

Performance Monitoring Programs

Overview:

Midwest offers short-term (1 year) and long-term (2-10 years) performance monitoring programs. The goal of this testing is to quantify and evaluate the runway's performance over time to ensure the optimum performance of the installed runway. All testing and assessments are performed by qualified and trained personnel. The following tests are conducted at a minimum 3 times (prior to installation, immediately following installation and 30-90 days post installation).

Visual Runway Assessment:

Visual assessments are conducted by trained Midwest personnel and/or a third-party to evaluate the condition of the runway. These assessments include but are not limited to: photos of the runway surface, videos of the runway surface and/or aircraft movements, completion of site assessment forms, visual emission observations, etc.

Silt Load Testing:

Silt Load testing is an EPA method use to predict and quantify dust emissions from the resuspension of loose material on the runway surface due to traffic. Per EPA's AP-42 document, the term "silt loading" refers to the mass of silt-size material per unit area of travel (g/m^2). The total runway surface dust loading consists of loose material that can be collected by broom sweeping and vacuuming of the traveled surface. The silt fraction is determined by measuring the proportion of loose dry surface dust that passes through the #200 sieve.

GeoGauge Testing:

The Geogauge is a portable, non-destructive device used to measure the stiffness of a surface. It is used to measure and monitor the increase or decrease in the stiffness and uniformity of the runway over time. Readings are taken every 400 linear feet along the center, left side and right side of the runway. Readings are expressed in Mn/m. Stiffness readings in the range of 0-8Mn/m are considered to have a weak stiffness. Readings between 10-14Mn/m are considered to have moderate stiffness. Readings exceeding 14Mn/m are considered to have high stiffness.

Dynamic Cone Penetrometer Testing:

The Dynamic Cone Penetrometer is a portable instrument used to measure the in-place strength of a granular or fine-grained surface. A 17.6lb weight is dropped along a rod at a height of 22.6" which then drives a metal cone located at the bottom of the rod into the surface. The number of drops required to achieve 150mm of penetrations is recorded. This is considered the PR or penetration rate. DCPs are widely recognized by the engineer community and the data can be easily converted to CBR values which represent a bearing capacity value for the surface.

Solvent Extraction Testing:

Solvent extraction testing is a method to determine the concentration of product present in the treated runway based on EPA method 3540C. The product concentration can be measured over time and compared to the initial application rate by sampling defined areas of the runway surface and performing the solvent extraction analysis. The data provides a basis for determining maintenance application recommendations.