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FYT
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10163N48 FYT DK3N 4,8

Material	AISI 1022 steel		Diameter (mm)	4,8
Heat treatment	Austenitising + quenching + tempering		Drilling capacity	4 mm.
Corrosion protection	Zinc-plated	Hardness	Surface	Min 560 HV
Lengths (mm)	13 - 120		Core	240 - 425 HV
Shear failure load	8.500 N		Tensile failure load	13.500 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)	1.100	2.000	2.900	3.800	1.400	2.500

*. Mean test value.



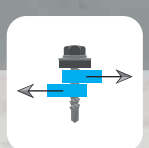
Maximum pull-over force (N)*

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)	1.800	2.700	3.200	3.300

*. 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 γ_{inst} = 1,4.
d. γM is the total safety based on κ_{mod} = 0,7 according EC 5.

Example of fastener strength calculation:

Data: Steel purlin 2 mm / Sheet 0,7 mm / FYT DK3N 4,8 with washer 18



1. Tensile strength:
   - From the data sheet values:
     Wtest = 2.900 N/fastener
   - Apply 90% reduction factor:
     Wchar = 2.610 N/fastener
   - Apply safety factor:
     Wadm = 1.305 N/fastener
2. Pull-over resistance:
   - From the data sheet values:
     Wadm = 1.764 N/fastener

The lower of these values is used

Design value of the fasteners: Wadm = 1.305 N/fastener.



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