



TN4S



TN4S-L



TACON



TACOL

CHARACTERISTICS

Plugs made of polyamide 6.

Recommended to be used with our countersunk screws, TPPO (Pz recess), TPTO (Tx recess) or TB coach wood screws.

Service temperature: -40 + 70 °C.

Use: Fixing of gates, railings, supports, shelves, signs, toilets, etc. both in hollow and solid materials.

INDIVIDUAL CHARACTERISTICS

TN4S/TN4S-L:

- Recommended either for solid base material (concrete, stone, solid bricks, etc.) or hollow base material (hollow bricks, concrete blocks, drywalls, etc.).
- With flared lip, to keep the plug from sliding into the base material during the installation.
- Anti-spin side wings in order to fix it to any kind of base material.
- Expand in 4 directions
- Installation data marked on the plug itself: drill diameter, drill depth y screw diameter to use.

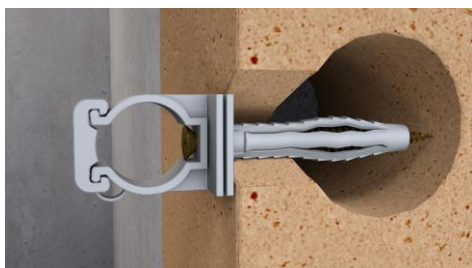
TACOL:
















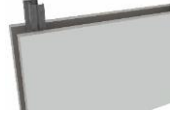



























- Anti-spin side wings to prevent the plug from turning while the knot is forming.
- With flared lip, to keep the plug from sliding into the base material during the installation.
- Recommended mainly for solid base material (concrete, stone, solid brick, etc.).





TACON:

- Anti-spin side wings to prevent the plug from turning while the knot is forming.
- Recommended mainly for solid base material (concrete, stone, solid brick, etc.).

APPLICATION EXAMPLES



BASE MATERIAL SELECTION TABLE						
MATERIALS		TN4S	TN4S-L	TACOL	TACON	
Concrete						
Stone						
Aerated concrete						
Drywall						
Solid brick						
Adobe brick						
Concrete block						
Hollow brick						
PERFORMANCES	High		Medium		Low	

1. RANGE				
ITEM	CODE	SIZE	PHOTO	MATERIAL
1	TN4S	Ø5 x 25 to Ø14 x 70		 POLYAMIDE 6
2	TN4S-L	Ø6 x 45 to Ø10 x 80		
3	TACOL	Ø5 x 25 to Ø12 x 60		
4	TACON	Ø4 x 20 to Ø16 x 80		

2. INSTALLATION DATA

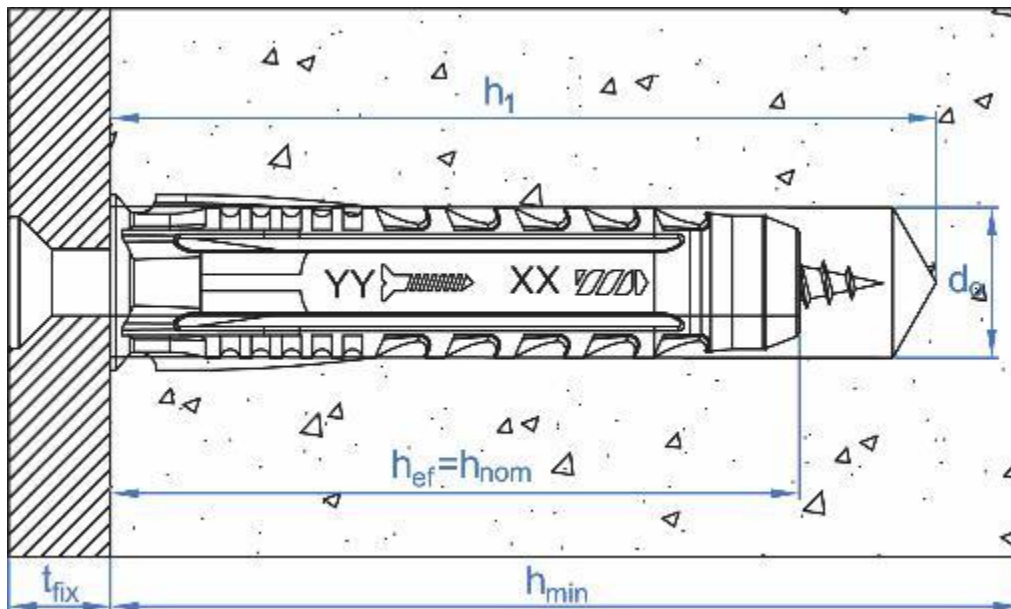
2.1 TN4S

4 Segments nylon plug



Installation data

CODE		TN4S05	TN4S06	TN4S08	TN4S10	TN4S12	TN4S14
		General dimensions	[mm] 5x25	6x30	8x40	10x50	12x60
d_0 : drill diameter	[mm]	5	6	8	10	12	14
$h_{ef} = h_{nom}$: effective depth	[mm]	25	30	40	50	60	70
h_1 : minimum drill hole depth	[mm]	30	40	50	60	70	80
Recommended screw	[mm]	TPPO 2,5-4	TPPO 3,5-5	TPPO 4-6 TB 5-6	TB 6-8	TB 8-10	TB 10-12



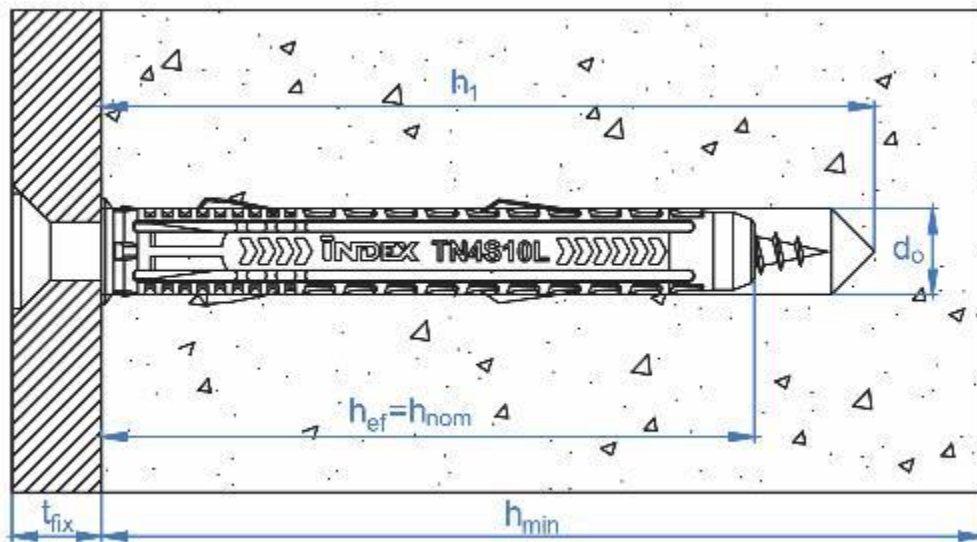
2.2 TN4S-L

4 Segments long nylon plug



Installation data

CODE		TNAS06L	TNAS08L	TNAS10L
General dimensions	[mm]	6 x 45	8 x 60	10 x 80
d _o : drill diameter	[mm]	6	8	10
h _{ef} = h _{nom} : effective depth	[mm]	45	60	80
h ₁ : minimum drill hole depth	[mm]	55	70	90
Recommended screw	[mm]	TPPO 3,5-5	TPPO 4-6 / TB 5-6	TB 6-8

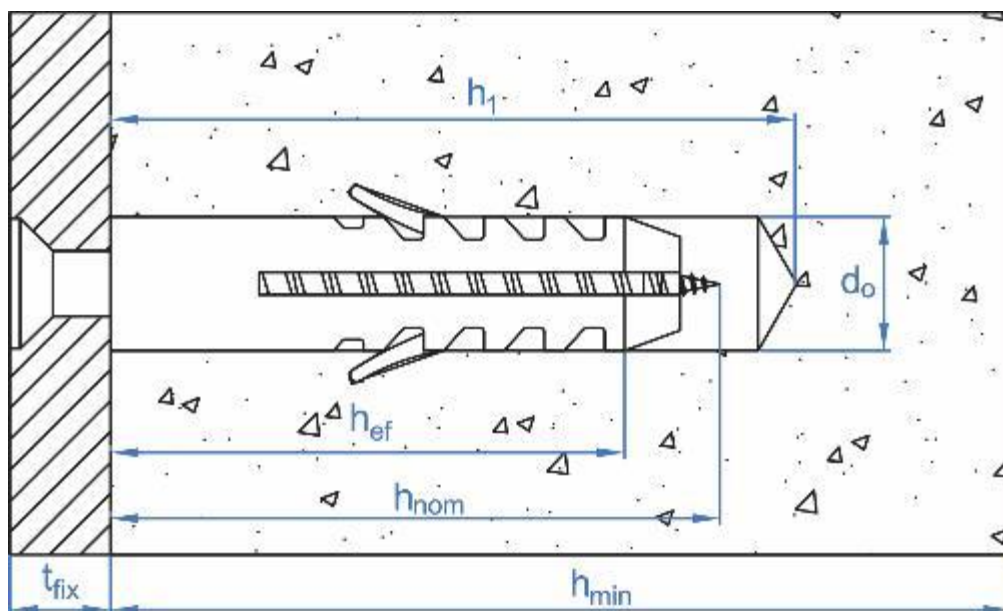


2.3 TACON Nylon plug



Installation data

CODE	[mm]	TACON04	TACON05	TACON06	TACON07	TACON08	TACON10	TACON12	TACON14	TACON16
		General dimensions	4X20	5X25	6X30	7X35	8X40	10X50	12X60	14X70
d_o : drill diameter	[mm]	4	5	6	7	8	10	12	14	16
$h_{ef} = h_{nom}$: effective depth	[mm]	20	25	30	35	40	50	60	70	80
h_1 : minimum drill hole depth	[mm]	25	35	40	40	50	65	75	90	95
Recommended screw	[mm]	TPPO 2,5-3	TPPO 2,5-4	TPPO 3,5-4	TPPO 4-4,5	TPPO 4,5 TB 5-6	TB 6-8	TB 8-10	TB 10-12	TB 12-14

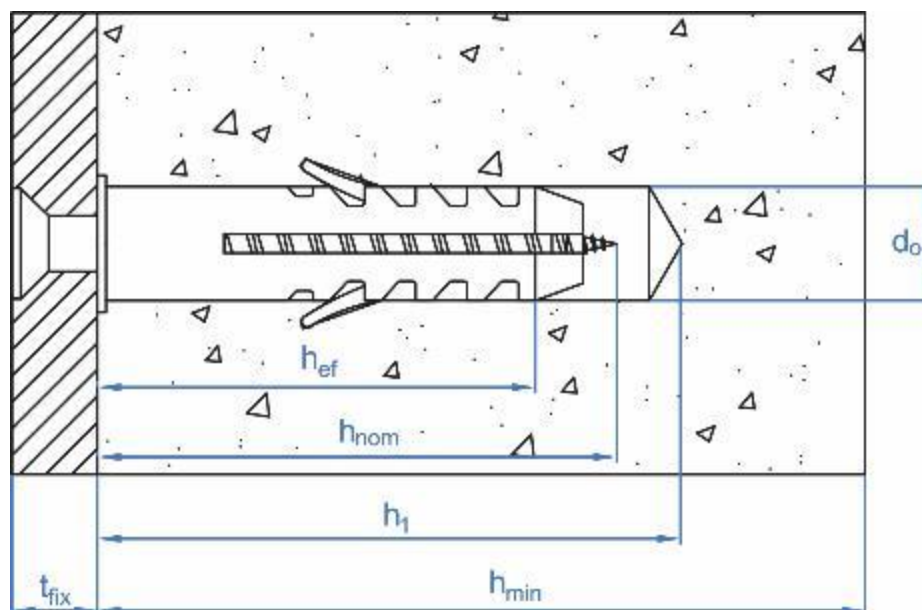


2.4 TACOL Flared lip nylon plug



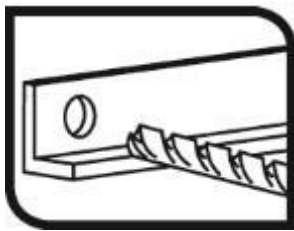
Installation data

CODE		TACOL05	TACOL06	TACOLA06	TACOL08	TACOL10	TACOL12
General dimensions	[mm]	5X25	6X30		8X40	10X50	12X60
d_o : drill diameter	[mm]	5	6	6	8	10	12
$h_{ef} = h_{nom}$: effective depth	[mm]	25	30	30	40	50	60
h_1 : minimum drill hole depth	[mm]	35	40	40	50	65	75
Recommended screw	[mm]	TPPO 2,5-4	TPPO 3,5-4	TPPO 3,5-4	TPPO 4,5 TB 5-6	TB 6-8	TB 8-10



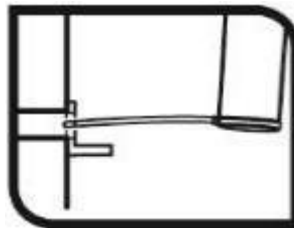
3. INSTALLATION PROCEDURE

3.1. Woodscrew installation



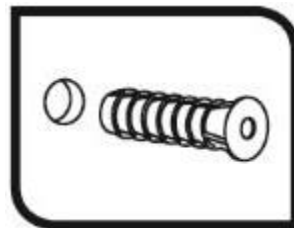
1. DRILL

Check concrete is well compacted and porosity insignificant.
 Drilling must be performed at the specified minimum depth and diameter in the previous table. Switch drill to hammer mode in case of drilling in concrete.
 In case of hollow materials do not use the hammer mode to avoid damaging the base material interior. Reduce drilling speed when we are about to finish the hole.
 Suitable for dry and wet drill holes.



2. BLOW AND CLEAN

Clean hole of dust and debris.
 Use blow-pump and cleaning brushes.

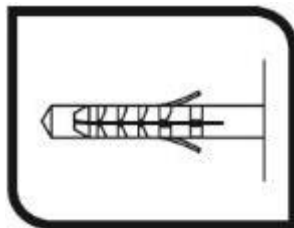


3. INSTALL

Insert the plug through base material. Have to be done till the edge, in case of having flared lip

4. APPLY TORQUE

Screw the bolt without applying an excessive tightening torque that may cause the plug to become over threaded. This is important when it comes to hollow materials, because due to the expansion of the block requires a greater number of turns of the screws.



5. INFO TO BE CONSIDERED

- For screw diameter \varnothing selection apply this approximated rule*:

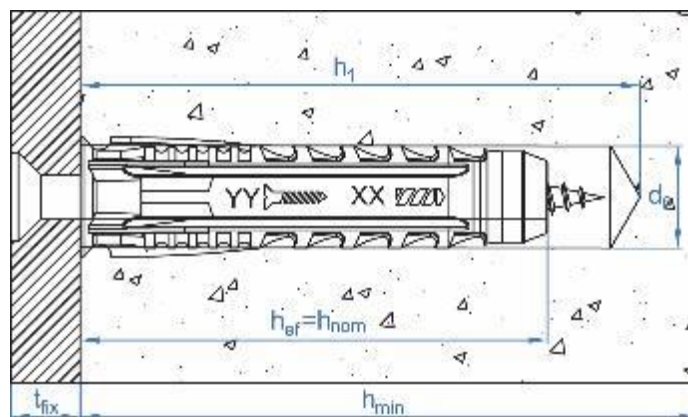
$$\varnothing_{\text{screw}} = \frac{\varnothing_{\text{plug}}}{2} + 1$$

- In order to select screw length apply this approximated rule:

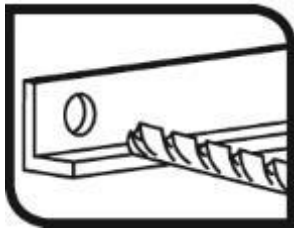
$$\text{Screw length} = t_{\text{fix}} + L + 5\text{mm}^{*}$$

*Do not apply this rule from $\geq \varnothing 12\text{mm}$ to higher diameters

**Due to the peak angle of the screw

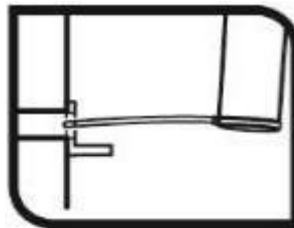


3.2. Threaded rod installation



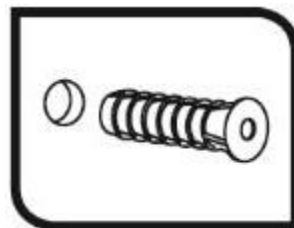
1. DRILL

Check concrete is well compacted and porosity insignificant.
 Drilling must be performed at the specified minimum depth and diameter in the previous table. Switch drill to hammer mode in case of drilling in concrete.
 In case of hollow materials do not use the hammer mode to avoid damaging the base material interior. Reduce drilling speed when we are about to finish the hole.
 Suitable for dry and wet drill holes.



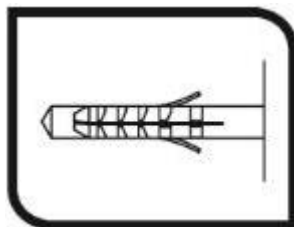
2. BLOW AND CLEAN

Clean hole of dust and debris.
 Use blow-pump and cleaning brushes.



3. INSTALL

Insert the plug through base material. Have to be done till the edge, in case of having flared lip



4. APPLY TORQUE

Screw the bolt without applying an excessive tightening torque that may cause the plug to become over threaded.
 This is important when it comes to hollow materials, because due to the expansion of the block requires a greater number of turns of the screws.

5. INFO TO BE CONSIDERED

- It is recommended to use woodscrews in order to perform correct installation. In case of using threaded rod, it is particularly recommended to do it at low revolutions and use the next metric and lengths for each nylon plug size:

PLUG	THREADED ROD	MINIMUM LENGTH [mm]
TN4S05	N/A	N/A
TN4S06/L	M4	45/60
TN4S08/L	M5	50/70
TN4S10/L	M6	65/95
TN4S12	M8	80
TN4S14	M10	90

4. RESISTANCES

The characteristic resistances in C20/25 concrete or in masonry for an isolated anchor (without spacing and edge distance effects) are specified in the following tables:

4.1. CHARACTERISTIC RESISTANCE ALL LOAD DIRECTIONS F_{Rk} [kN]

MATERIAL		NON-CRACKED CONCRETE	CRACKED CONCRETE	SOLID BRICK	HOLLOW BRICK
PLUG CODE	SCREW CODE				
TN4S05	TPPO30040	0,52	0,12	0,36	0,64
	TPPO40035	0,70	0,18	0,66	0,44
TN4S06	TPPO40040	0,50	0,13	0,44	0,36
	TPPO50040	0,82	0,24	0,58	0,52
	THREADED ROD M4	0,39	--	--	--
TN4S08	TPPO45050	1,39	0,66	2,40	0,75
	TPPO60050	4,20	1,17	3,56	0,70
	THREADED ROD M5	0,68	--	--	--
TN4S10	TB06060	3,99	0,85	3,24	1,03
	TB08060	5,69	2,34	5,51	1,64
	THREADED ROD M6	1,54	--	--	--
TN4S12	TB08070	3,71	1,41	2,14	1,81
	TB10070	9,73	4,28	3,57	1,85
	THREADED ROD M8	1,67	--	--	--
TN4S14	TB10080	6,63	3,36	3,80	2,16
	TB12080	15,53	6,99	7,68	2,57
	THREADED ROD M10	2,21	--	--	--
TN4S06L	TPPO50050	0,73	0,24	0,58	0,52
TN4S08L	TPPO60070	1,95	1,17	3,56	0,70
TN4S10L	TB08090	5,88	2,34	5,51	1,64
TACON04	TPPO30030	0,2	--	0,18	0,21
TACON05 / TACOL05	TPPO30040	0,23	--	0,25	0,45
	TPPO40035	0,49	--	0,46	0,31
TACON06 / TACOL06 TACOLA06	TPPO40040	0,35	--	0,31	0,25
	TPPO50040	0,57	--	0,41	0,36
TACON07	TPPO50045	0,38	--	0,63	0,42
TACON08 / TACOL08	TPPO45050	0,4	--	1,68	0,53
	TPPO60050	0,91	--	2,49	0,49
TACON10 / TACOL10	TB06060	2,1	--	2,27	0,72
	TB08060	4,38	--	3,86	1,15
TACON12 / TACOL12	TB08070	2,6	--	1,5	1,27
	TB10070	6,02	--	2,5	1,3
TACON14	TB10080	5,75	--	2,66	1,51
	TB12080	8,25	--	5,38	1,8
TACON16	TB14100	8,7	--	3,47	2,03

4.2. MAXIMUM LOAD RECOMMENDED ALL LOAD DIRECTIONS F_{rec} [kN]

MATERIAL		NON-CRACKED CONCRETE	CRACKED CONCRETE	SOLID BRICK	HOLLOW BRICK
PLUG CODE	SCREW CODE				
TN4S05	TPPO30040	0,15	0,03	0,1	0,18
	TPPO40035	0,2	0,05	0,19	0,13
TN4S06	TPPO40040	0,14	0,04	0,13	0,1
	TPPO50040	0,23	0,07	0,17	0,15
	THREADED ROD M4	0,15	--	--	--
TN4S08	TPPO45050	0,4	0,19	0,69	0,21
	TPPO60050	1,2	0,33	1,02	0,2
	THREADED ROD M5	0,27	--	--	--
TN4S10	TB06060	1,14	0,24	0,93	0,29
	TB08060	1,63	0,67	1,57	0,47
	THREADED ROD M6	0,61	--	--	--
TN4S12	TB08070	1,06	0,4	0,61	0,52
	TB10070	2,78	1,22	1,02	0,53
	THREADED ROD M8	0,66	--	--	--
TN4S14	TB10080	1,89	0,96	1,09	0,62
	TB12080	4,44	2	2,19	0,73
	THREADED ROD M10	0,88	--	--	--
TN4S06L	TPPO50050	0,29	0,07	0,17	0,15
TN4S08L	TPPO60070	0,78	0,33	1,02	0,2
TN4S10L	TB08090	2,35	0,67	1,57	0,47
TACON04	TPPO30030	0,06	--	0,05	0,06
TACON05 / TACOL05	TPPO30040	0,07	--	0,07	0,13
	TPPO40035	0,14	--	0,13	0,09
TACON06 / TACOL06 TACOLA06	TPPO40040	0,1	--	0,09	0,07
	TPPO50040	0,16	--	0,12	0,1
TACON07	TPPO50045	0,11	--	0,18	0,12
TACON08 / TACOL08	TPPO45050	0,11	--	0,48	0,15
	TPPO60050	0,26	--	0,71	0,14
TACON10 / TACOL10	TB06060	0,6	--	0,65	0,21
	TB08060	1,25	--	1,1	0,33
TACON12 / TACOL12	TB08070	0,74	--	0,43	0,36
	TB10070	1,72	--	0,71	0,37
TACON14	TB10080	1,64	--	0,76	0,43
	TB12080	2,36	--	1,54	0,51
TACON16	TB14100	2,49	--	0,99	0,58