

# Asphalt Reinforcement

Runway, Rotaflex, Dundee Airport, Scotland



## Project Description

Operations started at Dundee Airport in the 1950s. Known then as Riverside Park, the facility was a grass strip on newly reclaimed land adjacent to the northerly end of the Tay Rail Bridge. Most grassfield airports suffer from waterlogging in the winter months and Riverside Park was no exception, made worse by its proximity to the River Tay. A decision was made in the 1970s by the then operators Tayside Regional Council to move westwards by 500m to the airport's current location. An all-weather asphalt runway was laid, initially 900m in length (later lengthened to 1400m) and a new apron and terminal established on the northern edge of the site capable of handling 150,000 passengers a year. The airport has regular flights to London Stansted and serves many private users being the nearest airport to the "home of golf" at St Andrews.

## The Challenge

The reclaimed land, high water table and increased traffic prompted the client to consider the long term maintenance of the surface. The repeated impact load of airplanes touching down and braking has a flexing effect on the road runway asphalt surface. This continual flexing induces reflective cracking in the surface layers translating up from beneath, as water penetrates the surface course. Freeze and thaw effects further widen these cracks leading to potholing resulting in early failure of an otherwise sound construction. A cost effective method to prevent cracking and which seals the sublayers would increase maintenance periods thereby providing significant savings.

## Project Information

Client	Highlands and Islands Airports
Contractor	Tayside Contracts/ABG
Consultant	Dundee City Council
Products	Rotaflex 830SL
Quantity	9,000m <sup>2</sup>
Benefits	<ul style="list-style-type: none"><li>• Prevents cracking and seals surface to extend maintenance period</li><li>• Fast, in-line installation with asphalt laying process</li></ul>



**ABG Rotaflex 830SL**

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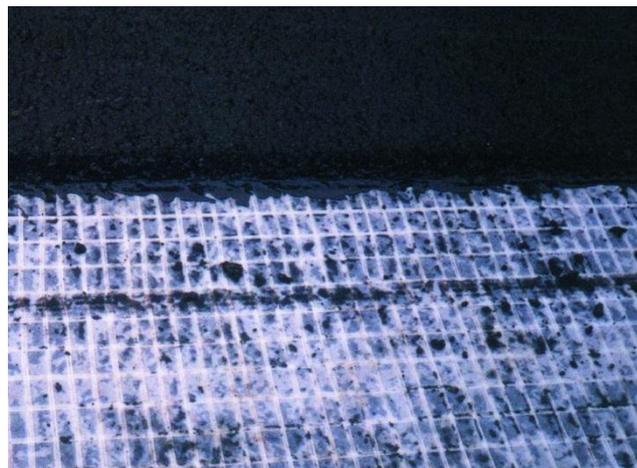


### The Solution

The client recognised the benefits of **ABG Rotaflex 830SL** asphalt reinforcement geocomposite. **Rotaflex** comprises a high strength/low strain glass fibre grid bonded to a nonwoven geotextile. **ABG**, also acting as the installer, sprayed a bitumen emulsion bond coat to the binder course for the geocomposite which is rolled onto the surface. The geotextile absorbs the bitumen ready for the hot surface course where it is reheated forming a sealed reinforced layer. The low strain glass fibre grid stops lateral movements in the pavement thus preventing the upward propagation of cracks. The surface is then reinforced and sealed extending the life of the surface course by up to four times resulting in considerable savings in construction time and minimised delays to airport users.

### The ABG Service

**ABG** provided technical support in selecting the correct Rotaflex composite for the high design loading caused by airplane trafficking. **ABG** worked with the Tayside Contracts to provide a quick and effective installation.



The geotextile supporting the glass fibre grid absorbs the bitumen emulsion tack coat to bond it to the surface. The hot asphalt surface course draws the bitumen through the fabric forming a complete water barrier. The grid then prevents cracking through the surface course.



Rotaflex Installation



Airport on reclaimed land serving Dundee.

Contact ABG today to discuss your project specific requirements and discover how ABG past experience and innovative products can help on your project.