

Pre Cast Concrete—Recent Quality Issues



Summary of Issues

The following Quality issues have occurred most recently at our projects at Parsons Tunnel and Northumberland Line but are symptomatic of issues encountered on previous projects

- Low cover
- Low concrete strength
- Units out of dimensional tolerance
- Damage to units prior to arriving on site/in transit/post delivery
- Defects not being communicated to Morgan Sindall prior to delivery
- Pre Cast units have been installed without required QA provided in advance.

Risk

Safety incident risk increases due to lifting activities associated with the unit removal, the delivery of new units and subsequent replacement.

Rework—potentially high if units are rejected post installation. High related cost and programme impact

Units that cannot be removed can potentially affect the design life of the structure. Likely to impact client perceived reputation. Lengthy technical assurance reviews required.

Environmental impact associated with waste of rejected units, materials required to make new units and carbon footprint of delivery.

Root Cause

Supply chain not used to the level of assurance required due to lack of experience in infrastructure projects. Failure in the factory inspection regimes, changes in manufacturing techniques, defects not being communicated.

MS project teams assumption that pre cast units will always be to the required quality standards leading to a lack of unit inspections on arrival to site. Project accepting units on site without related assurance evidence.

Mitigation

Supply chain to be briefed at pre-start meetings on the requirement for providing QA evidence in advance of units being delivered to site. Quality expectations for inspection regime and defect reporting to be established.

Factory visits prior to delivery are essential for any significant volume of bespoke pre cast units. Visits should include witnessing of pre pour checks, pour activities, concrete testing (slump/flow and cubes) as well as sample dimensional checks and cover surveys of completed units. Review of internal QA collation.

MS delivery teams to inspect all delivered units to site at the point of delivery for damage & dimensional tolerance. % cover meter survey required on all deliveries.

No units to be installed on site without concrete strength results received and reviewed for compliance. Non-compliant units to be quarantined and rejected. NCR to be raised

SHEQ Alert date:	03/2023	Display until:	05/2023			
Distribution:	Morgan Sindall	x	Supply Chain	x	Morgan Sindall Group	x
Communication:	Toolbox talks / briefings	x	Noticeboards	x	SHEQ update	x

Everyone has the right to be

100% Safe