

## Ceiling nail FDZ

Permissible loads for a single anchor<sup>1)</sup> for multiple use of redundant non-structural applications\* in normal concrete C20/25 up to C50/60<sup>2)</sup>.  
For the design the complete current assessment ETA-17/0737 has to be considered.

Type	Material/ surface	Effective anchorage depth  $h_{ef}$ [mm]	Minimum member thickness  $h_{min}$ [mm]	Cracked and non-cracked concrete		
				Permissible load ( $F_{perm}$ ); minimum spacing ( $s_{min}$ ) and edge distances ( $c_{min}$ ) with reduced loads		
				$F_{perm}^{3)}$ [kN]	$s_{min}$ [mm]	$c_{min}$ [mm]
FDZ 6	gvz	25	80	0.7	60	70
FDZ 6	gvz	32	80	1.0	50	60

\* In addition to the load table above, the following must be considered for multiple fastening of non-structural redundant systems:

A multiple fixing (redundant system) according to EN 1992-4 and CEN/TR 17079 is defined by

- at least 3 fixing points (per attached element) with at least one anchor at each fixing point and a permissible load per fixing point of 1.4 kN

- or by at least 4 fixing points with at least one anchor each fixing point and a permissible load per fixing point of 2.1 kN

- Additionally, it has to be proven that the stiffness of the attached element shall be large enough to ensure that in case of excessive slip or failure of a fastener the load on this fastener or fixing point can be transferred to neighbouring fixing points without significantly violating the requirements on the attached element in the serviceability and ultimate limit state.

For further details see EN 1992-4 section 7.3 and CEN/TR 17079.

<sup>1)</sup> Design according to EN 1992-4:2018 (for static resp. quasi-static loads). The partial safety factors for material resistance as regulated in the ETA as well as a partial safety factor for load actions of  $\gamma_L = 1.4$  are considered.

<sup>2)</sup> For concrete strength class C12/15 see ETA.

<sup>3)</sup> Valid for tensile load, shear load and oblique load under any angle. In the case of combinations of tensile, shear loads and bending moments, the design must be carried out in accordance with the provisions of the complete ETA and the provisions of the EN 1992-4:2018.