

RAFT FOUNDATIONS



LABC Warranty’s Surveyors and Engineers are required to assess the structural design and construction of raft foundations as part of the audit process on behalf of the Underwriter. The following guidance outlines recognised good practice in relation to raft foundations which is acceptable to LABC Warranty. Raft foundation design and construction should be in accordance with the LABC Warranty Technical Manual and recognised publications from British Standards, Eurocodes, CIRIA, BRE and ICE.

KEY REQUIREMENTS

The raft foundations shall be designed to clearly demonstrate that the rafts, insulation and any treated ground are capable of supporting and transferring the foundation design loads safely to known soil strata that are, in turn, capable of supporting the loads, using the appropriate soil properties obtained from geotechnical testing and contained in the appropriate site investigation report. The rafts shall be designed in accordance with BS8004:2015 and shall ensure that long term settlement does not exceed 25mm or 1:500 (differential), unless more stringent criteria are required by the Project Structural Engineer.

TECHNICAL DOCUMENTATION REQUIRED

The following documentation shall be submitted to LABC Warranty for assessment. In the absence of approval, works are proceeding at the Developer’s own risk.

1. Site Investigation Reports including site-specific recommendations for raft foundations to ensure long term settlement does not exceed 25mm or 1/500 (differential)
2. Structural drawings:
 - a) GA and RC drawings, including a drawing register sheet
 - b) Details of internal and external thickenings to cater for loadings and the effects of frost
 - c) Details of any insulation beneath the raft

3. Structural calculations:
 - a) Demonstrating that the ground bearing pressure does not exceed the allowable value specified in the Site Investigation Report. Localised areas of higher bearing pressures (e.g. beneath load-bearing walls, thickenings or point loads) should be considered
 - b) Demonstrating that the raft (i.e. the thickenings, slab and beams) can span a 3 metre ‘soft spot’ or cantilever 1.5 metres
 - c) Demonstrating the adequacy of any insulation beneath the raft (in relation to loadings, creep and groundwater)
4. Confirmation that all made ground beneath the foundation has / will be removed or treated
5. Details of engineered granular fill below the raft (including its depth and later extent, ensuring a 45o spread from the edge), along with its compaction specification, testing and validation
6. Calculations demonstrating how the depth of granular fill has been determined to cater for the effects of heave and shrinkage (if shrinkable soils are present)
7. Details of any ground treatment (e.g. vibro treatment, cement-lime stabilisation etc.)

If there are queries with regard to anything not covered within this document and / or it is intended to deviate from the above guidance, then please contact LABC Warranty for agreement prior to commencement. Following acceptance of the proposals, please contact us if anything is subsequently discovered on site, which affects the design and / or construction of the raft.

REFERENCE DOCUMENTS

- BS EN 1997-1:2004 + A1:2013 - Eurocode 7: Geotechnical Design (EC7)
- BS 8004:2015 - Code of Practice for Foundations
- BS EN 1997-2:2007 – Ground Investigation and testing
- BS 5930: 2015 - Code of Practice for Ground Investigations
- LABC Warranty Technical Manual –Chapter 5.2.