VOIDS WITHIN SPRAYED CONCRETE

ALERT TOPIC	Voids within Sprayed Concrete	**ALERT REFERENCE:**	Q03- 2025
TARGET AUDIENCE:	All Contract, Estimating Staff	**AUTHORISED BY:**	Steve Jones
DATE OF ISSUE:	Monday 1 December 2025	**DISPLAY UNTIL:**	End April 2026

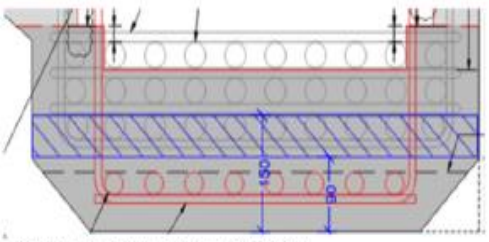
INTRODUCTION

We have 2 contracts that have had significant problems with sprayed concrete over the last year which have been found to have voids within the repairs which have resulted in return work and major commercial costs. This alert looks at the reasons for the issues and makes recommendations around sprayed concrete.

Sullom Voe

REASON FOR ISSUING THIS ALERT

- At **Denham Viaduct** we were asked to spray beam soffit repairs up to a depth of nearly 200mmm, with multiple layers of reinforcement as can be seen on the section. Flowable repairs should have been used. Subsequent testing both radar and investigative drilling revealed voids beyond 80mm to the 200mm zone. Injection work was undertaken using Weber precision cementitious grout to fill the voids which was accepted following further survey works to prove the injection.
- At **Sullom Voe** soffit repairs as top photo were being undertaken using sprayed Gunite when voids were detected above the B2 bar between 75 and 100mm from the soffit. Cores also indicated poorly compacted material. Overall, these errors relate to operator error. Injection using a resin material Fosroc Nitofil LV was undertaken to fill the voids. (see picture of filled void)



SPAN D - DRILL TRIAL RECORD

CONCLUSIONS AND DISCUSSION POINTS

- Spraying repairs particularly soffits is a common form of repair, where 'ghosting' is recognised as a quality risk. This risk needs to be carefully considered, and the following points considered when undertaking sprayed repairs around reinforcement.
- Carefully review if sprayed repairs are feasible for soffit and also vertical repairs. Consider depth of repair, spacing and size and layers of rebar. If you are spraying more than 75mm and if there are multiple layers of reinforcement with spacings closer than 150mm we should be looking at shutter and pour options (with consideration of again venting each repair to avoid void/air pockets being left). If necessary, point out risk to spraying works to our client and that we will not be responsible for voids.
- Undertaking competency trials with the proposed sprayers. Mirror the actual works you will be doing for trials in terms of depths, orientation and reinforcement.
- Ensure that adjacent reinforcement is protected from overspray and that rebound is considered, as both issues could lead to layers of poorly compacted mush around reinforcement or on substrates.
- Ensure the trials are tested for potential voids; Pundit echo testing, cores, drill holes are all possible methods
- Undertake a quality control regime that incorporates testing for voids as noted above.

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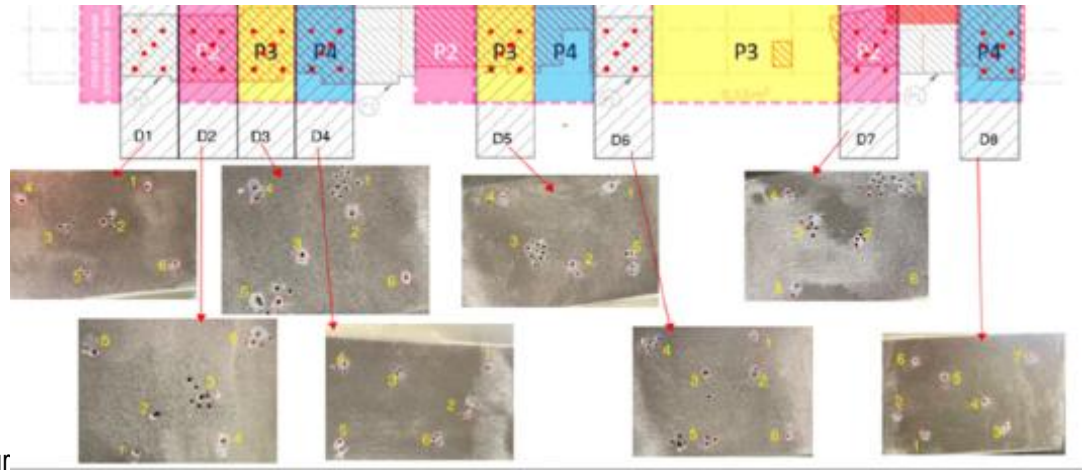

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Please review the content of the attached SHEQ Alert for relevance prior to communicating the contents to your site teams. Please record your briefing below and retain in your files:

SHEQ ALERT BRIEFING RECORD

ALERT TOPIC:	Voids within Sprayed Concrete	**ALERT REFERENCE:**	Q03- 2025
PROJECT NAME:		**DATE OF BRIEFING:**	
BRIEFING DELIVERED BY:			

The following people have signed to confirm receipt and understanding of this SHEQ Alert:

NAME	EMPLOYER	EMPLOYEE ID	SIGNATURE

If you have any SHEQ issues that you wish to discuss, please contact your supervisor, line manager, or a member of the SHEQ team.