APSDS 5.0

Airport Pavement Structural Design System

Comprehensive and Powerful

The Airport Pavement Structural Design System is a powerful, user-friendly, Windows-based package with the capability to make even the most complex design project simpler, surer, more cost-effective and faster than any alternative.

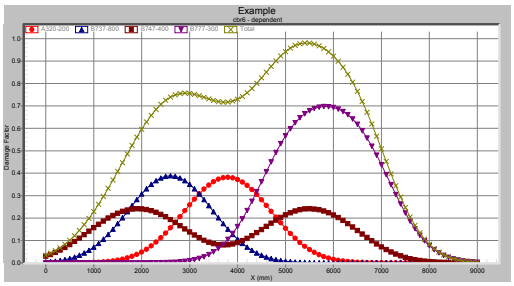
APSDS implements a rigorous flexible pavement design methodology that incorporates state-of-the-art pavement material properties and performance models. It calculates the cumulative damage induced by the whole traffic spectrum.

APSDS has a unique model for aircraft wander. This is the statistical variation of the paths taken by successive aircraft relative to runway or taxiway centrelines, or to the lead-in lines to parking positions. Increased wander reduces pavement damage by different amounts that depend upon pavement thickness.

Easy to Use

Defining Inputs

Pavement and loading databases eliminate the need to constantly re-key information. APSDS is an open system that lets you define your own material properties and loadings.



Damage graph shows damage variation across pavement.

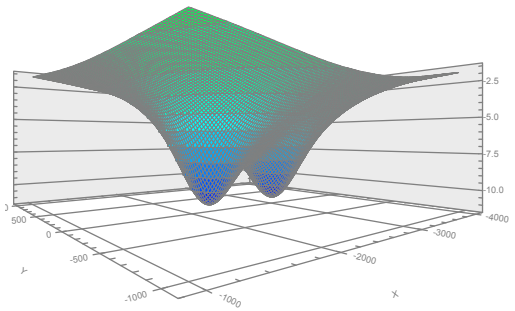
Automatic Thickness Design

The Automatic thickness design capability will determine the optimum thickness of a given layer in a few seconds on a Pentium PC.

Viewing the Results

APSDS generates graphs that show the variation of the damage factor across the pavement. These graphs show the contribution from each aircraft model in the traffic spectrum.

APSDS can also generate graphs of any component of displacement, strain or stress in two-dimensional or three-dimensional form.



Sample Three-dimensional plot: strain pulse under dual wheels

Proven On Major Projects

This Australian designed system has been in regular use World-wide for more than ten years proving its worth in dozens of design applications.

APSDS is based on the internationally-accepted CIRCLY pavement design system, in use throughout Australia and around the world for over two decades.

APSDS has been used for many major airport projects including:

- New Fifth Runway project at Amsterdam's Schipol International Airport- one of the world's largest international airports.
- Copenhagen Airport, Denmark
- Leonardo da Vinci International Airport, Rome, Italy
- Johannesburg International Airport, Johannesburg, South Africa

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Requirements

- Microsoft Windows XP, Windows Vista, Windows 7 or 8.x.
- 800x600 display or higher

Features

Material models

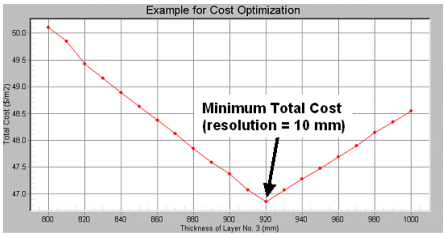
- multi-layered pavement system
- isotropic and anisotropic materials
- define your own performance criteria
- automatic sub-layer generation for granular materials.

Traffic Loadings

- no limit on the number of vehicle types or loading conditions
- User-specified aircraft wander
- analysis explicitly uses specified spectrum
- erroneous short-cuts such as "equivalent" axles or design aircraft are not necessary

Optimize Costs

The Cost Analysis feature lets you fine tune layer thicknesses to minimize construction cost. You can specify unit costs for each material.
A Parametric Analysis feature can loop through a range of thicknesses for one or two layers, while simultaneously designing the thickness of another layer. This feature will optimise up to three layers. Combining this with the Cost Analysis feature, allows for fine-tuning of layer thicknesses to minimize construction and maintenance costs.



Automatically generated plot:
Total Cost vs. Layer 3 Thickness

Benefits from APSDS

The benefits of APSDS are many and of major significance. They impact on all levels of airport operation - from design and construction, to ongoing operation and maintenance.

- APSDS allows logical comparisons to be made between competitive pavement design submissions.
- The impact of changing traffic patterns and the effects of new aircraft such as the Airbus A380 and Boeing's 777 on proposed designs can be considered and planned for.
- New and innovative pavement materials - binders, aggregates and other developments - can be rationally assessed and evaluated on a sound technical and economic basis.
- Because ALL relevant factors - current and future - can be taken into account, the risk of over-design caused by a lack of proper information can be reduced .significantly
- The accuracy of APSDS performance projections minimises the risk of premature pavement failure and its attendant liabilities problem. The professional user is actively encouraged to use material performance data which is project specific to ensure the integrity of the design output. The speed of the system allows comprehensive sensitivity analysis to be completed quickly.
- Typically, APSDS analyses are processed and ready for review in minutes.

Try out APSDS now!

We invite you to try out APSDS for yourself! Simply visit *www.mincad.com.au* to download an evaluation version.

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