Test report no: 040-12

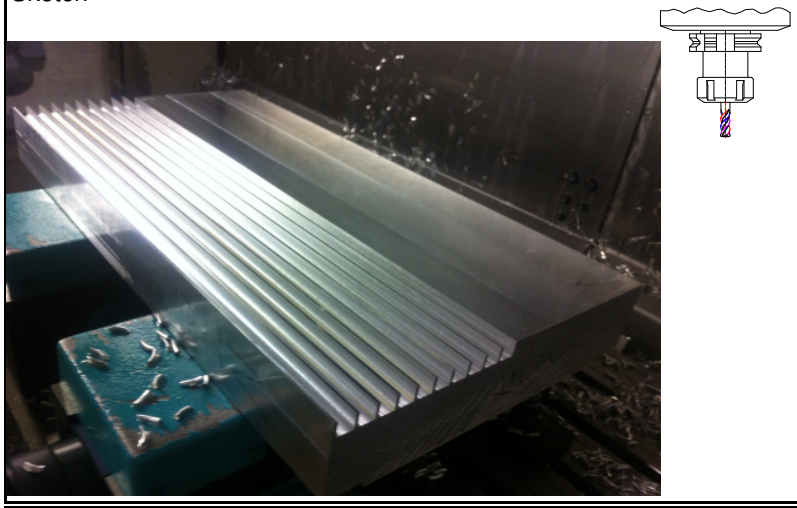
VAN HOORN CARBIDE

Machine	Micron VCP 600
Spindle type	Step -Tec
Max RPM	20.000
Power Kw	18 Kw
Cutter holder	Collet Chuck

Workpiece material	3.2315
Hardness	Alu 51 ST

Application			
Side milling	X	Up-milling	X
Slotting		Down-milling	
Profiling		Ramping	
Plunging		Circular	

Sketch



		Test 1	Test 2
Cutter supplier		van Hoorn Carbide	van Hoorn Carbide
Cutter description		VHAD 3 100 072 10 10	VHAD 3 100 072 10 10
Cutter diameter eff.	Ød mm	10	10
Number of teeth	z	3	3
Carbide grade		10	10
Cutting conditions			
Cutting speed	V_c m/min	500	500
Revolution	n rpm	15.915	15.915
Feed per tooth	f_z mm	0,050	0,250
Table feed	V_f mm/min	2.387	11.937
Depth of cut	a_p mm	10	10
Width of cut	a_e mm	10	10
Length of cut	L mm	500	500
Chip removal rate	Q cm^3/min	238,70	1193,70
Chip thickness	Hm mm	0,04999	0,25002
Coolant type		dry / air / minimum lub. / emulsion	dry / air / minimum lub. / emulsion
Coolant pressure	Bar	Internal External	Internal External
Cutting time / comp	T_{comp}. min		
Toollife	T_{total} min		
Power consumption	P Kw		
Edge wear	V_b mm		
Successful		Yes / Average / No	Yes / Average / No

Remarks

In this test we increased the Fz every slot. We started with 0,05 mm/tooth (normal Fz). The last step was 0,25 mm/tooth. The tool didn't break after 0,25 mm/tooth, but the machine couldn't take this much power.
No visible wear after the test.