

Aggregate Industries

Test results for a high performing asphalt surfacing – Super AirMat – laid for the first time on a taxiway last September, confirm the material's exceptional suitability for airport applications.

New airport surfacing prepares for take off

Planes landing at East Midlands Airport and aircraft preparing to take off have been travelling on a new asphalt surfacing called Super AirMat since last year. The material – a revolutionary thin surfacing system for airfield use – was laid on a section of the airport's main 'Alpha' taxiway by Aggregate Industries UK Limited in September.

Super AirMat went down as expected and has since performed well. Five months on, the results of laboratory testing confirm that the development of the material and its application have been a success.

Aggregate Industries' Commercial Manager Glenn Ford says: "Cores taken from the newly laid material were analysed and the results used as the basis of a report published by Shell Bitumen UK in February.

"Testing involved a close look at wheel tracking, stiffness, water sensitivity, long term ageing and fatigue of the material and the report confirmed our confidence in Super AirMat."

"Super AirMat's interconnecting texture allows water to flow away laterally along conduits within the surfacing."

Paul Phillips

The material was developed by joint venture partners Aggregate Industries and Shell Bitumen and laid at East Midlands as part of an Aggregate Industries' contract to resurface around half of the 3km taxiway.

It used, in the main, a tried and tested proprietary stone mastic asphalt overlay known as AirMat. However, Aggregate Industries and Shell Bitumen were keen to demonstrate the capabilities of their new Super AirMat, and successfully persuaded the airport to allow a 120m section of the taxiway to be resurfaced using the new system (see box).

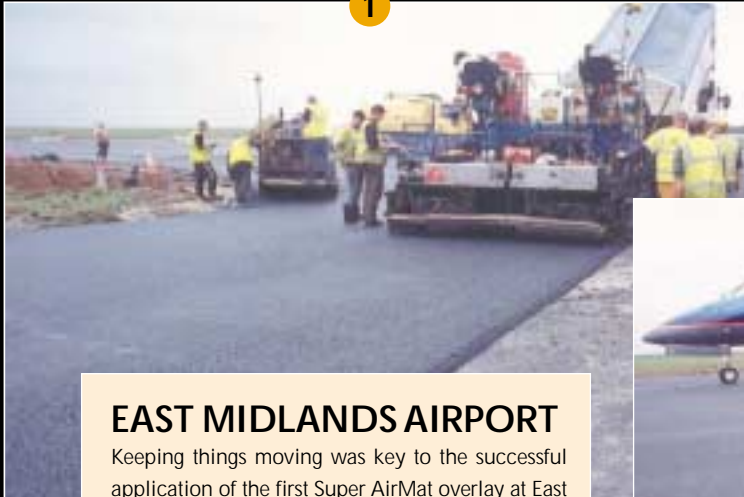
Aggregate Industries' Technical & Development Director Paul Phillips says the development of Super AirMat marks a significant step forward for airfield resurfacing in the UK.

"The purpose of developing Super AirMat was so we could have a resurfacing material that is more advanced than conventional overlay systems in every respect," he explains. "The new system has been designed to improve drainage characteristics, to provide enhanced durability and to be ready for service quicker than other resurfacing materials used in airfield maintenance."

Special properties within the material give it a smooth, negative texture which provides a high degree of skid resistance and helps to disperse rainwater from the surface.

"Standing water on an airfield could cause an aircraft to experience a loss of friction with the surface," says Phillips. "The nature of Super AirMat's interconnecting texture allows water to flow away laterally along conduits within the surfacing."

Application of Super AirMat is a one pass process, in that the surfacing does not need to be grooved once it is laid. Grooving is a common secondary process associated with the conventional resurfacing of airfield pavements – such as with Marshall Asphalt – to give a surface the required degree of friction and water shedding ability.



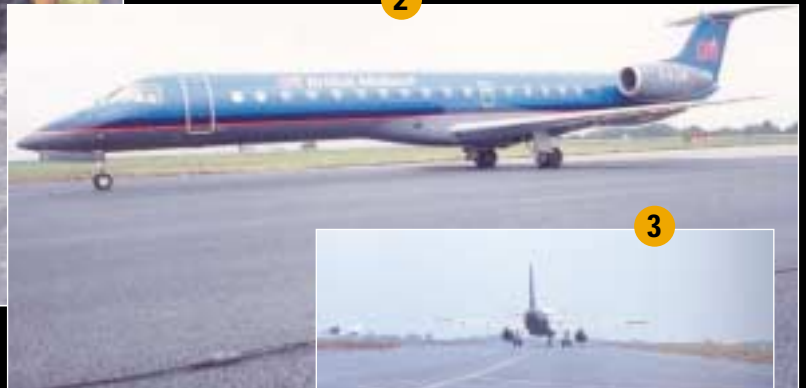
EAST MIDLANDS AIRPORT

Keeping things moving was key to the successful application of the first Super AirMat overlay at East Midlands Airport in September. Over a two day period, 420t of the new asphalt material was brought in from Aggregate Industries' plant at Bardon Hill, and laid on a 120m length of the Airport's 23m wide 'Alpha' taxiway.

The use of Super AirMat marked the first stage of resurfacing on the airfield's concrete taxiway. The contract had to be completed within a strict time scale as aircraft carrying passengers and cargo were scheduled to begin using the taxiway that evening.

The material was laid and compacted using conventional paving plant. Polymers contained within Super AirMat, in combination with an interlocking aggregate skeleton, can allow trafficking within as little as half an hour of the material being laid.

Site work began at 7am each day, but reduced visibility caused by fog delayed the start of work on the second day by over an hour. However, this did not affect the outcome of the contract.



1: Application of Super AirMat is a one pass process. Once laid, the asphalt surfacing does not need to be grooved.

2: The paving team at East Midlands Airport made sure there was no delay between getting the material down and being compacted.

3: Passenger flights continued to take off and land at the airport without delay.

"Cutting transverse grooves into surfacing often takes a long time, making a project more expensive and disruptive for the client and users of an airport," says Shell Bitumen's National Technical Manager John Read. "The other conventional method of providing texture by adding a friction course is not always suitable."

Doing away with both processes and opting for Super AirMat means that overall resurfacing time is

reduced. Further use of Super AirMat at airports around the country is expected and a further series of tests of the material at East Midlands Airport, scheduled to take place during November, should give Super AirMat further credence.

Phillips adds: "We are trying to change the mindsets of airport clients around the country, as Super AirMat is the best possible material to use to repair a cracked airfield.

"We are trying to build confidence among airport clients and there is no reason why the material can not be used on runways as well as on taxiways," he continues. "No airport really likes to be first with a new material, but with the co-operation of the airport's forward thinking engineers, its use at East Midlands should help make way for its use elsewhere."

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