



# M25 Stabilising the concrete sections

Vacuum Void Grouting

[www.balvac.co.uk](http://www.balvac.co.uk)  
[enquiries.balvac@balvac.co.uk](mailto:enquiries.balvac@balvac.co.uk)  
01928 719 875

**Balvac**  
**Balfour Beatty**

## Balvac carried out specialist Vacuum Void Grouting to sections of the M25.

### Deteriorating road surface

Due to heavy traffic inducing differential movement across joints, some slabs had completely broken up and as a result had to be replaced. Slabs which were in the earlier stages of failure were rehabilitated using the Balvac Vacuum Void Grouting (VVG) process which was first developed in the late 1970s.

### The Proposal

All four of Connect Plus Services framework contractors on the M25 J10-8 (2014) carriageway repair contract employed Balvac to carry out specialist vacuum grouting works to stabilise selected slabs in-situ.

### Scope

Ever mindful of safety, even the basic element of drilling the injection holes used modern technology in the form of a semi-automated rig mounted drill fitted with a vacuum attachment to eliminate both Hand Arm Vibration Syndrome and dust.

Cost effectiveness came not only from the reduced costs compared to reconstruction, but also in the reduced traffic management / disruption costs as all works were carried out during engineering hours with no risk of being unable to fully open the motorway to traffic each day. Balvac were able to deliver additional savings by working closely with all four principal contractors. This helped to programme some continuity between the numerous 'mini-phases' with the associated mobilisation / demobilisation costs shared between them.

### Outcome

This project built on the success of stabilisation works, by vacuum grouting, that were carried out on the clockwise carriageway in 2013. Several more successful phases have since been undertaken in both directions between J8-11 as the client adopts a more pro-active maintenance regime. Currently FWD data from J24-25 is being assessed for an expected VVG scheme in 2020.

With an established track record of over 40 years, and tens of thousands of concrete slabs successfully stabilised on concrete pavements across major motorways, local authority roads, airports and even distribution centres, Balvac's clients can be confident that the VVG process provides them with a cost effective and high-quality result.

### Stabilisation of slabs by Vacuum Void Grouting

Application of the vacuum creates an airflow pattern, drawing air from the sub-base and down the feeder holes. Replacing the air inflow with grout results in the filling of the void.

