Explanatory Information: Construction in cyclonic areas

The intent of building construction in cyclonic areas (see Figure 2.2.3) is to ensure the structure has sufficient strength to transfer wind forces to the ground with an adequate safety margin to prevent collapse of the building and the building being lifted, or slid off its foundations.

To resist these forces it is necessary to have—

- an anchorage system, where the roof is connected by the walls to the footings by a chain of connections; and
- a bracing system to prevent horizontal collapse due to wind forces; and
- continuity of the system where each structural element is interlocked to its adjoining structural element throughout the building.

Explanatory Information: Anchorage

Anchorage of the system is achieved by using a variety of connectors. Each connector must be capable of carrying the uplift force, because the ability of the building to resist the wind forces is directly related to its weakest link.

WA 2.2.4

2.2.4 Determination of structural resistance of materials and forms of construction

[2019: 3.0.4]

The following requirements, or any combination of them, must be used to determine the structural resistance of materials and forms of construction as appropriate:

(a) Earthworks: H1D3(1).

(b) Earth retaining structures: H1D3(2).

(c) Termite risk management: H1D3(3).

(d) Concrete construction (including slabs and footings, and reinforced and prestressed concrete structures): H1D4.

(e) Piled footings: H1D12.

(f) Post-installed and cast-in fastenings in concrete: AS 5216.

(g) Masonry (including masonry veneer, *unreinforced masonry* and *reinforced masonry*): H1D5.

(h) Steel construction (including steel framing and structural steel members): H1D6.

(i) Timber construction (including design of timber structures, timber framing and design of nail-plated timber roof trusses): H1D6.

(j) Composite steel and concrete: AS/NZS 2327.

(k) Aluminium construction:

  (i) AS/NZS 1664.1.

  (ii) AS/NZS 1664.2.

(l) Roof construction (including plastic sheeting, roofing tiles, metal roofing and terracotta, fibre-cement and timber slates and shingles): H1D7.

(m) Wall cladding: H1D7.

(n) Glazed assemblies: H1D8.

(o) Barriers and handrails (including stairway and ramp construction):

  (i) H5D3; and

  (ii) AS/NZS 1170.1 for the determination of loading forces on a barrier.

(p) Attachment of decks and balconies to *external walls* of buildings: H1D11.

(q) Garage doors and other large access doors in openings not more than 3 m in height in *external walls* of buildings determined as being located in wind region C or D in accordance with Figure 2.2.3: AS/NZS 4505.

(r) For *high wind areas*: requirements listed in (a) to (q) as appropriate or the Northern Territory Deemed to Comply