



Runway Pavement Surface Type Descriptions

A number of airlines have requested Boeing guidance concerning understanding the various pavement surface types used to describe runway pavement. The following descriptions are provided in response to this request.

Macadam (sometimes called tarmac, or tarmac) - Uniformly sized stones rolled or compacted in-place, and usually sealed by an asphalt treatment that penetrates into the uppermost portion of the surface, or coated with tar or bitumen. Usually such surfaces are thin by typical airport standards, on the order of 1 to 2 inches (2 to 5 centimeters) thick.

Gravel runway - A runway, typically constructed of a mixture of compacted soils and stones, with a surface that is not bound by any additives (neither asphaltic nor cementitious). Such runways are classified as "unpaved" and are sometimes referred to as "unimproved". A grass runway usually does not qualify as a gravel runway.

Flexible Pavement - A runway, taxiway, or ramp that is surfaced with a mixture of asphaltic materials (asphalt and aggregate) of from 3 to 5 inches (8 to 13 centimeters) or more in thickness. This type of construction qualifies a runway to be referred to as "hard surfaced" or "paved". (Also known as an "asphalt" pavement.)

Rigid Pavement - A runway, taxiway, or ramp that is surfaced with a mixture of concrete materials (portland cement, sand, coarse aggregate, and water) of from 6 to 20 inches (15 to 51 centimeters) or more in thickness. Typical narrow body runways usually have 11 to 13 inches (28 to 33 centimeters) of concrete thickness, and runways that serve wide body aircraft usually have 17 to 20 inches (43 to 51 centimeters) of concrete thickness. This type of construction qualifies a runway to be referred to as "hard surfaced" or "paved". (Also known as a "concrete" pavement.)

Seal Coat - This type of runway is usually an unpaved (gravel) runway, the surface of which has been treated with a spray sealant (usually asphaltic or resinous) to create a well-textured, waterproof surface that typically has a total thickness of less than one inch (one to two centimeters). Such surfaces generally do not stand up well to high tire pressures or high wheel loads, but if the surface is unbroken, the runway is considered paved (or hard surfaced).

Slurry Seal - A mixture of well-graded fine aggregate, mineral filler, emulsified asphalt and water, applied to a runway as a surface treatment. Slurry seals are generally only applied to previously paved surfaces.

Additional questions concerning this issue can be directed to Boeing's Airport Technology group as follows:

Boeing Airport Technology
P.O. Box 3707, MC 67-KR
Seattle, WA 98124
425-237-1004
AirportTechnology@boeing.com