



Wind-Borne Debris Primer

Wind-borne debris is a hazard associated with severe weather events such as hurricanes and tornadoes. These weather events can launch projectiles at speeds greater than 100 mph. The best way to prepare for severe weather and to protect the things that are most important is to select the proper materials and systems for your home. Adherence to applicable building codes is the first step, therefore this document lists the applicable codes and standards for reference. The intent of this document is to bring awareness to the risks of wind-borne debris and show how brick can help mitigate the damage inflicted on a residence during a weather event.

In addition to wind-borne debris, there are other weather events that can severely damage the exterior of a home. Hail is the most common culprit and can be very destructive. While hurricanes and tornadoes pickup anything in their path to create projectiles, hailstorms with high wind are self-reliant. A storm in March 2021 ran through Northeast Tennessee leaving some homes looking like they had been peppered with bullets. The best defense against wind-borne debris and hail is a durable, impact resistant, exterior cladding. Clay brick, in both anchored and adhered applications, provides much better impact resistance than other common cladding materials.

Several studies have been conducted by the National Brick Research Center (NBRC), University of Tennessee, and other organization to determine the ability of various claddings to resist impact from projectiles. Clay brick is consistently a top performer in such tests and exceeds the impact resistance requirements for high velocity hurricane zones in the Florida Building Code (FBC).



Clay Brick

Clay Brick Impact Resistance

Hail Resistance – Other Claddings



Vinyl Siding



Synthetic Stucco (upper)

Notice: the clay brick is undamaged

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Missile Impact Resistance – Other Claddings



Regardless of where your home is located or how prone you are to significant weather events; clay brick is always a great choice. If your home is in an area defined as a Wind-Borne Debris Region, then brick is a great way to meet the designated code requirements set forth in the listed codes and standards.

References

- 2018 International Building Code (IBC)
- 2017 Florida Building Code (FBC)
- 2014 International Code Council (ICC) 500: ICC/NSSA Standard for the Design and Construction of Storm Shelters

Each code defines wind-borne debris regions similarly:

WIND-BORNE DEBRIS REGION. Areas within hurricane- prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed, *Vult*, is 130 mph (58 m/s) or greater; or
2. In areas where the ultimate design wind speed is 140 mph (63.6 m/s) or greater.

For *Risk Category II* buildings and structures and *Risk Category III* buildings and structures, except health care facilities, the wind-borne debris region shall be based on Figure 1609.3.(1). For *Risk Category IV* buildings and structures and *Risk Category III* health care facilities, the windborne debris region shall be based on Figure 1609.3(2).

*The FBC uses the term “ultimate design wind speed” and the symbol “*Vult*” in place of “basic design wind speed” and “*V*” respectively. Both terms are intended to refer to strength design wind speeds, not allowable stress design wind speeds.

**Risk Categories are defined in Table 1604.5 for IBC and FBC