

Application lab report

Planar grinding of titanium with various grinding stones



QATM-Preparation method

Objective:

In this report a comparison between Al_2O_3 -Stone (Item-no.: 95016741) and SiC-Stone (Item-no.: 95016747) should be presented. Therefore, the planar grinding was performed with 8 titanium samples in sample holder Z5803043 on Qgrind XL. The surface roughness of the samples is shown in table 1.

Grinding

Device	Sample holder	Pressure mode				
Qgrind XL	Z5803043	Central Pressure				
Step	MEDIUM		 RPM		 N	 min
 Planar grinding	Corundum-Stone, grit 100 or SiC-Stone, grit 150	H ₂ O + Coolant	SH = 120 Stone = 1500	▶▶	200	Till samples are plane

Notes

- SH = rpm for sample holder
- Stone = rpm for stone
- to get the samples plane we have adjusted to remove 0,4 mm

Parameter for dressing:

- number of pre-dressing cycles = 2
- dressing depth = 10 μm
- dressing interval = every 30 s
- dressing type = normal grinding

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Figure 1: Overview of the used sample holder and the used samples.

Table 1: Results of the surface roughness measurement:

Stone	Ra [μm]	Rz [μm]
Corundum-Stone (Item-no.: 95016741)	0,31	2,99
SiC-Stone (Item-no.: 95016747)	0,27	2,59