



The Play & Recreation Experts

1-800-573-7529

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Metal Shelter General Specifications

Fit and finish have always been important yet many times not discussed or recognized. Our product features and benefits information will help describe manufacturing techniques that set apart our pre-engineered structures from site built units. When evaluating a product's fit and finish, decisions on the durability of primer coating the steel, final color coatings, assembly techniques, and ease of installation all must be considered. At Superior Shelters, we have been capitalizing on "fit and finish" for years to achieve a product that looks good, lasts long and is easy to maintain. Our hope is that by bringing awareness to product quality, your ownership equation will result in a higher level of customer satisfaction for lifetime of your shelter.

Structural Eaves

These are great for structural stability of the shelter and prevention of vandalism on the roof edges.

No Exposed Bolts

Our hardware connections are hidden within the beams to provide aesthetic elegance.

Powder Coating: Setting the Stage

1. **Blast to White:** Blast all steel to "White" condition to remove all surface rust and oil. This process insures a raw steel finish for proper adhesion for Stage 4 (Zinc TGIC Powder Prime Coat).
2. **Air Induction Cleaning:** Remove dust from the blast process in stage 1.
3. **Preheat Steel:** Pre-Heat steel at 1.5 ft per line minute for 13ft in IR oven to a temperature of 250 Degrees to prepare steel for Stage 4 (Epoxy TGIC Powder Coating Zinc Rich Primer Process).
4. **Zinc Rich Powder Coating:** This stage is the Electrostatic Application of Epoxy TGIC Powder Coating Zinc Rich Primer. Unlike any other shelter manufacturer, we are utilizing an actual TGIC Zinc Powder Coating Rich Primer. This stage 3 application is applied at 3 mils and has been salt spray tested for 4,000 + hours using the ASTM Method B117. (Note: The 4,000 hours of salt spray testing is only with the Zinc Rich TGIC Powder Coat Primer and before the Stage 5 TGIC Top Powder Coat application of an additional 3 mils of TGIC Powder Coat.)
5. **Top Powder Coating Color:** This stage is the Electrostatic application of TGIC Top Powder Coat at 3 mils. This application, along with the Stage 4 Epoxy TGIC Powder Coating Zinc Rich Primer, produces a total of 6 mils of finished Powder Coating and has tested at 5,000+ hours using the ASTM Method B117. It is important to note that testing was discontinued at 5,000 hours.
6. **Curing Process:** The final stage is the final cure of coatings at 450 degrees for 30 minutes.

Test Results: Powder Coating

1. **Test:** Direct Impact (in/lbs) | **Method:** D2794 | **Range:** 120 + in/lbs
2. **Test:** Indirect Impact (in/lbs) | **Method:** D2794 | **Range:** 120 + in/lbs
3. **Test:** Pencil Hardness | **Method:** D3363 | **Range:** 2H +
4. **Test:** Cross Hatch Adhesion | **Method:** D3359B | **Range:** 4B +
5. **Test:** Flexibility (Conical Mandrell) | **Method:** D1797 / D522 | **Range:** 90%
6. **Test:** Salt Spray Resistance | **Method:** ASTM B117 | **Range:** 5,000 + hours



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7. **Test:** Humidity Resistance | **Method:** ASTM D2247 | **Range:** 5,000 + hours

Shelter Roofing

- 24 GAUGE R-PANEL METAL ROOF PANELS: Roof decking will be a minimum 24 gauge steel panels, featuring a galvalume substrate and Kynar 500 coating selected from our standard offering of 22 colors (Color Sheets Available). All trims (except Panel Covers – 24 gauge) shall be 29 gauge and match the roof panel color.
- 24 GAUGE MEDALLION-LOK METAL ROOF PANELS: Roof decking will be a minimum 24 gauge steel panels, featuring a galvalume substrate and Kynar 500 coating selected from our standard offering of 22 colors (Color Sheets Available). All trims (except Panel Covers – 24 gauge) shall be 29 gauge and match the roof panel color.
- 26 GAUGE MERIDIAN METAL ROOF PANELS: Roof decking will be a minimum 26 gauge steel panels, featuring a galvalume substrate and Kynar 500 coating selected from our standard offering of 17 colors (Color Sheets Available). Eave and hip trims shall be 29 gauge provided of the same color.
- 29 GAUGE MAX-RIB METAL ROOF: Roof decking will be a minimum 29 steel panels, featuring a galvalume substrate and Kynar 500 coating selected from our standard offering of 17 colors (Color Sheets Available). Eave and hip trims shall be 29 gauge provided of the same color.

Test Results: Shelter Roofing

1. **Description:** Accelerated Weathering | **Method:** ASTM G 23 | **Galvalume Substrate with Fluoropan Coating:** Hours: 2,000 – Chalk Rating 9 – Color: 2 (triangle) E Max.
2. **Description:** (QUV) | **Method:** ASTM G 53 | **Galvalume Substrate with Fluoropan Coating:** Hours: 2,000 – Chalk Rating 9 – Color: 2 (triangle) E Max.
3. **Description:** Salt Spray | **Method:** ASTM B 117 | **Galvalume Substrate with Fluoropan Coating:** Hours: 1,000 – Scribe Rating 7 $\frac{1}{16}$ " – Field Rating 10 – No Blisters
4. **Description:** Humidity | **Method:** ASTM D 2247 | **Galvalume Substrate with Fluoropan Coating:** Hours: 2,000 – Rating 10 – No Blisters
5. **Description:** Adhesion | **Method:** ASTM D 3359 | **Galvalume Substrate with Fluoropan Coating:** No Loss of Adhesion
6. **Description:** Pencil Hardness | **Method:** ASTM D 3363 | **Galvalume Substrate with Fluoropan Coating:** HB Minimum
7. **Description:** Specular Gloss | **Method:** ASTM D 523 | **Galvalume Substrate with Fluoropan Coating:** 25-35 at 60°
8. **Description:** Impact Resistance | **Method:** ASTM D 2794 3x Metal Thickness in inch per pound – No Loss of Adhesion
9. **Description:** Abrasion Resistance | **Method:** ASTM D 968 | **Galvalume Substrate with Fluoropan Coating:** Total Sands = 67 liters
10. **Description:** Acid Resistance | **Method:** ASTM D 1308 (Procedure 6.2) (Independent of Substrate) | **Galvalume Substrate with Fluoropan Coating:**
 - 10% Hydrochloric Acid 24 hrs. – No Visible Change
 - 20% Hydrochloric Acid 18 hrs. – No Visible Change
 - 20% Sulfuric Acid 18 hrs – No Visible Change



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- 25% Sodium Hydroxide 1 hr – No Visible Change
- 20% Muriatic Acid 15 minutes – No Visible Change

11. Description: Flame Test | **Method:** ASTM E 84 | **Galvalume Substrate with Fluoropan Coating:** Class A Coating