channel Letter
4	Depth of Box	4” inches
Sl No	**ACP Signage Fasica Specification**	
1	ACP	3mm Thick Panel with 0.30 Coated Coil Both Side with Exterior Grade Paint and AA3105 Alloy Grade and 1st Recycled LDPE Core. Minimum Tensile Strength of 130 Newton/MM Square (N/mm2) With minimum period of 10 Years Warranty Make: Aludecor/ Eurobond/ Alucobond/ Alubond/ Viva or other specific make as approved by the Bank matching to Bank’s colour.
2	Acrylic	10mm thick 040 cast Arcylic Sheet - Astari/Yearlong or any other specific make approved by the Bank
3	Vinyl	Vinyl sticker of 3M/Avery/LG/Arlon with white & Bank’s yellow colours for letters and logos and also matching Bank’s colour. Printing of matter, letters and logos to be as per Bank’s Specifications.

6. TECHNICAL SPECIFICATIONS OF SINGLE SIDED LED MODULE/ LED DRIVER:

1	Make of LED module/ LED Driver	Osram/ Lighting Technologies/ Tridonic or any other specific make approved by the Bank.
2	Colour	6500 Kelvin
3	Watt/ Module	0.72W/ 0.75W
4	LED Module per sft in signage	Maximum 3 Module per Sft
5	System Efficiency (Lm/W)	>95-100 Lm/W
6	Operating temperature	-40 degree C to +65 degree C
7	LED Module Life	Minimum 50000 hours Burning life
8	Protection Class Certifications and standard	IP66 BIS/LM79/LM80
9	Warranty	With minimum period of 5 Years Warranty
	LED Driver Specifications	
1	LED Driver Wattage	40W/ 60W/100W/120W/ 240W
2	Surge Protection	Inbuilt Min 6KV L to E and 10KV L to N
3	Supply Voltage for drivers	90V – 300V
4	LED Driver Life	Minimum 100000 lakhs burning hours life
5	Protection Class	IP67 rating
6	Short Circuit Protection/ Overload Protection/ Over temperature protection	

7. ELECTRICAL COMPONENTS:

- Low loss, slim type, Electronic Driver/ Electronic Ballast of reputed make such as Wipro/ Philips/ Crompton greaves.
- Good quality insulated copper wires of ISI mark such as Poylcab/ Finolex/ V-Guard or other specific make as approved by the Bank should be used for all electrical connections.
- Connectors made from molded plastic should be used to connect wires. No wire should be connected by tape or left open.
- Circuit wiring by way of 2 runs of 7/20 copper wire + 1 run of 3/20 copper wire for earthing of 660/1100 Volts grade of ISI approved make through 19mm dia PVC conduit using required saddles/joint/elbows as required at site. The number of circuits should be based on the number of tubes connected to each circuit and as per the direction of bank.

- Main Cable and Distribution system: The main cable and distribution system will be provided by Bank. The circuit **wiring upto a maximum of 10 meter** from the Board should be provided by the Bidder.

8. **FIXING OF THE SIGNAGES AND SAFETY AT SITE:** The signage providers shall duly assess the site condition for fixing securely by appropriate means using necessary clamp, hooks, fasteners and including minor civil works necessary at site. The entire signage so fixed at site shall withstand high wind pressures depending upon the actual locations / floor in which it is installed. It shall also be the responsibility of the signage solution provider for the safety of the installation, the signage till they are billed and accepted by the bank. While executing the work the labour force used shall comply to labour laws and all necessary safety measures shall be undertaken like using scaffolds, ladders, safety belts, helmets, gloves, appropriate tools. Suitable precautions shall be taken against overhead power lines, slippery surface or such other hazards which may be in the close proximity to the premises / site. Any damages to the signage during the process of installation will result in rejection of the signage and the same shall be replaced at their own cost.

9. **STANDARDS:** All the materials shall conform to the required standards & safety aspects as specified in relevant ASTM/BIS standards wherever applicable.

10. THE SIGN BOARDS HAVE TO BE FIXED AT VARIOUS HEIGHTS FROM THE GROUND LEVEL AS PER THE REQUIREMENT. THE RATE QUOTED SHALL APPLY FOR UPTO FIRST FLOOR. SCAFFOLDING CHARGES OR ANY OTHER CHARGES WILL NOT BE PAID EXTRA.

SIGNATURE OF THE BIDDER/CONTRACTOR (WITH SEAL)