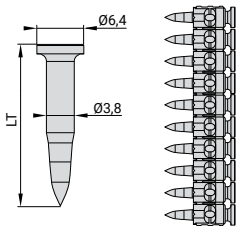
PULSA UP6

Very high performance pins, to guarantee success in hard materials

CHARACTERISTICS

Zn ZINC COATED STEEL



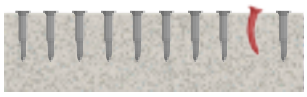
MATERIAL

- Blue collated strip
- Shank in carbon steel:
  Hardness ≥ 56 HRc
  Electrogalvanised,
  min. zinc coating 10 µm

PULSA UP6 PINS

RANGE	Length (mm) LT	Code 500 pcs BOX
UP6-17	17	057692
UP6-22	22	057693

SUCCESS RATE



	ESTIMATED RATE OF SUCCESSFUL FIXINGS Percentage of pins correctly fixed to support a load. This rate may vary according to site conditions.
Concrete C20/25	95-99%
Concrete C50/60	90-95%
Pre-stressed / Hollow concrete slab	92-95%

PULSA GAS TOOLS

PULSA P27 (95 joules)

PULSA P40P+ (100 joules)

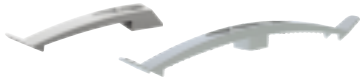
PULSA P65 (100 joules)

PULSA METAL ACCESSORIES

RANGE	DESCRIPTION	CODE	MATERIAL	FIRE RESISTANCE (1)
P-CLIP	Metal clip for fixing conduits			
	P-CLIP D.16 P-CLIP D.20 P-CLIP D.25	016988 016990 016993	Galvanised metal sheet DX51	Test report Ref. GS 6.1/22-002-1
TRH-CLIP	Metal clip to hang threaded rod (M6 & M8), chains or suspension cables (2)			
	TRH-CLIP	011430	Galvanised metal sheet DC01 Ep.1,5 mm	Test report ref. CSTB 05-158/A
METAL CABLE TIE	Right angled steel clip for installation of suspended light duty components			
	MCC-0	155721	Galvanised metal sheet S250GD	Test report Ref. GS 6.1/22-002-1
PERFORATED STRIP	Perforated metal strip for fixing conduits to the floor			
	12 x 0,8 - 10 m 17 x 0,8 - 10 m	056562 056561	Galvanised metal sheet DC01 Ep. 0,8 mm	Test report Ref. GS 6.1/22-002-1

(1) Tested in accordance with EAD 330232-01-0601 and ISO 834 fire standards.
(2) Not suitable for fixing suspended ceilings

PULSA PLASTIC ACCESSORIES

RANGE	DESCRIPTION	CODE	MATERIAL	INCANDESCENT WIRE TEST ISO CEI 695-2	INSTALLATION / WORKING TEMPERATURES
CLIPELEC	All purpose base plate for use with cable ties up to 9 mm wide for fixing conduit & cable ; Allogene free ; UV protected (black version)				
	CLIPELEC Black CLIPELEC Grey	011203 053881	Polypropylen copolymer	750°	-5°C + 35°C -30°C +55°C
MULTICLIP	Multi-purpose data & cable clip for the fast installation of specialised & standard cables using soft VELCRO™ style straps & plastic cable ties				
	Ø mini 16 Ø maxi 32	565843	Polypropylen	650°C	-5°C + 35°C -30°C +55°C
TIE-CLIP	Base plate with cable tie for fixing conduit & cable				
	Ø mini 16 Ø maxi 32	565844	Polyamid 6.6	650°C	-5°C +35°C -40°C +70°C
E-CLIP	For fast installation of RNC and rigid conduit				
	E-CLIP D.16 E-CLIP D.20 E-CLIP D.25 E-CLIP D.32	567214 565032 565033 565034	Polypropylen	650°C	-5°C + 35°C -30°C +55°C
P-CLIP	Single and double plastic base for fixing flexible water/electricity pipes				
	P-CLIP 16 P-CLIP 20 P-CLIP 25 P-CLIP 16 x 16 P-CLIP 20 x 20	567206 565082 567208 567209 565086	Polypropylen	650°C	-5°C + 35°C -30°C +60°C
CABLE BOW	Single and double bows for fixing cables to ceilings				
	S - 8 cables 3 x 1,5 D - 16 cables 3 x 1,5	565915 565916	Polyamid 6 Light grey colour	650°C	-5°C + 35°C -20°C +70°C
	S - 8 cables 3 x 1,5 FIRE D - 16 cables 3 x 1,5 FIRE	565917 565918	Polyamid 6 - GW960 Dark grey colour	960°C	

PULSA UP6

PIN SELECTION GUIDE

FIXING METAL TRACKS FOR DRYWALLERS		CONCRETE BASE MATERIAL	UP6-17	UP6-22
METAL TRACKS on floors, walls and ceilings 	Spacing between partition studs: 600 mm	C20/25	◆	◆
		C30/37 to C50/60	◆	◆
		Pre-stressed slab / Hollow concrete slab(1)	◆	◆
FIXING ACCESSORIES FOR ELECTRICIANS		**CONCRETE BASE MATERIAL**	**UP6-17**	**UP6-22**
 	Metal clip TRH-CLIP Clip MCC-O Perforated metal strip	C20/25	◆	◆
		C30/37 to C50/60	◆	◆
		Pre-stressed slab / Hollow concrete slab (1)	◆	◆
 	CLIPELEC TIE-CLIP P-CLIP MULTICLIP ECLIP Cable bow	C20/25		◆
		C30/37 to C50/60		◆
		Pre-stressed slab / Hollow concrete slab (1)		◆
VARIOUS FIXINGS		**STEEL BASE MATERIAL**	**UP6-17**	**UP6-22**
Various fixings on steel	Thickness of part to be fixed: LT - 7 mm max.	f_{uk} = 410 – 450 N/mm²	◆	◆

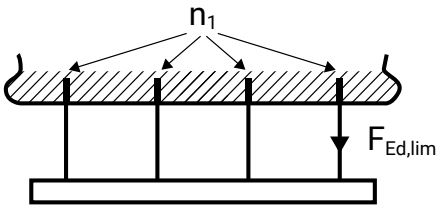
(1) Maximum embedment value to be respected to avoid damaging the prestressing reinforcement. The substrates used must comply the following embedment of the underlying concrete element pre-stressing rods: embedment greater than 17 mm in pre-stressed slabs, and 25 mm in hollow concrete slabs.

PERFORMANCES FOR NON STRUCTURAL APPLICATIONS

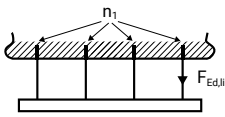
Design principle :

- **Non-structural applications**
- **Redundant systems with aligned fixing points ≥ n_1**

The principle of redundant systems allows the redistribution of loads in case of excessive slip or failure of one fastener to neighbouring fasteners: $n_1 \cdot F_{Rd} \geq F_{Ed}$

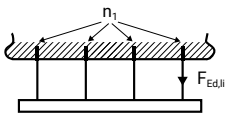


NON CRACKED CONCRETE

REDUNDANT SYSTEMS	EMBEDMENT DEPTH [mm]	CHARACTERISTIC / DESIGN RESISTANCES [kN]		ACTIONS at ULS (Ultimate Limit State) F_{Rd} [kN]			
 - $n_1 \geq 4$; $F_{Ed,lim} \leq 0,6$ kN - $n_1 \cdot F_{Rd} \geq F_{Ed}$	h_{nom}	F_{Rk}	F_{Rd}	$n_1 = 3$	$n_1 = 4$	$n_1 = 5$	$n_1 = 6$
Concrete C20/25	10 - 15 mm	0,50	0,20	0,60	0,80	1,00	1,20
Concrete C50/60	10 - 14 mm	0,73	0,30	0,88	1,17	1,46	1,75
Pre-stressed slab / Hollow concrete slab (1)	10 - 14 mm	0,92	0,37	1,10	1,47	1,84	2,21

(1) Maximum embedment value to be respected to avoid damaging the prestressing reinforcement. The substrates used must comply the following embedment of the underlying concrete element pre-stressing rods: embedment greater than 17 mm in pre-stressed slabs, and 25 mm in hollow concrete slabs

STEEL

REDUNDANT SYSTEMS		EMBEDMENT DEPTH [mm]	CHARACTERISTIC / DESIGN RESISTANCES [kN]		ACTIONS at ULS (Ultimate Limit State) F_{Rd} [kN]		
 - $n_1 \geq 3$; $F_{Ed,lim} \leq 2$ kN - $n_1 \cdot F_{Rd} \geq F_{Ed}$		h_{nom}	F_{Rk}	F_{Rd}	$n_1 = 3$	$n_1 = 4$	$n_1 = 5$
Steel base material	f_{uk} = 350-500 N/mm² Max. grade ST52/S355	6,5 mm	2,60	1,73	5,20	6,93	8,67
		7,5 mm	2,90	1,93	5,80	7,73	9,67
		8,5 mm	3,20	2,13	6,40	8,53	10,67

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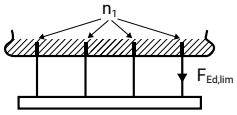
PERFORMANCE FOR LIGHT CABLE TRAY FIXINGS

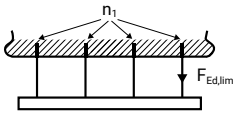
Density of fixing points:

- **Horizontal cable tray:** **0,40 m for non-reinforced cables**
  0,75 m for reinforced cables
- **Vertical cable tray:** **1,00 m for all cable types**

LIGHT-WEIGHT CABLE TRAY FIXINGS	BASE MATERIAL Concrete Pre-stressed slab / Hollow concrete slab(1)	EMBEDMENT DEPTH [mm] h_{nom}	DESIGN RESISTANCES PIN & ACCESSORY SYSTEM [kN] $F_{Rd,syst}$	ACTIONS at ULS (Ultimate Limit State) PER EACH METER LENGTH F_{Ed}/ml [kN]		
 ▪ $n_1 \geq 10$ ▪ $F_{Ed,lim} \leq 0,1$ kN/ml				S = 0,40 m	S = 0,75 m	S = 1,00 m
METAL P-CLIP D.16 to D.25	Concrete C20/25 to C50/60	10 - 15 (1) mm	0,15	0,37	0,20	0,15
CLIPELEC						
MULTICLIP						
TIE-CLIP	Concrete C20/25 to C50/60	10 - 15 (1) mm	0,035	0,087	0,045	0,035
E-CLIP						
P-CLIP SIMPLE						
P-CLIP DOUBLE						
SIMPLE CABLE BOW						
DOUBLE CABLE BOW						

(1) Maximum embedment value to be respected to avoid damaging the prestressing reinforcement. The substrates used must comply the following embedment of the underlying concrete element pre-stressing rods: embedment greater than 17 mm in pre-stressed slabs, and 25 mm in hollow concrete slabs.

SECURING CEILING LIGHTS

LIGHT FIXINGS, SECURING CEILING LIGHTS	BASE MATERIAL Concrete Pre-stressed slab / Hollow concrete slab (1)	EMBEDMENT DEPTH [mm] h_{nom}	DESIGN RESISTANCES PIN & ACCESSORY SYSTEM [kN] $F_{Rd,syst}$
 ▪ $n_1 \geq 10$ ▪ $F_{Ed,lim} \leq 0,1$ kN/ml			
MCC-O	Concrete C20/25 to C50/60	10 - 15 (1) mm	0,30
TRH-CLIP			

(1) Maximum embedment value to be respected to avoid damaging the prestressing reinforcement. The substrates used must comply the following embedment of the underlying concrete element pre-stressing rods: embedment greater than 17 mm in pre-stressed slabs, and 25 mm in hollow concrete slabs.