



Airport Pavements – Benefits of Concrete Runways

Concrete produces a long life, low maintenance runway pavement that is robust and tough. Durability supports the safe operation of aircraft and low maintenance performance that makes concrete an economical choice.

Concrete is relied on across the busiest Australian and global airports for terminal aircraft standing areas and Taxiway surfaces, due to its robustness, durability and low maintenance outcomes.

Concrete has also been selected for the runways at the world's busiest and most important airports, for example at Shanghai Pudong International (PVG) and almost every major commercial hub airport in the United States of America including: Atlanta (ATL), Los Angeles (LAX), Denver (DEN), Chicago, O'Hare (ORD), McCarran, Las Vegas (LAS), and New York (JFK). Closer to home, Auckland International Airport (AKL) also features a single concrete runway.

Why Choose Concrete:

SAFETY

- Permanent surface texture or grooving to minimise potential of aircraft skidding or hydroplaning
- Light reflectance for excellent runway visibility for approaching aircraft
- Less build-up of superheated air layer above pavement surface.

ECONOMICS

- Cost competitive construction
- No periodic resurfacing or surface sealing
- Low maintenance delivering much lower costs across the runway's life
- Less runway downtime for maintenance increasing runway utilisation.

PERFORMANCE

- The heavy wheels of slow moving international airplanes demand a tough concrete pavement that is aviation fuel resistant
- Resistance to degradation by fuel spillage, or drippings, jet heat or blast
- Rut resistance under channelled traffic or parked aircraft
- Reserve load carrying capacity
- Designs available for a range of foundation conditions
- Resistant to extremes of environmental conditions.

SUSTAINABILITY

- Longer design life with low maintenance delivers a lower Life Cycle Cost
- Locally sourced raw materials
- Knowledgeable local supply chain, well skilled in delivering concrete pavements
- Resilient concrete construction accommodates extreme weather events
- Concrete is recyclable at the end of design life.



Concrete Runway Case Studies & Contacts

NEW YORK

Background

John F Kennedy (JFK) International Airport in New York is one of the busiest airports in the United States of America. Serviced by four runways, the largest runway has a concrete surface.

Runway Design Deliverables

- Runway length is 3,682 metres
- The runway also serves as a back-up for space shuttle missions

Contact

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AUCKLAND

Background

Auckland (AKL) International Airport in New Zealand is the second largest airport in Australasia for international traffic.

AKL International is an airport with no curfew, in operation 24/7, 365 days a year and required a runway that was low maintenance and robust throughout its design life.

Runway Design Deliverables

- Runway length is 3,635 metres
- The runway was delivered seven days ahead of schedule; for one stint, concreting ran continuously for 24 hours for eight days

Contact

Auckland

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LAS VEGAS

Background

Las Vegas International Airport (McCarran) re-constructed its fourth runway replacing an old aging asphalt model with concrete (now all four runways are concrete).

Runway Design Deliverables

- Runway length is 4,423 metres
- Operational under sun, rain, heat and frost conditions.
- Constantly supports the repetitive impact of a 500 tonne A380 aircraft.

“One of the reasons concrete is favored over asphalt is that some of the rubber from an aircraft tire is knocked off when the plane lands and tends to blend into the asphalt in the heat”

“Contractors are replacing an asphalt surface with more durable and safer concrete.”

<https://www.reviewjournal.com/local/local-las-vegas/mccarran-runway-closes-for-67-million-rebuild/>

AMERICAN CONCRETE PAVEMENT ASSOCIATION CONTACTS (ACPA)

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ACPA have made available several detailed case studies on Concrete Runways throughout the USA.

All available on request.

OTHER INTERNATIONAL CONTACTS

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