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Technical Data Sheet (DTS)

Product Name: 0.7/0.5/4mm Aluminum 3D Panel

Product Description：

This is an innovative 4mm thick aluminum composite panel, consisting of a 0.7mm aluminum face and a 0.5mm aluminum backing layer, both bonded to a 3D-embossed core made from 0.3mm aluminum sheet. The core is crafted with a unique three-dimensional textured design, enhancing both structural strength and aesthetic appeal. This panel meets A2 fire rating standards, making it ideal for architectural applications requiring durability, lightweight properties, and fire safety.

1. Technical Specifications

- **Total Thickness:** 4mm
- **Face Thickness:** 0.7mm
- **Back Thickness:** 0.5mm
- **Standard Width:** 1250mm, 1500mm
- **Length:** Customized according to customer requirements
- **Aluminum Alloy:** Made of high-strength aluminum alloy
- **Core Material:** 3D-embossed core made from 0.3mm aluminum sheet
- **Surface Coating:** PVDF
- **Coating Thickness:** ≥25μm
- **Color:** Customized according to client requirements

2. Dimensional Tolerances

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

3. Mechanical Properties

- **Bending Strength:** ≥100 MPa
- **Tensile strength：** 2.0MPa
- **Compressive strength：** 1.5MPa
- **Bending radius** ≥ 500mm

4. Physical Properties

- **Density:** Approximately 4.3 kg/m² (for 4mm thickness with aluminum)
- **Thermal Conductivity:** ≤ 0.3 W/m·K
- **Coefficient of Thermal Expansion:** 2.4×10^{-6} /°C
- **Heat Distortion Temperature:** ≥ 95°C
- **Water Vapor Permeability:** ≤ 0.1 g/m²·24h
- **Corrosion Resistance:** Good, suitable for outdoor use

5. Fire Performance

- **Fire Rating:** A2 grade, non-combustible and suitable for high fire safety requirements.

6. 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.

7. Performance Features

- **Lightweight:** Reduces the overall load on structures, making it easy to transport and install.
- **Aesthetic Appeal:** The three-dimensional design adds depth and visual interest to architectural applications.

8. Application Areas

- Building facades
- Interior walls and partitions
- Decorative elements in commercial and residential spaces
- Other applications requiring enhanced aesthetics and lightweight properties

9. 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.

10. 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.

11. Warranty

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

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