

FIXING SYSTEMS - EDILMATIC ANCHOR CHANNELS

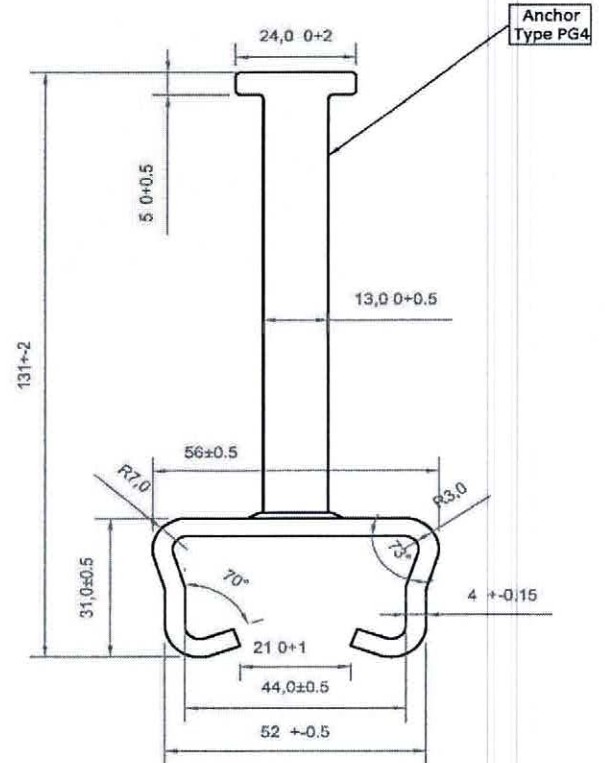
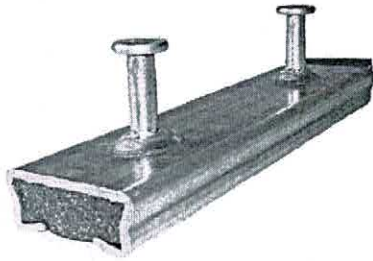


ANCHOR CHANNEL TYPE:

GM

SIZE (in mm):

57 x 31 x 4



PRICES for CUT DOWN SIZES

HOT-DIP GALVANIZED		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGM15P1ZC	15	2	
SGM20P1ZC	20	2	
SGM25P1ZC	25	2	
SGM30P1ZC	30	2	
SGM37P1ZC	37,5	3	
SGM40P1ZC	40	3	
SGM50P1ZC	50	3	
SGM75P1ZC	75	5	
SGM100P1ZC	100	6	

*HDG (coating ≥ 50 μm)

HOT-DIP GALVANIZED		Toothed Version	
Code	Lenght (cm)	N° Pegs	Price
SGM15P1ZCD	15	2	
SGM20P1ZCD	20	2	
SGM25P1ZCD	25	2	
SGM30P1ZCD	30	2	
SGM37P1ZCD	37,5	3	
SGM40P1ZCD	40	3	
SGM50P1ZCD	50	3	
SGM75P1ZCD	75	5	
SGM100P1ZCD	100	6	

*HDG (coating ≥ 50 μm)

STAINLESS STEEL		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGM15P1I	15	2	
SGM20P1I	20	2	
SGM25P1I	25	2	
SGM30P1I	30	2	
SGM37P1I	37,5	3	
SGM40P1I	40	3	
SGM50P1I	50	3	
SGM75P1I	75	5	
SGM100P1I	100	6	

*Stainless Steel A4

JOINT HOT-DIP GALVANIZED		
Code	FOR ANCHOR CHANNEL	Price
GA44ZC	TYPE GM - GE	
GA34ZC	TYPE GD	

FIXING SYSTEMS - EDILMATIC ANCHOR CHANNELS

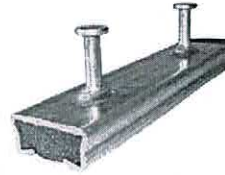


ANCHOR CHANNEL TYPE:

GM

SIZE (in mm):

57 x 31 x 4

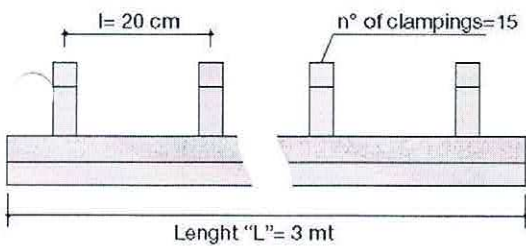


PRICES for 3 mt BARS (Standard measure)

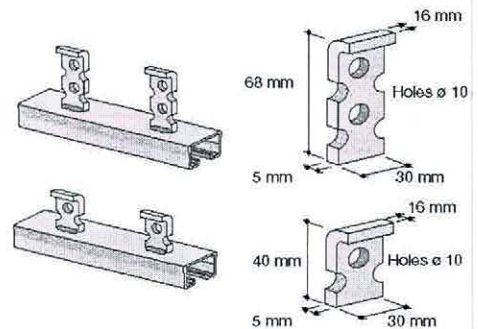
HOT-DIP GALVANIZED		Standard Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGM320P1ZC	300	With Pegs each 20 cm	With Pol.	
PGM3LZC	300	Smooth	With Pol.	
PGMLZCSP	300	Smooth	No Pol.	
PGM320Z1ZC	300	With welded clamps each 20 cm	With Pol.	

HOT-DIP GALVANIZED		Toothed Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGM320P1ZCD	300	With Pegs each 20 cm	With Pol.	
PGM320Z1ZCD	300	With welded clamps each 20 cm	With Pol.	

Picture 1: distance from clampings on 3 mt bars



Picture 2: indication of welded clamps on GM Anchor Channel



FIXING SYSTEMS - EDILMATIC ANCHOR CHANNELS

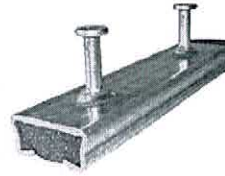


ANCHOR CHANNEL TYPE:

GE

SIZE (in mm):

56 x 30 x 3,3



PRICES for 3 mt BARS (Standard measure)

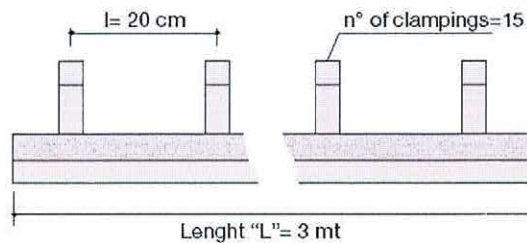
HOT-DIP GALVANIZED		Standard Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGE320P1ZC	300	With Pegs each 20 cm	With Pol.	
PGE3LZC	300	Smooth	With Pol.	
PGE3LZCSP	300	Smooth	No Pol.	

*HDG (coating ≥ 5)

HOT-DIP GALVANIZED		Toothed Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGE320P1ZCD	300	With Pegs each 20 cm	With Pol.	

*HDG (coating ≥ 5)

Picture 3: distance from clampings (Pegs) on 3 mt bars



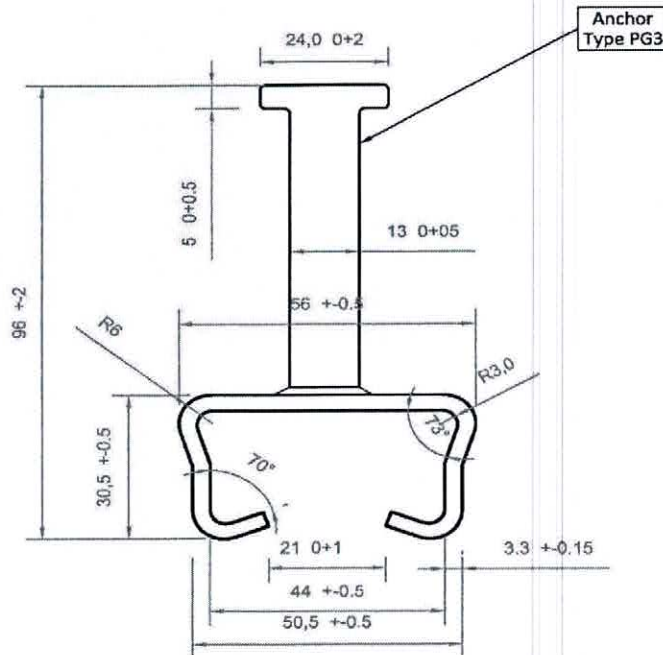


ANCHOR CHANNEL TYPE:

GE

SIZE (in mm):

56 x 30 x 3,3



PRICES for CUT DOWN SIZES

HOT-DIP GALVANIZED		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGE15P1ZC	15	2	
SGE20P1ZC	20	2	
SGE25P1ZC	25	2	
SGE30P1ZC	30	2	
SGE37P1ZC	37,5	3	
SGE40P1ZC	40	3	
SGE50P1ZC	50	3	
SGE75P1ZC	75	5	
SGE100P1ZC	100	6	

*HDG (coating ≥ 50 μm)

STAINLESS STEEL		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGE15P1I	15	2	
SGE20P1I	20	2	
SGE25P1I	25	2	
SGE30P1I	30	2	
SGE37P1I	37,5	3	
SGE40P1I	40	3	
SGE50P1I	50	3	
SGE75P1I	75	5	
SGE100P1I	100	6	

*Stainless Steel A4

HOT-DIP GALVANIZED		Toothed Version	
Code	Lenght (cm)	N° Pegs	Price
SGE15P1ZCD	15	2	
SGE20P1ZCD	20	2	
SGE25P1ZCD	25	2	
SGE30P1ZCD	30	2	
SGE37P1ZCD	37,5	3	
SGE40P1ZCD	40	3	
SGE50P1ZCD	50	3	
SGE75P1ZCD	75	5	
SGE100P1ZCD	100	6	

*HDG (coating ≥ 50 μm)

FIXING SYSTEMS - EDILMATIC ANCHOR CHANNELS

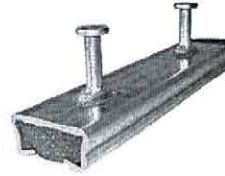


ANCHOR CHANNEL TYPE:

GD

SIZE (in mm):

46 x 25 x 2,5



PRICES for 3 mt BARS (Standard measure)

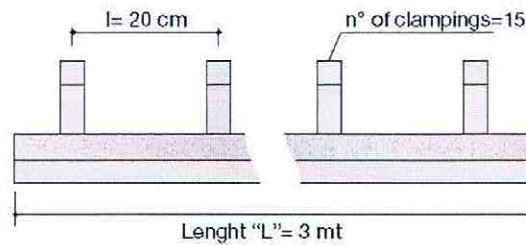
HOT-DIP GALVANIZED		Standard Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGD320P1ZC	300	With Pegs each 20 cm	With Pol.	
PGD3LZC	300	Smooth	With Pol.	
PGD3LZCSP	300	Smooth	No Pol.	

*HDG (coating $\geq 50 \mu\text{m}$)

HOT-DIP GALVANIZED		Toothed Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGD320P1ZCD	300	With Pegs each 20 cm	With Pol.	

*HDG (coating $\geq 50 \mu\text{m}$)

Picture 4: distance from clampings (Pegs) on 3 mt bars



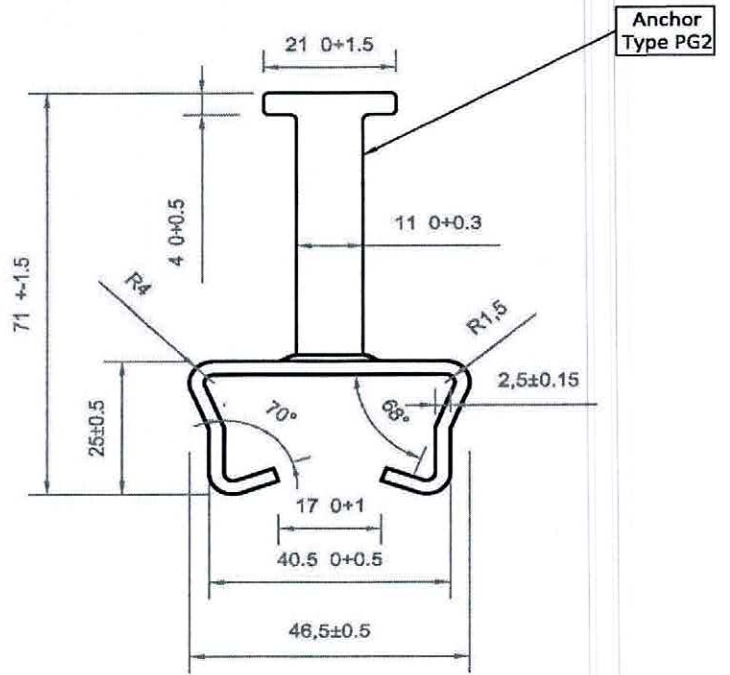
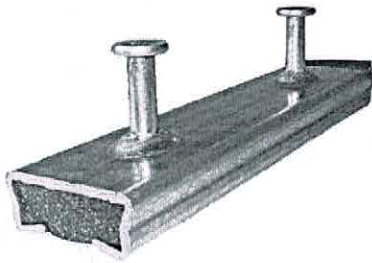


ANCHOR CHANNEL TYPE:

GD

SIZE (in mm):

46 x 25 x 2,5



PRICES for CUT DOWN SIZES

HOT-DIP GALVANIZED		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGD15P1ZC	15	2	
SGD20P1ZC	20	2	
SGD25P1ZC	25	2	
SGD30P1ZC	30	2	
SGD37P1ZC	37,5	3	
SGD40P1ZC	40	3	
SGD50P1ZC	50	3	
SGD75P1ZC	75	5	
SGD100P1ZC	100	6	

*HDG (coating ≥ 50 µm)

STAINLESS STEEL		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGD15P1I	15	2	
SGD20P1I	20	2	
SGD25P1I	25	2	
SGD30P1I	30	2	
SGD37P1I	37,5	3	
SGD40P1I	40	3	
SGD50P1I	50	3	
SGD75P1I	75	5	
SGD100P1I	100	6	

*Stainless Steel A4

HOT-DIP GALVANIZED		Toothed Version	
Code	Lenght (cm)	N° Pegs	Price
SGD15P1ZCD	15	2	
SGD20P1ZCD	20	2	
SGD25P1ZCD	25	2	
SGD30P1ZCD	30	2	
SGD37P1ZCD	37,5	3	
SGD40P1ZCD	40	3	
SGD50P1ZCD	50	3	
SGD75P1ZCD	75	5	
SGD100P1ZCD	100	6	

*HDG (coating ≥ 50 µm)

FIXING SYSTEMS - EDILMATIC ANCHOR CHANNELS



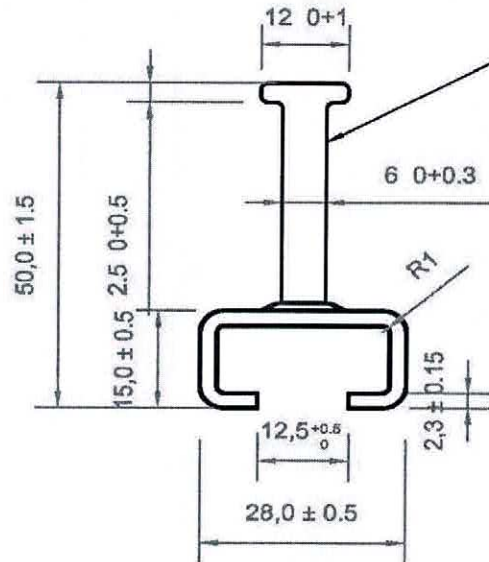
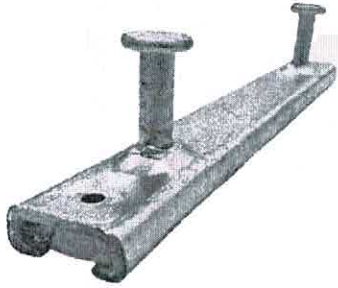
ANCHOR CHANNEL TYPE:

GF

SIZE (in mm):

28 x 15 x 2,3

Anchor Type PG1



PRICES for CUT DOWN SIZES

HOT-DIP GALVANIZED		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGF15P1ZC	15	2	
SGF20P1ZC	20	2	
SGF25P1ZC	25	2	
SGF30P1ZC	30	2	
SGF37P1ZC	37,5	3	
SGF40P1ZC	40	3	
SGF50P1ZC	50	3	
SGF75P1ZC	75	5	
SGF100P1ZC	100	6	

*HDG (coating $\geq 50 \mu\text{m}$)

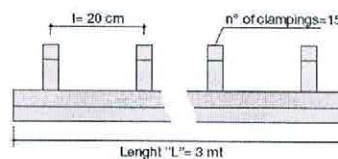
STAINLESS STEEL		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGF15P1I	15	2	
SGF20P1I	20	2	
SGF25P1I	25	2	
SGF30P1I	30	2	
SGF37P1I	37,5	3	
SGF40P1I	40	3	
SGF50P1I	50	3	
SGF75P1I	75	5	
SGF100P1I	100	6	

*Stainless Steel A4

PRICES for 3 mt BARS (Standard measure)

HOT-DIP GALVANIZED		Standard Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGF320P1ZC	300	With Pegs each 20 cm	With Pol.	
PGF3LZC	300	Smooth	With Pol.	
PGF3LZCSP	300	Smooth	No Pol.	

*HDG (coating $\geq 50 \mu\text{m}$)



FIXING SYSTEMS - EDILMATIC ANCHOR CHANNELS

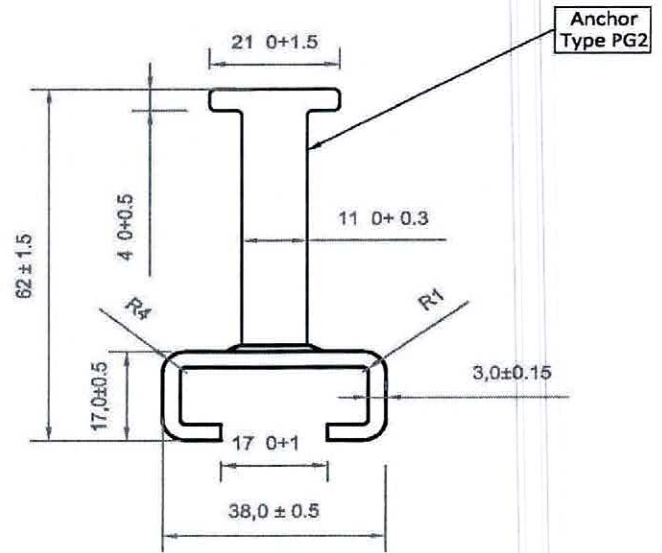
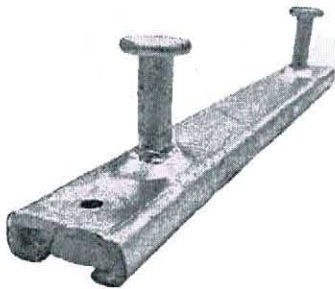


ANCHOR CHANNEL TYPE:

GI

SIZE (in mm):

38 x 17 x 3



PRICES for CUT DOWN SIZES

HOT-DIP GALVANIZED		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGI15P1ZC	15	2	
SGI20P1ZC	20	2	
SGI25P1ZC	25	2	
SGI30P1ZC	30	2	
SGI37P1ZC	37,5	3	
SGI40P1ZC	40	3	
SGI50P1ZC	50	3	
SGI75P1ZC	75	5	
SGI100P1ZC	100	6	

*HDG (coating $\geq 50 \mu\text{m}$)

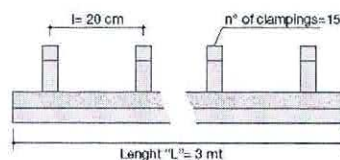
STAINLESS STEEL		Standard Version	
Code	Lenght (cm)	N° Pegs	Price
SGI15P1I	15	2	
SGI20P1I	20	2	
SGI25P1I	25	2	
SGI30P1I	30	2	
SGI37P1I	37,5	3	
SGI40P1I	40	3	
SGI50P1I	50	3	
SGI75P1I	75	5	
SGI100P1I	100	6	

*Stainless Steel A4

PRICES for 3 mt BARS (Standard measure)

HOT-DIP GALVANIZED		Standard Version		
Code	Lenght (cm)	Version	Polyurethane	Price/mt
PGI320P1ZC	300	With Pegs each 20 cm	With Pol.	
PGI3LZC	300	Smooth	With Pol.	
PGI3LZCSP	300	Smooth	No Pol.	

*HDG (coating $\geq 50 \mu\text{m}$)



Profile - Special Hollow Profiles

TOOTHED HOLLOW PROFILE

GENERAL FEATURES

The new approach to design in seismic zones as for structural connections with prefabricated elements often requires the complete locking of the connection elements in all possible movement directions.

To solve these problems EDILMATIC offers a new and innovative hollow profile type equipped with "toothing" on the cleats, that, thanks to the use of an ANTISLIDING JOINT, enables to stop the elements completely during their assembly, in all 3 orthogonal directions.

The **TOOTHED HOLLOW PROFILE** is identical in form and dimension to the standard profiles of the EDILMATIC range.

On request, we supply a toothing on the whole useful surface of the cleats, for the "anti sliding" version.

The toothed **ANTISLIDING JOINT** matches very well with the hollow profile and the resulting joint prevents the bolt, which had been previously inserted in the profile, to slide on its longitudinal axis.

The joint is equipped with 2 side cleats having an "antirotating" effect on the bolt, they prevent it from rotating, in case the coupling loosens.

The **TOOTHED HOLLOW PROFILE** is available in 3 different hollow profile types with 3 different available clampings (P1 pegs, S1 brackets e Z1 clamps) and 2 anti sliding joint models depending on the useful capacity.

The materials used for the toothed hollow profiles are the same used for the standard types (S280GD UNI EN 10346). The toothed profiles are available with the same finishings of the standard profiles.

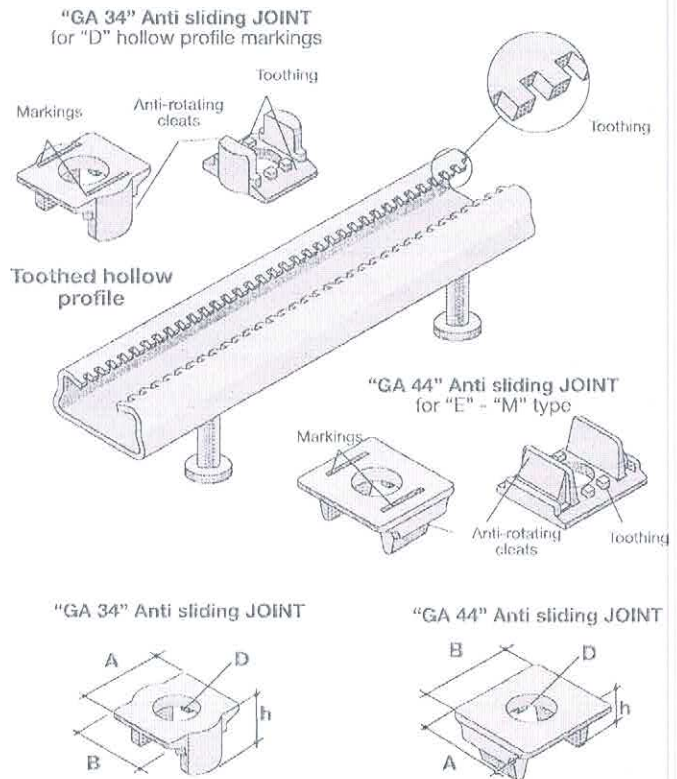
The Anti sliding joints are made of S355JR steel and are delivered white zinc-plated with UNI EN ISO 2081 cold electrolytic zinc-plating.

On request the joints can be delivered in AISI 304 STAINLESS STEEL and/or with hot zinc-plating.

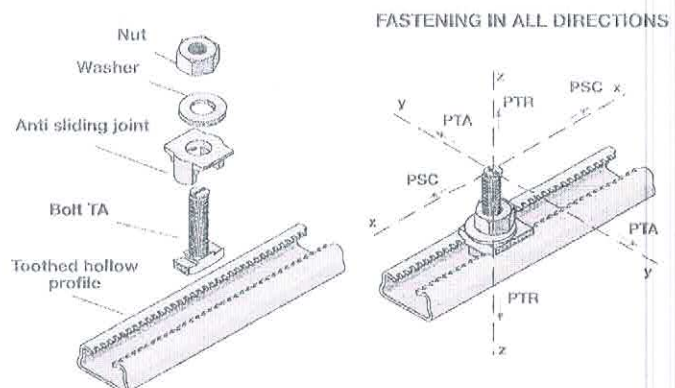
On every joint, in the top part, you will find the lot code with the indication of the casting number, month is production and year and the EDILMATIC acronym as quality guarantee of the delivered product.

Joint Type	Material	Characteristics	Finishing
GA 34 (for D type)	S355JR (UNI EN 10025)	Break (N/mm ²)= 491	Cold zinc-plating (White) UNI EN ISO 2081
GA 44 (for E-M type)		Yield (N/mm ²)= 491 A% (max)= 30	Stainless steel AISI 304 Hot zinc-plating (dip) UNI EN ISO 1461

The testing certificates for the RAW MATERIAL are available on request



Toothed profile type	Joint type	Joint sizes		
		a x b	h	D
Type D profile (46x22x2.5)	GA 34	(34x35)	18	16
Type E profile (59x27x3.3)	GA 44	(44x36)	20	20
Type M profile (60x31x4)	GA 44	(44x36)	20	20



Profile - Special Hollow Profiles

TOOTHED HOLLOW PROFILE

SLIDING LOADS and COMBINED LOADS

The toothed hollow profiles are available for hollow profiles of the "E", "D" and "M" type with S1/S2 brackets, with P1 pegs and Z1 clamps (only the "M" type), see Page 21.

The instructions for the max tensile (PTR) and cutting (PTA) applicable loads are identical to the ones indicated for the 3 profile types in the catalogue, the same norms have to be complied with as for the distances from the borders, concrete classes and distances between centres of applied loads. Such **cutting and tensile values** have been tested in a lab by means of specific tests with loads applied using the **anti sliding joint**.

In case you use toothed profile for cutting and/or tensile (and not sliding) applications, the use of the **anti sliding joint** is always compulsory; otherwise, the indicated max. capacities are not guaranteed.

In the sliding applications with anti sliding joints, the toothed profiles capacities change according to the used profile and joint type.

In the table you'll find the allowed sliding capacities for the 3 profile types with the 3 available clamping types, with reference to the suitable anti sliding joint type.

In applications with combined loads it is possible to have more load components at one time:

Sliding + tensile loads

Sliding + cutting loads

Sliding + cutting + tensile load

In such cases the single max. loads cannot be considered, but it is also necessary to determine the influence of every single load component on the corresponding allowed load.

The test formula to apply considering all 3 possible capacity components is the following:

$$\left(\frac{PTR_{eff}}{PTR_{amm}}\right) + \left(\frac{PTA_{eff}}{PTA_{amm}}\right) + \left(\frac{PSC_{eff}}{PSC_{amm}}\right) \leq 1 \text{where}$$

PTR_{amm} = Tensile allowed capacity (PTR_{max})

PTR_{eff} = Tensile applied load

PTA_{amm} = Cutting allowed capacity (PTA_{max})

PTA_{eff} = Cutting applied load

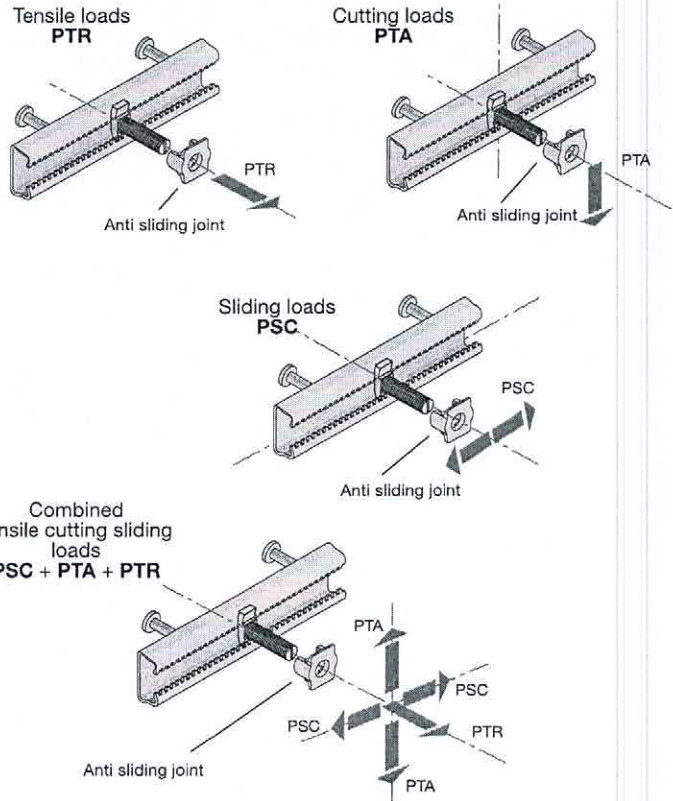
PSC_{amm} = Sliding allowed capacity (PSC_{max})

PTR_{eff} = sliding applied load

In the table you find a summary of the **allowed max loads** for the 3 profile types in the standard use configurations with reference to the one point cutting, tensile and sliding loads. For other load configurations refer to the allowed values indicated in the catalogue.

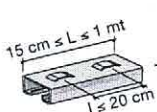
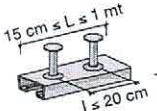
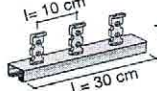
For applications requiring a sliding along the longitudinal profile axis (thermal expansions - settlements) there are special **ACCESSORIES** such as antilock shims.

(Ref. page 32).



The load values shown in the table have to be considered with a compulsory use of the anti sliding joint and with concrete where $R_{ck} > 25N/mm^2$



with S1 brackets	PROFILE TYPE	TENSILE	CUTTING	SLIDING
	Type D profile (46x22x2.5) GA 34 joint	PTR max 11 kN	PTA max 13 kN	PSC max 13 kN
	Type E profile (59x27x3.3) GA 44 joint	PTR max 16 kN	PTA max 16 kN	PSC max 16 kN
with P1 pegs - Z1 clamps	PROFILE TYPE	TENSILE	CUTTING	SLIDING
	Type D profile (46x22x2.5) GA 34 joint	PTR max 13 kN	PTA max 13 kN	PSC max 13 kN
	Type E profile (59x27x3.3) GA 44 joint	PTR max 17 kN	PTA max 17 kN	PSC max 17 kN
	Type M profile (60x31x4) GA 44 joint	PTR max 32 kN	PTA max 32 kN	PSC max 19 kN

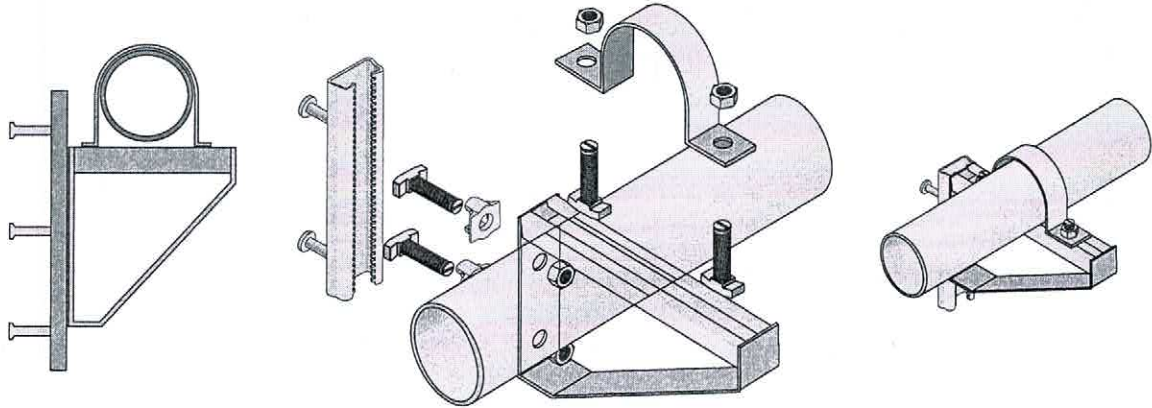
Profile - Special Hollow Profiles

TOOTHED HOLLOW PROFILE

APPLICATION EXAMPLES

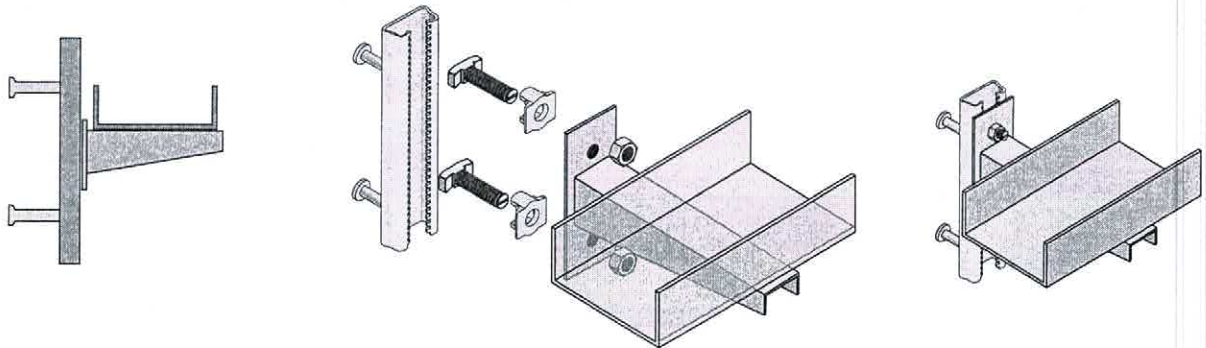
Example 1

TOOTHED PROFILES with **ANTISLIDING JOINTS** for the assembly of industrial accessories such as heating lines with EDILMATIC bolts and special profiles.



Example 2

TOOTHED PROFILES with **ANTISLIDING JOINTS** for the assembly of plant engineering accessories such as cables holder pipe and brackets for the electrical systems, using EDILMATIC bolts.

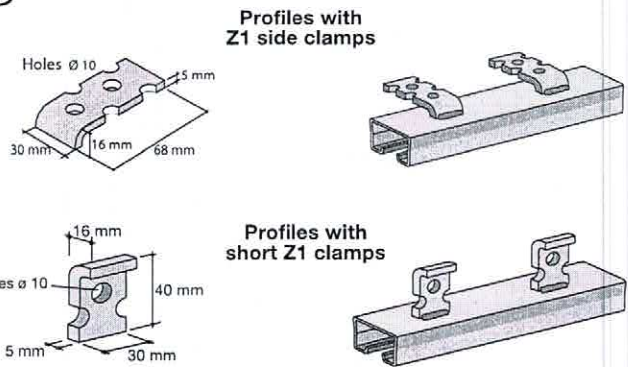


Profiles with Z1 welded clamps

SPECIAL APPLICATIONS

THE PROFILES WITH WELDED Z1 CLAMPS are a special production available for the hollow profiles type "M" - "E" - "D" - "H" in all standard lengths (in cut down sizes and/or 3m bars), as shown in the catalogue.

For special applications, with particularly thin elements in CLS and/or of very low thickness, 2 special Z1 clamps are available, the **short Z1 Clamp** and the **side Z1 Clamp**, which can be attached on the corresponding profiles; they have very small dimensions and quite high static performances (useful capacities), considering the small thicknesses in which they will be placed.

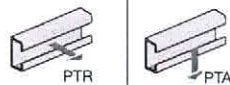


SIDE Z1 CLAMP

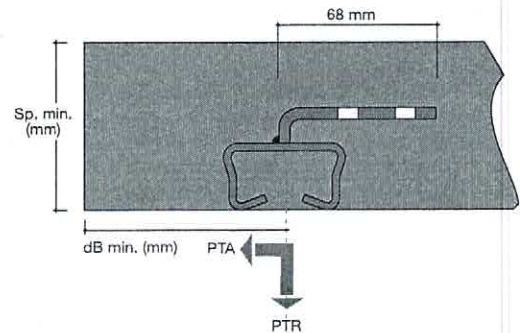
The hollow profiles with Z1 clamp are suitable for applications in very thin elements possibly under only retention loads.

The max. loads applicable refer to a concrete with $R_{cK} < 25 \text{ N/mm}^2$. For concrete of lower classes it should be planned additional reinforcing structures.

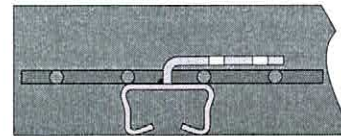
The maximum applicable loads, shown in the table, refer to a concrete with $R_{cK} \geq 25 \text{ N/mm}^2$



Profile Type	Sp min. (mm)	dB min. (mm)	Pmax TENSILE (kN)	Pmax CUTTING (kN)
Type H profile (42x20x2.5)	50	80	PTR max 8 kN	PTA max 8 kN
Type D profile (46x22x2.5)	60	80	PTR max 9 kN	PTA max 9 kN
Type E profile (58x31x3)	80	100	PTR max 10 kN	PTA max 10 kN



Additional reinforcing structure (bars and/or electro-welded net) with concrete with $R_{cK} < 25 \text{ N/mm}^2$



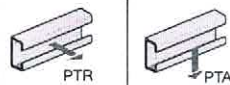
SHORT Z1 CLAMP

The hollow profiles with short Z1 clamps are suitable for applications in thin elements which can be used also as anchoring elements.

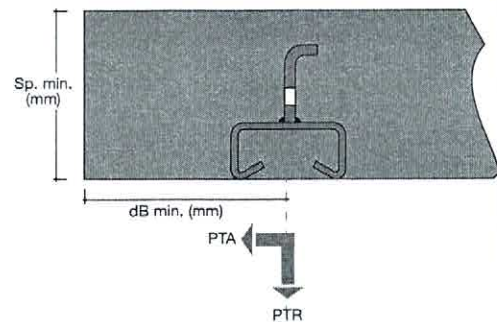
The max. applicable loads refer to a concrete with $R_{cK} < 25 \text{ N/mm}^2$

For concrete of lower classes it should be planned additional reinforcing structures.

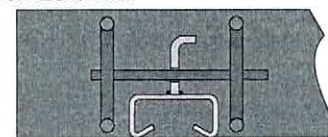
The maximum applicable loads, shown in the table, refer to a concrete with $R_{cK} \geq 25 \text{ N/mm}^2$



Profile Type	Sp min. (mm)	dB min. (mm)	Pmax TENSILE (kN)	Pmax CUTTING (kN)
Type H profile (42x20x2.5)	80	80	PTR max 9 kN	PTA max 9 kN
Type D profile (46x22x2.5)	90	90	PTR max 10 kN	PTA max 10 kN
Type E profile (58x31x3)	100	100	PTR max 11 kN	PTA max 11 kN



Additional reinforcing structure (bar and/or stirrups) with concrete with $R_{cK} < 25 \text{ N/mm}^2$



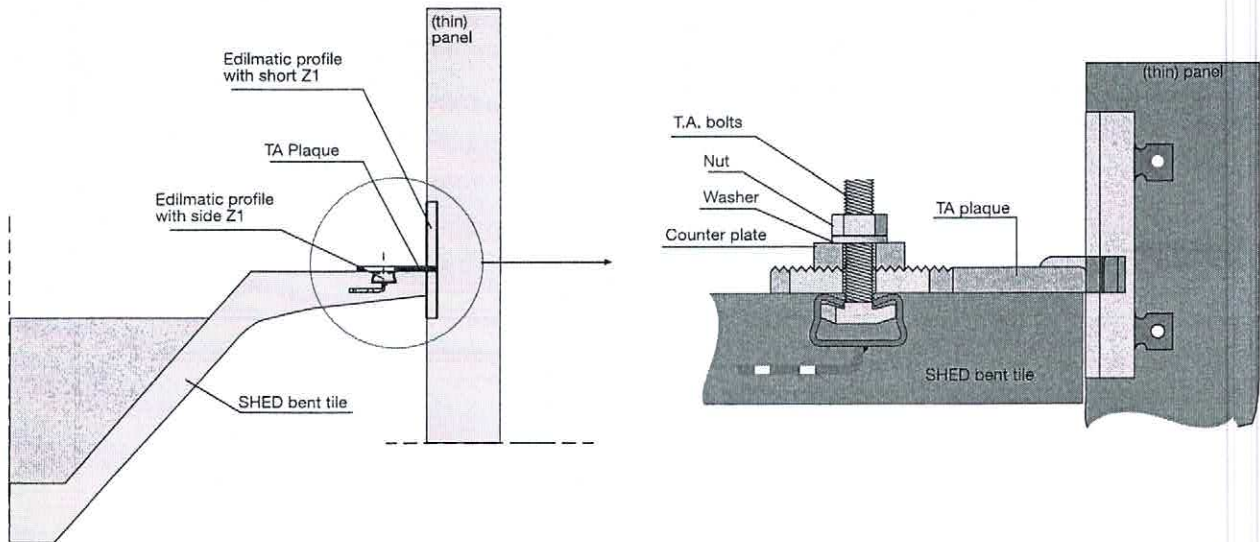
Profiles with Z1 welded clamps

SPECIAL APPLICATIONS

APPLICATION EXAMPLES

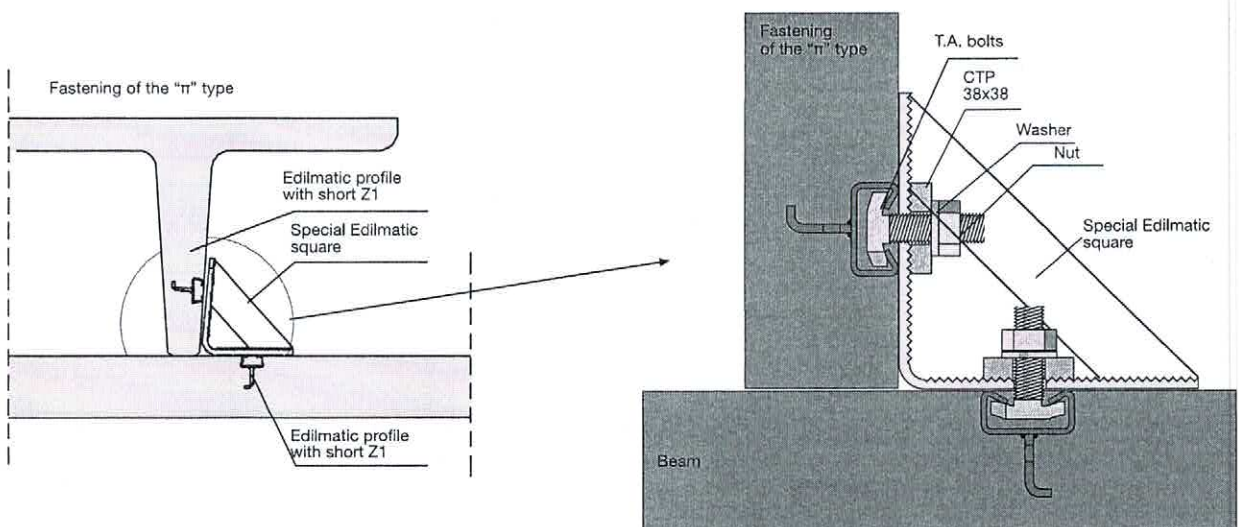
EXAMPLES 1

Retention of thin SHED bent tile covering panels in the cleat area with TA Plaques and Edilmatic accessories



EXAMPLES 2

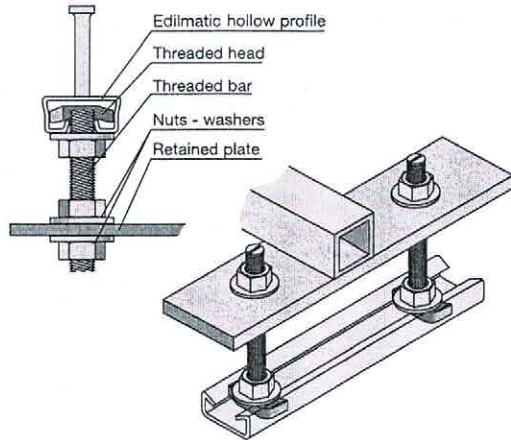
Fastening of the "π" type covering bent tile to the beam in the rib area with Edilmatic squares and accessories.



Special Accessories

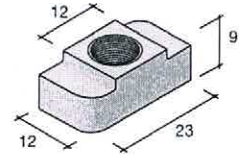
SPECIAL BOLTS

Threaded heads M8 - M10 - Class 8.8



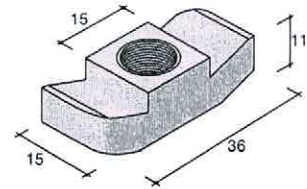
M8 HAMMER HEAD

In STEEL C21B
UNI 7356-74
Class 8.8
zinc-plated

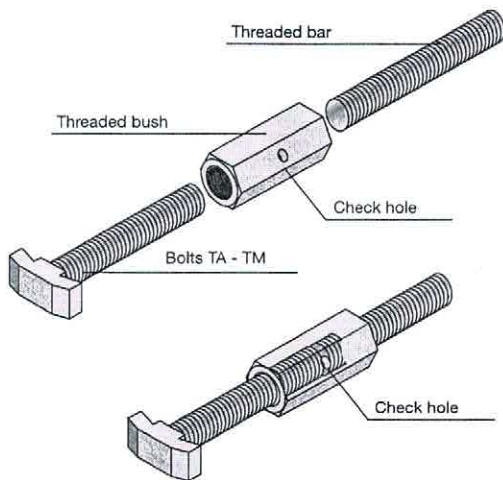


M10 HOOK HEAD

In 30MnB3
UNI EN 10083-3 STEEL
Class 8.8
zinc-plated



Hexagonal union bushes

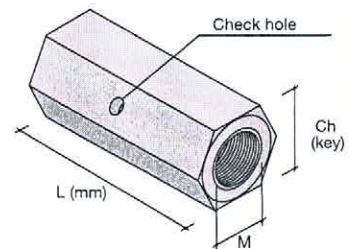


In case there's a request of (TA-TM) with lengths over the ones shown in the catalogue, it is possible to stretch them using a **union bush** and threaded bars of the right length to reach the useful length required.

In case of applications with hollow profiles, the allowed max. load depends on the used profile.

The allowed max. load you find in the table refers to the single parts.

The components must be screwed up for about the half of the bush length; the correct position can be seen through the **Control hole** on the bush side.



Material:

PS113 - CF9 SMnPb36
UNI EN 10087 - DIN 1651-88

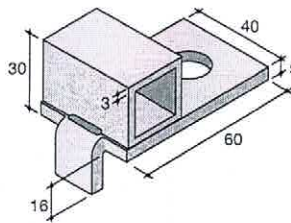
Thread (M)	L (mm)	Ch (mm)	Max load (kN)
M10	30	17	13
M12	30	19	19
M14	35	22	27
M16	35	24	36

The testing certificates for the RAW MATERIAL are available on request.

Special Accessories

REGULATION TUBULAR PLAQUE

The regulation **tubular plaque** is a simple and easy application accessory which has been designed to enable an easy regulation of the retention distance of concrete elements. It can be used with hollow profiles, bolts and standard accessories of the **Edilmatic** range.



The **tubular plaque** is made of steel **S235JR** and is delivered with yellow cold electrolytic zinc-plating (UNI ISO 2081)

On request they can be delivered with hot zinc-plating (UNI EN ISO 1461 - Sp.min.= 50 micron).

APPLICATIONS

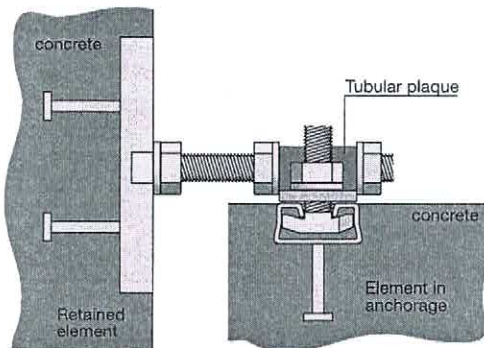
Type Bolt	Type Profile	Applicable load (kN)
TA M14 Bolts	H	10
	H30	12
	D	13
TA M16 Bolts	E	16
	M	16

The particular tubular plaque form enables in some special cases to match 2 different hollow profile types

Ex:
 "E" PROFILE TYPE retained with bolt M16
 "D" PROFILES TYPE in anchorage with bolt M14

The bolts and washers which can be used belong to the standard EDILMATIC products range. The max. allowed load applicable to the system refers to the max. load of the profile used in the **RETAINED** element.

ASSEMBLY AND ACCESSORIES



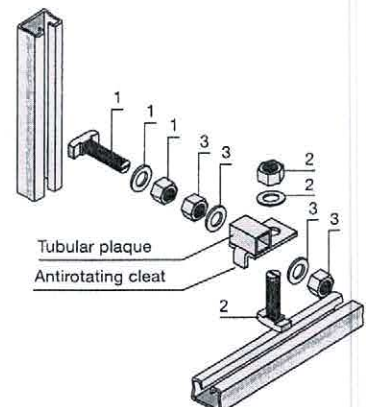
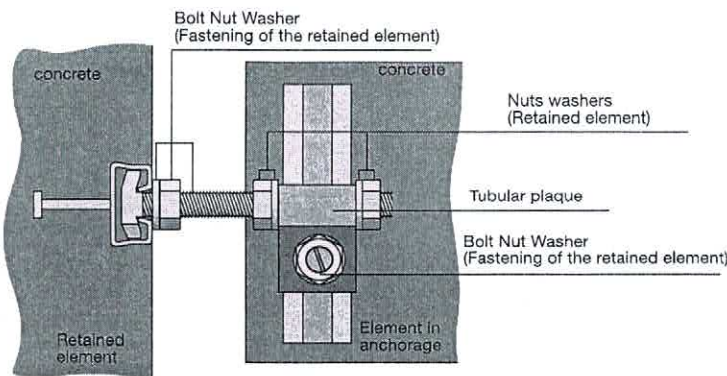
The **SYSTEM** consists of a central body, e.g., a "**TUBULAR PLAQUE**" which has to be fastened (by means of bolts and nuts) to the profile in the anchoring element and of a bolt of the right length to fasten to the retaining element profile and to insert in the joint.

By means of the 2 nuts next to the joint we regulate the retention distance.

The cleat in the **PLAQUE** lower part avoid the rotation of the piece.

ACCESSORIES FOR ANCHORAGE

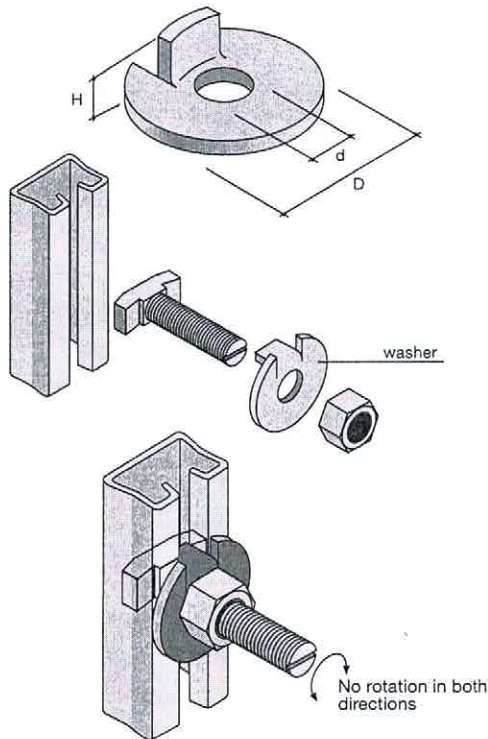
- 1 - Washer nut bolt for the retained element
- 2 - Washer nut bolt for anchorage element
- 3 - Nuts and washers for the fastening between the bolt and the plaque (1)



Special Accessories

ANTIROTATING WASHER ANTILOCK SHIM

ANTIROTATING WASHER



The **ANTIROTATING WASHER** has been developed to guarantee more safety in the fastening of the TA Bolts to the hollow profiles.

Their particular shape prevents the bolts rotation in both directions and the possibility of the connections failure in case the fastening nuts loosens.

It is made of S235JR steel and is delivered with cold yellow electrolytic zinc-plating (UNI EN ISO 2081).

We have 2 models available: for TA M14 and TA M16 BOLTS.

It can be matched also with the **ANTILOCK SHIM**

SIZE

for bolts type	D (mm)	d (mm)	H (mm)
M14	45	14.5	17
M16	52	16.5	21

ANTILOCK SHIM

For particular applications the **ANTIROTATING WASHER** can be matched to the **ANTILOCK SHIM**.

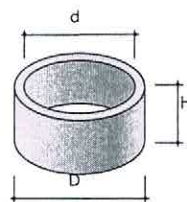
The specific function of the **ANTILOCK SHIM** is to enable the bolts fastening inside the profile, but also to prevent their fastening on the cleats and enable the shim to slide diagonally inside the profile (along the profile lying axis) for the whole available length.

Using the 2 accessories at the same time, the bolt can slide inside the profile but cannot rotate and come out of the profile.

It can be delivered in 2 models :
for TA M14 and TA M16 bolts.

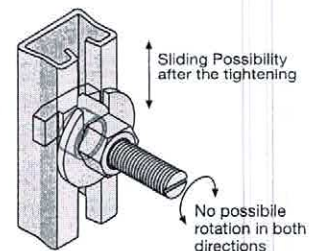
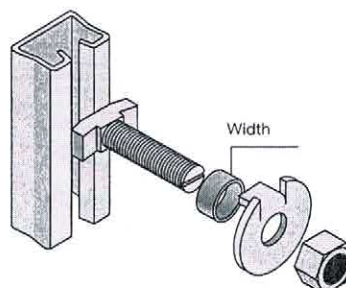
It is made of S235JR steel and is delivered with yellow cold electrolytic zinc-plating (UNI EN ISO 2081).

The use of the antilock shim does not change the functional and max. load features of the systems on which it is used.



SIZE

for bolts type	D (mm)	d (mm)	H (mm)
M14	18	14	3.5
M16	20	16	3.5

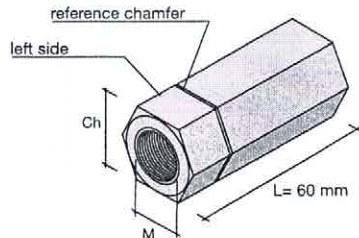


Special Accessories

RIGHT-LEFT THREAD BUSH-ROD WITH

BUSHES-RODS

The **bush-rod** is a simple and easy accessory, useful for distance retention of two **concrete** elements (beam-boards / banks, parapets, etc...).



The bush has a threaded hexagonal form partly with a thread on the left side (area behind the reference bevel) and partly with a right thread.

In the part with the left thread are inserted the TA left bolts L= 50 mm (M14-M16).

On the opposite side, the standard TA Bolts with Length "L" have to be inserted and defined

depending on the required anchorage distance.

After the bolts fastening to the hollow profiles in the concrete elements, the regulation is done by means of the 2 nuts next to BUSH-ROD.

The **bushes-rods** are made of PS113 special steel (UNI EN ISO 10083) and are delivered with yellow cold electrolytic zinc-plating (UNI EN ISO 2081).

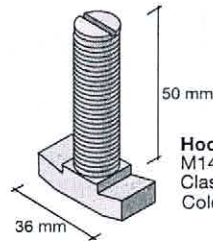
INFORMATION ABOUT CAPACITIES

The max loads which can be applied on the system depend on the **USED HOLLOW PROFILE**.

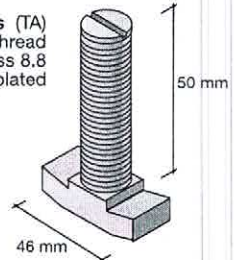
Hereafter you will find the max. loads applicable with reference to the single component and to the used threaded bar for applications without **HOLLOW PROFILE**.

Bars (M)	Allowed Load (kN)
M14	27
M16	36

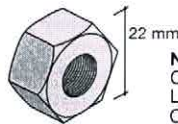
The testing certificates for the RAW MATERIAL are available on request



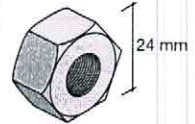
Hook head bolts (TA)
M14 x L=50mm Left thread
Class 8.8
Cold zinc-plated



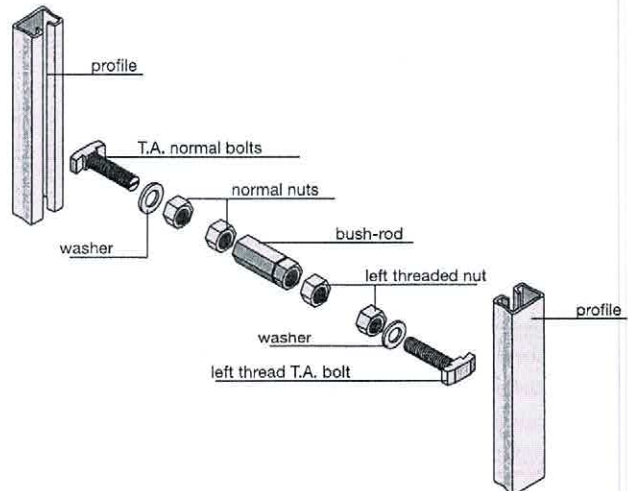
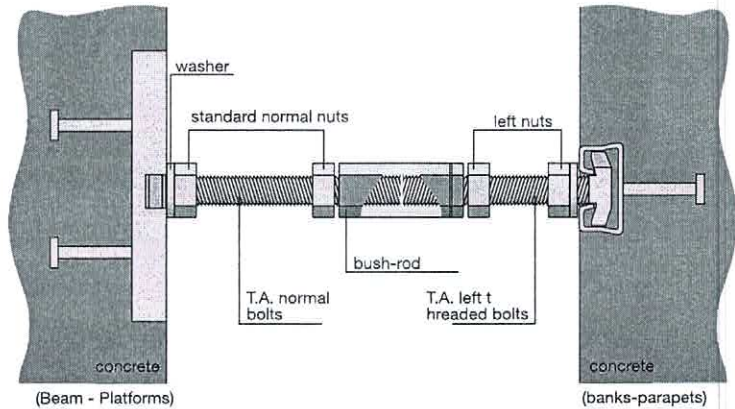
Hook head bolts (TA)
M16 x L=50mm Left thread
Class 8.8
Cold zinc-plated



Nuts M14 - UNI 5588
Class 6s
Left thread
Cold zinc-plated (UNI 3740-6*)



Nuts M16 - UNI 5588
Class 6s
Left thread
Cold zinc-plated



Retention plaques

GENERAL

The **EDILMATIC PLAQUES** are designed to solve the retention problems of concrete products.

They are available in different lengths, depending on the anchorage distances and in different forms, depending on the loads and on other types of hollow profiles which we intend to use. The slot on the plaque's back offers a wide regulation range of the retaining distances and the knurled coupling with the counter-plate prevents sliding problems after the tightening.

In all plaque types, in the different positions, there are product traceability markings identifying the producer (E = Edilmatic) and the lot code (reference to the material casting number - production month and year) as a warranty of **QUALITY** and proof of the controls carried out.

Hook head plaques (PTA)

They are knurled plaques made of quality steel S355J2G3 (UNI EN 10025) and delivered with UNI EN ISO 2081 (yellow) cold electrolytic zinc-plating.

They can be used with middle-heavy profiles for middle-high loads and are available in **4** different types with different "L" lengths:

L = 100 mm - 150 mm - 200 mm - 250 mm

Thanks to the slot on the plaques back you can use TA M14 and/or M16 bolts depending on the hollow profile used.

For the fastening of the plaques to the elements in anchorage the use of the knurled 38x38 counter-plate is compulsory (CTP).

Plaques with threaded bush (PB)

These knurled plaques are made of quality steel CF9SMnPb36 (UNI EN 10083) and delivered with UNI EN ISO 2081 (yellow) cold electrolytic zinc-plating.

They are recommended for applications with very high retention distances and when a higher regulation precision is required.

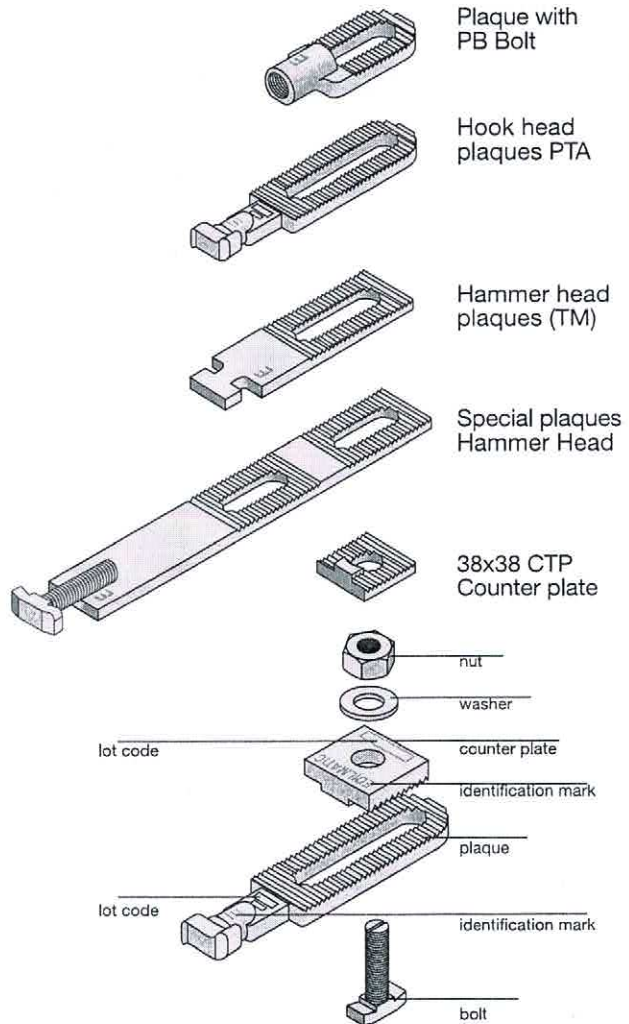
Thanks to the matching with bolts, available in different lengths, you can reach all retention distances, necessary to establish the connection.

Hammer head plaques (PTM)

These knurled plaques are obtained using S235JRG1 (UNI EN 10025) steel and delivered with UNI EN ISO 2081 (yellow) old electrolytic zinc-plating.

They can be used with light hollow profiles and are recommended for retentions with light design loads.

For the plaques fastening to the anchorage elements you must use a 38x38 knurled counter-plate (CTP).



Materials

Type plaque	Material	Mechanical Characteristics	Reference regulations	Kind of coating
TM Plaques	S235JRG1	s rott.= 340÷470 N/mm ² A%= 26	UNI EN 10025 [DIN 17100]	yellow old electrolytic zinc-plating (UNI EN ISO 2081)
TA Plaques	S355J2G3	s rott.= 490÷630 N/mm ² A%= 22	UNI EN 10025 [DIN 17100]	
PB Plaques	CF9SMnPb36	s rott.= 490÷630 N/mm ² A%= 22	UNI EN 10087 [DIN 1651]	Sp _{min} = 12 micron

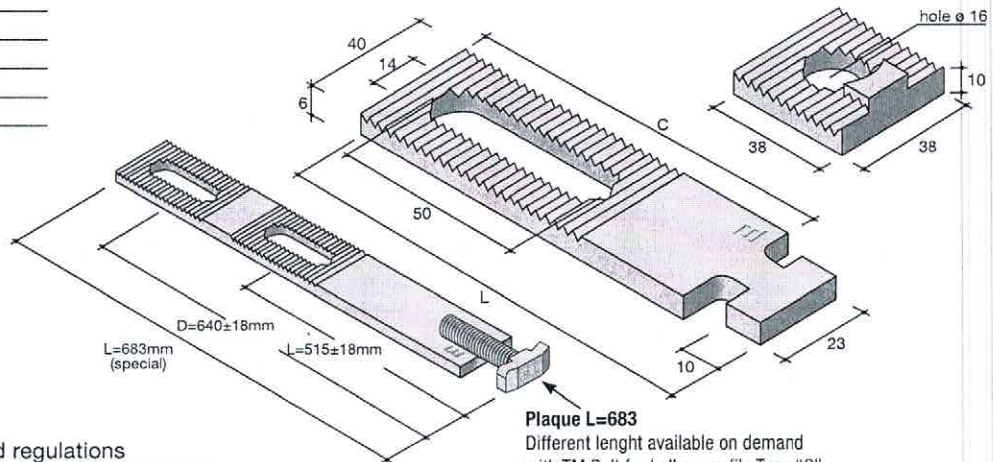
The Technical Department is at disposal in order to release **ON DEMAND** test certifications both on **RAW MATERIAL** and **PRODUCT**. The test certifications available for each lot bought.

Retention plaques

HAMMER HEAD PLAQUES (TM)

Dimension

Plaque Type	C Value
L = 120 mm	102
L = 150 mm	132
L = 200 mm	182
L = 250 mm	232
L = 683 mm	665



ASSEMBLY DATA

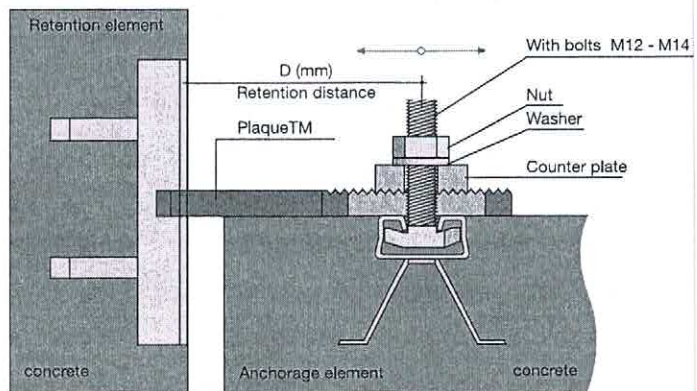
TABLE 1

Retention distances and regulations

	Plaque Type L	Anchorage distance D (mm)		
		D	D Min.	D Max.
With bolts TM M12 - TA M14	L = 120 mm	63	44	82
	L = 150 mm	93	74	112
	L = 200 mm	143	124	162
	L = 250 mm	193	174	212
	L = 683 mm	see side picture		

The **TM L=683mm** plaque is a special type available on stock for special applications. If necessary on request, we can deliver TM special plaques with "L" length defined by the customer.

For additional information please contact the **Engineering Department**.



The **D VALUE** is the medium distance that can be reached using the different plaques types calculated from the profile's centre in the anchoring element to the retained element.

The **D max. and D min.** values are the minimum and maximum distances that can be reached using the plaques slot.

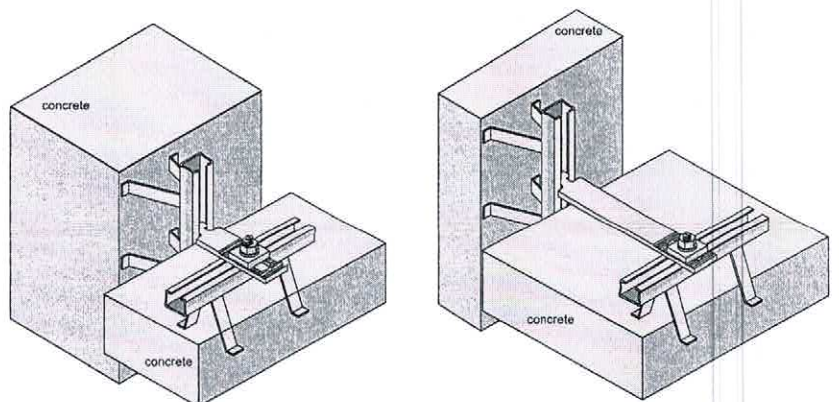
TABLE 2

Matches and loads that can be used (for profiles with P1 pegs and S1 brackets)

	Anchorage element Profile to be used	Retention element Profile to be used	Maximum load applicable to the system (kN)
with bolts TM M12	C Type	C Type	8
with bolts TA M14	D Type	C Type	8

The max. load applicable to the system refers to the max. profile load used in the **RETAINED** element.

Application examples

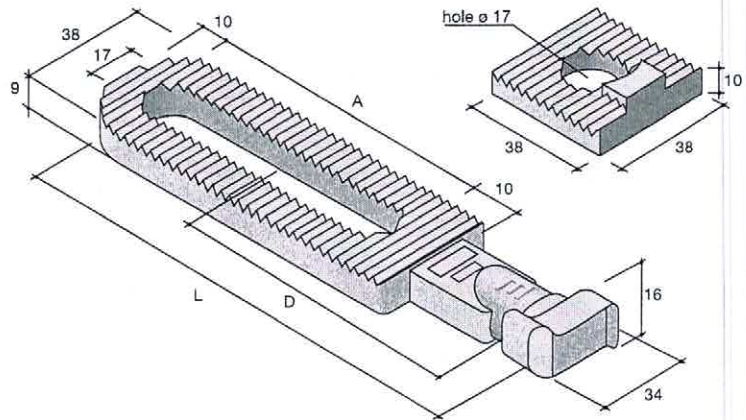


Retention plaques

HOOK HEAD PLAQUES (TA)

Dimension

Plaque Type	Value D	Value A
L = 100 mm	50	50
L = 150 mm	85	90
L = 200 mm	125	120
L = 250 mm	170	120

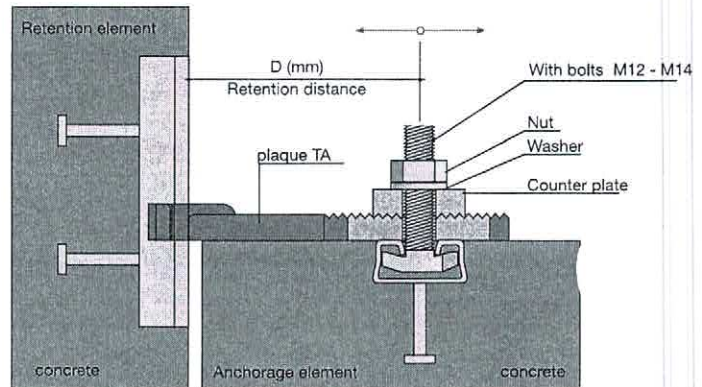


ASSEMBLY DATA

TABLE 1

Retention distance and settings

With bolts M14 - M16	Plaque Type	Anchorage distance D (mm)		
	L	D (mm)	D Min. (mm)	D Max. (mm)
With bolts M14 - M16	L = 100 mm	50	32	68
	L = 150 mm	85	48	120
	L = 200 mm	125	68	170
	L = 250 mm	170	118	220



The **D VALUE** is the medium distance that can be reached using the different plaques calculated from the profile's centre in the ANCHORING element to the RETAINED element.

The **D max.** and **D min.** values are the minimum and maximum distances that can be reached using the plaques slots.

ALLOWED MAX. LOADS

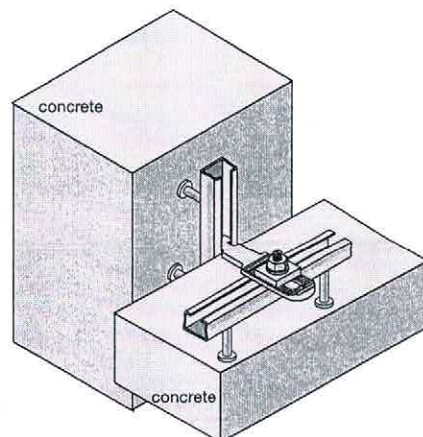
TABLE 2

Combinations and max. loads used
(for profiles with Z1 clamps and P1 pegs)

	Anchorage element	Retention element	Maximum load applicable to the system (kN)
	Profile to be used	Profile to be used	
With bolts TA M14	H Type	A Type	11
	H30 Type	F Type	13
	D Type	C Type	13
With bolts TA M16	E Type	H Type	11
		H30 Type	13
	M Type	D Type	13

The max. load applicable to the system refers to the max. profile load used in the **RETAINED** element.

Application examples

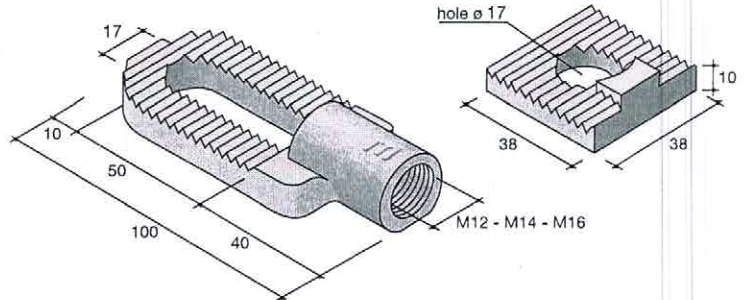


Retention plaques

PLAQUE WITH PB THREADED BUSH (M12-M14-M16)

The Edilmatic Plaques with bush have been studied for coupling with all TA and TM bolt types (M12-M14-M16) for applications requiring a high retaining distance and a more precise adjustment but also when it is necessary to balance any profile positioning errors. Using the bolts available in different lengths it is possible to reach any useful distance.

The bolt must be screwed up for at least 20 mm in the plaque bush and the tightening in the retained element profile has to be carried out using nuts and washers.



Assembly data

Depending on the "D" retention distance we calculate the "L" Length of the bolt which has to be coupled.

The bolt must be screwed up for at least 20 mm in the bush, as a consequence we obtain the value "A" = 40 mm

The "L" bolt length results from the formula:

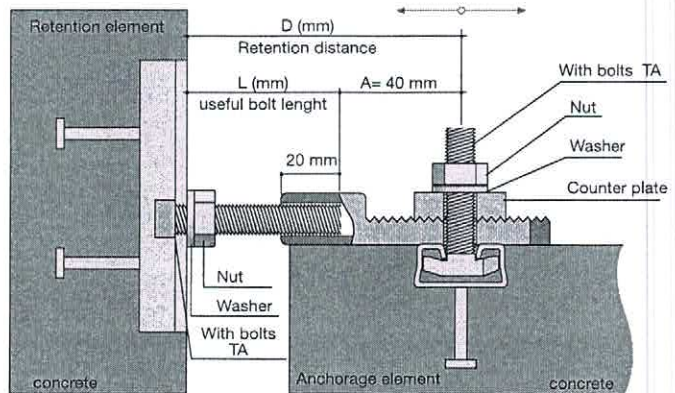
$$L = D - 40 \text{ mm} \quad \dots\dots\dots \text{where}$$

L= Bolt length
D= Retention distance

Es: retention distance = 100 mm

$$L \text{ bolt length} = D - 40 \text{ mm} = 100 - 40 = 60$$

(L bolt length = 60 mm)



The "D" distance is the medium distance that can be reached using the different bolts calculated from the profile's centre in the ANCHORING element to the RETAINED element. Using the PLAQUE slot (50 mm) this distance can vary [(D ±18 mm)].

Acting on the coupled bolt before the fastening you can make other millimetre adjustments to obtain an optimal retention.

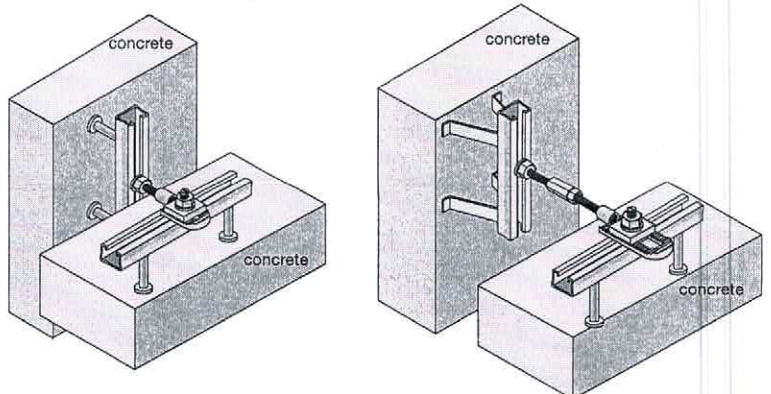
TABLE 1

Combinations and used loads
(for profiles with Z1 clamps and P1 pegs)

	Anchorage element Profile to be used	Retention element Profile to be used	Maximum load applicable to the system (kN)
With bolts TM M12	C Type	C Type	8
With bolts TA M14	H Type	H Type	11
	H30 Type	H30 Type	13
	D Type	D Type	13
With bolts TA M12	E Type	E Type	17
	M Type	M Type	32

The max. load applicable to the system is the profile **Max. tensile capacity** in the **RE-TAINED** element.

Application examples



Retention plaques

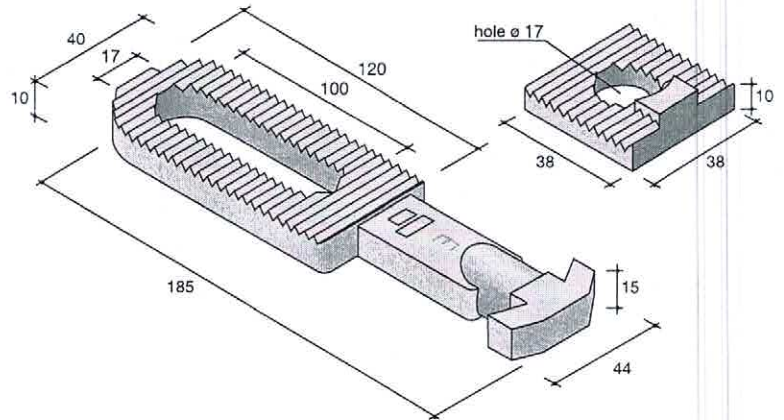
PLAQUE HOOK HAED L= 185 mm

The plaque hook head L=185mm can be used with HOLLOW PROFILES type E and M, for fastening the anchoring element TA M16 bolts must be used.

It is particularly recommended for the retention of elements in concrete with middle-high loads requiring the use of middle-heavy profiles.

It is made of **S355J2G3** UNI EN 10025 quality steel.

It is delivered cold electrolytic zinc-plated (UNI EN ISO 2081).



ASSEMBLY DATA

TABLE 1

Retention distance and adjustments

With bolts M16	Plaque Type L	Anchorage distance D (mm)		
		D (mm)	D Min. (mm)	D Max. (mm)
	L= 185 mm	110	70	150

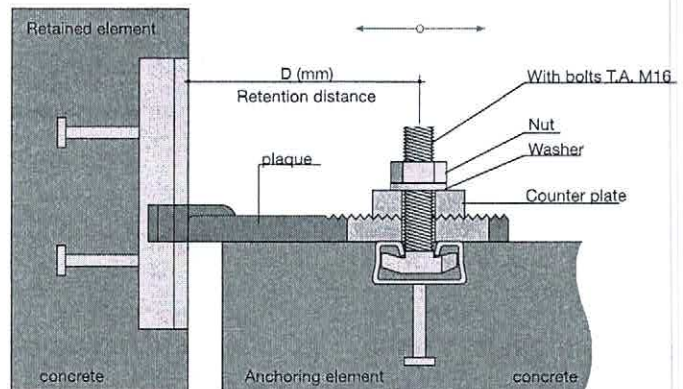
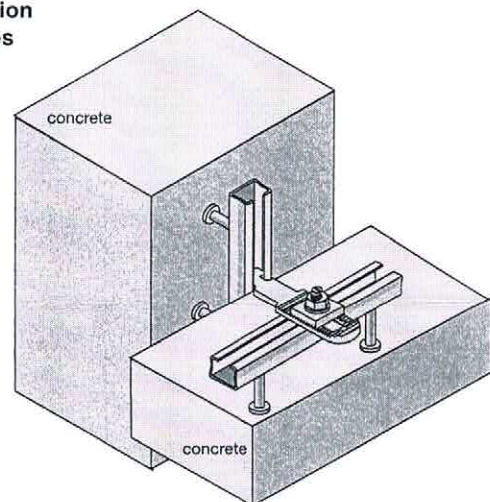


TABLE 1

Combinations and max. loads used
(for profiles with Z1 clamps and P1 pegs)

With bolts TM M16	Anchorage element Profile to be used	Retention element Profile to be used	Maximum load applicable to the system (kN)
		Tipo E	Tipo E
	Tipo M	Tipo M	32

Application examples

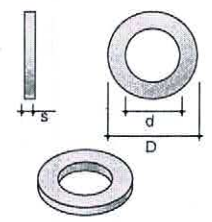


The max. load applicable to the system refers to the max. profile capacity used in the **RE-TAINED** element.

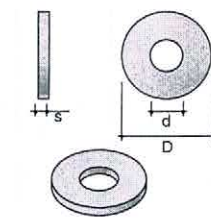
Standard Accessories

ACCESSORIES FOR BOLTS

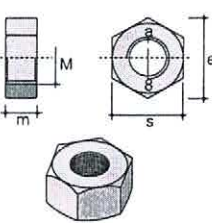
STANDARD WASHERS

UNI EN ISO 7089 Class R40 Zinc-plated	for bolts	D (mm)	d (mm)	s (mm)
	M10	20	10.5	2
	M12	24	13	2.5
	M14	28	15	2.5
	M16	30	17	3

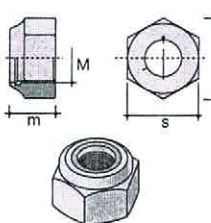
BIG WASHERS

UNI EN ISO 7093 Class R40 Zinc-plated	for bolts	D (mm)	d (mm)	s (mm)
	M10	30	11	2.5
	M12	36	14	3
	M14	42	16	3
	M16	48	18	4

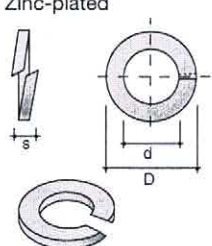
MIDDLE NUTS

UNI EN ISO 4034 Class 8 - 6s (according to UNI 3740/4*) Zinc-plated	for bolts	D (mm)	d (mm)	s (mm)
	M10	17	18.9	8
	M12	19	21.1	10
	M14	22	24.5	11
	M16	24	26.8	13

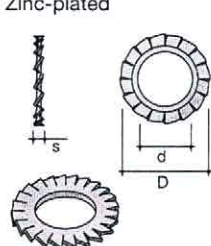
SELF-LOCKING NUTS

UNI 7473 - ISO 2358 Class 8 - 6s (according to UNI 3740/4*) Zinc-plated	for bolts	D (mm)	d (mm)	s (mm)
	M10	17	18.9	11.5
	M12	19	21.1	14
	M14	22	24.5	16
	M16	24	26.8	18

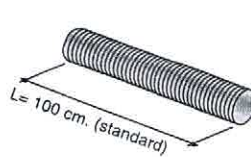
ELASTIC WASHERS (Grower type)

UNI 1751 DIN 127 B Class R 150 Zinc-plated	for bolts	D (mm)	d (mm)	s (mm)
	M10	18.1	10.7	5.2
	M12	21.1	12.7	5.9
	M14	24.1	14.7	7.1
	M16	27.4	16.7	8.3

TOOTHED WASHERS (external)

UNI 8842 A DIN 6798 A Class HRC 38-45 Zinc-plated	for bolts	D (mm)	d (mm)	s (mm)
	M10	18	10.5	2.7
	M12	20.5	12.5	3
	M14	24	14.5	3
	M16	26	16.5	3.6

THREADED BARS

ISO Metric thread DIN 975 - C40 (class 6.8) Zinc-plated	thread (M)	length (L=cm.)	maximum load allowed (kN)
<p>The standard length is L = 100 cm. On request they can be delivered in any length</p> 	M10	100	16
	M12	100	23
	M14	100	32
	M16	100	44
	M18	100	53
	M20	100	68
	M24	100	98

Also available in 8.8 class and B7 (ASTM A-193)