

Technical Data Sheet (TDS)

Product Name:

0.21/3mm Matt/Matt Digital Printing Aluminum Composite Panel

Product Description:

This product is an aluminum composite panel specifically designed for digital printing and screen printing. featuring high-quality aluminum sheets laminated on both sides of a low-density polyethylene core, Its surface features a specially developed coating that ensures high compatibility and excellent adhesion with various printing inks. With its superior flatness and consistency, the panel allows for rich layers and clarity of color after printing, achieving optimal visual effects. Additionally, the coating provides weather resistance, enabling long-lasting vibrancy and color stability of printed graphics. This lightweight, high-strength, and corrosion-resistant panel is ideal for Billboards and signage, Indoor and outdoor decorative displays, Promotional image displays in commercial spaces, Art display panels in galleries and exhibitions

1. Basic Information

- **Total Thickness:** 3mm
- **Aluminum Thickness:** 0.21mm
- **Core Type:** Low-Density Polyethylene (LDPE)
- **Surface Treatment:** Matt / Matt
- **Applications:** Billboards and signage, Indoor and outdoor decorative displays, Promotional image displays in commercial spaces, Art display panels in galleries and exhibitions

2. Dimensions

- **Total Thickness:** 3mm
- **Aluminum Thickness:** 0.21mm
- **Standard Sizes:** 1220x2440mm, 1500x3050mm

3. Dimensional Tolerances

- **Panel Thickness:** ± 0.2 mm
- **Aluminum Thickness:** ± 0.02 mm
- **Width:** ± 2 mm
- **Length:** ± 3 mm
- **Diagonal:** ± 5 mm
- **Warpage:** ≤ 4 mm

4. Surface Properties

- **Coating:** PE (Polyester)
- **Coating Thickness (microns):** 16 ± 1
- **Pencil Hardness:** $\geq 2H$
- **Toughness of Coating:** $\leq 3T$
- **Impact Strength (kg/m^2):** 50 (No cracking in paint)
- **Adhesion Force:** 100/100 (No peeling)
- **Boiling Water Resistance:** Boiling for 2 hours without change
- **Solvent Resistance:** Cleaned 200 times with Dimethylbenzene without change
- **Acid Resistance:** Immerse surface in 2% HCl for 24 hours without change
- **Alkali Resistance:** Immerse surface in 2% NaOH for 24 hours without change
- **Cleaning Resistance:** > 1000 times without change

5. Mechanical Properties

- **Elongation:** $\geq 1\%$
- **Peel Strength:** ≥ 3 N/mm

6. Physical Properties

- **Weight:** Approximately 3.7 kg/m^2
- **Temperature Range:** -25°C to $+80^\circ\text{C}$
- **Thermal Expansion Coefficient:** 2.4 mm/m @ 100°C temperature difference

7. Weather and Chemical Resistance

- **UV Resistance:** Excellent
- **Corrosion Resistance:** Good resistance to acids, alkalis, and salts
- **Moisture Resistance:** Suitable for high-humidity environments

8. Surface Characteristics

- **Gloss Levels:** Low Gloss (20-50 GU)
- **Color:** Customizable (default is white)
- **Stain Resistance:** Easy to clean, minimal dust adhesion

9. Fire Performance

- **Flame Class:** B2 (Combustible, due to the standard LDPE core)

- **Melting Point:** Approximately 660°C (aluminum)

- **Maintenance:** Regular cleaning of gloss/matt surfaces to maintain appearance.

10. Recommended Usage Conditions

- **Application Scenarios:** Suitable for outdoor advertising boards, architectural facades, exhibitions, and displays.
- **Installation Methods:** Frame mounting, panel installation, adhesive fixing, and various other methods.

11. Packaging and Transportation

- **Packaging Method:** Standard wooden crate or pallet packaging
- **Storage Conditions:** Avoid moisture and keep away from corrosive chemicals
- **Transportation Requirements:** Handle with care to prevent impact and scratches

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产品技术参数表 (TDS)