



EAC

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Determination of surface friction characteristics for construction and maintenance
purposes

The guidance in this section involves the functional measurement of friction-related aspects related to runway construction and maintenance. Excluded from this section is the operational, as opposed to functional, measurement of friction for contaminated runways. However, the devices used for functional measurement could also be used for operational measurement, but in the latter case, the figures given in EAC 139-19, Table 3-1 are not relevant.

1. The surface friction characteristics of a paved runway should be :
 - (a) Assessed to verify the Surface friction characteristics of new or resurfaced paved runways (Subpart F, 139.309(a)(23));
 - (b) Assessed periodically in order to determine the slipperiness of paved runways (Subpart L, 139.341(e));
2. The condition of a runway pavement is generally assessed under dry conditions using a self wetting continuous friction measuring device. Evaluation tests of runway surface friction characteristics are made on clean surfaces of the runway when first constructed or after resurfacing.
3. Friction tests of existing surface conditions are taken periodically in order to avoid falling below the minimum friction level specified by ECAA. When the friction of any portion of a runway is found to be below this value, then such information is promulgated in a NOTAM. Specifying which portion of the runway is below the minimum friction level, and its location on the runway. A corrective maintenance action must be initiated without delay. Friction measurements are taken at time intervals that will ensure the identification of runways in need of maintenance or special surface treatment before their condition becomes serious. The time intervals and mean frequency of measurements depend on factors such as: aircraft type and frequency of usage, climatic conditions, pavement type, and pavement service and maintenance requirements.
4. Friction measurements of existing, new or resurfaced runways are made with a continuous friction measuring device provided with a smooth tread tire. The device should use self-wetting features to allow measurements of the surface friction characteristics to be made at a water depth of 1 mm.
5. When it is suspected that the surface friction characteristics of a runway may be reduced because of poor drainage, owing to inadequate slopes or depressions, then an additional measurement is made, but this time under natural conditions representative of a local rain. This measurement differs from the previous one in that water depths in the poorly cleared areas are normally greater in a local rain condition. The measurement results are thus more apt to identify problem areas having low friction values that could induce aquaplaning than the previous test. If circumstances do not permit measurement to be conducted during natural conditions representative of a rain, then this condition may be simulated. (See EAC 139-48)
6. When conducting friction tests using a self wetting continuous friction measuring device, it is important to note that, unlike conditions, in which there is very limited variation of the friction coefficient with speed, a wet runway produces a drop in friction with an increase in speed. However, as the speed increases, the rate at which the friction is reduced becomes less. Among the factors affecting the friction coefficient between the tire and the runway surface, texture is particularly important. If the runway has a good macro-

texture allowing the water to escape beneath the tire, then the friction value will be less affected by speed. Conversely, a low macro-texture surface will produce a larger drop in friction with increase in speed.

7. A minimum friction level below which corrective maintenance action should be and taken. As criteria for surface friction characteristics of new or resurfaced runway surfaces and its maintenance planning, to improve the friction. EAC 139-19 provides guidance on establishing maintenance planning and minimum friction levels for runway surfaces in use.