

Product Information and Handling Guidelines For Fiberglass Entry Door Panels

Disclaimer

These guidelines are provided as general recommendations based on typical manufacturing and environmental conditions. Actual results may vary depending on door design, component selection, coating systems, equipment, and facility conditions.

MASTERGRAIN does not control the fabrication, assembly, finishing, or installation of complete door systems and therefore cannot guarantee final product performance. It is the responsibility of the door manufacturer to ensure that their complete door system complies with applicable building codes, certification requirements, and performance standards for the intended application.

Purpose and Scope

These Product Information and Handling Guidelines are intended for MASTERGRAIN's direct customers who manufacture entry door systems using MASTERGRAIN fiberglass entry door panels, either:

- As door builds using the customer's own components and processes, or
- In combination with MASTERGRAIN-supplied components where applicable.

These guidelines cover recommended practices for receiving handling, storage, acclimation, machining, surface preparation, finishing, and structural considerations for MASTERGRAIN fiberglass entry door panels. Door system performance, including air, water, structural, thermal, and durability performance, depends on the complete door assembly, the components selected, and the manufacturing and installation methods used.

Customers are responsible for validating their specific door builds and configurations for the intended application and any required certifications or code compliance.

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Unless otherwise specified in writing by MASTERGRAIN, these guidelines apply to exterior residential entry door manufacturing.

Product Description

MASTERGRAIN fiberglass entry door panels are engineered for exterior residential door applications. Panels are designed to provide long-term structural integrity, dimensional stability, and resistance to environmental exposure when properly handled, machined, finished, assembled, and installed in accordance with applicable industry standards.

MASTERGRAIN panels may be used to manufacture complete entry door systems either as standalone slabs or in combination with MASTERGRAIN-supplied components such as frames, lite frames, simulated divided lites, and reinforcement elements, where applicable. Final door performance is dependent on the complete door system design, component selection, fabrication methods, finishing system, and installation practices.

For technical assistance, approved processes, or application-specific guidance, customers should contact MASTERGRAIN Technical Services through their authorized sales or customer service representative.

Product Characteristics

- Panels are constructed using sheet moulded compound (SMC) fiberglass skins with engineered wood and composite structural elements.
- High-density, CFC-free polyurethane foam core providing improved thermal performance and sound attenuation.
- Fiberglass door panels (slabs) available in woodgrain textures and Edge® Smooth finishes. Woodgrain textures are manufactured using MASTERGRAIN's NVD (Nickel Vapor Deposition) technology to deliver industry-leading authenticity and depth of woodgrain replication.
- One-piece molded, all-fiberglass door lite frames available in both woodgrain and Edge® Smooth finishes, offered in plugless and plugged configurations for exterior durability and clean interior aesthetics.
- Suitable for recommended opaque paint systems and stain and clear coat systems when finished in accordance with coating manufacturer specifications.

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- Designed for long-term exterior exposure when fully sealed and properly installed in a complete door system.
- Excellent dimensional stability compared to traditional wood door constructions.
- Compatible with standard entry door hardware and glazing systems when machined and reinforced in accordance with recommended practices.

Receiving, Handling, Acclimation and Storage Guidelines

Receiving and Initial Inspection

- Inspect all panels immediately upon receipt for visible shipping damage, dimensional irregularities, or defects.
- Verify quantities, sizes, and configurations against shipping documentation.
- Separate and clearly identify any damaged or non-conforming panels. Do not process damaged material.
- Report shipping damage or non-conformance according to MASTERGRAIN claim and return procedures before machining or finishing.

Safe Handling

- Use appropriate carts, racks, or lifting equipment when moving panels. Individual panel weight may exceed 200 lb.
- Support panels evenly across their full length and width at all times.
- Avoid point loading, cantilevered support, or unsupported spans.
- Do not drag, slide, or drop panels.
- Avoid contact between finished or visible surfaces and hard or abrasive materials.
- Protect edges and corners from impact during movement.
- Use protective padding, separators, or slip sheets when stacking, staging, or transporting panels.

Acclimation and Stabilization

- Allow panels to acclimate to plant conditions before machining, glazing, assembly, or finishing.

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- Do not process panels immediately after delivery from uncontrolled transport conditions.
- Support panels in a neutral, unstressed position during acclimation.
- Do not force panels flat during staging or preparation.

Storage

- Store panels in a clean, dry, climate-controlled environment. Recommended range: 60°F to 80°F (16°C to 27°C) and 30% to 50% relative humidity.
- Avoid rapid or extreme changes in temperature or humidity.
- Keep panels elevated on properly supported skids, pallets, or racking systems.
- Support panels evenly and continuously to prevent sagging, bowing, or twist.
- When flat stacking, use protective separators between each panel and maintain uniform support.
- When storing vertically, use padded rigid dividers and ensure full panel support.
- Protect faces, edges, and corners from impact, abrasion, and compression.
- Do not expose panels to direct sunlight, heat sources, water, or excessive moisture.
- Store finished and unfinished panels separately.

Pre-Processing Inspection

- Inspect panels for flatness, bow, twist, and squareness before machining.
- Verify thickness, width, and height prior to processing.
- Segregate panels that do not meet dimensional or flatness requirements for review.
- Never attempt to force panels into alignment during machining or assembly.

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Structural Reinforcement and Hardware Load Requirements

- Door system structural performance depends on proper reinforcement of hinge, lock, and hardware attachment areas.
- Hinge locations shall be reinforced to support static and dynamic door loads.
- Lock, handle, and multipoint hardware locations shall be reinforced to prevent fastener pull-out and core compression.
- Reinforcement materials must be compatible with fiberglass and suitable for exterior exposure.
- Fastener embedment depth, edge distance, and spacing shall be sufficient to prevent cracking or localized stress.
- Oversized and glazed doors may require additional reinforcement and increased hinge capacity.
- Door manufacturers are responsible for validating hardware selection, hinge quantity, and reinforcement design.
- Inadequate reinforcement may result in sagging, misalignment, operational issues, or structural failure and may affect warranty eligibility.

Machining Guidelines

- Allow panels to fully acclimate prior to machining.
- Inspect for flatness and squareness before processing.
- Support panels fully during machining to prevent vibration and deflection.
- Use sharp tooling designed for fiberglass and composite materials.
- Use carbide high-helix end mills for latch, handle, and glass cut-outs.
- Use carbide burrs or equivalent for hinge pocket machining.
- Perform roughing and finishing passes for large lite openings.
- Use proper fixturing and hold-down methods.
- Conduct test cuts and first-article inspections.
- Remove dust and debris prior to finishing.

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Surface Preparation and Finishing

- Transport panels on clean, padded carts or racks.
- Inspect for contamination prior to finishing.
- Clean surfaces per coating manufacturer recommendations.
- Use only exterior-grade coating systems approved for fiberglass.
- Use UV-resistant or UV-reflective finishes.
- Follow coating manufacturer technical data sheets.
- When using IR curing, do not exceed a surface temperature of 150°F (65°C).
- Fully coat and seal all six sides, including edges, cut-outs, and hardware mortises.
- Ensure complete coating coverage in lite cut-outs and exposed core areas.
- Allow full cure prior to stacking or packaging.

Cautions and Considerations

- Follow all workplace safety and PPE requirements.
- Use mechanical lifting assistance as required.
- Ensure full six-side sealing prior to exterior exposure or assembly.
- Improper handling, storage, machining, or finishing can result in cosmetic and structural defects.
- These conditions may affect appearance, fit, performance, and long-term durability.
- Adherence to these guidelines is required to maintain product quality and system integrity.