



**FAA**  
**Southern Region Airports Division**

## **Runway and Taxiway Safety Areas**

### *Frequently Asked Questions (FAQ)*

#### **What is a runway safety area (RSA)?**

An RSA is a defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

#### **What is a taxiway safety area (TSA)?**

A TSA is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

#### **What is the size of the RSA?**

The RSA is a rectangular box surrounding the runway and is based on the runway design code. The dimensions range from 120 feet to 500 feet in width and 240 feet to 1000 feet in length beyond the departure end of the runway. (see FAA Advisory Circular 150/5300-13, Airport Design)

Generally, on airports that serve air carrier aircraft, the RSA extends 250 feet either side of the runway centerline and 1000 feet beyond each end of the runway.

#### **What is the size of the TSA?**

The size of the TSA is based upon the airplane design group for which the taxiway is designed and ranges from 49 feet, to 262 feet in width (see FAA Advisory Circular 150/5300-13, Airport Design).

#### **What are the RSA and TSA maintenance requirements in 14 CFR part 139?**

On airports that are certificated under 14 CFR part 139 the certificate holder must maintain its safety areas as follows:

- 1) Each safety area shall be cleared and graded, and have no potentially hazardous ruts, humps, depressions, or other surface variations.
- 2) Each safety area must be drained by grading or storm sewers to prevent water accumulation.
- 3) Each safety area must be capable under dry conditions of supporting snow removal and aircraft rescue and firefighting equipment and of supporting the occasional passage of aircraft without causing major damage to the aircraft.

- 4) No objects may be located in any safety area, except for objects that need to be located in a safety area because of their function. These objects must be constructed, to the extent practical, on frangible mounted structures of the lowest practical height, with the frangible point no higher than 3 inches above grade.
- 5) FAA Advisory Circulars in the 150 series contain methods and procedures for the configuration and maintenance of safety areas acceptable to the Administrator.

### **What are acceptable slopes or grades for earthwork around a facility located inside the RSA?**

The transverse slopes for runway safety areas range between 3 - 5% (FAA Advisory Circular 150/5300-13). Since other runways and taxiways commonly intersect one another, these grades would apply in the direction parallel to the runway centerline as well transverse to the runway centerline. These grading standards also apply to grading work for a NAVAID facility within the RSA such as a PAPI or LOC foundation or footing. Fill material must be graded and appropriately compacted around the edges of the concrete footings (see FAA Advisory Circular 150/5300-13, Airport Design).

### **What are low impact resistant supports (LIRS)?**

LIRS are supports designed to resist operational and environmental static loads and fail when subjected to a shock load such as that from a colliding aircraft.

### **What is frangibility?**

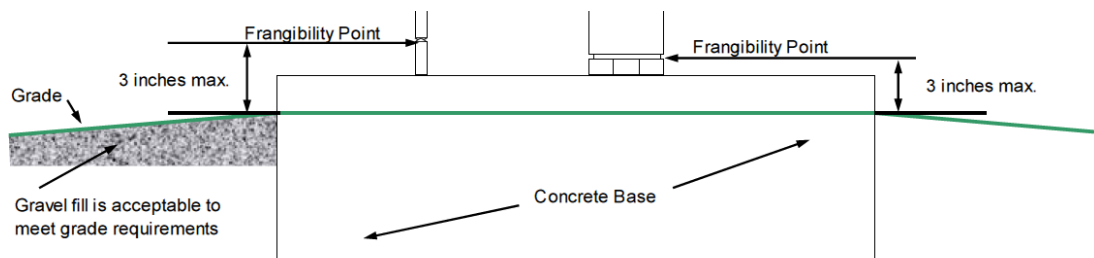
Frangibility is the ability of an object to break, distort, or yield when impacted by another object (see FAA Advisory Circular 150/5220-23, Frangible Connections).

### **What is a frangible object?**

A frangible object is an object designed to have minimal mass and absorb a minimal amount of energy during an impact event. In the airport environment, the goal of these objects is to not impede the motion of, or radically alter the path of, an aircraft while minimizing the overall potential for damage during an incident.

### **How do you measure the height of the frangible point?**

Measurement of the frangible point height is taken from grade to the point of frangibility on the connection. If a concrete pad is installed, the measurement is NOT to be taken from the top of the concrete pad or from grade to the top of the pad, but rather from grade to the point of frangibility.



### **What is a Navigational Aid (NAVAID) that is fixed by function?**

Any component of a NAVAID where the standard siting criteria (distance from the runway) prevents the NAVAID from being located outside the RSA for the runway being served is considered fixed by function.

Fixed by function NAVAIDS include: Runway End Identifier Lights, Precision Approach Path Indicator, Visual Approach Slope Indicator, Inner Marker, and all types of Approach Light Systems.

Service roads and safety-essential roadway signs to a fixed by function NAVAID are also considered to be fixed by function and must meet grade and frangibility requirements.

Equipment shelters, junction boxes, transformers, power control units, and other appurtenances that support a fixed by function NAVAID are NOT fixed by function unless operational requirements require them to be located in close proximity to the NAVAID.

### **Can a NAVAID that is not “fixed by function” be installed within an RSA?**

Yes. If there are no other options for relocating the NAVAID outside the RSA it can be installed in the RSA provided it meets the frangibility requirements. Siting NAVAID(s) such as an ILS Localizer (LOC) within an RSA is **not** normally considered fixed by function, and must first be determined to be necessary due to unusual circumstances or as necessary for LOC to perform adequately.

### **What about temporary objects in the RSA or TSA?**

No objects, including people and vehicles, should be permitted in the RSA or TSA when an aircraft is using the associated runway or taxiway. An exception is the use of temporarily installed arresting gear systems used during an airshow.

### **Is construction allowed in the RSA?**

No construction may occur within the existing RSA while the runway is open for aircraft operations. The RSA dimensions may be adjusted if the runway is restricted to aircraft operations requiring smaller RSA. The temporary use of declared distances and/or partial runway closures may provide the necessary RSA under certain circumstances.

### **Is construction allowed in the TSA?**

No construction may occur within the TSA while the taxiway is open for aircraft operations. The TSA dimensions may be adjusted if the taxiway is restricted to aircraft operations requiring a smaller TSA.

**What are the requirements for operating in a RSA or TSA at an airport with an operating Air Traffic Control Tower (ATCT)?**

14 CFR part 139 requires the certificate holder to limit access to the safety areas only to those pedestrians and ground vehicles necessary for airport operations. Each pedestrian and ground vehicle must contact the ATCT and receive authorization prior to accessing any RSA or TSA. All persons that access an RSA or TSA must be trained prior to initial performance of such duties and at least once every 12 consecutive calendar months prior to moving on foot or operating a ground vehicle in a RSA or TSA. Records must be kept to document this training.