

The JCP Technical Manual has been compiled to give a wide range of information to allow anchors to be selected with the minimum of effort or calculation. The selection of anchors can be a very complex task and this Manual is not intended to cover all situations or applications but to enable the specifier to select a suitable product for their particular application where a simple approach can be used. Where a more complicated application requires the use of Anchor Design Software this can be achieved by discussing the application with the JCP Technical Department.

To help understand the approach of this Technical Manual a number of factors are explained below. These factors all influence the correct selection of a product and although not all factors will effect all applications there is a need to understand how different circumstances will require a different approach.

A European Technical Approval on a product is visible evidence that the product has been independently tested and assessed to a given standard as laid down in the ETAG 001 Guidelines For European Technical Approval: Metal Anchors for use in Concrete. It also provides a route for the product to receive a CE Mark.



The Water Regulations Advisory Scheme proves that the product has been tested for use in contact with Potable (Drinking) water.



Listing No: 0612509

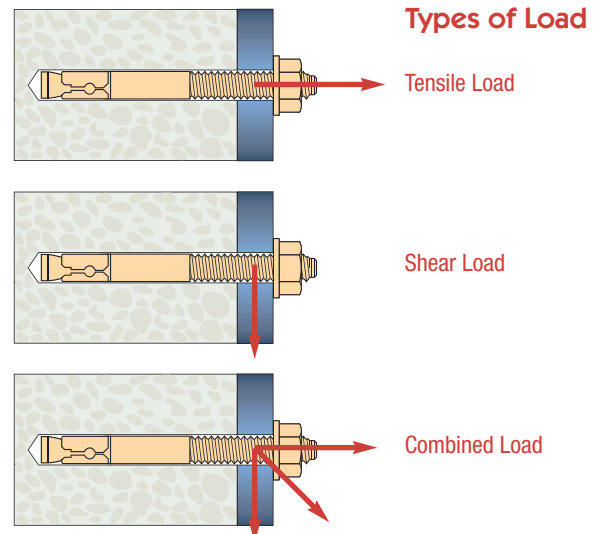
Base Material

All loads are based on a good quality C20/25 concrete, properly supplied and applied. C20/25 concrete has a minimum cylinder strength of 20MPa and a cube strength of 25MPa. These figures are measured on a cylinder of 150mm in diameter and 300 mm in height, or a cube of 150mm x 150mm x 150mm.

All figures are for uncracked concrete but figures for cracked concrete can be obtained from the appropriate European Technical Approval where the anchors are suitable for use in cracked concrete. Reference to the individual ETA's will give guidance on the level of approval.

Some anchors have data for brickwork but this is for guidance only. Due to the variable nature of bricks care must be taken that they are of a suitable type and strength for the product chosen.

Care must be taken to ensure the correct comparison is made between the relevant loads. For an explanation of the different loads see the following section.



For Combined Loads use the formula $(\text{Applied Tensile Load}/\text{Recommended Tensile Load}) + (\text{Applied Shear Load}/\text{Recommended Shear Load}) \leq 1.0$

Ultimate Resistance The average failure load of a minimum of 5 tests.

Characteristic Resistance 95% of all ultimate loads reach or exceed this load.

Design Resistance Contains a Factor of Safety derived from the test series and should be compared with factored loads.

Approved (Recommended) Load Approved Load comes from the ETA for a product with an Approval and the Recommended Load is for products that do not have an ETA. Both contain an extra element to include an installation safety factor and should be compared with unfactored loads.

Edge Distance – Tensile The Edge Distance for an anchor takes into account the amount of material between an anchor and a free edge to provide sufficient support for the Design Resistance of the anchor. Where that Edge Distance is reduced a Reduced Design Resistance is given. These figures are for single anchors

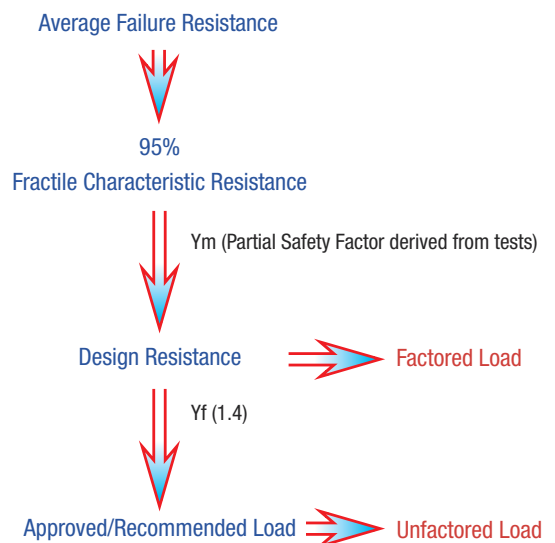
uninfluenced by any other anchor or a second edge.

Edge Distance – Shear Shear Loads towards an edge are for single anchors where the spacing between anchors is greater than 3 times the Edge Distance. The Design Resistance is reduced to take into account closer edge distances but care must be taken to ensure that the edge of the concrete is in good condition and subject to damage or pitting.

Spacing The loads given in the Reduced Design Resistance table are for a pair of anchor uninfluenced by edge distance or any other anchors. It should be noted that these loads are per pair of anchors and not per individual anchor.

Approved/Recommended Loads Where Unfactored loads are being considered the loads shown in the Reduced Design Resistance table must be divided by 1.4.

Partial Safety Factor Approach



For applications not covered by the information in this Technical Manual please contact the JCP Technical Department on 020 8546 6545 or by email to jcpenquiries@owlett-jaton.com