

The U.S. Federal Highway Administration (FHWA) has adopted the testing parameters and criteria from the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals for determining acceptable performance of breakaway pole devices.

Following adoption of the 1985 AASHTO crash-test specifications, the FHWA began issuing acceptance letters to manufacturers of pole breakaway systems acknowledging that the devices meet requirements. Typically, the acceptance letters describe the device tested and include a drawing of the device, test results, and information on the use of the device, such as the weight of the system tested or the soil in which it is acceptable. Also, FHWA policy requires the use of crash-worthy hardware within the clear zone, regardless of the ownership of the roadway or the source of project funding. For further information refer to the FHWA web site.

http://safety.fhwa.dot.gov/roadway_dept/road_hardware/breakaway.htm.

Whether a coupler, slip base or frangible base system is used, the system should be engineered, tested and proven by its manufacturer. As a minimum, the supplier's engineer should:

- confirm that the breakaway product will support the pole for the given wind pressure and wind speed for the area;
- provide FHWA acceptance letter.

Breakaway devices are typically used for highway and freeway applications where poles are located within a defined clear zone.

The clear zone is defined as the roadside border area adjacent to the roadway to be kept clear of fixed objects, which may be traversed by errant vehicles.

Determining the clear zone is a complex task. It is a function of design speed, traffic volumes, the presence of fill and cut slopes, the steepness of the slopes and the horizontal curvature of the road, and should be defined by a qualified professional engineer.

Breakaway devices should not be used in medians and scenarios where a knocked-down pole can impact an oncoming vehicle or where an errant pole may strike pedestrians.