



fresmak

F-GRIP

CLAMPING BY ADHESION

CLAMPING BY ADHESION. AN ADHESIVE FOR DEMANDING PROCESSES

THE F-GRIP SOLUTION INCLUDES:

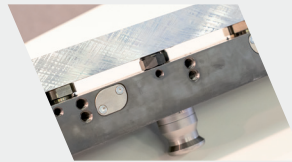
The adhesive (consumable)

- A biphasic polymer blend** developed by Fresmak chemistry researchers



A custom-made tooling

- Designed and customized** by Fresmak R&D engineers
- Including a heating and cooling system** for adhesive activation



- Thin walls
- Honeycomb structures
- Complex shapes
- Curved designs
- Fragile parts

- Metals (Aluminum, Titanium, Inconel...)
- Glass & Ceramics
- Technical Foams
- Engineering plastics

Process optimization
without part
prejudice

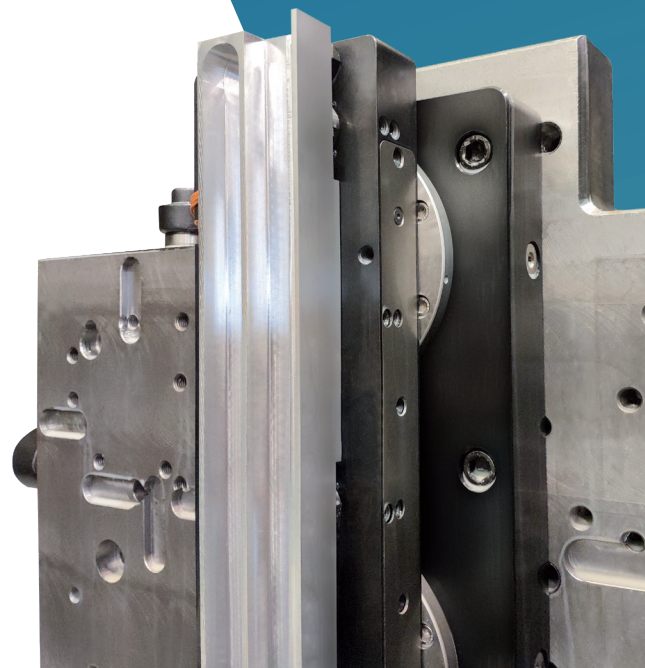


F-GRIP

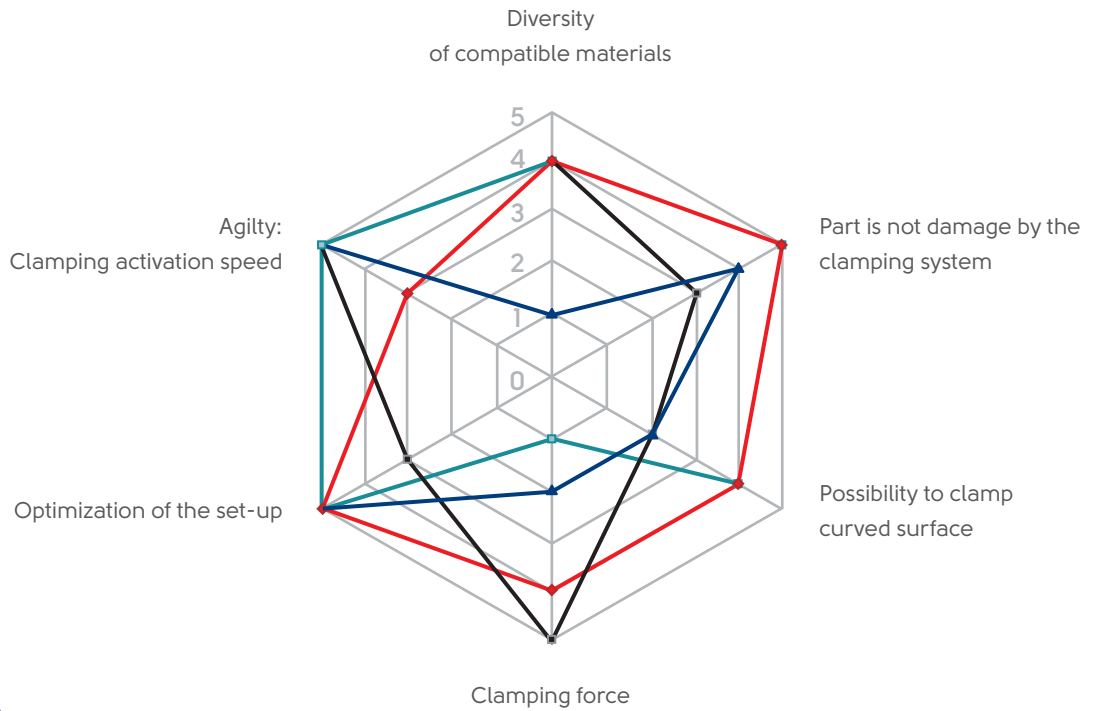
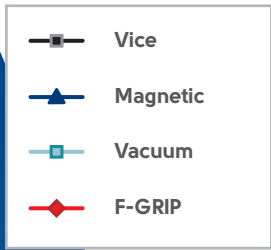
ADVANTAGES

A solution for many applications

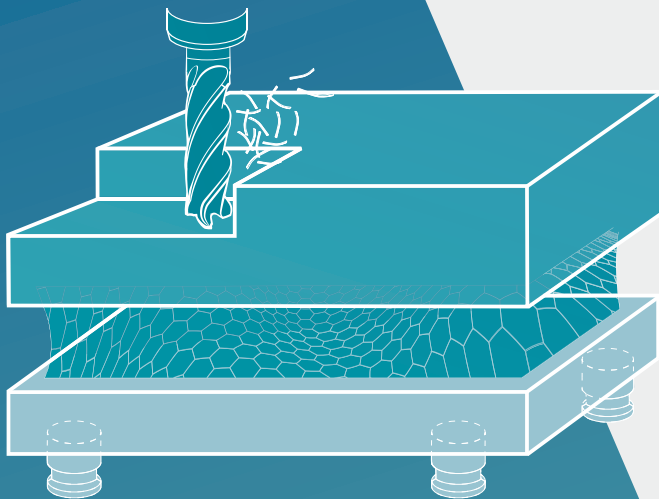
- INNOVATION**
An adhesive that is able to clamp a workpiece of any material during machining operations
- DESIGNED FOR SENSITIVE PARTS**
Developed especially for complex designs, thin wall parts, curved shapes and fragile materials
- COST & TIME SAVING**
Leaving 5 sides free for machining, it enables to perform more operations in one set-up
- ROBUST & STRONG**
The clamping force is much higher than electromagnetic and vacuum technologies (up to 1100N/cm² at rupture)
- CLEAN AND REVERSIBLE**
It does NOT let residues on the clamped surface



AN ALTERNATIVE TO CURRENT TECHNOLOGIES

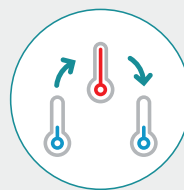


PROCESS



1 Clamping preparation

The adhesive is placed onto the **F-GRIP** fixture. The workpiece is positioned on top, supported by fixed abutments.



2 Adhesive activation

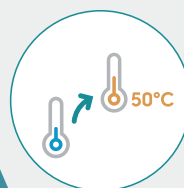
The adhesive is pushed against the workpiece surface, the assembly is heated up* and then cooled down in order to activate the adhesion.

** Up to 80°C - 150°C acc. to the application*



3 Part machining

The workpiece is ready to be machined with 5 sides available in 1 setup.



4 Part release

Once machined the workpiece can be unclamped applying a temperature of 50°C without impacting the surface. No additional operation is necessary.