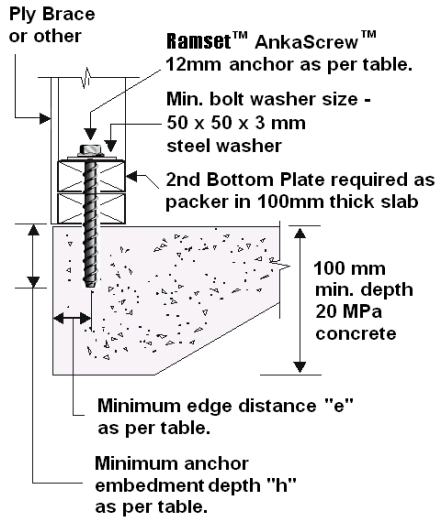


# Limit State Uplift Capacity

## Ramset™ 12mm AnkaScrew™

|           |          |
|-----------|----------|
| Date      | 13/03/12 |
| Reference | TDS03046 |

Limit State Design uplift capacity of Ramset™ AnkaScrew™ used in wall frame tie-down connection (ply brace or other).



**Tie Down Capacity of Bolts through Timber as per AS 1684.2-1999**

| Bolt Size | Uplift capacity (kN) |    |    |                 |     |     |
|-----------|----------------------|----|----|-----------------|-----|-----|
|           | Unseasoned timber    |    |    | Seasoned timber |     |     |
|           | J2                   | J3 | J4 | JD4             | JD5 | JD6 |
| M12       | 27                   | 27 | 26 | 20              | 16  | 12  |



### Ramset™ AnkaScrew™

| Anchor Type | Part Number | Anchor Size, $d_b$ | Installation details                         |  |                              |                               |                                  |                                  | Uplift Capacity (kN) |
|-------------|-------------|--------------------|--|--|------------------------------|-------------------------------|----------------------------------|----------------------------------|----------------------|
|             |             |                    | Drilled Hole Diameter (concrete), $d_h$ (mm) | Fixture Hole Diameter (timber), $d_f$ (mm) | Min. Edge Distance, $e$ (mm) | Min. Anchor Spacing, $a$ (mm) | Min Drill Hole Depth, $h_1$ (mm) | Anchor Embedment Depth, $h$ (mm) |                      |
| AnkaScrew™  | AS12150GM   | 12                 | 12   | 15   | 120                          | 70                            | 77                               | 71                               | 14.4                 |

- Note:**
1. Uplift Capacity is based on installation into concrete with 20 MPa concrete compressive strength
  2. Uplift Capacity is based on Strength Limit State Design of the Specifiers Resource Book Edition 3 located in the Mechanical Anchoring Section - pages 195 to 202.
  3. Uplift Capacity is per anchor
  4. Minimum concrete substrate thickness can be  $b_m = 100$  mm
  5. For an actual concrete substrate thickness of 100 mm, the 12 mm x 150 mm Galvanized AnkaScrew™ will require a 2<sup>nd</sup> Bottom Plate as a packer (i.e. Overall Fixture Thickness to be  $t = 35 + 35 + 3 = 73$  mm)