# Zinc-plated

FYT
FIJAMOS EL MUNDO

## 10163N39 FYT DK3N 3,9

| | | | | |
|---|---|---|---|---|
| Material | AISI 1022 steel | | Diameter (mm) | 3,9 |
| Heat treatment | Austenitising + quenching + tempering | | Drilling capacity | 2,5 mm. |
| Corrosion protection | Zinc-plated - Delta Tone | Hardness | Surface | Min 560 HV |
| Lengths (mm) | 13 - 19 | | Core | 240 - 425 HV |
| Shear failure load | 5.000 N | | Tensile failure load | 8.500 N |



### Maximum pull-out force (N)*

| Thickness (mm) | 1,00 | 1,50 | 2,00 | 2,50 | 2 x 0,63 | 2 x 1,00 |
|---|---|---|---|---|---|---|
| Force (N) | 740 | 1.346 | 1.952 | 2.558 | 942 | 1.683 |

*. Mean test value.



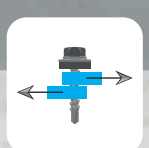
### Maximum pull-over force (N)*

| Thickness (mm) | 0,50 | 0,60 | 0,70 | 0,80 | 1,00 |
|---|---|---|---|---|---|
| Without washer (N) | 840 | 1.008 | 1.176 | 1.344 | 1.680 |
| P 16 washer (N) | 1.120 | 1.344 | 1.568 | 1.792 | 2.240 |
| P 18 washer (N) | 1.260 | 1.512 | 1.764 | 2.016 | 2.520 |

*. Values obtained from the Spanish structural steel code for an ST37 sheet (350 N/mm2)





### Maximum shear force (N)

| Thickness (mm) | 0,63 | 0,63 | 0,75 | 1,00 |
|---|---|---|---|---|
| Section (mm) | 2 x 0,63 | 2,00 | 1,50 | 2 x 1,00 |
| Force (N) | 1.211 | 1.817 | 2.154 | 2.221 |

*. Values obtained from the Spanish structural steel code for an ST37 sheet (350 N/mm2)

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**The values in table 1 are mean test values (ẋ). The following factors are recommended according to CEN/TS 17659:**

## Table 2 - Recommended material partial (safety) factors for fastening in structural decks of different marterials

| Material of structural deck | Nominal thickness | Characteristics [a] | γM |
|---|---|---|---|
| Steel according to EN 10346 | 0,50 ≤ t < 0,70 mm | yield strength ≥ 280 N/mm$^2$ | 2,0 |
| | t ≥ 0,70 mm | yield strength ≥ 280 N/mm$^2$ | 1,8 |
| Aluminium according to EN 485 | t ≥ 0,70 mm | yield strength ≥ 195 N/mm$^2$ | 2,0 [b] |
| Concrete according to EN 206 | | Minimum C12/15 | 2,1 [c] |
| Light weight concrete according to EN 12602 | | ≥ 500 kg/m$^3$ | 3,0 [b] |

| Material of structural deck | Nominal thickness | Characteristics [a] | γM |
|---|---|---|---|
| Wood - soft wood according to EN 338 | t ≥ 20 mm | Minimum C24 | 1,86 [d] |
| OSB according to EN 300 | t ≥ 18 mm | Minimum OSC/3 | 1,86 [d] |
| Plywood according to EN 636 | t ≥ 18 mm | Minimum Service class 2 (EN 1995-1-1) Intended application = Structural S | 1,86 [d] |

a. Recommended for new structural decks.
b. This recommended value is based on hnowledge / experience.
c. This value is based on $\gamma_{inst}$ = 1,4.
d. γM is the total safety based on $\kappa_{mod}$ = 0,7 according EC 5.

## Example of fastener strength calculation:

**Data: Steel purlin 2 mm / Sheet 0,6 mm / FYT DK3N 3,9 with washer 16**



1. Tensile strength:
   - From the data sheet values:
     Wtest = 1.952 N/fastener
   - Apply 90% reduction factor:
     Wchar = 1.757 N/fastener
   - Apply safety factor:
     Wadm = 879 N/fastener
2. Pull-over resistance:
   - From the data sheet values:
     Wadm = 1.344 N/fastener

The lower of these values is used

**Design value of the fasteners: Wadm = 879 N/fastener.**

A1 REACCIÓN AL FUEGO — Fire protection

Rolled beam cold-formed

Screw Self-drilling

Head Ph2

TÜV NORD PN-EN ISO 9001

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