

Revolutionizing the machining process

FAQ

- How is F-GRIP supplied?
- F-GRIP is available in 200x200 mm sheet format in two different thicknesses (0,5 and 1,5mm with ± 0.05mm precision). It can be easily cut by the user into desirable shapes/sizes.
- Which F-GRIP thickness is recommended to use?
- F-GRIP thickness is chosen depending on the bonding surface flatness and type of machining operation:
For surface flatness < 0.1mm, 0,5 mm adhesive is recommended.
For surface flatness > 0.1mm, 1,5 mm adhesive is recommended.
For machining through the entire workpiece (e.i drilling or complete milling) consider the adhesive to be enough thick for the cutting tool to go through the workpiece without reaching the base plate. For most of these operations, 1,5 mm thick adhesive is recommended.
- How much F-GRIP is recommended to use?
- It is not recommended to exceed more than 50% of the workpiece surface with adhesive (except for small workpieces). Consider that workpieces bonded with large adhesive surface, might need higher removal forces.
- How much temperature is necessary to apply?
- 150oC is the recommended temperature for F-GRIP. Both bonding surfaces must be at the desired temperature (± 10°C). For materials with temperature limitations, see Recommended Values on F-GRIP Technical Data Sheet TDS or contact technical department.
- How much pressure should be applied?
- 0.250 Kg per cm2 of adhesive used is considered as the minimum contact pressure necessary for a correct bonding of two flat surfaces. If there are significant differences on substrate flatness, higher pressure must be applied to compress the adhesive and fill the gap between both surfaces. To choose the proper pressure, see Recommended Values on F-GRIP Technical Data Sheet.
- How much time must the system be heated and compressed simultaneously?
- Between 15-30 minutes.
- When is the bonding ready?
- When the system is cooled down to 30oC or less.
- Which is F-GRIP maximum holding strength?
- 1 cm2 of adhesive can stand for 1750 N under tensile stress.
- What type of machining can I do using F-GRIP adhesive?
- Milling, grinding, turning, polishing
- Is the adhesive affecting the precision on the machining?
- No. F-GRIP bonding is rigid enough to get micron machining tolerances.
- How to ensure a good parallelism of the workpiece and the base plate?
- For a correct positioning of the workpiece, uniform pressure must be done during heating. For this, X, Y or Z positioners can be added to the base plate to avoid workpiece tilting.
- Is F-GRIP affected by machining fluids?
- No. F-GRIP bonding is stable under water, oil and common coolants used for machining.
- When machining the part might get hot, is this affecting the bonding?
- The adhesive bond starts to weaken when it reaches 50°C.

F-GRIP
CLAMPING BY ADHESION

Removable thermo adhesives for machining





F-GRIP
CLAMPING BY ADHESION

REMOVABLE THERMO ADHESIVES FOR MACHINING

Strong part holding and easy part release in the same formulation

F-GRIP is a unique adhesive

100% solid thermo-adhesive developed by chemistry researchers

✓ Fragile parts

✓ Deformable materials

✓ No flat surfaces

✓ Thin parts

✓ Porous materials



✓ Metal and alloys



✓ Ceramic and glass



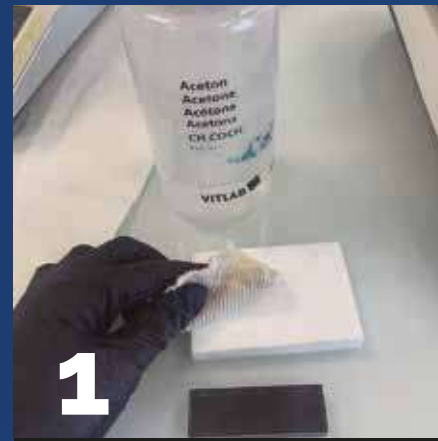
✓ Composites



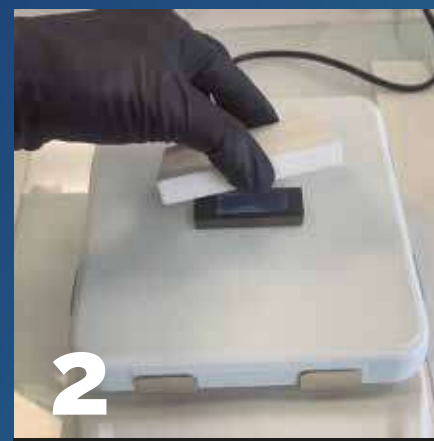
✓ Technical foams

Designed to hold sensitive parts for machining

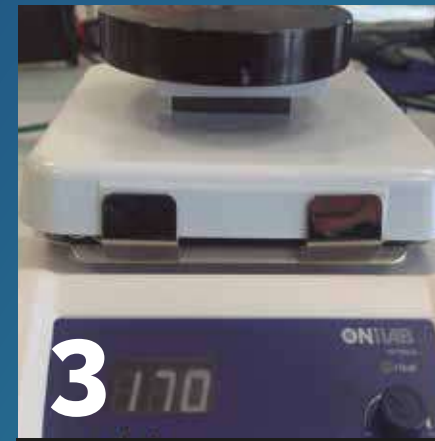
How to use F-GRIP



1
Clean dirt and oil from
base and workpiece



2
Place the adhesive
between the plate and
the workpiece



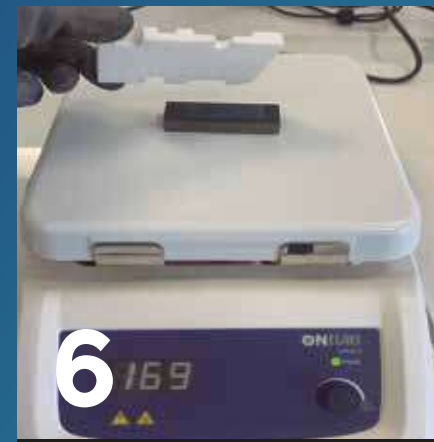
3
Heat and press ⁽¹⁾ the
system up to 150°C for
15-30 minutes



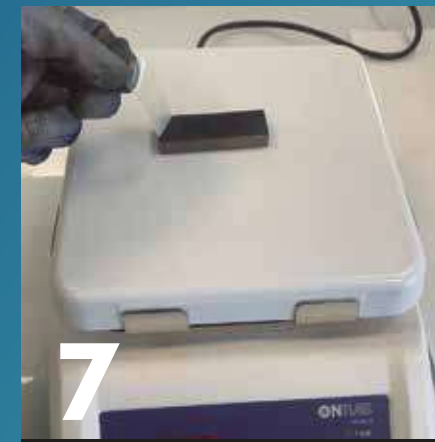
4
Cool the system down to
30°C or less



5
Machine the workpiece



6
Remove the part by heating



7
Peel off the adhesive and
reuse if possible

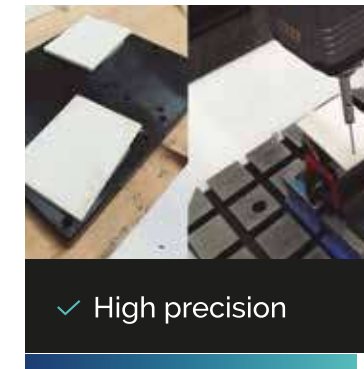


⁽¹⁾ Recommended
values and
equipments QR

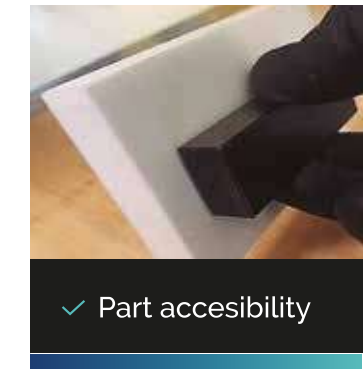
Impact on machining production



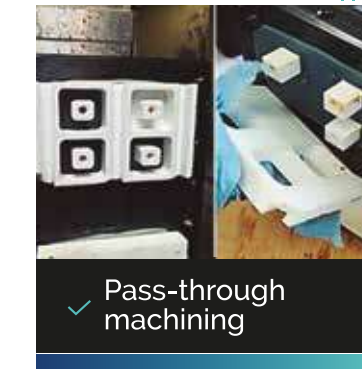
✓ No part distortion



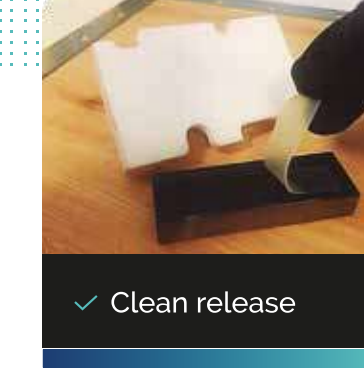
✓ High precision



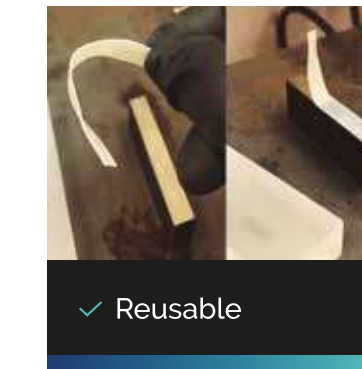
✓ Part accessibility



✓ Pass-through
machining



✓ Clean release



✓ Reusable



✓ Secure /reliable
holding

ADVANTAGES

✓ High bonding strength

Clamping force superior
to vacuum, magnetic or
waxing methods

✓ Completely removable

Part release without
cleaning operations

✓ Facile use

100% solid during
heating for bonding and
de-bonding

✓ Machinable

Suitable when
machining through
the part is needed

✓ Chemically Stable

Stands up to oils
and cutting fluids

✓ Reusable

up to 3 bonding
cycles

- ✓ Reduction of defective parts
- ✓ Micron tolerances and quality finishing
- ✓ Decrease on number of operations
- ✓ Increase on coolant efficiency
- ✓ Minimize chipping
- ✓ No cleaning equipments
- ✓ Decrease in machine downtime
- ✓ Longer non supervised machining
- ✓ Better automation