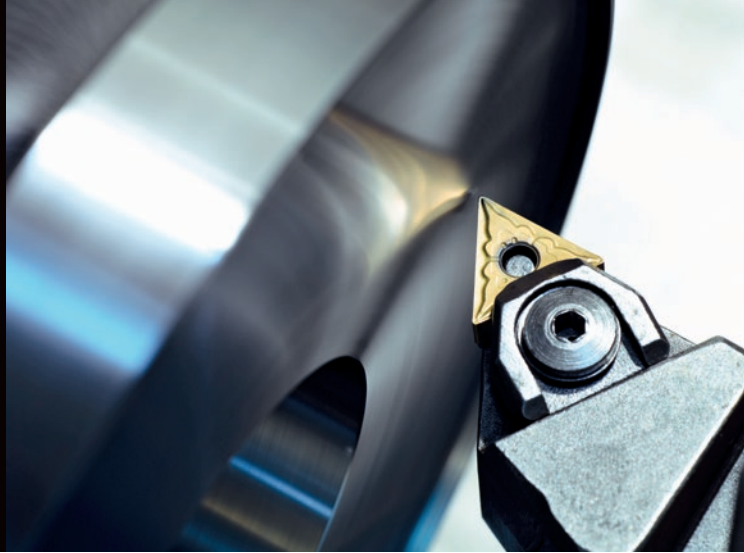


# VITAC® 3000

A unique and powerful product for high-speed machining.



VITAC® 3000 is a process that complies with the ISO 683-2 standard, which guarantees a reduction in the abrasiveness of oxides, for all machining operations at high cutting speeds.

## Areas of application

This variant can be used mainly for mechanical engineering applications for components such as cylinders, cams, large gears, printing machine cylinders...

## Clean steels ( $K_{0xy} < 30$ ), with low carbon footprint.

The VITAC® 3000 process has been designed to improve machinability while guaranteeing mechanical and fatigue properties of the standard product.

The targeted inclusion population allows, during high speed machining, a protection of the tools, by the deposit of a protective layer on the cutting tool. The life of the tool is thus improved.

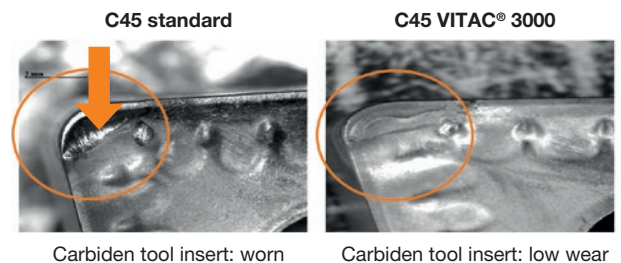
VITAC® 3000 steels are produced using a 100% electric arc furnace (EAF) at the Fos-sur-Mer plant (13), whose carbon footprint is one of the lowest in Europe ( $< 450 \text{ kg CO}_2/\text{t}$ ).

## Characteristics

- Controlled sulfur content
- Control of the inclusionary population
- High reproducibility of machining
- Guaranteed cleanliness

## Advantages

- Improved cutting conditions
- Increase in tool life or cutting speed



## Benefits

- Economic gains of 15 to 30% through:
  - a reduction in manufacturing time (up to 20%)
  - or tooling costs



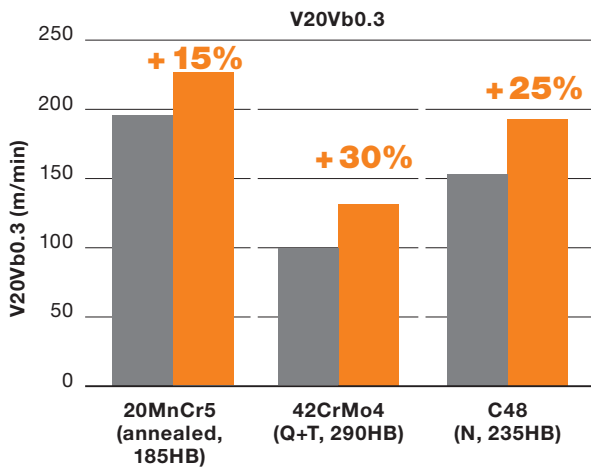
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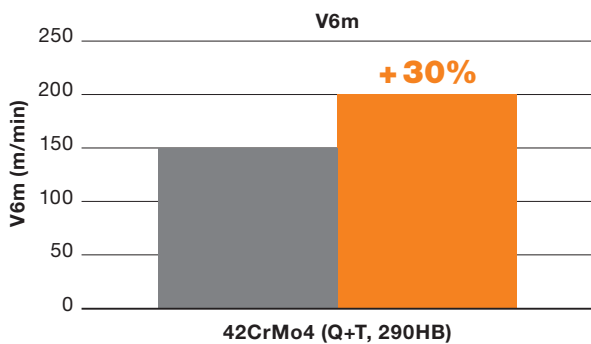


## Excellent performance for turning and drilling operations at high cutting speed

### Turning test



### Drilling test

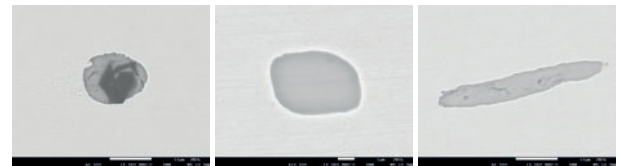


Turning and drilling performance measured on:

- Standard products
- Grade developed with the VITAC<sup>®</sup> 3000 process

Productivity can be increased by up to 20% at any cutting speed in turning or drilling compared to standard grades.

Improved productivity and tool life is achieved through the inclusionary population formed during the manufacturing process.



Al oxide encapsulated in a CaMnS sulfide

Globular CaMnS sulfide

Elongated MnS sulfide

The use of grades developed with the process VITAC<sup>®</sup> 3000, guarantees mechanical and fatigue properties identical to standard grades.

		UTS (MPa)	$\sigma_d$ /UTS
42CrMo4	Standard	950	0.49
	VITAC <sup>®</sup> 3000	940	0.50

Fatigue performance at R (-1), obtained in the laboratory by the "staircase" method at 10<sup>7</sup> cycles.

### Capability

Process applied on the Fos-sur-Mer elaborations, for diameters greater than 80 mm.



**Ascometal**

### ASCOMETAL France Holding SAS

Avenue de France  
57300 Hagondange  
contact@ascometal.com  
www.ascometal.com

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