




Aka-Brief #19 Superalloys with Diffusion Coatings

1						
	Rhaco Grit P120	Water	300 rpm	30 N	Until plane	BF, 50x
2						
	Allegran 9	DiaUltra 9 µm	150 rpm	35 N	2:00 min	BF, 50x
3*						
	Largan 9	DiaUltra 9 µm	150 rpm	35 N	2:00 min	BF, 50x
4						
	Silk	DiaUltra 3 µm	150 rpm	30 N	2:00 min	BF, 50x
5**						
	Chemal	Fumed Silica 0.2 µm Alkaline***	150 rpm	20 N	2:00 min	BF, 50x

Times are stated for a 300 mm preparation system and Forces for an individual 40 mm dia. sample.

On a 250 mm system the times should be increased by 30%, on a 200 mm system by 100%.

With larger samples the force should be increased, with smaller samples decreased.

The rotational speed of the head (sample holder or sample mover plate) used is 150 rpm.

Time and Force may vary depending on the equipment.

* No cleaning is necessary between Step 2 and 3 as the same diamond grain size is used for both steps.

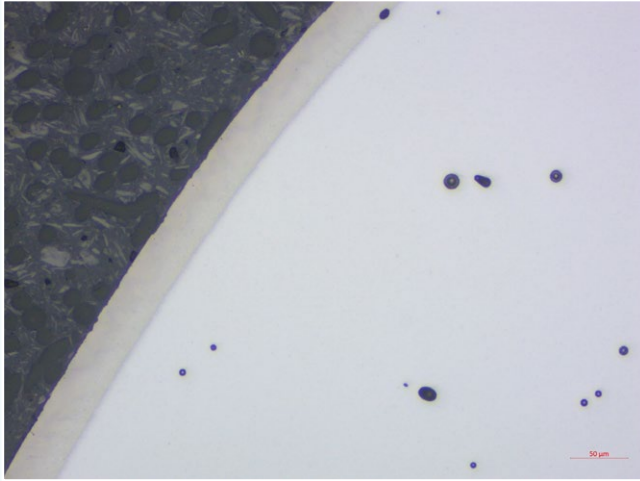
** If the finish of the coatings is not scratch-free after oxide polishing, this step can be replaced by a 1 µm step on a Napal cloth with 20 N for 2 min. Oxide polishing can be used afterwards if an etching of the substrate is required.

*** Prior to oxide polishing the polishing cloth should be wetted with water until the holder touches the polishing cloth. For the last 10 seconds of the oxide polishing step, the polishing cloth should be flushed with water to clean both samples and polishing cloth.

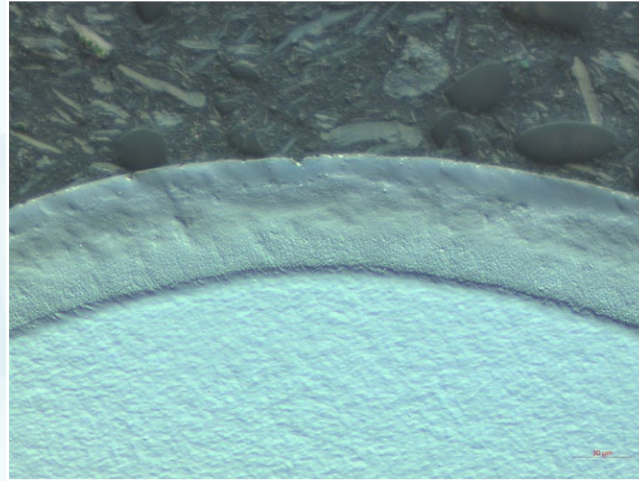


Aka-Brief #19 Superalloys with Diffusion Coatings

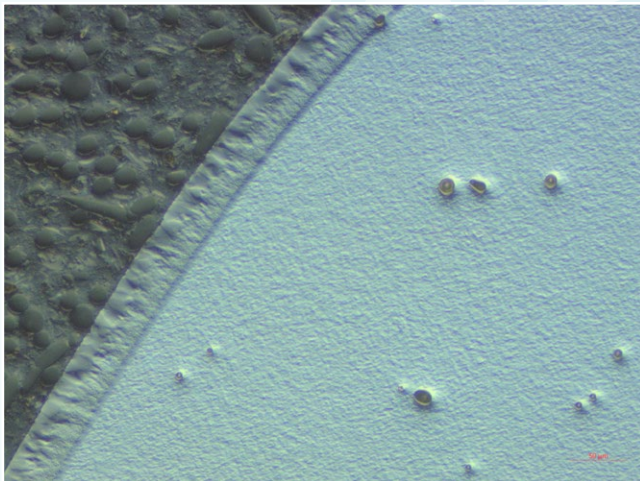
FINAL RESULT



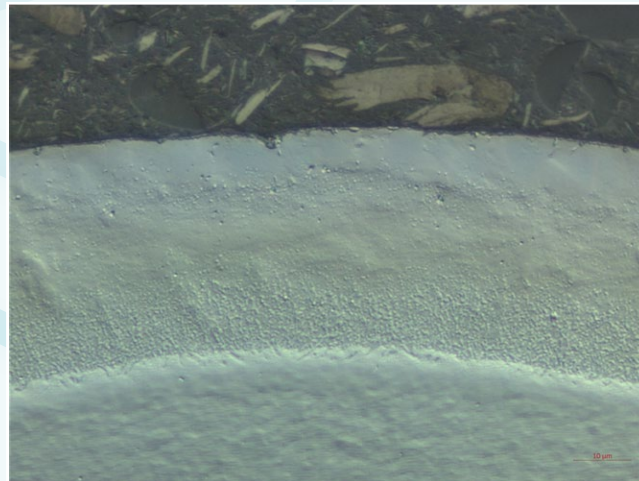
Porosity in Superalloy substrate, BF, 200x



Diffusion coatings, DIC, 500x



Porosity in Superalloy substrate, DIC, 200x



Diffusion coatings, DIC, 1000x