TECHNICAL FLOORING DATASHEET
07

Technical Note
End Cover to Prestressing Tendons – September 2026

The aim of this technical note is to demonstrate the durability of our members Precast Concrete beams for use within ground floors without the need to protect the reinforcement which is flush with the ends of the beams.

The normal usage for precast prestressed beams is at the ground floor within buildings with cavity wall construction where the ends of the beams bear onto a DPC on the inner leaf. In accordance with BS 8103-1:2011, Table 10 the exposure condition is class XC3 for ground floors. Table A3 of BS8500-1 states that the minimum designated concrete for exposure class XC3 is a strength of RC40/50, which according to Table A15 of BS8500-1 should have a minimum cement content of 340kg/m^3. All MPA Precast members precast prestressed beams are manufactured using concrete with a cube strength greater than 50N/mm^2 and a minimum cement content above 350kg/m^3. Thus, our members precast products meet the requirements for XC3 exposure conditions.

Due to the method of manufacture where the beams are cast to the full length of the beds which are up to 150m in length and then cut to length once cured it is not possible to provide end cover to the reinforcement.

Current design standards, Building Regulations and technical standards issued by the warranty providers do not state that end cover is required. In order to meet the requirements, set by the warranty providers the following is applicable:

- floor must be designed by a competent engineer
- have 25mm cover to the soffit of the beam
- be installed in accordance with the beam manufacturer's instructions
- have a 60-year design life
- third party certification if installed as part of a system

All the above requirements are met by MPA Precast members.

Notwithstanding the above reference can also be made to Clause 4.12.3.1.1 of BS8110-1 which states that under normal conditions the ends of individual pre-tensioned tendons do not require concrete cover. In addition, Clause 4.12.3.1.2 states that the minimum cement content should not be reduced below 300 kg/m^3.

Many processes of deterioration of concrete only occur in the presence of free water. As such the structure should be designed, wherever possible, to minimize uptake of water or exposure to moisture. This has been achieved by the introduction of a DPC and the fact that the beam end is within a cavity wall.



In summary:

- All the clauses contained within the warranty providers standards are met.
- The design standards and Building Regulations do not require end cover or protection.
- Bearing on to the inner leaf of a cavity wall within a building is a normal condition.
- The grade of concrete used is greater than that required for the exposure class.
- Free water will not be present within the cavity.
- The beams meet XC3 durability requirements for 60-year design life.
- The ends of the beams do not require painting

Photo above –
End protection to beams

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