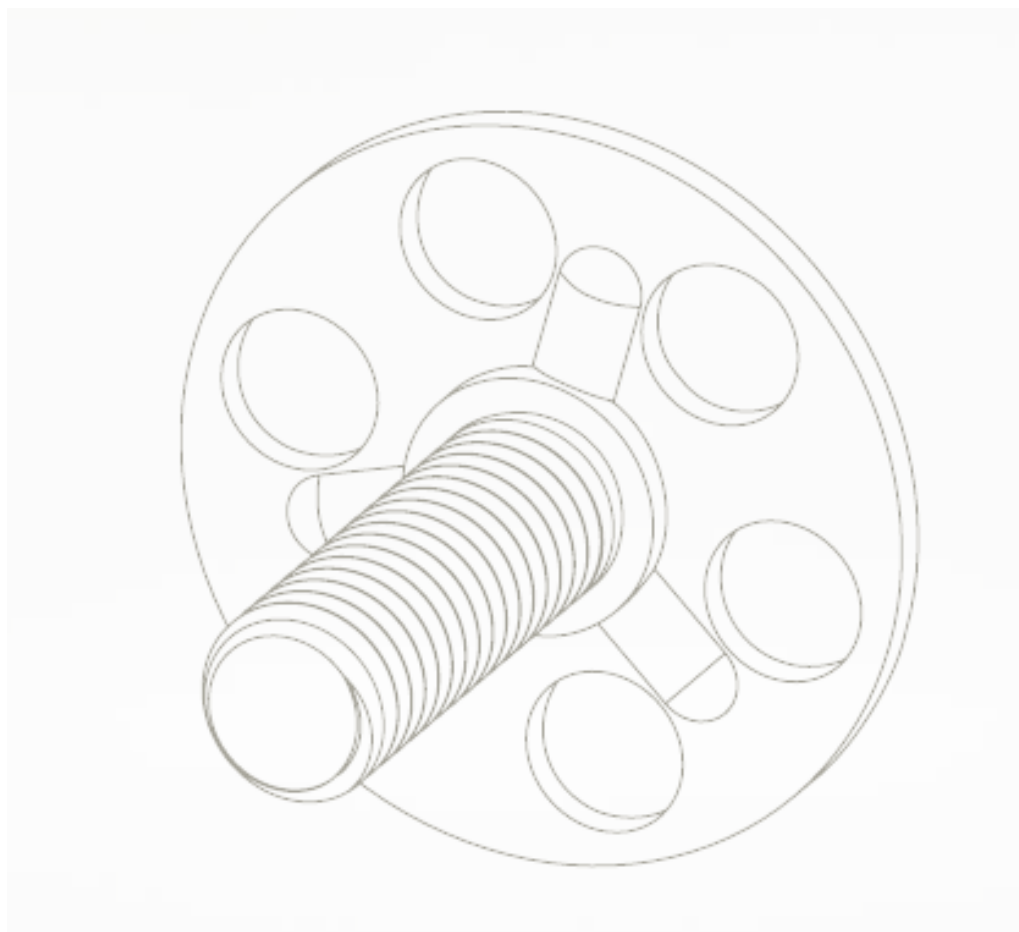




# MASTER-PLATE<sup>®</sup>

## GUIDE TO CHOICE

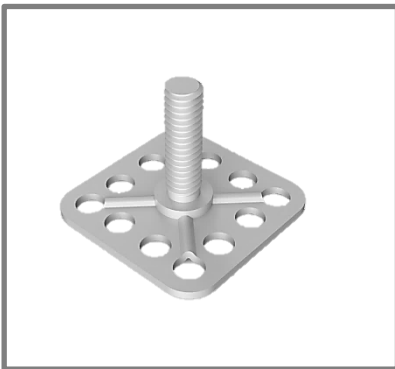


# MASTER-PLATE®

**Master-Plate®** : is a very simple fixing system that through appropriate adhesives allows the fixing on any type of receiving material. It doesn't require any particular mechanical preparation, the usual mounting is done by placing the Master-Plate® on adhesive previously applied to the merging point required. It can be used also on lamination, co-molding or by screwing. The several combinations between the base plates and fastening elements offer a wide range of possibilities to technicians and designers.

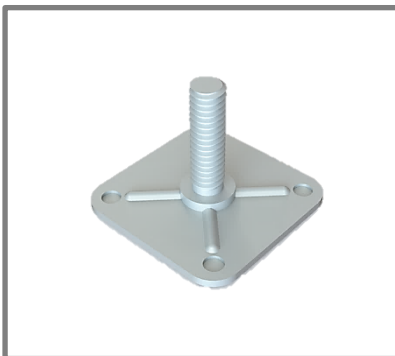
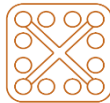
## DIFFERENT NEEDS MEANS DIFFERENT CHOICES.

**Specialinsert®** is constantly looking for innovative solutions that can improve production processes and meet the needs of the customer. For this reason, the new **MASTER-PLATE® RS** range was born, and we have done a series of comparative tests on the two different types of **MASTER-PLATE®** in order to help the users identify the fastener system that best suits their needs.



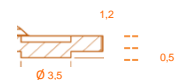
### STandard

System composed of a **PERFORATED FLAT BASE** and a fastener.



### Round Spacers

System composed of a **BLIND BASE** with **ROUND SPACERS** and a fastener.



# INSTALLATION

**1**



Prepare the surface for receiving the adhesive

**2**



Put the proper adhesive on MASTER-PLATE® base plate

**3**



Place MASTER-PLATE® on the surface

**4**



Press the MASTER-PLATE® in order to have some adhesive coming out

**5**



Wait for drying of the adhesive before using the fastening system

**6**



MASTER-PLATE® is structurally assembled and ready for use

TIPO COLLA ADHESIVE TYPE	Compositi Composites	Plastica(*) Plastic(*)	Legno Wood	Metallo Metal	Lapidei Natural Stone	Agglomerati Conglomerated	Cristalli Glass
VABER MA300	oo	oo	o	oo	o	oo	oo
MASTIKOL SG 300-15	o o(**)	oo	-	o o(**)	o	oo	o
3M DP8810NS	oo	o	o	oo	o	o	-
LOCTITE 9466	oo	o	oo	oo	oo	oo	oo

(\*) Adesivi idonei ad alta energia superficiale di facile incollaggio.

(\*) Adhesives suitable for high surface energy of easy bonding.

Su plastiche a bassa energia superficiale e quindi di scarsa adesione si consigliano le seguenti colle: 3M DP8010, MASTIKOL PPX5.

Low surface energy plastics and therefore low adhesion, we suggest: 3M DP8010, MASTIKOL PPX5.

Per la corretta definizione dell'adesivo da utilizzare, su materiali con poca tenuta quali PE, PA, PP e silicone raccomandiamo di interpellare direttamente i produttori delle colle.

To get a correct definition of the adhesive to be use, on low adesion materials, as pe, pa, pp and silicone, please refer to the adhesive producers.

(\*\*) Non necessita l'uso di primer o abrasione.

(\*\*) Primer or abrasion not needs.

LEGENDA: - Non adatto  
KEY: - Not suitable

o Sufficiente  
o Sufficient

oo Buono  
oo Good

# TEST

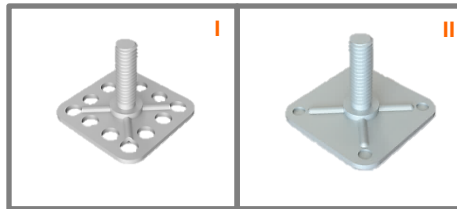
The purpose of the performed tests is to establish and compare the performance of the different types of insert. Three different types of **MASTER-PLATE®** were examined using the same material, fixing, welding and installation parameters:

## I. Standard

- Stud M 6 X 20 (Stainless Steel AISI 316 L)
- *Standard Plate with holes (Stainless Steel AISI 316 L)*

## II. Round Spacers

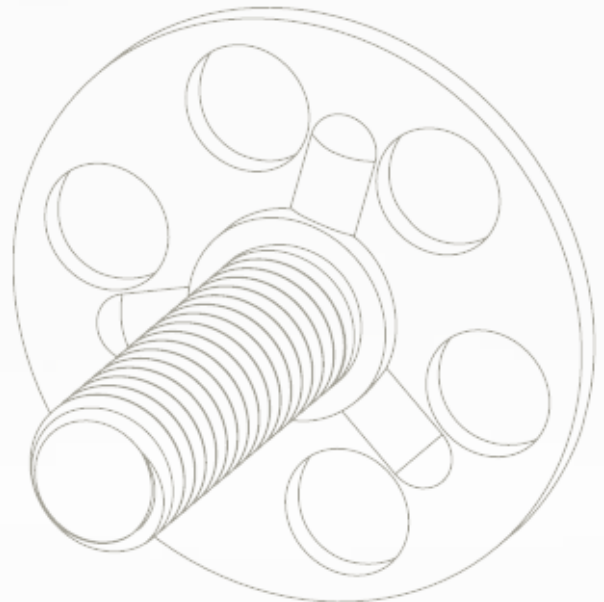
- Stud M 6 X 20 (Stainless Steel AISI 316 L)
- *Blind Plate with Round Spacers (Stainless Steel AISI 316 L)*



Adhesive and bonding support have been chosen using the same criterion

**Adesive Type**                      Methacrylate adhesive

**Support Material**                Steel Plate thk 2 mm

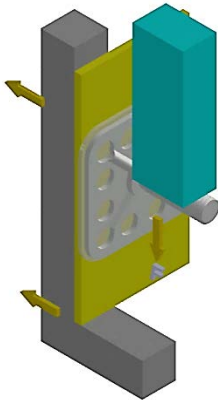
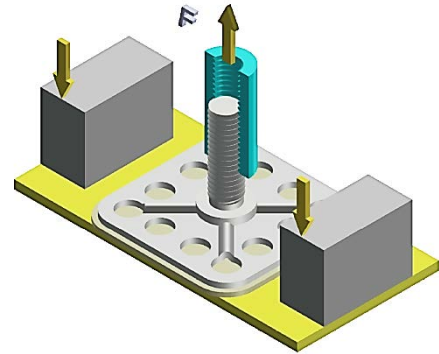


The three types of **MASTER-PLATE®** have been subjected to the following tests:

## A. Pull Out Force



Once the system (Support + adhesive + **MASTER-PLATE®**) is screwed into a load cell measurement tool, detachment from support is reached and the maximum peak of extractive force is measured.



## B. Shear force

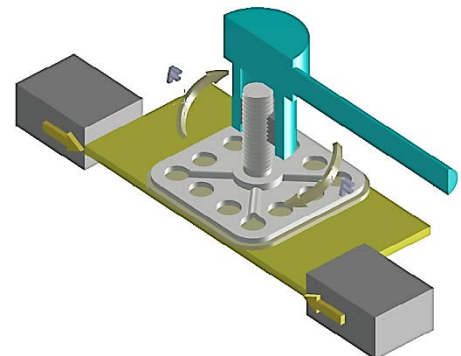


Once the system (Support + adhesive + **MASTER-PLATE®**) is screwed into a load cell measurement tool, detachment from support is reached and the maximum peak of resistance to cutting is measured.

## C. Torque



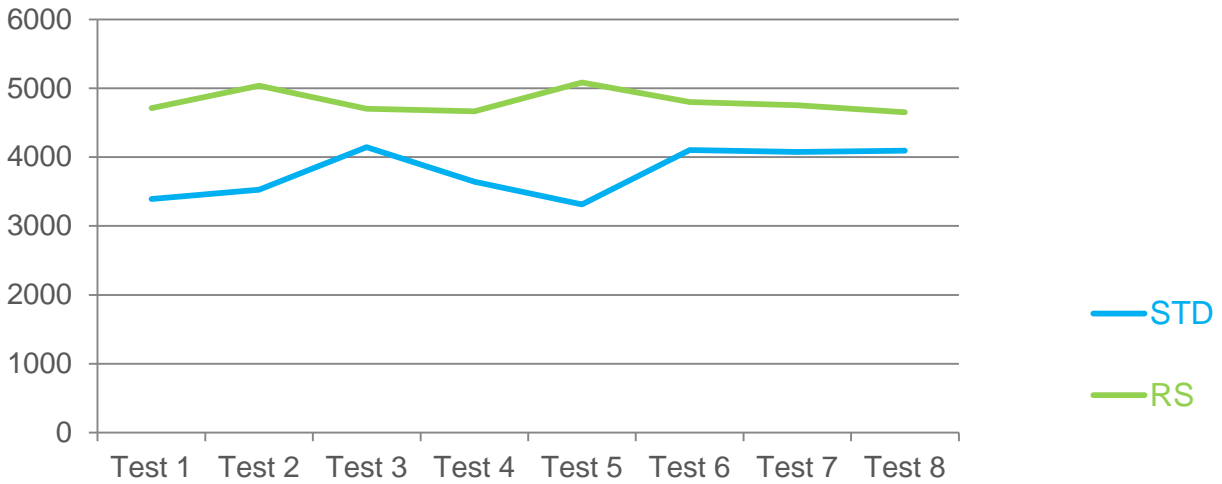
Once the system (Support + adhesive + **MASTER-PLATE®**) is fixed, resistance to twisting is measured, using a dynamometric key to measure the maximum torque peak.





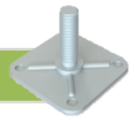
# RESULTS

## A. Pull Out Force



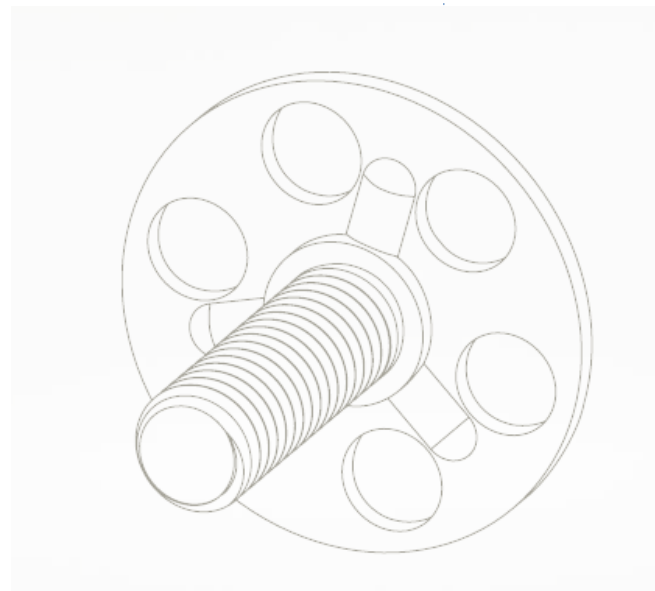
**STANDARD**

Minimum Value 3312 N (338 Kg)  
 Maximum Value 4145 N (423 Kg)  
 Delta 833 N (85 Kg)  
 Average Value 3783 N (386 Kg)



**ROUND SPACERS**

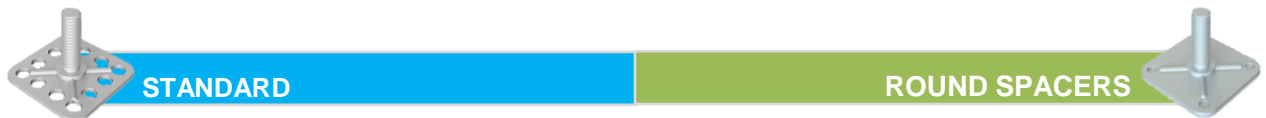
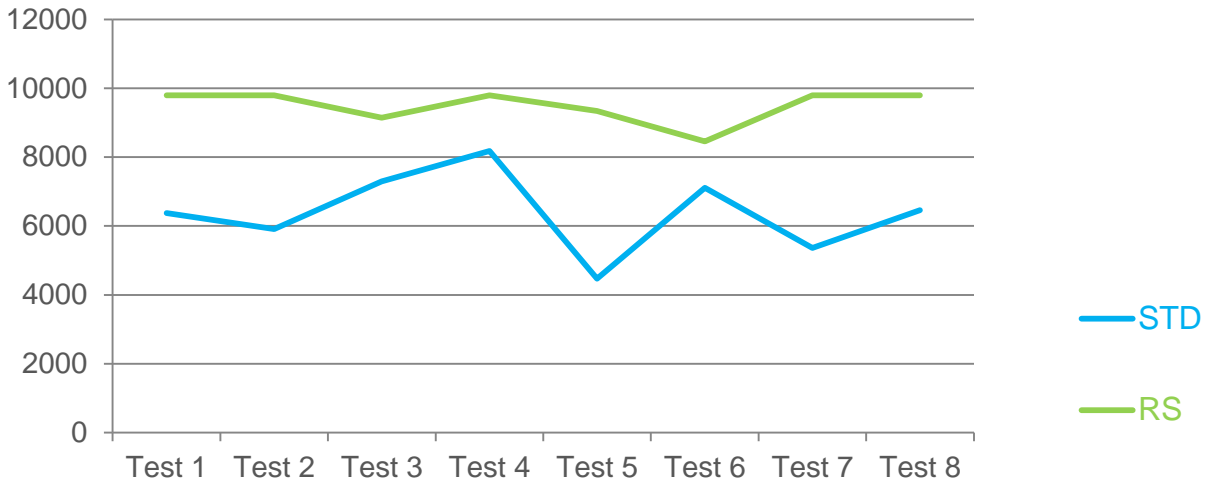
Minimum Value 4655 N (475 Kg)  
 Maximum Value 5086 N (519 Kg)  
 Delta 431 N (44 Kg)  
 Average Value 4802 N (490 Kg)





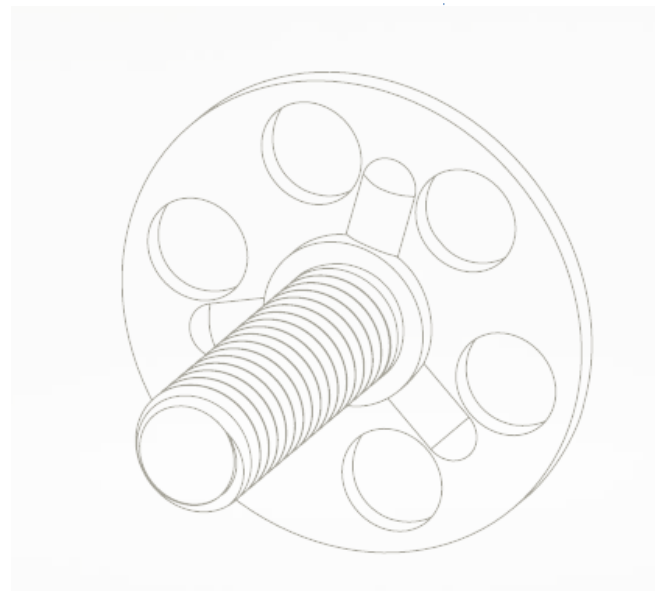
# RESULTS

## B. Shear force



Minimum value 4469 N (456 Kg)  
 Maximum Value 8183 N (835 Kg)  
 Delta 3714 N (379 Kg)  
 Average Value 6390 N (652 Kg)

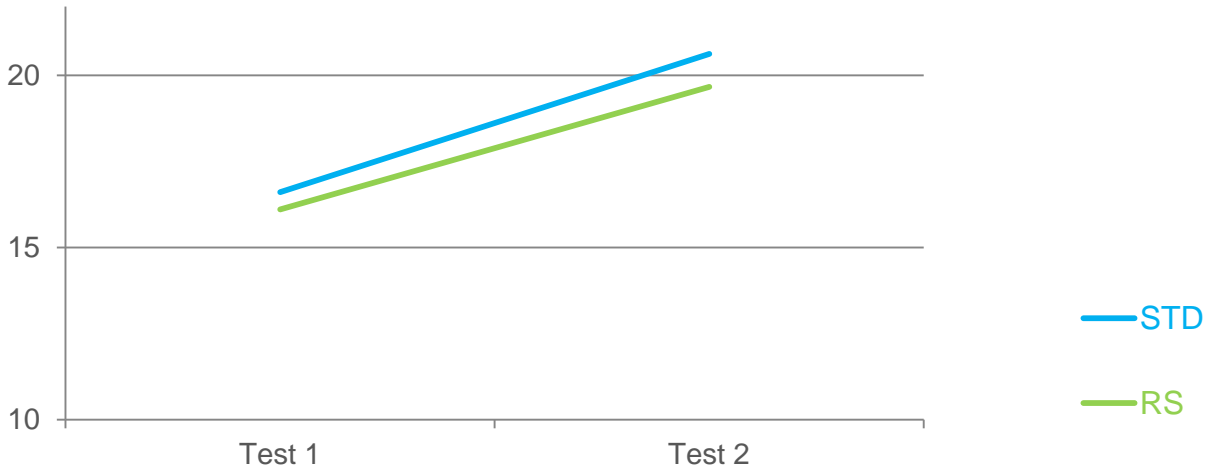
Minimum Value 8457 N (863 Kg)  
 Maximum Value 9807 N (1000 Kg)  
 Delta 1342 N (137 Kg)  
 Average Value 9486 N (968 Kg)





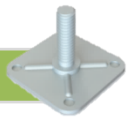
# RESULTS

## C. Torque



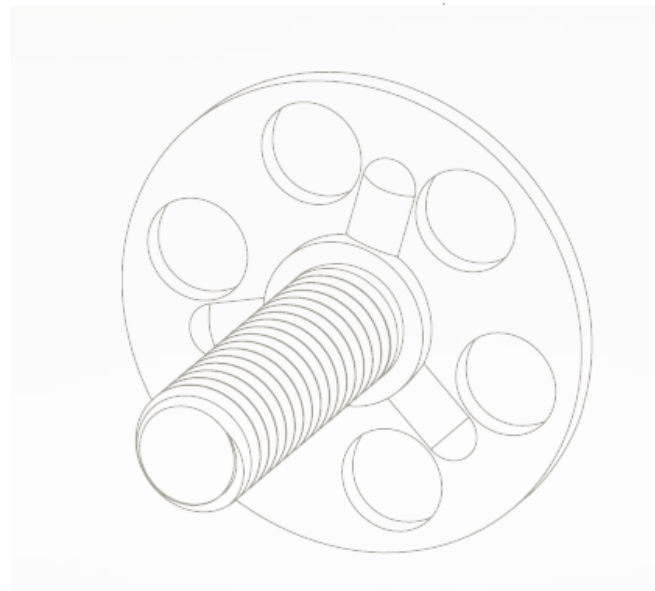
**STANDARD**

Minimum value 16,61 N/m  
 Maximum value 20,63 N/m  
 Delta 4,02 N/m  
 Average value 18,62 N/m



**ROUND SPACERS**

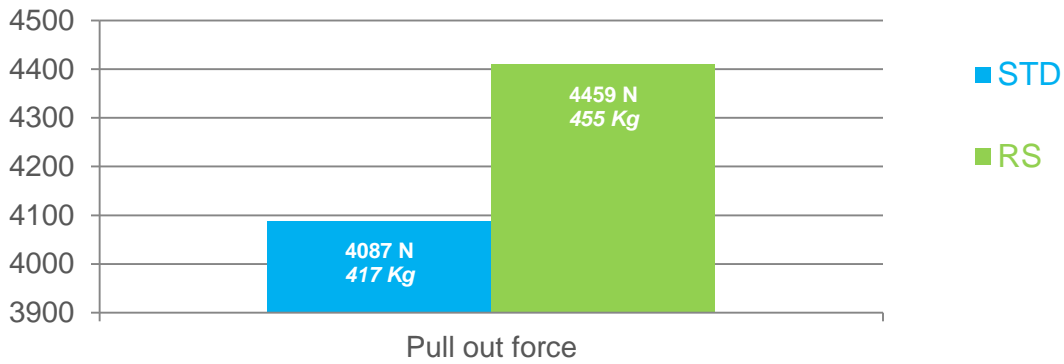
Minimum value 16,11 N/m  
 Maximum value 19,67 N/m  
 Delta 3,56 N/m  
 Average value 17,89 N/m



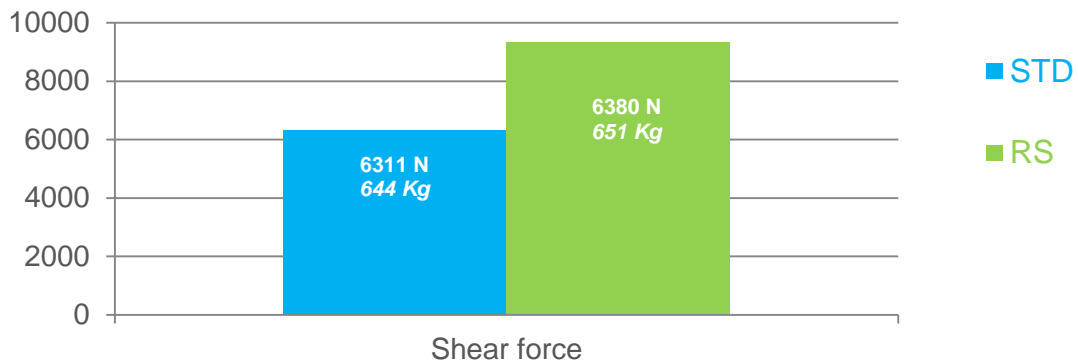


# RESULTS – Average values comparison

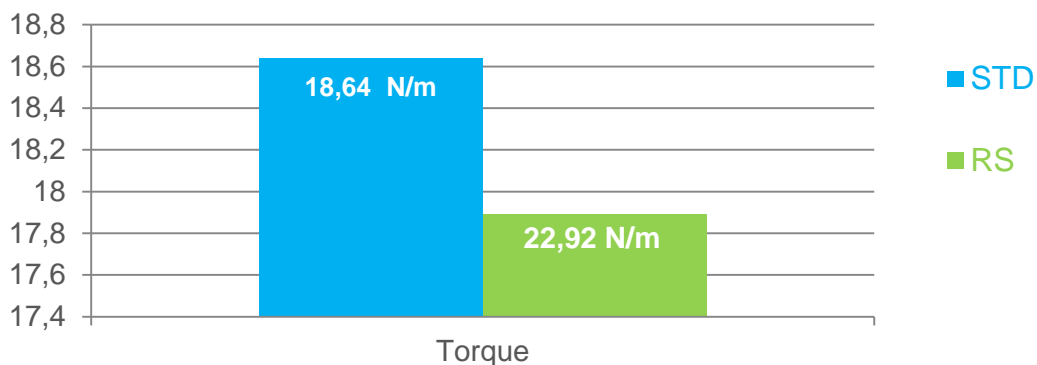
## A. Pull out force



## B. Shear force

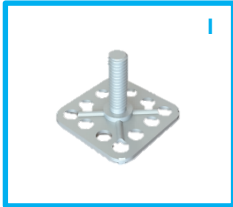


## C. Torque



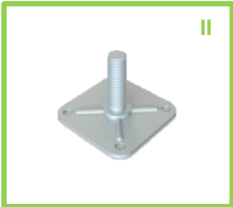
# Notes

## Adhesive consumption



### STANDARD

Adhesive is applied on the entire surface of the plate. We recommend a “serpentine” application to create a constant and continuous layer. Any excess gets out through the holes of the base.



### ROUND SPACERS

Adhesive is applied at the center of the base. By pressing it slightly when placing it, it is then evenly distributed over the entire surface. The Round Spacers characterizing the plate act as a stopping point.

MASTER-PLATE®	Average quantity of adhesive used	Average number of pasted pieces per cartridge (50 ml)	Δ % of adhesive used vs MASTER-PLATE® Standard Version	Average cost of single gluing*
STANDARD	2,32 gr	21 pz	-	0,38 €/pc
ROUND SPACERS	0,65 gr	75 pz	- 72 %	0,10 €/pc

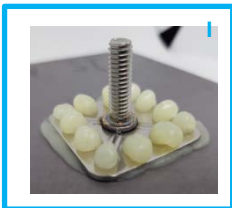
\* When price of a 50ml cartridge is €8.00

# Notes

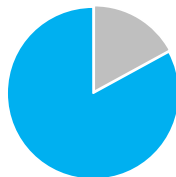
## Weight



MASTER-PLATE®	Insert Weight	Adhesive Weight	Total Weight
<b>STANDARD</b>	11,30 gr	2,32 gr	13,62 gr
<b>ROUND SPACERS</b>	13,29	0,65 gr	13,94 gr



STANDARD



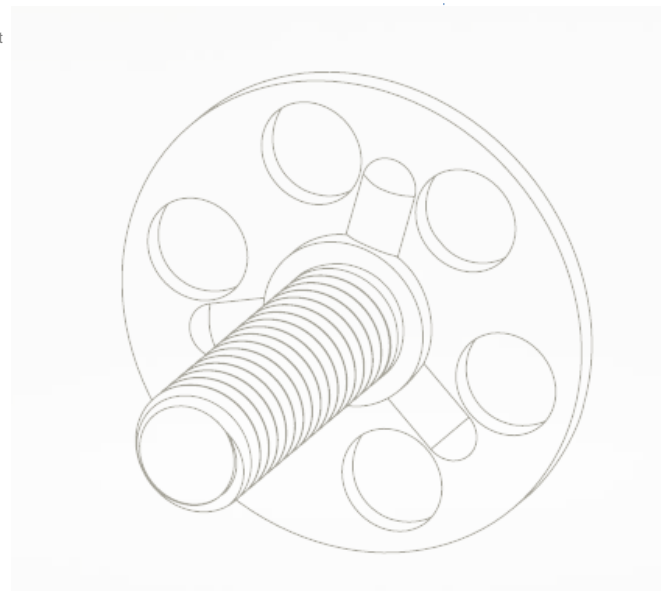
■ Adhesive Weight ■ STD Weight



RS



■ Adhesive Weight ■ DS Weight

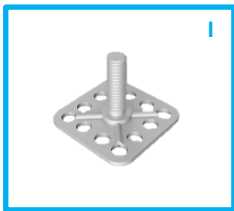


# Annotazioni

## Interferences and Axiality Maintenance

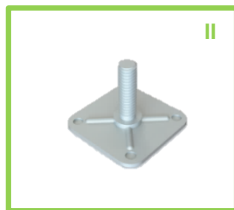
One of the characteristics of the plates of the **MASTER-PLATE series® STANDARD** is the **pierced** plate. Excess adhesive gets out through the holes of the base while laying it. The **MASTER-PLATE series® RS**, instead, is characterized by a blind plate.

Here below are shown the interferences that may happen between the placed insert and the element attached to it.



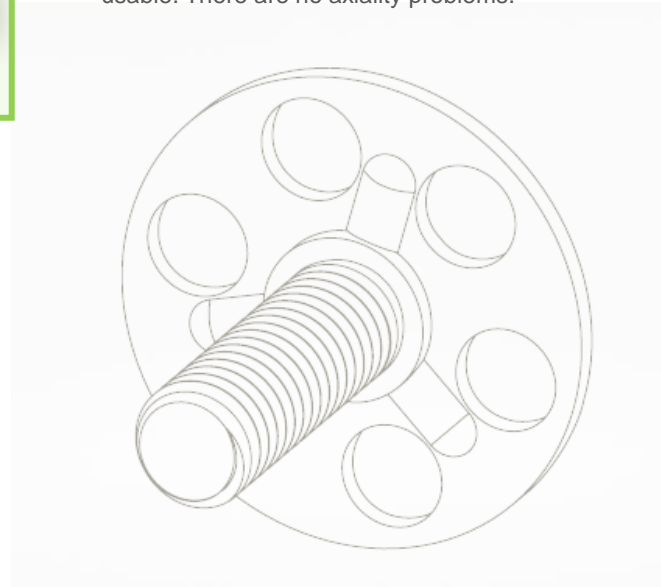
### STANDARD

The excess of adhesive, coming out of the holes of the base, creates interference. Therefore, it is not possible to screw a component to MASTER-PLATE® until the lower bound of the threaded part. Maintaining axiality between the parties It is equally delicate. Such interferences vary depending on the amount of adhesive applied. On average, there is a footprint between 3 and 5 mm.



### ROUND SPACERS

No interference is remarked. The adhesive does not intersect between the MASTER-PLATE® and the element screwed to it. The threaded part is completely free and usable. There are no axiality problems.



# Conclusions

The whole **MASTER-PLATE®** range performed very well during tests, and the three different types of **MASTER-PLATE®** perform differently depending on the different evaluation criteria. The choice amongst the Series products depends on different factors, such as:

- Pull Out Force resistance
- Shear Force resistance
- Torque resistance
- Adhesive saving
- Weigh saving
- Glueing quality (interferences and maintaining axiality)

