GENERAL PATHWAY FOR MASONRY & EXCEPTION

In general, following the “Acceptable Construction Practice” or an “Acceptable Construction Manual” can achieve a Deemed-to-Satisfy Solution required by National Construction Code (NCC). The ABCB accepts design and construction for masonry structures in accordance with AS 3700 – Masonry Structures, AS 4773 – Masonry for Small Buildings; or Acceptable Construction Practice under NCC 2019 Volume 1 and 2.

NCC requires that if one of the options described in ‘Acceptable Construction Manual’ or ‘Acceptable Construction Practice’ is not complied with, then the appropriate authority must be satisfied that the Performance Requirements have been met.

AS 3700 is recognised as an ‘Acceptable Construction Manual’ for masonry structures’ design under NCC 2019, with an exception to clause 8.5.1 (d).

This practice requires horizontal tie restraints for vertical reinforcement. The Standards Australia Masonry Committee (BD-004) deemed grout provided adequate bonding strength to ensure confinement of vertical steel reinforcement, provided the annulus of grout is not less than twice the diameter of steel.

DESIGN OPTIONS

When designing for a reinforced masonry element as depicted in the images below, practitioners can adopt the following approaches.

OPTION 1: DESIGN AS UNREINFORCED MASONRY ELEMENT

- Design in accordance with NCC 2019
- Higher cost for desired structural capacity
- Height limit applies
- Zero contribution from reinforcement

OPTION 2: DESIGN AS REINFORCED MASONRY (WITH HORIZONTAL TIES) ELEMENT

- Design in accordance with NCC 2019 and AS 3700
- Higher cost for horizontal ties
- Careful workmanship required

OPTION 3: DESIGN AS REINFORCED MASONRY (WITHOUT HORIZONTAL TIES) ELEMENT

- Design in accordance with AS 3700 but not NCC
  - Requires certification by Professional Engineer
- Less stringent: grout annulus of 2 X Bar Diameter
- Cost-effective and time-saving option

DISCLAIMER: The information given is intended for general guidance and does not replace the services of professional advisers on specific projects.
Compliance with the NCC is achieved by complying with both:

**Governing Requirements**, which include building classification, documentation requirements and various regulations for States and Territories, are mentioned throughout the NCC; and

**Performance Requirements**, which are satisfied by achieving either a Performance Solution, a Deemed-to-Satisfy (DTS) Solution or a combination of both.

---

**PERFORMANCE REQUIREMENTS**

- **PERFORMANCE SOLUTION**
  - Verification Methods under NCC
  - Evidence of Suitability
  - Expert Judgement, i.e. Professional Engineers’ Certification
  - Deemed-to-Satisfy Equivalent solution

- **DEEMED-TO-SATISFY SOLUTION**
  - Acceptable Construction Manual
  - Acceptable Construction Practice
  - Evidence of Suitability
  - Expert Judgement, i.e. Professional Engineers’ Certification

To achieve a performance solution, one or more of the options on the right must be demonstrated:

**Expert judgement** is used to determine whether a solution complies with performance requirements based on the verification by personnel(s) who has adequate qualification and experience. **Evidence of suitability** includes certificate of conformity or accreditation by credible authorities, testing conducted by an accredited laboratory, reports from professional engineers or credible experts, or product technical statements demonstrating compliance and limitations of use.

---

**DISCLAIMER:** The information given is intended for general guidance and does not replace the services of professional advisers on specific projects.