

TECHNICAL UPDATE

INFORMATION REQUIRED FOR MAJOR PROJECTS SCHEMES PROPOSING PRE-CAST CONCRETE PANELISED CONSTRUCTION



Information required prior to quote issuance for major projects

Scheme proposing pre-cast concrete panelised construction

Introduction

The following guidance outlines the screening requirements that will need to be addressed by pre-cast concrete panelised construction manufacturers in order for a major project, those with buildings of six storeys or more, to satisfy the necessary criteria prior to a quotation being issued. These conditions will be applied during our normal risk management process to ensure that the functional requirements of the LABC Warranty Technical Manual are achieved.

Major projects or schemes of this size involve an initial assessment of the project as to whether it can be considered a manageable risk and a full quotation is then issued. The LABC Warranty risk management process is then applied and only when the requirements of the LABC Warranty Technical Manual have been met to the satisfaction of your Major Projects team, will an additional referral be made to the insurer to confirm that the scheme is an insurable risk, meaning that the full offer of warranty will be confirmed and Certificates of Approval may be issued.

For pre-cast concrete panelised systems, in order to be considered a manageable risk the following information must be provided to accompany any application and confirmed in writing by the manufacturer of the pre-cast concrete panelised system:

1. That the pre-cast panel system is based on conventional reinforcement approaches. Fibre reinforced panels require in-depth assessment. This type of pre-cast panel system is not accepted in principle and must be assessed on system specific basis.
2. That the manufacturer holds valid ISO9001 – copy to be provided on project specific basis.
3. That all works are carried out in strict accordance with the manufacturer's specification and the functional requirements of the LABC Warranty Technical Manual.
4. That structural calculations are provided and accepted on a project specific basis. Structural engineer design responsibility is confirmed and stated who has overall responsibility for the structural design (including coordination and reviewing of any sub-contractor elements).
5. Design and installation is carried out in accordance with BS EN 1992-1-1 & BS 8297:2017 (calculations to BS 8110 are not acceptable for warranty).
6. The design of cladding units should be in accordance with NA to BS EN 1990:2002+A1. The basis of the structural design table in NA to BS EN 1990:2002+A1, Table NA.2.1, is the design working life within BS 8500.
7. For loadbearing elements, the design of concrete and reinforcement should be in accordance with BS EN 1992-1-1:2004+A1, and for the design of steel elements should be in accordance with BS EN 1993-1-1.
8. For the design of stainless steel items such as supports and restraints, reference should be made to BS EN 1993-1-4.
9. There should be close cooperation between the designer of the pre-cast elements, and the designer of any supporting structure. In particular the designer of the structure should be made aware of the magnitude and location of the loads likely to be imposed onto the structure by the pre-cast.
10. That substantiation that the panels have been designed to accommodate the building movements,

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including lateral loads, is provided and accepted on a project specific basis.

11. That site installation of the system is carried out by the certificate holder, or companies under the direct supervision of the certificate holder. Where installation is carried out by a third party company, details of that company must be provided.
12. That systems are constructed utilising two lines of defence against water ingress, together with appropriate drainage - arrangements and locations of system drainage weep holes are to be provided and agreed on a project specific basis.
13. That the location of the EPDM membranes sealing junctions around window and door openings is provided and agreed on a project specific basis.
14. That buildings which are 18m or above in England and Wales are built of non-combustible materials.
15. That through wall condensation risk calculations and through wall u-value calculations are to be provided for each wall type are provided on a project specific basis.
16. That freeze-thaw testing is carried out to the requirements of ETAG 034 and TS EN 72-22 on a project specific basis.
17. That factory based and on-site testing regimes for water penetration to the waterproof envelope are to be agreed on a project specific basis – subject to CWCT Sequence B testing.
18. That system is subject to hard and soft body impact testing requirements being attained on a site by site basis.
19. That a copy of the manufacturer's specification and warranty is provided on a project specific basis, together with third party accreditation for all external doors and windows. All materials to hold third party product approval certificate (BBA/KIWA BDA/BM TRADA/etc).
20. That guidance is provided to the homeowner regarding maintenance of and alterations to the system on a project specific basis.
21. That the system is subject to the approval of the mortar and grout products on a site by site basis.
22. This generic acceptance is for warranty purposes only. Compliance with relevant building regulations will be checked on a project specific basis where applicable (fire/means of escape/sound/moisture/energy/etc).

For methods resulting in offsite construction it is recommended that LABC Warranty are engaged at the earliest possible time. LABC Warranty reserve the right, in any instance where the requirements of the technical manual cannot be met to implement our escalation process. Failure to comply with the requirements of the technical manual could result in a conclusion that the project is not an insurable risk, leading to a cancellation of the offer of warranty.

Every care was taken to ensure the information in this article was correct at the time of publication (July 2021). Guidance provided does not replace the reader's professional judgement and any construction project should comply with the relevant Building Regulations or applicable technical standards. For the most up to date LABC Warranty Major Projects technical guidance please refer to your Major Projects Manager.