Case Study
Brisbane Airport

Shell Multiphalte - flying high at Brisbane Airport, for the resurfacing of the main runway

Shell Bitumen came up with the right product - Shell Multiphalte 1000/320 – for the resurfacing of Brisbane Airport's main runway. It is perfect for withstanding the demands of heavy airport traffic and the high temperatures of the Australian climate.

Shell Multiphalte 1000/320 was selected because it is harder at higher temperatures than normal C320 bitumen, making the finished pavement more deformation resistant against heavy aircraft loads at temperature extremes - enhancing the life of the runway.

The right product and technical expertise keep main runway open during resurfacing	
Critical success factors	- Fit for purpose binder to meet demands of heavy aircraft - Sharp project management skills to maintain operations - High thermal stability
Application	Airport runway
Volume	3,000 tonnes
Product family	Shell Multiphalte
Product grade	1000/320
Client	Brisbane Airport Corporation
Contractor	Pioneer Road Servcies Pty Ltd
Project Engineer	Arup Consulting Engineers Ltd, Brisbane

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Longer life runway for expanding airport

Brisbane Airport is believed to be the fastest growing airport in Australia, with annual passenger numbers exceeding 18.5 million in 2007/08 and peak hours seeing around 45 departures and arrivals.

After 15 years of heavy use, the original 50mm deep C320 asphalt runway was really showing its age.

When Brisbane Airport Corporation Ltd (BAC) required an upgrade for its aging asphalt runway they looked for a long-lasting solution to withstand increasing future aircraft movements and loadings.

Flexible product for flexible working

One of the greatest challenges facing the team was keeping the runway open. BAC could not afford full closure as the stretch of runway in question was the only one to accept large aircraft.

Pioneer Road Services, the chosen contractor, had to resurface the new runway in meticulously planned stages. Each night's resurfacing window was strictly limited, sometimes to as little as three hours per night. They required a proven product that could meet the higher ambient temperatures as well as the tight paving window. Shell Multiphalte 1000/320 was up to the challenge, being more manageable during the asphalt production and paving stages than alternative polymer modified binders.

Working Smart

To cope with the demands of a large-scale resurfacing operation with so rigorous a schedule, the team had to work smart, carefully planning every action to meet strict daily deadlines.

The team's solution was to partition the runway into segments of 300 x 45 metres, with each segment attended to one night at a time by the team of 65 workers:

- **One hour** for the removal of the existing, aged runway surface
- **Five hours** (reduced to 3 for the final stages of the project) to lay up to 1000 tonnes of asphalt to the specified design levels of 100mm to 25mm deep
- **One hour** to raise and reinstall runway lighting and to apply line markings to the new surface, ready for immediate heavy use.

The resurfacing was completed within a five month time period, with each stage of the operation ahead of schedule.

Thanks to the manageability of Shell Multiphalte 1000/320 and strict adherence to schedule, the team met the 5am deadline each day, allowing business to continue as usual at the airport.

Brisbane's main runway is now more resistant to rutting and cracking – a robust runway for the future.

For more information about how Shell Bitumen can help your business, please visit www.shell.com/bitumen

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