

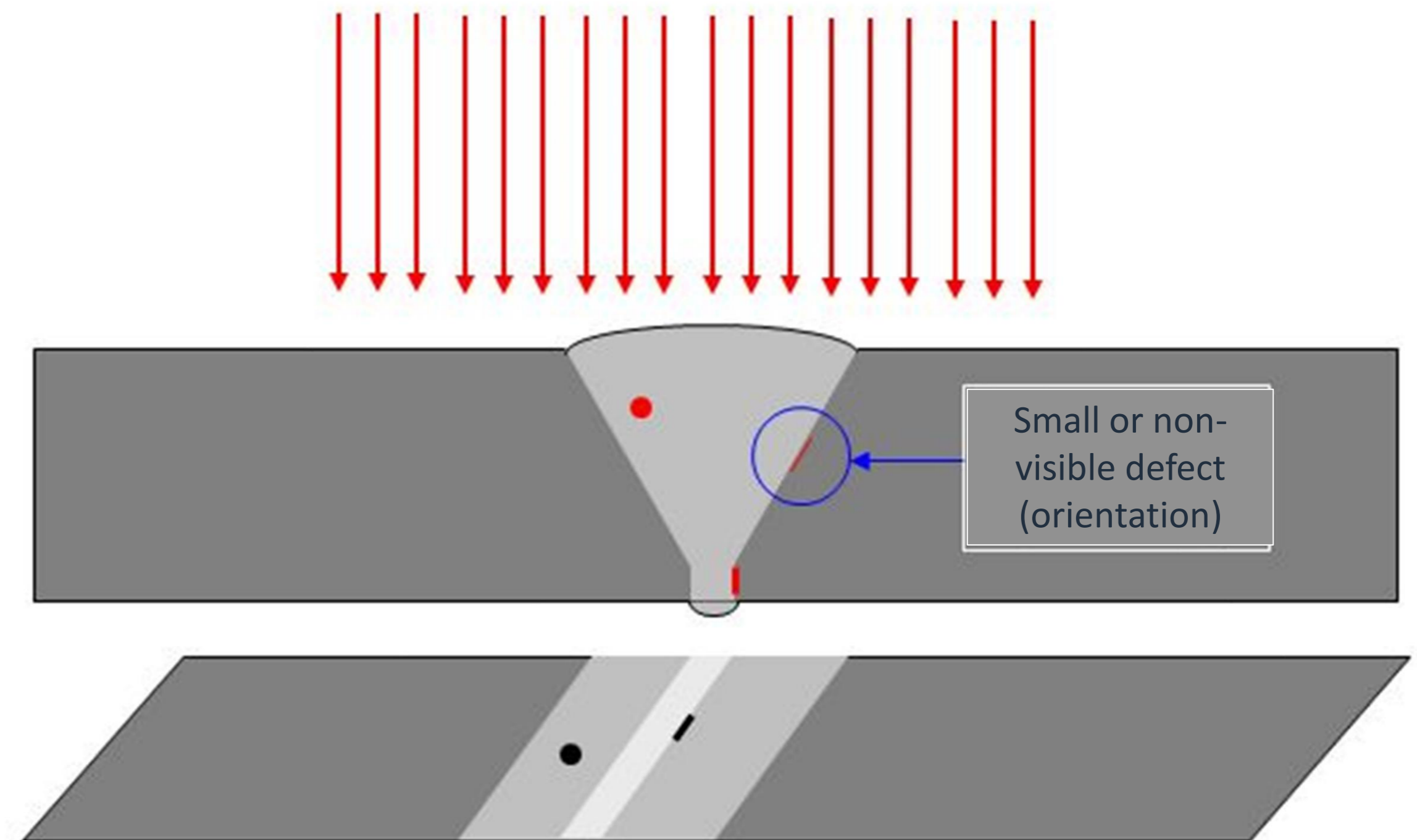
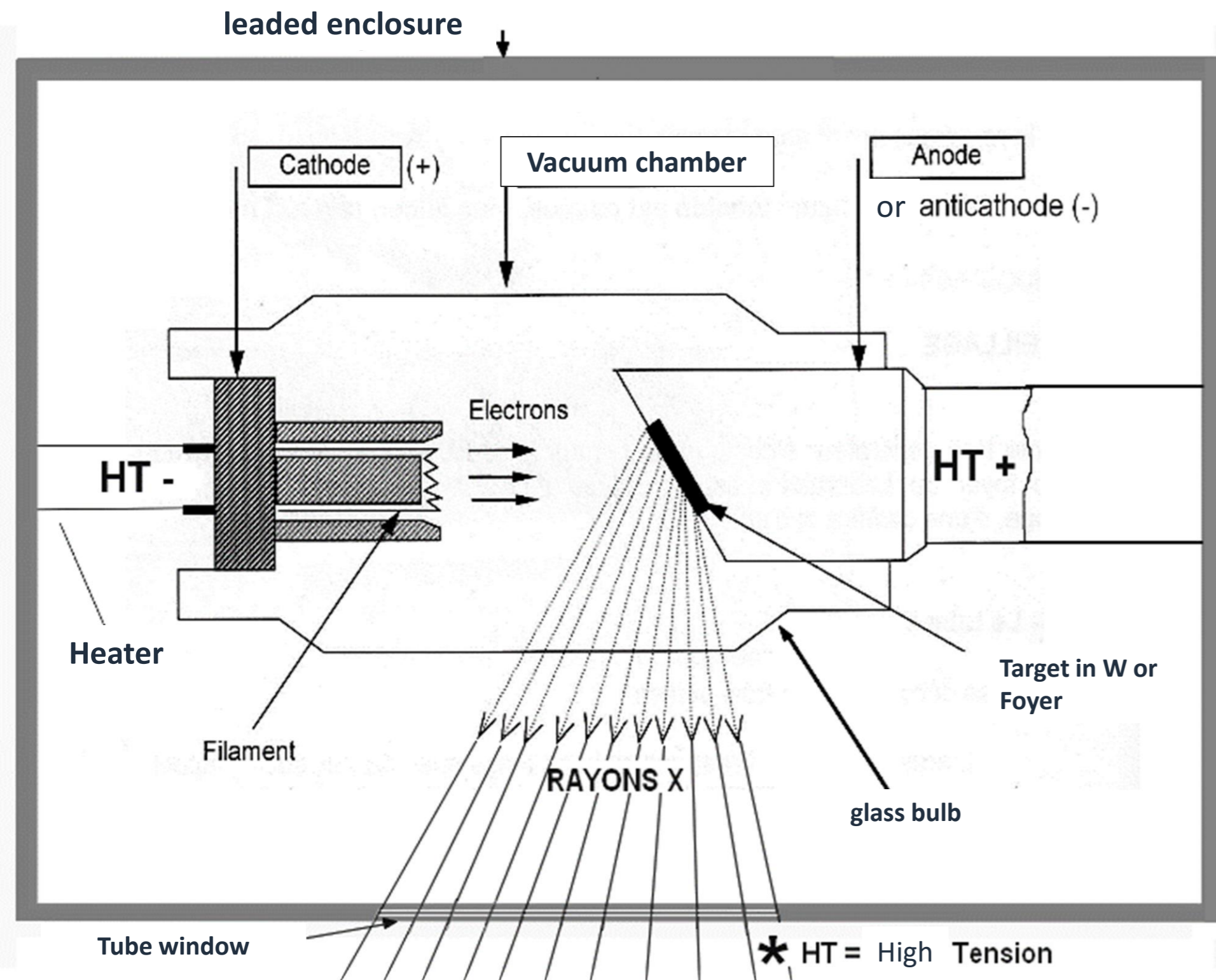


Inspection par Radiographie
Radiographic Inspection

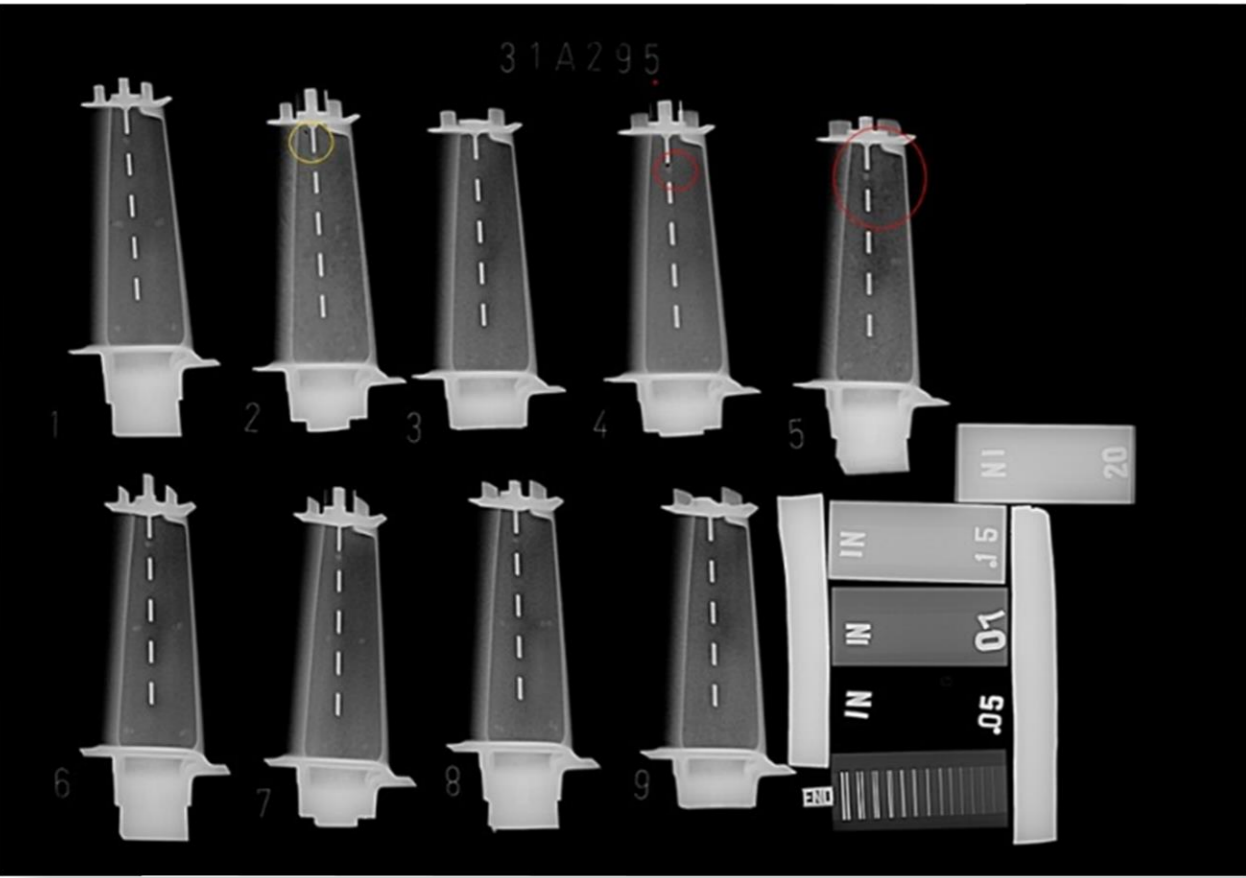


Principle

Principle : Radiography is a method utilizing an X-ray tube that emits X-ray radiation which passes through the object being inspected. The image is captured by a digital detection process (formerly a film process). The digital detection process takes a few seconds, allowing a prompt image display ready for dark room interpretation by a certified level 2 RT inspector. The entire RX radiography shooting technique must be validated by a certified level 3 RT Engineer.



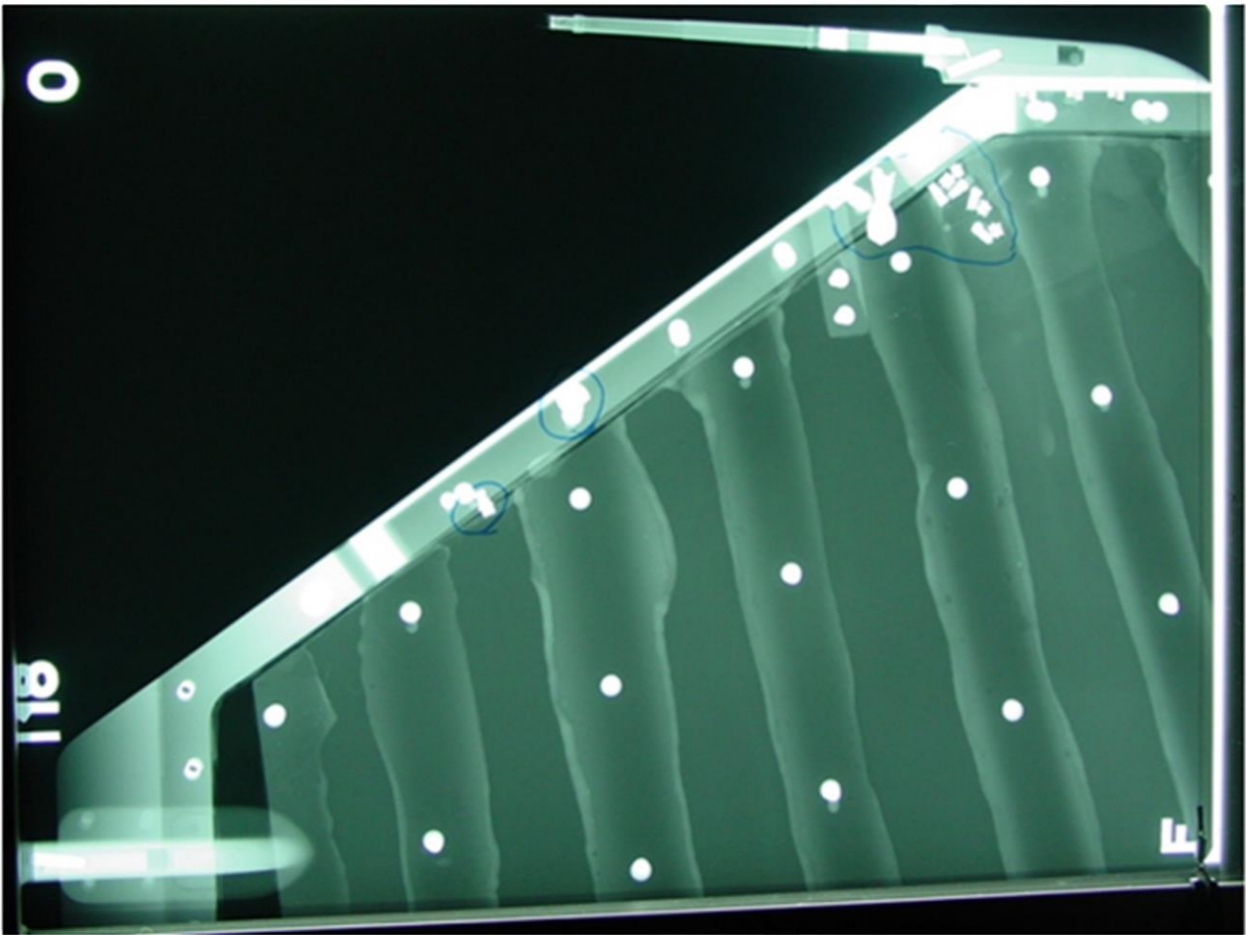
Foundry inclusion



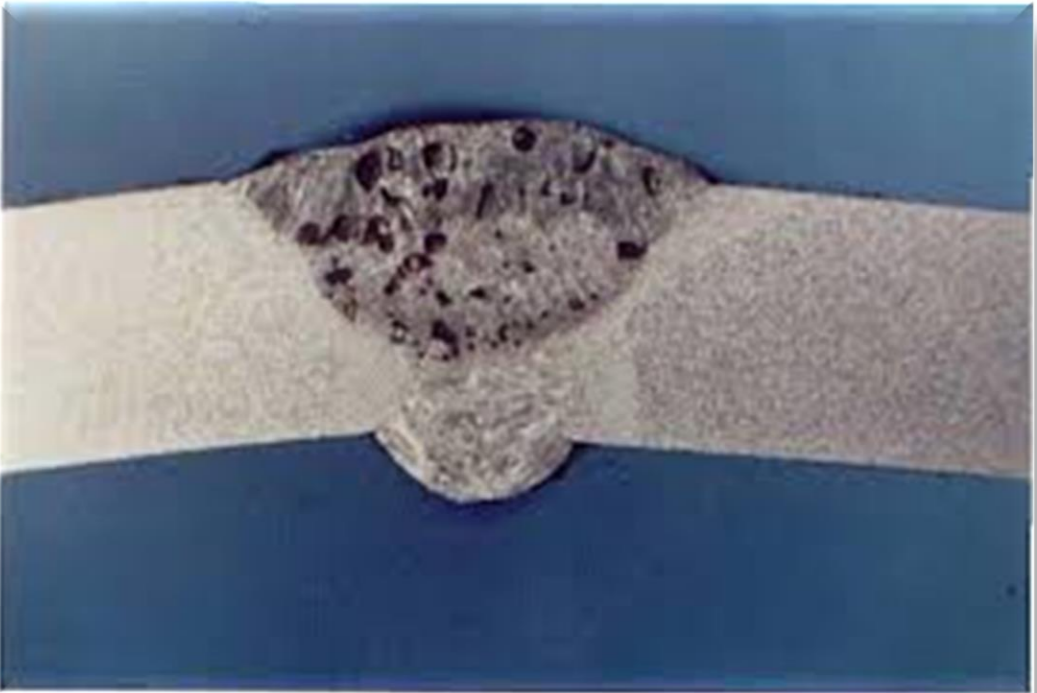
Delamination - composite rib



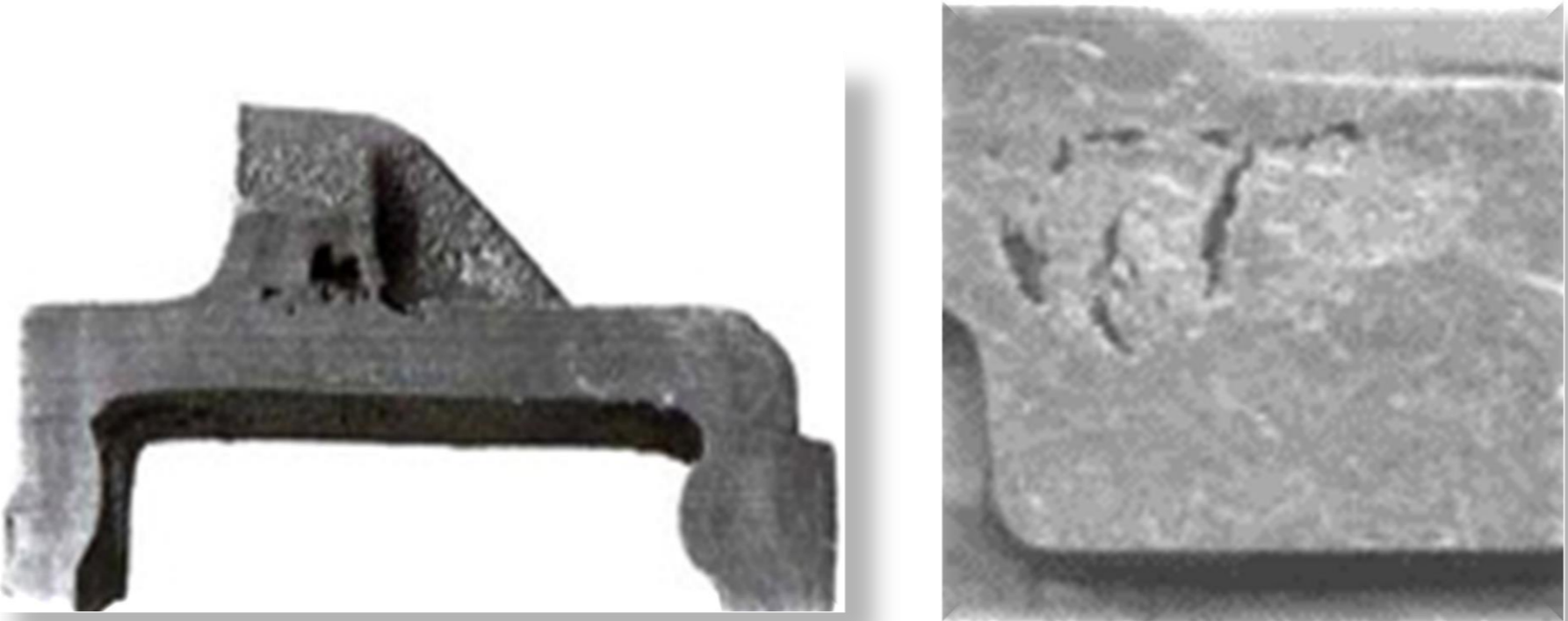
Foreign body - composite



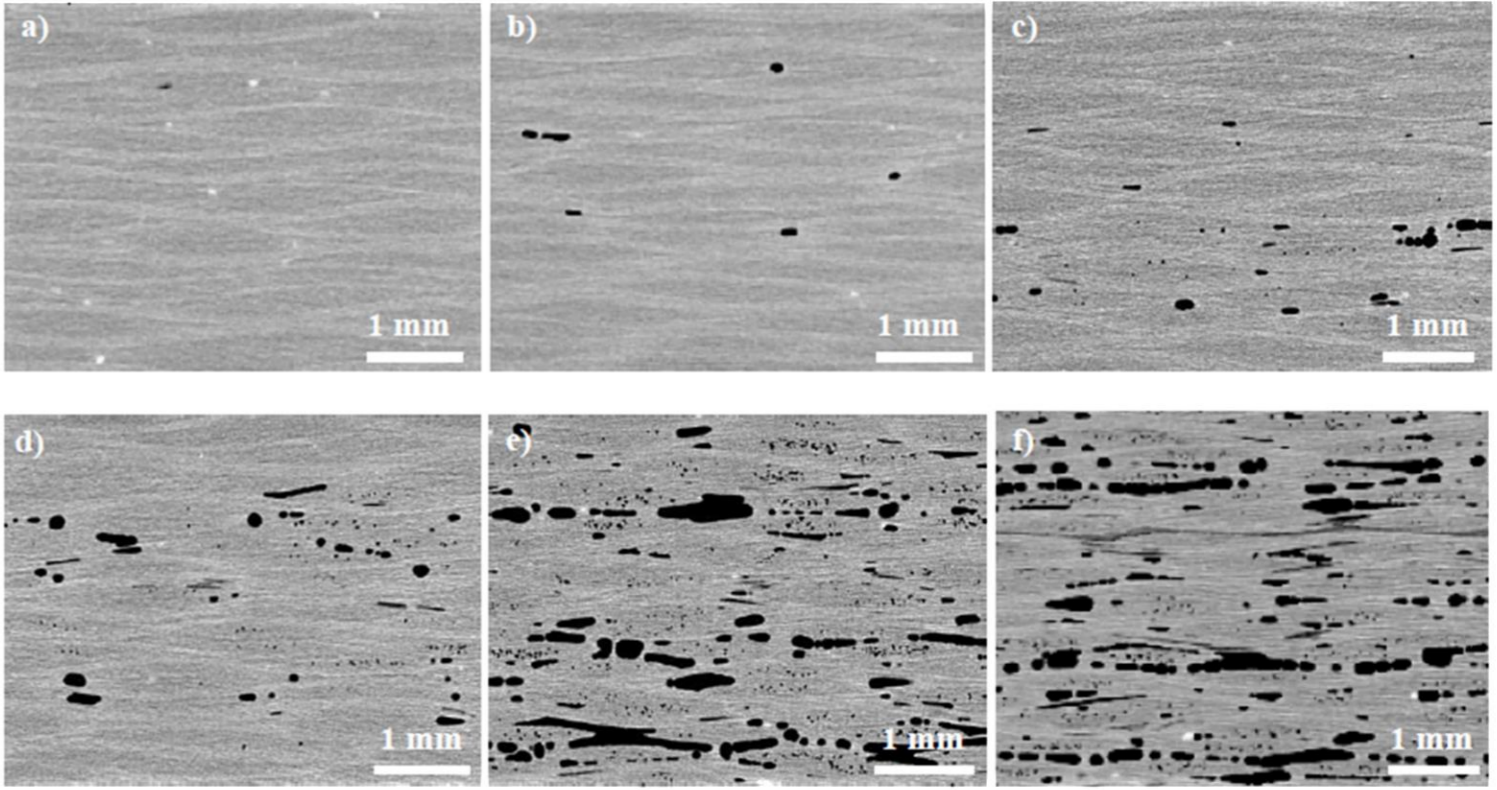
Welding defects



Shrinkage (casting defect)



Determination of % Porosity





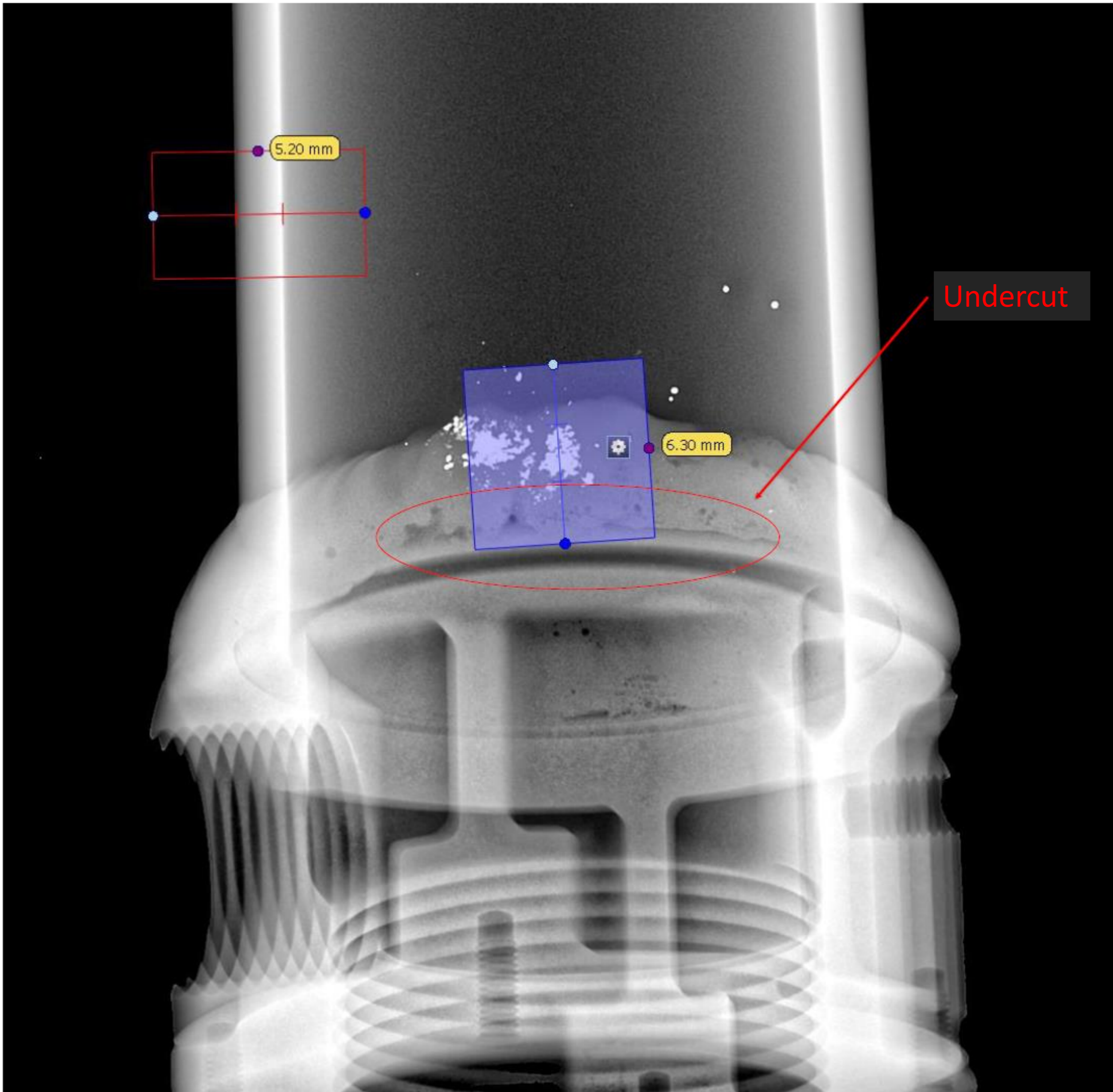
VIEW B2

NDT Services & Polishing

According to EN 12517-2 Acceptance Level 2

- Denser inclusions (3.1mm max): **6.30mm**
- Porosity (3.3mm max): **1.40mm**
- Cluster porosity (4% max): **2%**
- Undercut (1mm max): **40mm**

NON CONFORMITY

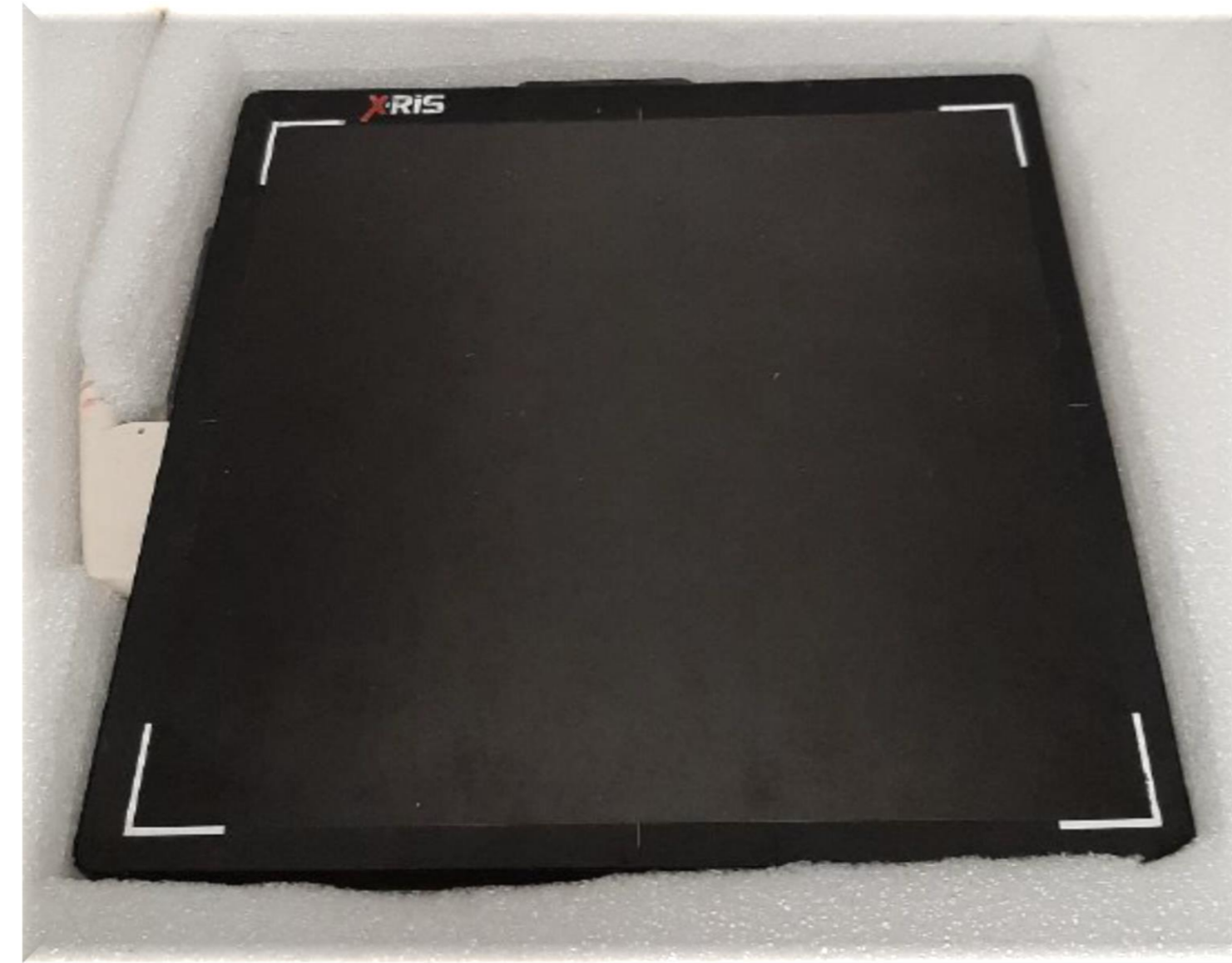


Radiography - portable digital technique outside MPP

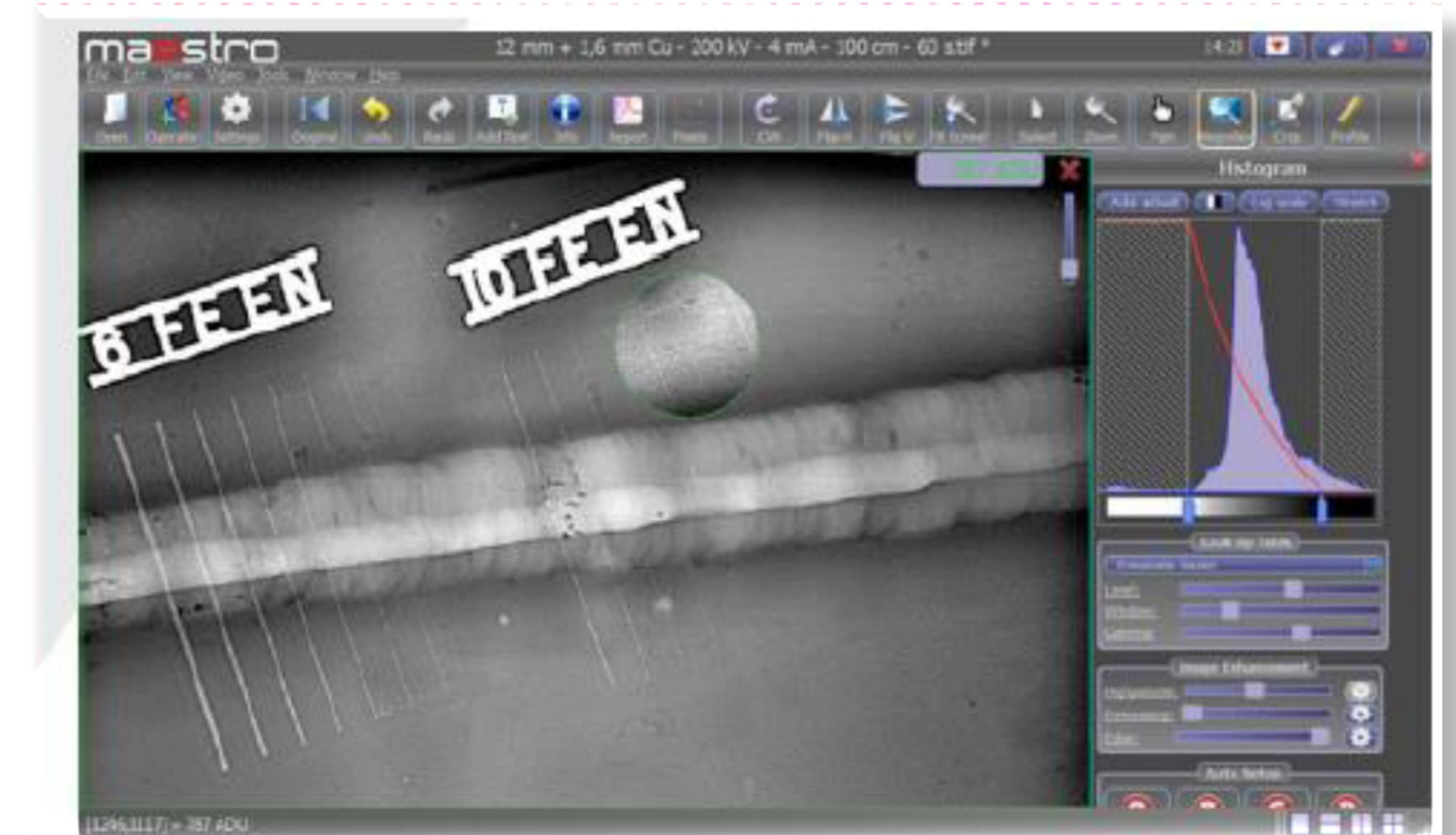
Battery portable tube



Wifi high resolution detector

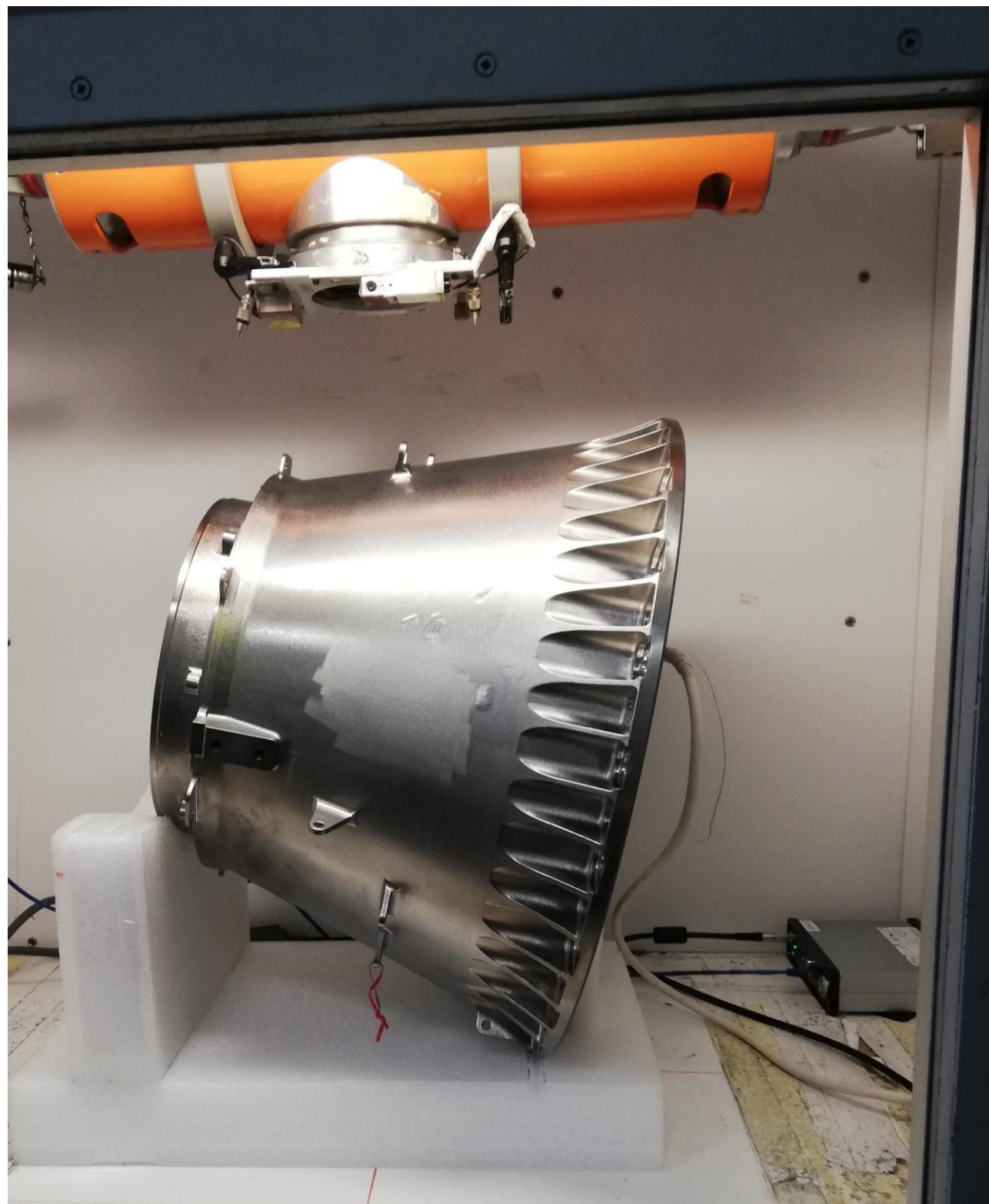


Maestro Xris software on dedicated laptop



Inspection

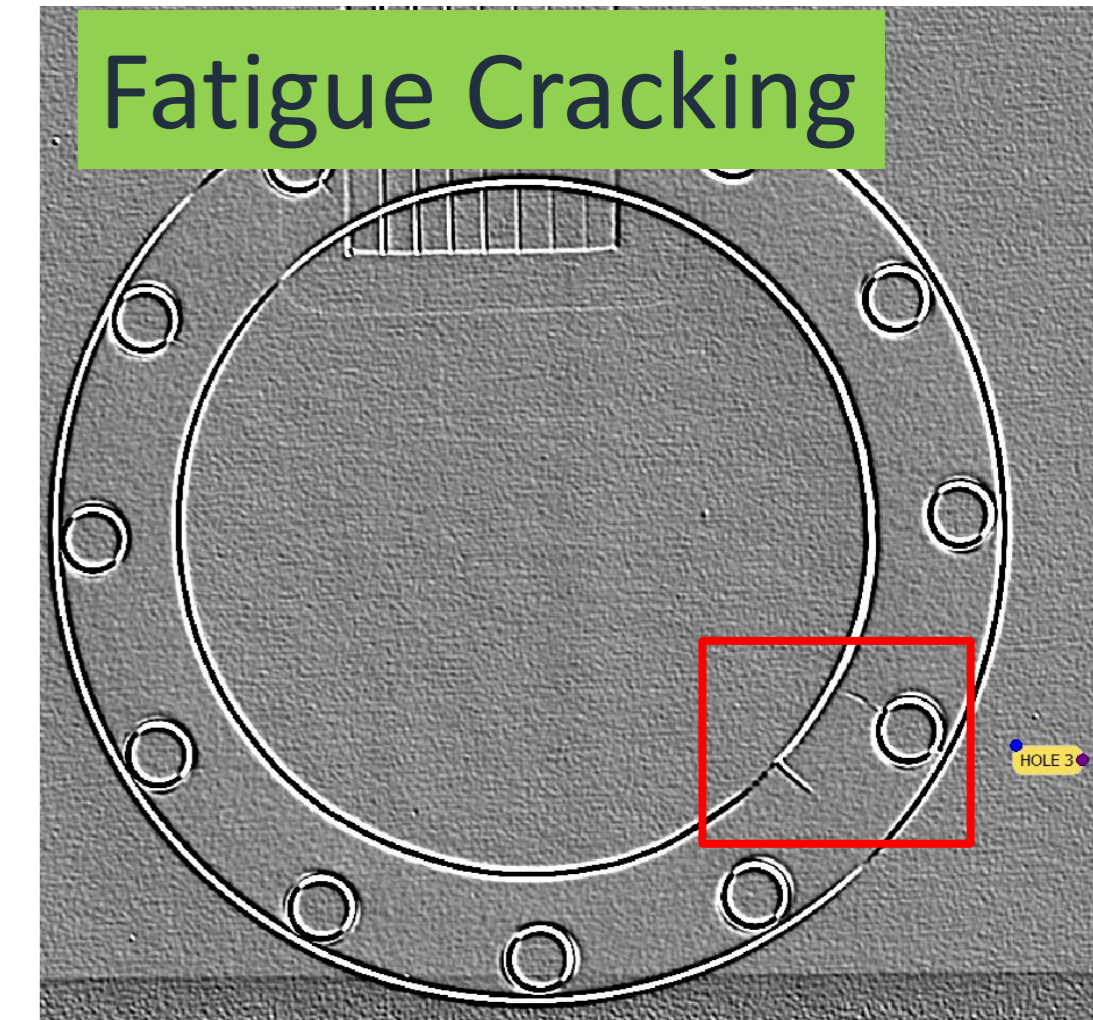
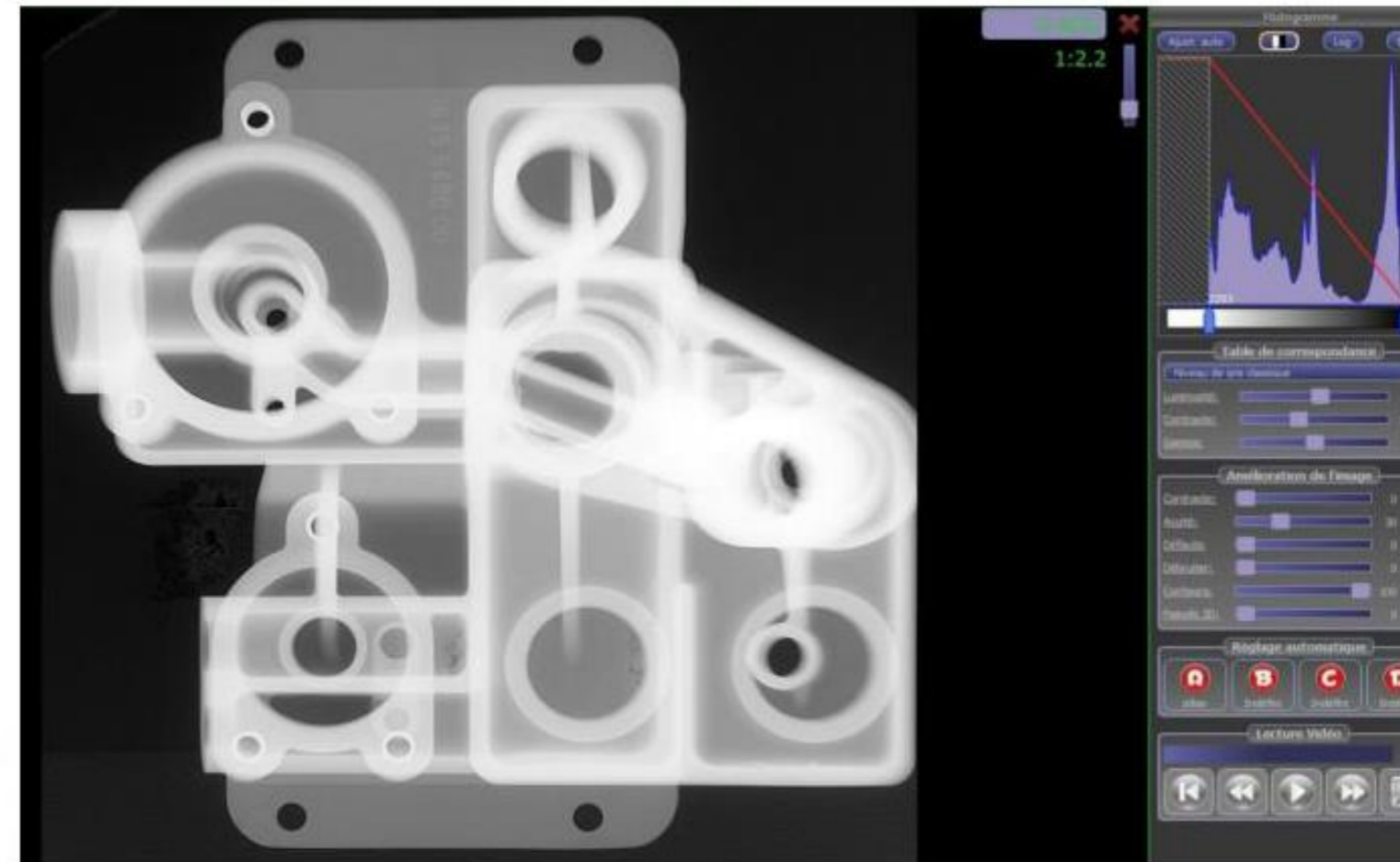
Radiographie digital – Flat Panel Xris at MPP (internal method)



320kV tube - detector in the room



Wider Flat Panel
400x 400 mm

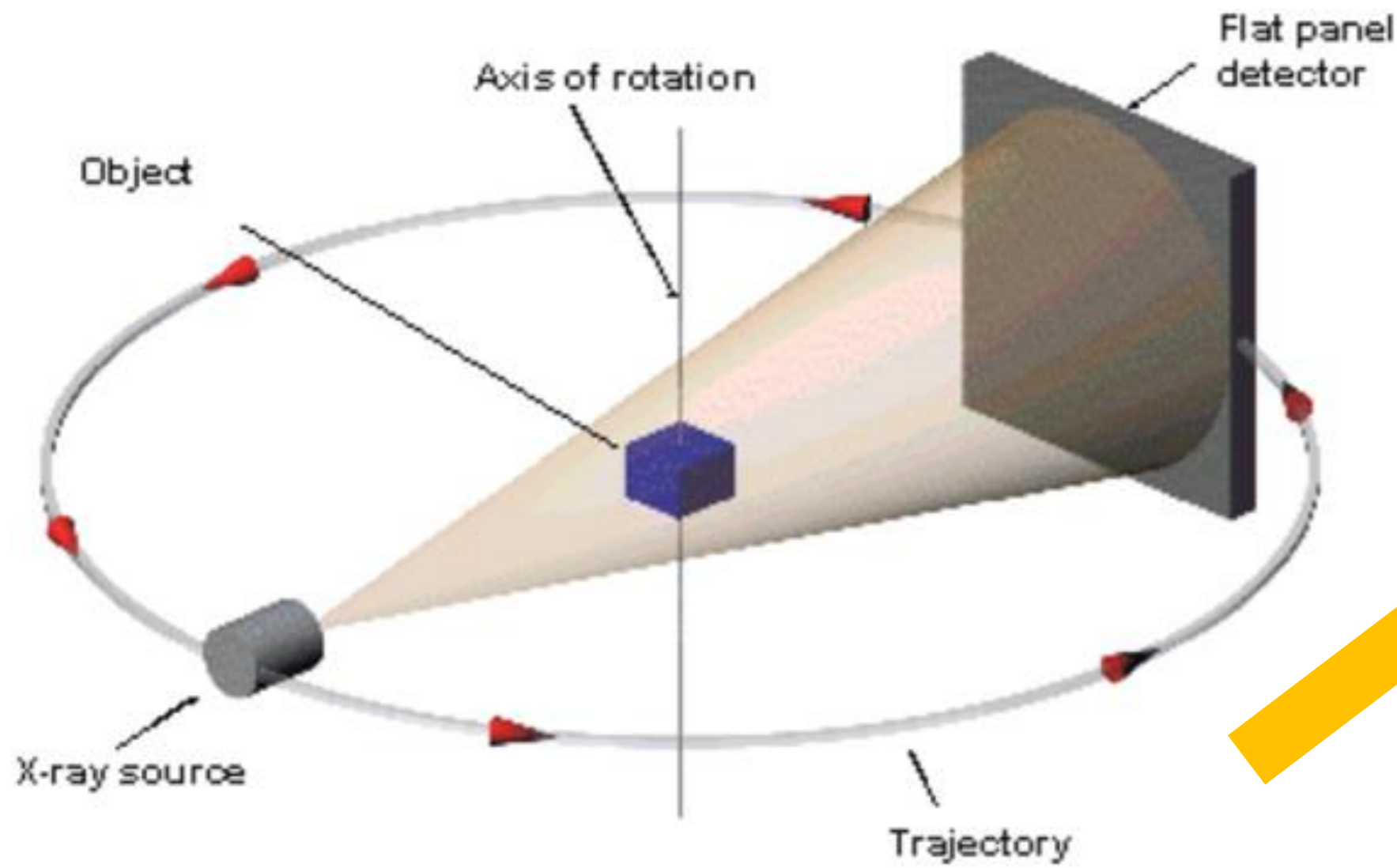


Fatigue Cracking



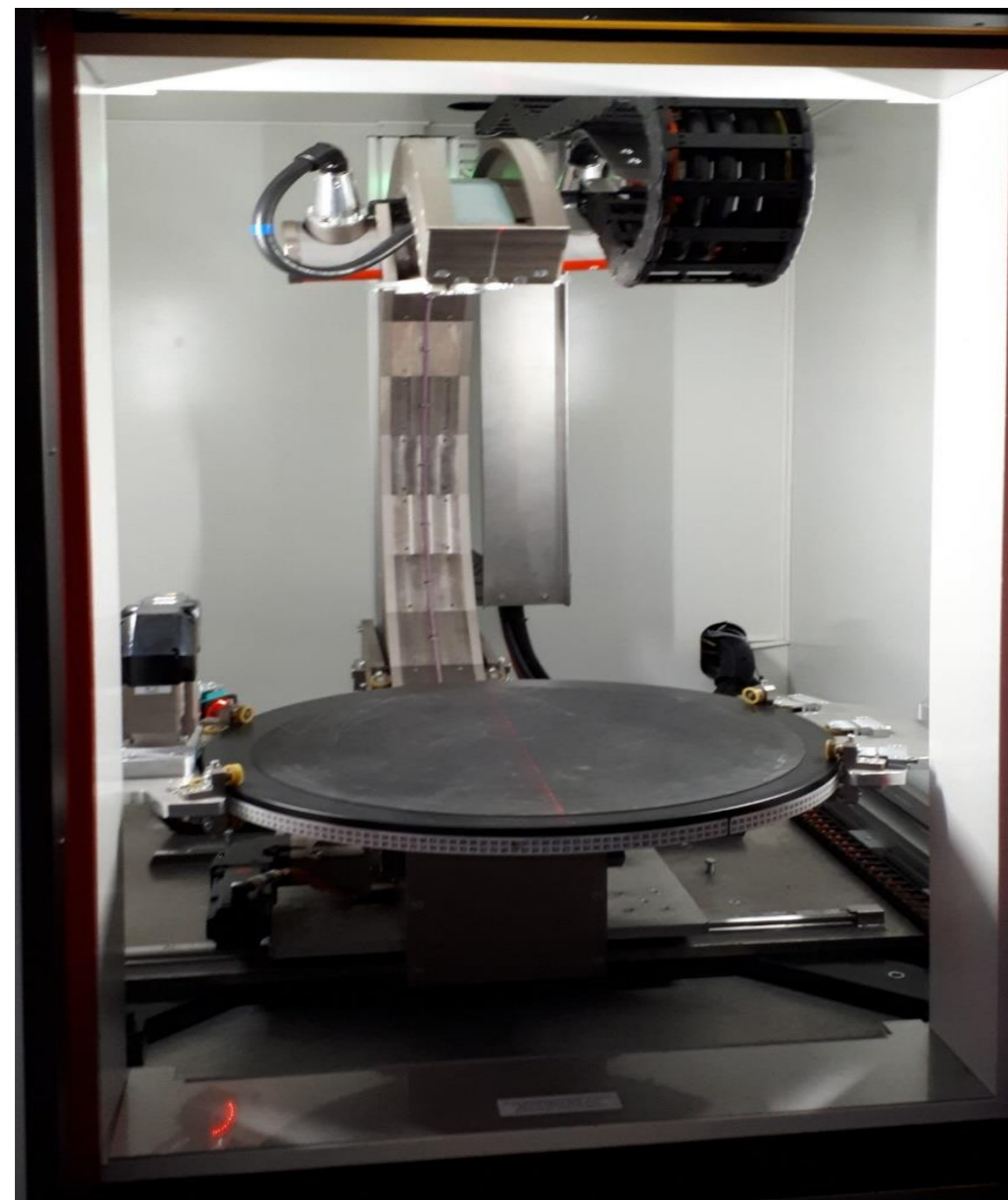
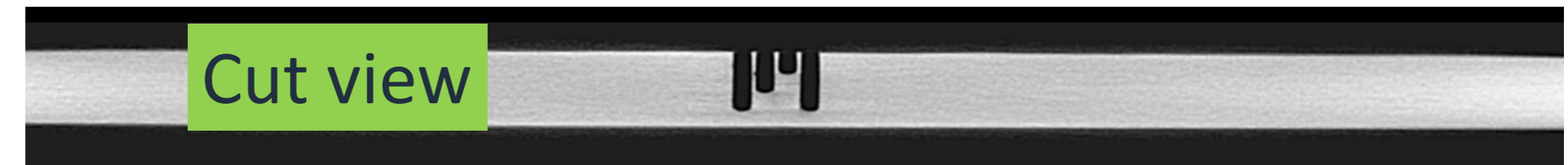
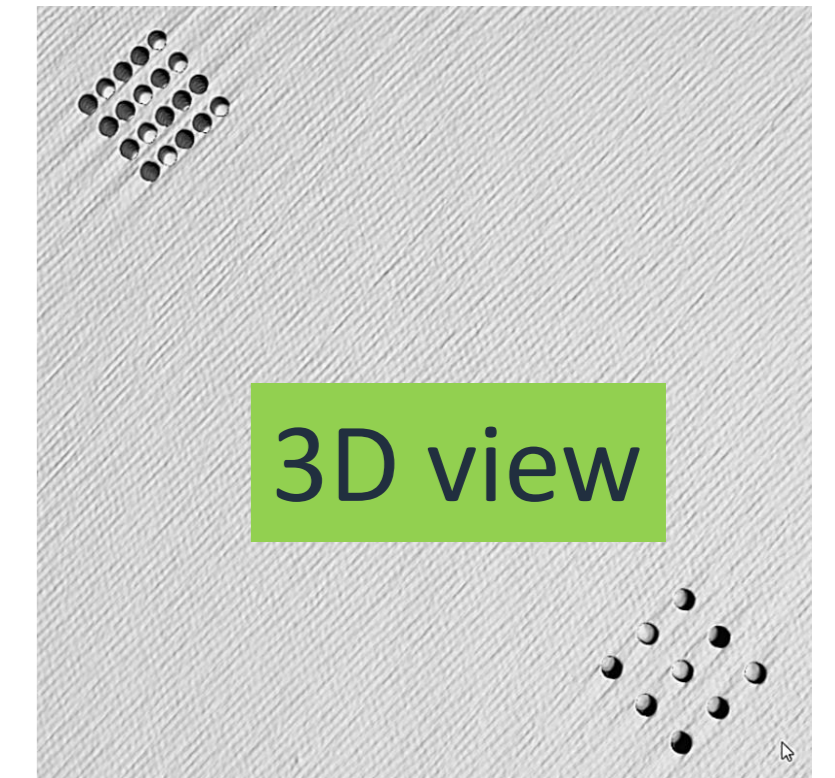
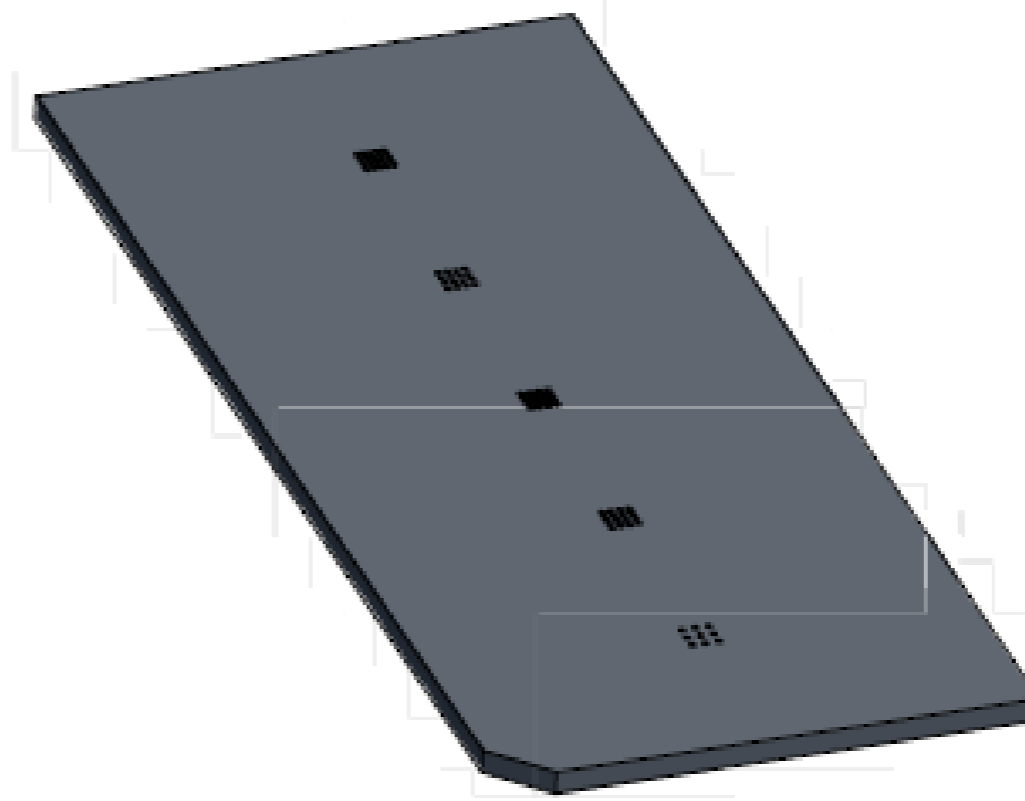
Delamination in tangential shot

Tomography

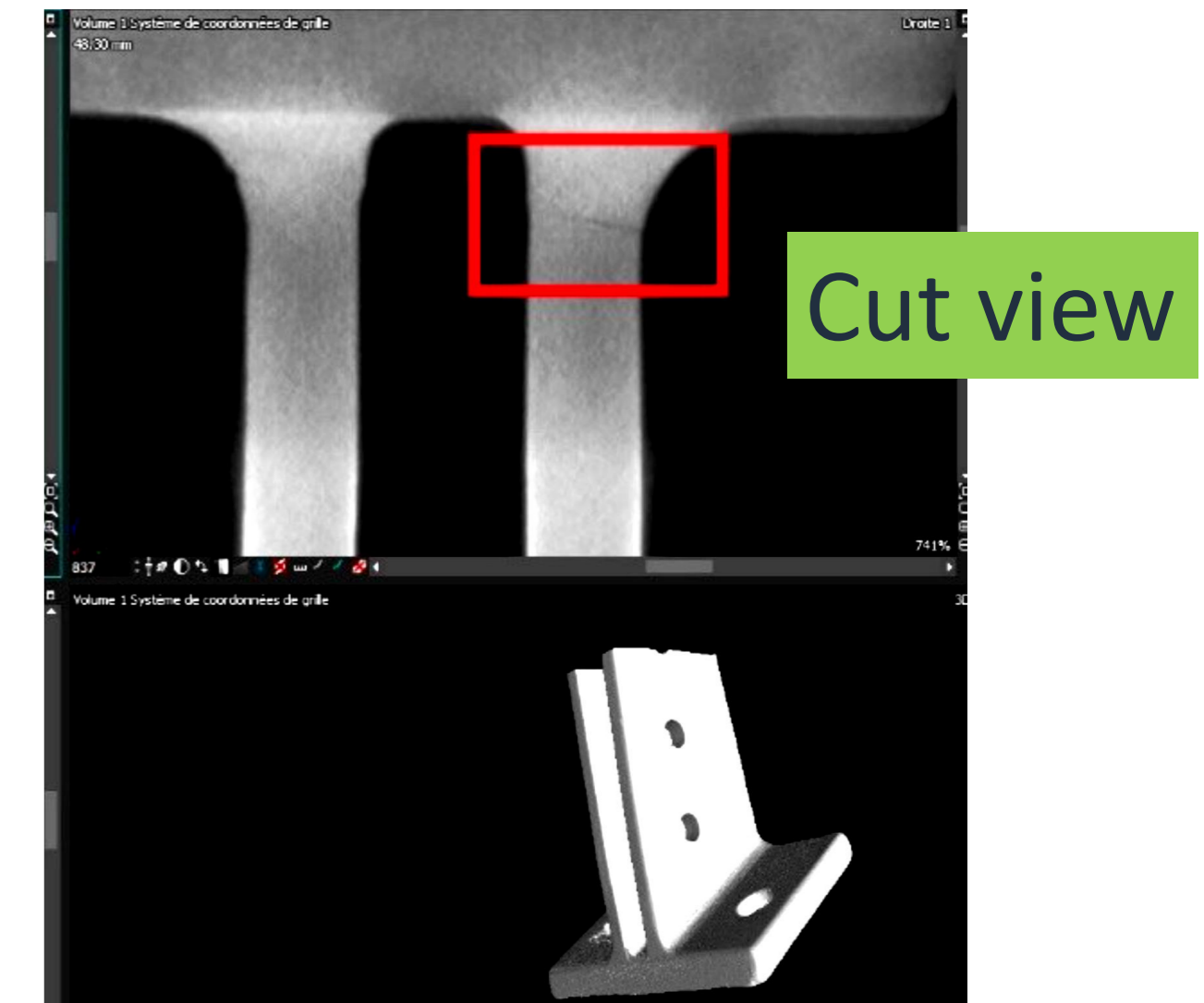


Application on composite Porosity Detection

Alkar Porosity panel




Application on metal Crack Detection



Method	Equipment / Techniques	STAFF
RT Radiographic Testing	<ul style="list-style-type: none"> Digital radiography (from 50KV – 320KV) Resolution from 50 μm – 200 μm 	2 RT Level1 2 RT level 2 and 1 RT3
UT Ultrasonic Testing	<ul style="list-style-type: none"> Immersion Testing Thickness measurement Phased Array Pulse Echo 	1 UT level 1 2 UT level 2 1 UT level 3
PT Penetrant Testing	<ul style="list-style-type: none"> Red Dye or Fluorescent penetrant Alkaline or Solvent Degreasing 	4 PT level 2 1 PT level 3
MT Magnetic Particle Inspection	<ul style="list-style-type: none"> Hand yokes Stationary MT bench 	3 MT level 2 1 MT level 3
IRT Infrared Thermography Testing	<ul style="list-style-type: none"> Hot air heater or 4 x 1000 W Halogen heaters IR Camera Flir T450sc 	2 IRT level 2 1 IRT level 3
ST Shearographic Testing	<ul style="list-style-type: none"> Hot air heater or 4 x 1000 W Halogen heaters Optrion Digital Shearographic Camera 	1 ST level 1 1 ST level 3
ET Eddy Current Testing	<ul style="list-style-type: none"> High and low Frequency Eddy Current Testing Rotating Probe ET 	2 ET level 2 1 ET level 3
VT Visual Testing	<ul style="list-style-type: none"> Direct VT of welds, castings and composite parts Indirect VT (endoscopy and digital microscope 220x) 	1 VT level 2 1 VT level 3

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