

Technical Data Sheet (TDS)

Product Name: 0.4/4mm Aluminum Composite Panel

Product Description:

This product is a 4mm thick aluminum composite panel, featuring 0.4mm high-quality aluminum sheets laminated on both sides of a low-density polyethylene core. It features a core made of either LDPE (Low-Density Polyethylene), B1-grade fireproof material, or A2-grade fireproof material, and is coated with PVDF (polyvinylidene fluoride) paint. It provides excellent weather resistance, lightweight properties, and an appealing aesthetic, making it suitable for building facades, billboards, and interior decoration.

1. Technical Specifications

- **Total Thickness:** 4mm
- **Face Thickness:** 0.4mm
- **Standard Width:** 1220mm, 1500mm
- **Length:** Customized according to customer requirements
- **Aluminum Alloy:** Made of high-strength aluminum alloy
- **Core Material:**
 - LDPE (Low-Density Polyethylene)
 - B1-grade fireproof material
 - A2-grade fireproof material
- **Surface Coating:** PVDF paint
- **Coating Thickness:** $\geq 25\mu\text{m}$
- **Color:** Customized according to client requirements

2. Dimensional Tolerances

- **Panel Thickness:** $\pm 0.2\text{mm}$
- **Aluminum Thickness:** $\pm 0.02\text{mm}$
- **Width:** $\pm 2\text{mm}$
- **Length:** $\pm 3\text{mm}$
- **Diagonal:** $\pm 5\text{mm}$
- **Warpage:** $\leq 4\text{mm}$

3. Mechanical Properties

- **Bending Strength:** $\geq 70\text{ MPa}$
- **Bending Elastic Modulus:** $\geq 1.5 \times 10^4\text{ MPa}$
- **Penetration Resistance:** $\geq 5.0\text{ kN}$
- **Shear Strength:** $\geq 18.0\text{ MPa}$

4. Physical Properties

- **Density:**
 - 5.2kg/m² (LDPE core)
 - 6.97kg/m² (B1-grade fireproof core)
 - 7.56kg/m² (A2-grade fireproof core)
- **Thermal Conductivity:** $\leq 0.3\text{ W/m}\cdot\text{K}$
- **Coefficient of Thermal Expansion:** $2.4 \times 10^{-6}/^{\circ}\text{C}$
- **Heat Distortion Temperature:** $\geq 95^{\circ}\text{C}$
- **Water Vapor Permeability:** $\leq 0.1\text{ g/m}^2\cdot 24\text{h}$
- **Corrosion Resistance:** Good, suitable for outdoor use

5. Surface Paint Properties

- **Weather Resistance:** Excellent, can withstand UV exposure, rain, and other environmental factors while maintaining color stability.
- **Chemical Resistance:** Good resistance to general chemicals (acids, bases, and solvents).
- **Scratch Resistance:** High surface hardness and superior scratch resistance, suitable for high-traffic areas.
- **Color Fastness:** Colors do not easily fade after prolonged exposure to sunlight, maintaining an attractive appearance.
- **Stain Resistance:** Smooth surface that is easy to clean and maintain, with dirt not easily adhering.

6. Performance Features

- **Lightweight:** Reduces the overall load on structures, making it easy to transport and install.
- **Weather Resistance:** The PVDF coating offers excellent UV resistance, preventing oxidation and fading, thus retaining aesthetic appeal over time.

7. Application Areas

- Building facades
- Billboards
- Commercial spaces and interior decoration
- Other applications requiring aesthetics and lightweight properties

8. Installation Recommendations

- Ensure the substrate is dry, clean, and flat before installation.
- Use appropriate tools and accessories to ensure secure installation.
- Follow relevant building codes and standards based on specific project requirements.

9. Storage and Handling

- Store the product in a dry, cool, and well-ventilated area, avoiding direct sunlight.
- Take precautions during transportation to prevent impacts and scratches on the surface.

10. Warranty

- This product comes with a warranty of 15 years; specific terms can be found in the relevant warranty policy.

-----END-----