

Aluminium Architectural Profile National Standard GB5237-2008

1.Mill Finish Profiles

| Dimensions&Tolerances | Planar Joint Clearance | | Curvature | | Torsion | Angle | Length | |
|-------------------------|---------------------------|----------|----------------------------|------|---|-------|--------------------------------|------|
| | Random 25mm Widths≤0.2 mm | | Random 300mm Widths≤0.2 mm | | Random 1000mm Widths≤0.2mm | ±1° | Nominall Length≤6000 mm +15 mm | |
| Mechanical Property | HW | | Tensile Strength gh (mpa) | | Stress at Definite Elongation gp0.2 (mpa) | | Elongation | |
| | ≥8 | | ≥160 | | ≥110 | | 8% | |
| Chemical Components (%) | Si | Mg | Fe | Cu | Mn | Zn | Cr | Ti |
| | 0.2-0.6 | 0.45-0.9 | ≤0.35 | ≤0.1 | ≤0.1 | ≤0.1 | ≤0.1 | ≤0.1 |

2.Anodizing & Dye

| Oxide Film Quality | Grade | Average Film Thickness | Mini Film Thickness | CASS Test | Drop Alkali Test | Drop Sand Test Abrasion Coefficient | Hole Sealing | Visual Quality |
|--------------------|-------|------------------------|---------------------|-----------|------------------|--|--------------|--|
| | Aa 10 | ≥10μm | ≥8μm | ≥9 | ≥50s | ≥300g/μm | ≤30mg/dm² | 1.Surface of profile is not allowed to have defects that influence on use, electric burning,oxide film spalling for example. 2.sureface of profile from the end within 80 mm is allowed to have defects such aselectric burning, oxide film spalling. |
| | Aa 15 | ≥15μm | ≥12μm | ≥9 | ≥75s | ≥300g/μm | | |

3.Electrophoretic Coating

| Compound Material | Grade | Anodic Oxidation | | Paint Film | Compound Paint | Paint Film | | Visual Quality |
|-------------------|-------|------------------------|----------------------|----------------------|----------------------|------------|----------|--|
| | | Average Film Thickness | Local Film Thickness | Local Film Thickness | Local Film Thickness | Adhesion | Hardness | Painted film should be uniform and neat. There is no wrinkle, crack,bubble,flow line,inclusions,tacky.and paint spalling or other defects on the surface that affecting further uses.Now, electrophoresis profiles from end within 80 mm range allows local membrane |
| | A | ≥10μm | ≥8μm | ≥12μm | ≥21μm | 0 | ≥2H | |
| | B | ≥10μm | ≥8μm | ≥7μm | ≥16μm | 0 | ≥2H | |

4.Powder Coating

| Coating Property | Gloss Value | Coating Layer Thickness | | Color and Chromatism | Indentation Hardness | Adhesion | Shock Resistance | Cup Drawing Test | Visual Quality |
|------------------|-------------|-------------------------|---------------------|---|----------------------|----------|---|---|--|
| | | Max Film Thickness | Mini Film Thickness | | | | | | |
| | 60 | ≤120 | ≥40 | It should be consistent with standard color version that stipulated in the contract | ≥80 | 0 | Positive Coating Film should not have the defects that tacky and paint spalling on the surface after shock test | Coating Film should not have the defects that tacky and paint spalling on the surface after cup drawing test which sag depth of 6mm | Exposed surfaces should be uniform and smooth.There is no wrinkle,crack,bubble,flow line,inclusions,tacky and paint spalling or other defects on the surface that affecting further uses |

5.Thermally Broken Profile

| Test Item | Load Styles | Test Result | | | | | | |
|--------------------------------------|---------------|---|----------|-----------|---|----------|-----------|---------------------------------|
| | | Longitudinal Shear Characteristic Value(N/mm) | | | Transverse Tensile Characteristic Value(N/mm) | | | The Average Value of Deflection |
| | | Indoor Tem. | Low Tem. | High Tem. | Indoor Tem. | Low Tem. | High Tem. | |
| Longitudinal Shearing Test | Barrier Strip | ≥24 | ≥24 | ≥24 | ≥24 | / | | / |
| High Temperature Sustained Load Test | Barrier Strip | / | / | / | / | ≥24 | ≥24 | ≤0.6 |

The Chemical Composition Table of Aluminium Profile

Chemical Composition of 6063 Aluminium Alloy

| Alloy | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Others | | Al |
|-------|---------|-------|-------|-------|-----------|-------|-------|-------|--------|-------|--------|
| 6063 | 0.2-0.6 | ≤0.35 | ≤0.10 | ≤0.10 | 0.45-0.90 | ≤0.10 | ≤0.10 | ≤0.10 | ≤0.05 | ≤0.15 | Remain |

| Item | | | Unit | Performance Index |
|-------------------------|---|---------|--------------------|-------------------|
| Alloy and Temper | | | | 6063 T5 |
| Tensile Strength δ b | | | Mpa | ≥160 |
| Yield Strength δ p0.2 | | | Mpa | ≥110 |
| Elongation | | | % | ≥8 |
| Vickers-Hardness | | | HW | ≥8 |
| Anodizing | Oxidation Film Thickness (Average Thickness) | AA110 | UM | ≥10 |
| | | AA15 | | ≥15 |
| | | AA20 | | ≥20 |
| | | AA25 | | ≥25 |
| | Sealing Quality | | Mg/dm ² | ≤30 |
| Electrophoretic Coating | Film Thickness (Average Thickness) | Grade A | Um | ≥21 |
| | | Grade B | | ≥16 |
| | Film Hardness | H | ≥2 | |
| | Film Adhesion | | Grade | 0(The Best) |
| Powder Coating | Film Thickness(Exposed Surface) | Um | 40-120 | |
| | Film Indentation Hardness | | ≥80 | |
| | Film Adhesion | Grade | 0 (The Best) | |