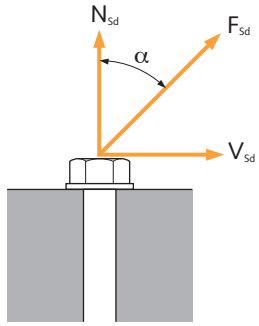
Combined load

The combined load F_{Sd} with an angle α is obtained by:

$$F_{Sd} = \sqrt{\left(N_{Sd}\right)^2 + \left(V_{Sd}\right)^2} \qquad \alpha = \arctan\left(\frac{V_{Sd}}{N_{Sd}}\right)$$

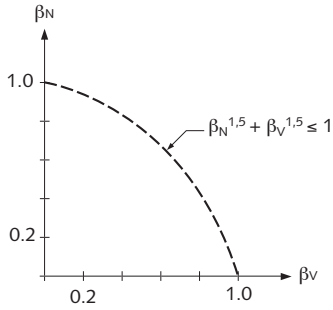
with N_{Sd}: action in tensile direction ($N_{Sd} = F_{Sd} \times \cos \alpha$)
V_{Sd}: action in shear direction ($V_{Sd} = F_{Sd} \times \sin \alpha$)



To verify the resistance for a combined load with the method CC, we proceed as follows :

We must verify:

- the tensile resistance: $\beta_N = N_{Sd} / N_{Rd} \leq 1$
- the shear resistance: $\beta_V = V_{Sd} / V_{Rd} \leq 1$
- the combined load with the following interactive equation : $\beta_N{}^{1,5} + \beta_V{}^{1,5} \leq 1$



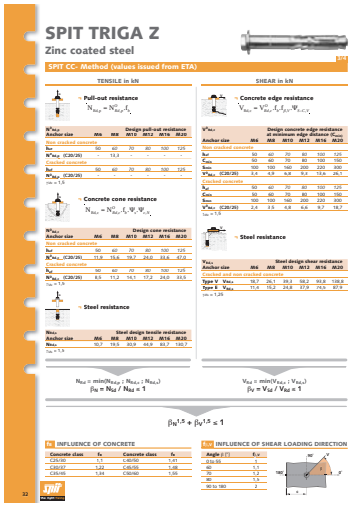
Using CC methodology

This simplified method is based on the principle of Method A from ETAG – Annex C, without taking into account splitting and pryout failure. This method was simplified to retain as much as possible of the ETAG method, whilst including as much of the latest approach as possible.

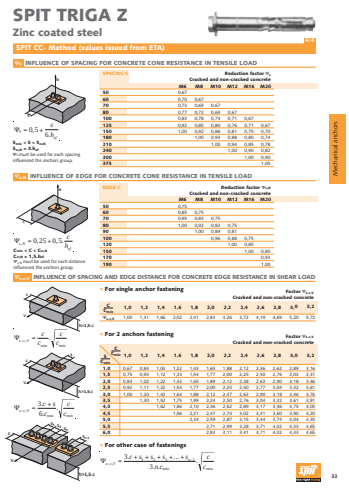
In this technical guide, for each product covered by the calculation method CC, you will find 4 pages:

- Pages 1/4 and 2/4 give the general technical data on the product and the performance of the product.
- Pages 3/4 and 4/4 contain data to design according to this method.

Page 3/4 gives the design resistance Rd for each type of failure, this data is calculated with the characteristic resistance (Rk) and the safety partial factor (γ_M) given in the ETA (if the anchor has CE marking), or from the product evaluation according to ETAG carried out by SPIT.


SPIT TRIGA Z
Zinc coated steel
SPIT CC- Method (values issued from ETA)

Page 4/4 gives the factors (Ψ_S, $\Psi_{C,N}$ et $\Psi_{S\text{-}C,V}$) to be used in the calculation for concrete cone failure in tensile and shear load to take into account the influence of spacing and distance from edge.


SPIT TRIGA Z
Zinc coated steel
SPIT CC- Method (values issued from ETA)