

## Fiberglass: The Steel Beater

Looks matter, but most homeowners want entry doors designed not only to impress but also to perform well for years to come. And that's why more and more builders, remodelers and homeowners are turning toward fiberglass and away from traditional materials like wood and steel.

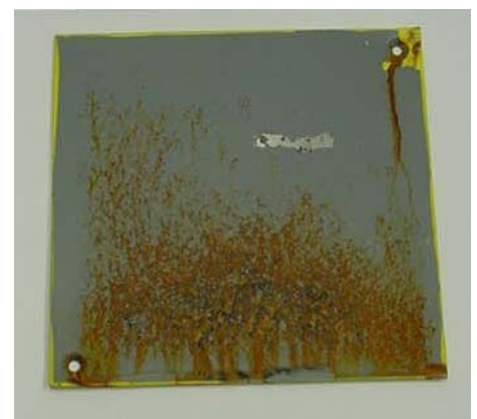
"Steel doors dent, ding, scratch, rust, corrode and often need to be repaired or replaced after construction is complete," said Bill Pagryzinski, R&D Manager at Therma-Tru's Advanced Technology Center in Edgerton, Ohio. "Fiberglass clearly outperforms even high-quality steel doors, especially when it comes to their performance over the long-term."

Engineers at Therma-Tru's Advanced Technology Center put Therma-Tru fiberglass entry and patio doors through a battery of sophisticated tests to ensure every fiberglass entry and patio door system it manufactures can stand up to weather and other factors. They carefully evaluate air infiltration, water penetration, mechanical performance, finish integrity, thermal transmittance and security performance, all in accordance with standards of the American Architectural Manufacturers Association (AAMA), American National Standards Institute (ANSI) and Insulated Steel Door Institute (ISDI).

One of the tests conducted at the Advanced Technology Center is the "missile impact test," in which a nine-pound wooden beam is fired from a cannon directly at a fiberglass door slab. The strong performance of Therma-Tru's fiberglass doors in this test means drastically reduced callbacks during construction – a huge benefit in time and cost savings to builders and remodelers.

In another test of door finishes comparing fiberglass and steel, engineers created a simulation of the effects of prolonged exposure to salt fog. After 144 consecutive hours of testing, conducted in accordance with ASTM B117-03, a high-quality steel door with a factory-applied finish clearly had lost its sheen. Therma-Tru's stained Fiber-Classic® door, however, looked as good as ever.

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*Therma-Tru's stained Fiber-Classic door (left) clearly outperforms a steel door with a factory-applied finish in a six-day simulation of the effects of salt fog. Engineers tested the finishes of the two doors for 144 consecutive hours in accordance with ASTM standard B117-03. While there are no test standards specifically for fiberglass doors, Therma-Tru tests to the standards established by the Insulated Steel Door Institute.*

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## Steel Beater, cont.

Fiberglass doors continue to prove their superiority over steel doors in energy efficiency. In thermal transmittance testing conducted in accordance with NFRC 100-91, ANSI/ISDI-107, ASTM C-236 and ASTM C-1199, Therma-Tru's Classic-Craft® 40 door registered an R-value of 8.33, or 20 percent better than a high-quality steel door.

Fiberglass doors also surpass high-quality steel doors in air infiltration performance. In testing conducted in accordance with AAMA 1702.2-85, fiberglass doors performed more than two times better than steel doors, measuring 0.10 CFM/FT2 compared to 0.22 CFM/FT2.

Therma-Tru's commitment to research and development has resulted in a line of high-quality fiberglass entry and patio doors – including new models of Smooth-Star entry and patio door systems that offer the look of fine painted steel with the high performance benefits of fiberglass.

## At the Advanced Technology Center



*R&D Manager Bill Pagryzinski tests corrosion and moisture resistance of a new hardware finish. The "salt fog" chamber exposes surfaces to an atomized salt spray within a chamber controlled for temperature and humidity. For more information on this test, see the lead article.*



## New Fiber-Classic® and Smooth-Star® Sliding Patio Doors

Fiber-Classic and Smooth-Star Sliding Patio Door Systems feature the look of grained wood or a smooth surface (respectively) with the superior durability of fiberglass, so they won't crack, warp or rot like wood, nor dent, ding or rust like steel patio doors.

The interior surface of Fiber-Classic sliding patio doors can be stained or painted to match any home's decor, while the exterior is available factory finished in White, Almond, Stone or Bronze. Fiber-Classic doors carry a limited lifetime warranty. Smooth-Star Sliding Patio Door Systems feature an interior surface that can be painted to match any home's decor, and a factory finished exterior available in White, Almond, Stone or Bronze. Smooth-Star doors feature a 20-year limited warranty. Other features of both doors include flush-glazed tempered Low-E insulated glass, pultruded fiberglass frames and sills for superior strength and durability.

## Fiberglass Doors: By the Numbers

- **60%** of consumers surveyed replaced their front door to improve the appearance of the house
- **57%** of consumers who replaced a front door did so because it was cracked, warped, or rotting
- **58%** of homeowners replaced wood and steel doors with fiberglass
- **62%** of homeowners believe fiberglass is more durable than wood or steel
- **96%** of remodeling homeowners said putting extra money into a front entryway is a good investment

*Source: Consumer Profiles and NFO Worldwide*

**For more information about Tru-Performance: The Therma-Tru Doors Research Series, please contact Ann Krebs at 419.891.7426 or [akrebs@thermatru.com](mailto:akrebs@thermatru.com)**