



## **VIPER ALPHA**

Ceramic bonded high performance grinding tools for the patented Viper grinding process.

# VIPER ALPHA

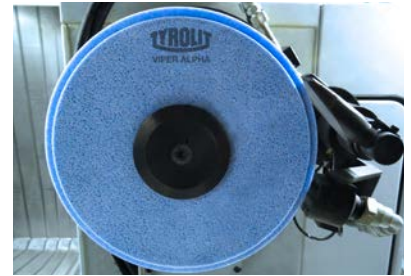
With the VIPER ALPHA, TYROLIT is setting a further milestone in the economical production of turbine blades. Thanks to the new ALPHA technology, these vitrified bonded high-performance grinding wheels convince with exceptional lifetime, high profile retention and cool grinding.

**+ Increased lifetime:** The new grain quality with special grain geometry together with optimal-grain integration lead to low wear of the grinding wheels. This significantly increases the life time.

**+ Environmentally-friendly:** The new VIPER ALPHA products convince with an environmentally friendly production method, without the use of organic burnout materials, as well as consumption-optimized fire curves. Hence, CO2 emissions can be reduced significantly.



**Application**  
VIPER-grinding of turbine components



**+ Cool grinding:** The specially developed sintered aluminum oxide ensures particularly cool grinding and low grinding forces.

**+ High profile retention:** Thanks to the high profile retention the dressing intervals can be significantly extended.

## Application example

Grinding of a fir tree profile of a turbine blade for the turbine industry  
TYROLIT VIPER ULTRA (VU33A60II10VB1) and VIPER ALPHA (VAA9A60II10WVK5):

**Capacity** increased by 20%



**Tool lifetime** increased by 25%



### ALPHA-technology at a glance:

- New grain quality with TYROLIT technology
- New grain geometry with TYROLIT technology
- Assured quality through in-house grain production
- Adapted high strength binding system