

varying garage door pressure capacities, and one and two story houses and one-to-three story commercial residential buildings.

Models of varying combinations of the above characteristics (e.g., wood frame, gable end, no window shutters) were created for four different regions in Florida. In all cases, the probabilistic capacities of the various components were determined by a variety of sources, including testing, test results in the literature, in-field data collection (post-hurricane damage evaluations), manufacturer's specifications and manufacturer's test data, and expert opinion.

In the case of the mid-/high-rise commercial residential model (buildings with more than three stories), the models include different apartment units corresponding to different building layouts (interior or exterior entry door), different locations within the floor plan (corner or middle units), different heights (subject to different probabilities of missile impact and wind speed), and different openings (windows, doors, sliders) with different protection options (none or impact resistant).

D. Building height/number of stories, primary construction material, year of construction, location, building code, and other construction characteristics, as applicable, shall be used in the derivation and application of building hurricane vulnerability functions.

The structural models include options that allow the representation of building code revisions. Three models were derived for each structural type: weak construction, medium construction, and strong construction. For example, each model for wood frame and gable roof homes has weak, medium, and strong versions. The assignment of a given strength level is based on the assumed age of the home being modeled and the available information on construction practice in that region of the state in that era of construction. Florida Building Code requirements that apply to the repair of existing homes are also taken into consideration when computing the repair costs of a structure. Separate models were also developed for manufactured housing constructed based on pre- and post-1994 HUD regulations and for different wind zones.

In addition to the various models that reflect construction type, region of Florida, and era of construction, each model has numerous additional strength features that can be adjusted before simulations are conducted to represent various combinations of mitigation features. For example, a weak constructed home in central Florida with masonry walls (no reinforcing) may have been recently re-roofed with railed roof decking and modern code-approved shingles. The simulation model is capable of reflecting this combination of weak original construction and new, strong roof sheathing and roof cover mitigation.

E. Hurricane vulnerability functions shall be separately derived for commercial residential building structures, personal residential building structures, manufactured homes, and appurtenant structures.

~~The commercial and personal residential building structures, mobile homes, and appurtenant structures are independently derived.~~

[Hurricane vulnerability functions are independently derived for commercial residential building structures, personal residential building structures, manufactured homes, and appurtenant structures.](#)