



Alice Springs Airport P/L
PO BOX 796
Alice Springs
NT 0871
Ph (08) 89 511 211
Fax (08) 89 555 046

TESTIMONIAL

RUBBER REMOVAL AT ALICE SPRINGS AIRPORT USING SHOT BLASTING TECHNOLOGY BY MULTITECH-BLASTRAC.

As the Airport Engineer at Alice Springs Airport I had a number of issues in the main runway (2438 m) that determined the need for rubber removal:

- The main runway 12/30 was built in 1991, since then, no rubber removal operation had taken place. That is, 16 years of rubber deposit.
- Although traffic has been relatively small over the past years, the increase of heavy weight aircraft and in particular the change to aircrafts with heavy wheel loading – like the B737-800 – has resulted in a larger and faster accumulation of rubber.
- The main runway was grooved in 1991 to allow for better drainage and to achieve a high level of friction. In 2006, I conducted a survey on the condition of the grooved lines. A total of 18,000 manual measurements of groove width and depth were taken at randomly selected areas of the runway as per U.S. Military Standards. All measurements were taken in grooves without rubber. The results indicated that certain areas had their grooved lines with a decreased width and depth. If in addition to that we consider that the accumulation of rubber was significant then the runway drainage capacity could be much lower.
- Alice Springs has extreme temperatures in Summer and the pavement surface can reach easily more than 65 degrees (°C). In addition, it has also cold Winters with temperatures as low as -10 degrees (°C). These extremes can result in a faster ageing process.
- Civil Aviation Safety Authority (CASA) informed that friction tests would be required on a regular basis from now on.

Having decided that a rubber removal was needed, a variety of methods were studied and compared. From the use of chemicals to the use of high and ultra high water pressure. Although all methods may suit different needs, in our case we had some constraints. First, the application of chemicals for the rubber removal using our ground staff (only 2 people) was not feasible. As it would take up to a year to complete the whole runway to only start again when finished.

Second, high and ultra high water pressure had the risk of polishing the runway aggregate (granite). Although positive results have been achieved in other airports, the particular aggregate used for the construction of the runway has to be seriously considered. Even 'low' pressures of 2,000 Kpi could damage the macro and microstructure. There has been 16 years of rubber deposits and in order to remove that old rubber high or ultra high pressure would be required. Polishing effects had to be avoided at all costs as it would result in a substantial loss of friction and therefore reducing the aircraft capability to break particularly in wet conditions where hydroplaning could take place.

Finally, it is also important to understand that in large capital cities these different methods can be tried in small areas and then take a decision. However, Alice Springs is located at 2 hours flight from the nearest city (Darwin) and 3 hours flight from Sydney (2,850 kms). The possibility of doing trials with different systems was not feasible as all equipment required would involve a large expense in logistics and others.

After some research, **Multitech-Blastrac** was contacted and I attended a demonstration at Coolangatta airport (Gold Coast). The main concern was to evaluate the macro and microtexture after the steel shots. The results were very satisfactory and the company was asked to conduct the rubber removal at Alice Springs Airport on February 2007.

Given the remote location of Alice Springs some logistic problems had to be addressed. Multitech showed a resourceful attitude and liaise with different transport companies until an adequate truck was hired. Arriving at Alice Springs Airport on schedule, Multitech staff followed all safety and security regulations at the airport. The works were scheduled to be conducted at night time (from 21:00) to allow for the pavement to cool.

From the first day, the results were spectacular. More than 8,000 m² were treated and rubber removed in only 3 nights. During the day I could confirm that not only the rubber has been removed on the surface and inside the grooved line but the macro and micro textures were not damaged. In addition, line marking was not affected and the crack repairs using Liquid Road were still there. The results, witnessed by Ayers Rock Airport staff and also later by Darwin Airport were impressive.

The professionalism of Multitech was exemplary. All works were conducted in safety, respecting the environment, with great quality and in a very short time.

Shot blasting has worked for us and considering that the rubber deposits were very old, it has been a great success.

Alice Springs Airport has now a main runway with no rubber and with clean groove lines.

I would like to thank **Multitech** and **Blastrac** for their work and I certainly recommend their services for other airports.

Javier Caldes
Airport Engineer
Alice Springs Airport

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