

# Product Data Sheet



## DefendEX<sup>™</sup> EFPHR

### Metal Paneling

Corrugated Panel for Commercial-Industrial  
Metal Roofing and Wall Cladding

### Description

DefendEX<sup>™</sup> EFPHR Roofing Panel (EFPHR) is a factory-formed corrugated commercial-industrial metal roof and wall panel that provides a traditional metal panel appearance. The EFPHR roofing panel is mechanically fastened with exposed fasteners and can be installed in a non-sequential pattern. The panel is available in a wide variety of materials and finishes including Kynar 500<sup>®</sup>/Hylar 5000<sup>®</sup> pre-finished G90 galvanized steel and aluminum, anodized and mill-finished aluminum, and Acrylume<sup>®</sup>.

For standard color selection, consult the current *EXCEPTIONAL Metals Color Chart*. Custom color services are available upon request.

Material only warranty available.

### Method of Application

1. EFPHR panels may be installed in a non-sequential pattern over a solid substrate or open framing.
2. Prior to panel installation, application of an approved underlayment is recommended.

**NOTE:** Follow approved installation details.

### Storage

- DefendEX metal panels should be stored in a well-ventilated, dry location, where no moisture can contact them. Moisture (From rain, snow, condensation, etc.) trapped between layers of material may cause water stains or white rust, which can affect the service life of the material and will detract from the appearance.
- If outdoor storage cannot be avoided, protect the panels with a ventilated canvas or waterproof paper cover. Do not use plastic, which can cause condensation. Keep the material off the ground in an inclined position with an insulator such as wood, or keep panels crated.
- Storage of end-use materials with protective film applied to the surface should be:
  - Wrapped/packaged to prevent exposure to direct UV, water, oils, or other contaminants.
  - Stored in an enclosed building or holding facility.
  - Within a temperature range of 45° - 90° F (7° - 32° C) and 20 - 80% relative humidity.
  - Less than six months with masking applied (warehouse storage and outdoor exposure combined).
  - Protective film may become brittle with long-term UV exposure.

## Precautions

- Oil canning is not a cause for rejection. Heavier gauges, narrower widths, striations, and embossing minimize oil canning.
- Sealant for end laps and lap joints shall be non-drying, non-toxic, and non-shrinking with a serviceable temperature of -60° - 212° F (-51° - 100° C).
- Quality, long-life butyl sealants work best as a gasket sandwiched between two pieces of metal. Non-acetic cured, silicone, color-matching sealants are recommended when voids must be filled. Sealants are not a substitute for proper assembly and workmanship.
- Exercise caution when handling to avoid injury or product damage.
- Refer to Safety Data Sheets (SDS) for safety information.
- **Immediately remove protective film after installation.**

Manufacturing Location: Anoka, MN



Product Data	
Property	Value
Panel Type	Commercial-Industrial
Joint Design	Overlapping
Tapered Panels	No
Radiused	No
Substrate	Solid Substrate or Open Framing
Standard Panel Surface	Smooth
Optional Panel Surface	Stucco Embossed

Product Size	
Property	Value
Panel Width	38 in. (956.20 mm) 36 in. (914.40 mm) Net Coverage
Minimum Panel Length	14 in. (355.60 mm)
Maximum Panel Length	480 in. (12.19 m)

Technical Information	
Property	Value
Fire Rating	UL Class A Rated Assemblies UL 263 & UL 790
Hail Rating	UL 2218, Class 4

Typical Properties		
Material and Thickness	Metal Specification	Available Finishes
<u>Aluminum</u> 0.032 in. (0.81 mm) 0.040 in. (1.02 mm)	<b>Base Metal:</b> Aluminum <b>Minimum Yield:</b> 21 KSI (145 MPa) <b>Thermal Expansion:</b> $12.6 \times 10^{-6}$ in/in/°F ( $22.68 \times 10^{-6}$ mm/mm/°C) <b>Modulus of Elasticity:</b> $10.0 \times 10^3$ x KSI (68.9 MPa)	Anodized Kynar 500/Hylar 5000 Unpainted/Mill-Finished
<u>Zincalume®/Galvalume® Steel</u> 24 ga (0.64 mm) 22 ga (0.79 mm)	<b>Base Metal:</b> AISI-G90 Galvanized steel <b>Minimum Yield:</b> 50 KSI (345 MPa) <b>Thermal Expansion:</b> $6.7 \times 10^{-6}$ in/in/°F ( $12.06 \times 10^{-6}$ mm/mm/°C) <b>Modulus of Elasticity:</b> $29.0 \times 10^6$ x KSI (200 GPa)	Zincalume Plus/ Galvalume Plus/ Acrylume® - Clear Acrylic Coated Kynar 500/Hylar 5000

**NOTE:** Consult the appropriate base metal sheet and coil product data sheet for additional information on the base metal and coating. Not all materials and thicknesses are available from all locations.

Contact EXCEPTIONAL Metals Technical Services at (866) 337-4599 for further information.

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