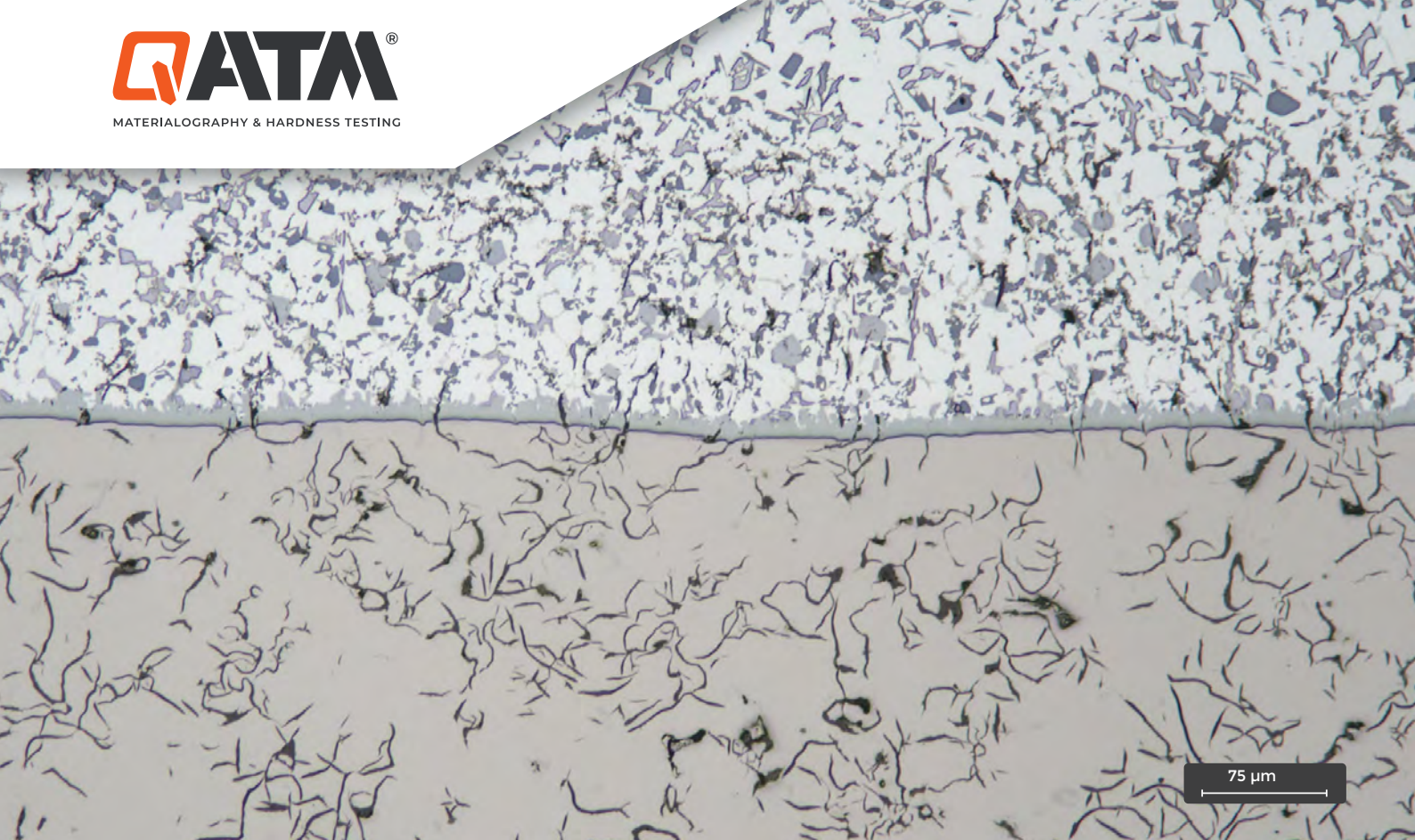




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BOUNDARY BETWEEN CAST ALUMINUM AND GRAY CAST IRON

Objective:

The sample should be examined for pores/voids, bonding defects and the microstructure. The samples were separated (Qcut 500 A), hot mounted (Qpress 50) and prepared (Qpol 300 AI Eco+). Detailed parameters and images can be found in the following application laboratory report.

CUTTING

Gerät	Qcut 500 A	
Cut-off disc	NF-A500SC, Silicon carbide, resin-bonded	Item no.: 95012566
Coolant and anti-corrosion agent	ATM Cool Cut	Item no.: 95004146
Clamping tool	2x Universal vice Mono 132	Item no.: Z1350002
	2x Hight support Mono	Item no.: Z1350011
Cutting method	Horizontal cut (X-axis)	
Parameter	- Feeding speed	0.6 mm/s
	- Pulse setting	0.2 / 0.1 mm
	- Rotational speed of cut-off disc	1800 rpm

Note



Cut-off machine Qcut 500 A

Cutting the sample



HOT MOUNTING



Hot mounting press Qpress 50

Gerät	Qpress 50	
Mounting material	Bakelit Black	Item no.: 95011982
Heating time	5:00 min	
Temperature	180 °C	
Pressure	250 bar	
Cooling time	4:00 min	
Accessories	-	
Heat set up	100%	
Pressure mode	Pressure from beginning	
Cooling set up	100%	

Note

- the parameter recommendation is for mould assembly Ø 40 mm



Sample in the hot mounting press



Automatic grinding and polishing machine Qpol 300 A1 Eco+

GRINDING/POLISHING

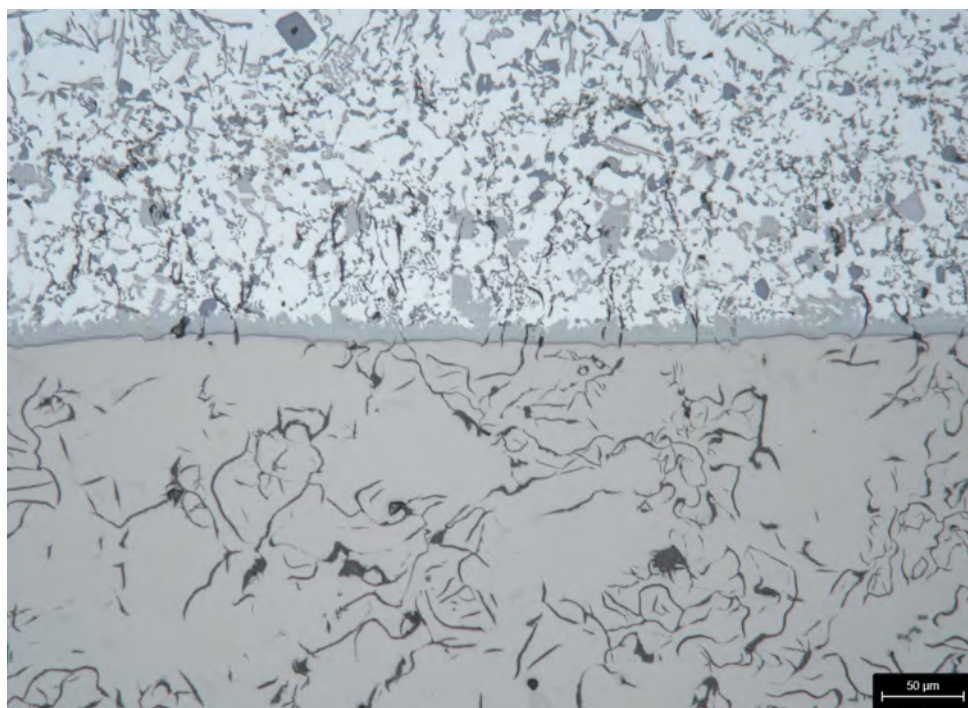
Device	Qpol 300 A1 Eco+	
Sample holder	6 x 40 mm	Item no.: Z5446025
Pressure	Single pressure	

STEP	MEDIUM		 rpm	 rpm	 Single Pressure N<	 min
 Pre-Grinding	SiC-Paper P320 + Quick-Tap	H ₂ O	200	120 ►► Synchronous Rotation	35	Till flat (ca. 1:00)
 Pre-polishing	BETA	Dia-Complete Poly, 9 µm	150	120 ◄► Counter Rotation	35	5:00
 Polishing	SIGMA	Dia-Complete Poly, 3 µm	150	120 ►► Synchronous Rotation	30	5:00
 Final polishing	OMEGA	Eposil F 0.1 µm	100	80 ◄► Counter Rotation	25	2:30 (H ₂ O the last 0:15)
Notes	- Pre-dosing for 9 µm und 3 µm and final polishing: 3 s - Dosing interval and dosing time for Dia. suspension 9 µm and 3 µm: Each 30 s for 1.3 s - Dosing interval and dosing time for final polishing suspension: Each 20 s for 1.3 s - The microscopic images were taken with a Leica DM8000 optical microscope					

The AlSi/grey cast iron structure under the light microscope - 100x



The AlSi/gray cast iron structure
under the light microscope - 200x



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www.qatm.com