

# AzuRe160



**Descrição:** Azulejo do século XVII (1620-1670); Origem: Lisboa.

**Amostras:** Fragmentos em depósito no *Museu Nacional do Azulejo* em Lisboa.

# Índice

- **Caracterização Morfológica**
  - ✓ Imagens macroscópicas
  - ✓ Imagens de microscopia electrónica (SEM)
- **Caracterização Física**
  - ✓ Propriedades hídricas / Porosidade
- **Caracterização Química/Mineralógica**
  - ✓ Análise por SEM/EDS

AzuRe160





Azulejo com craquelé denso e bem evidente.

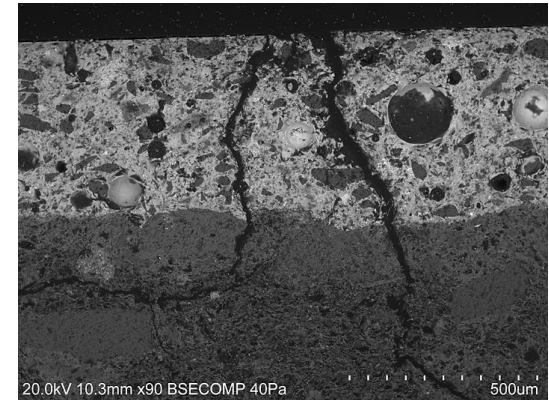
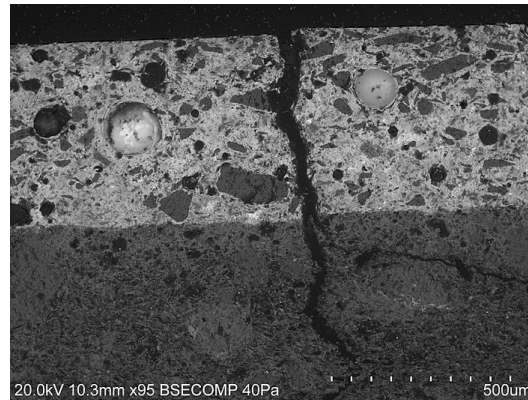
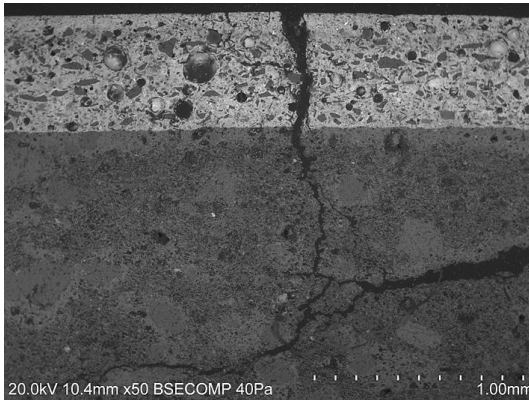


- Espessura do Azulejo = 16 mm

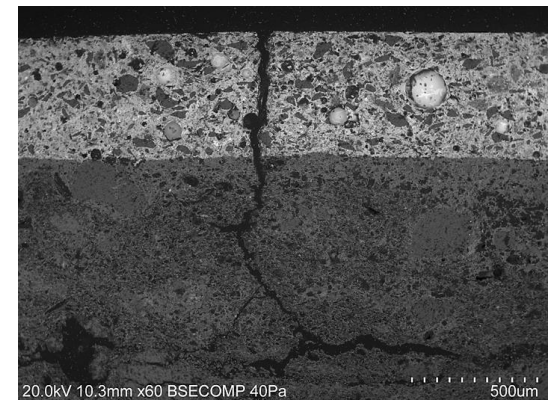


Chacota amarelada com poros circulares e alongados; filamentos de barro vermelho; inclusões vermelhas, pretas e beges; vazios alongados; areias; craquelé com propagação vertical na chacota.



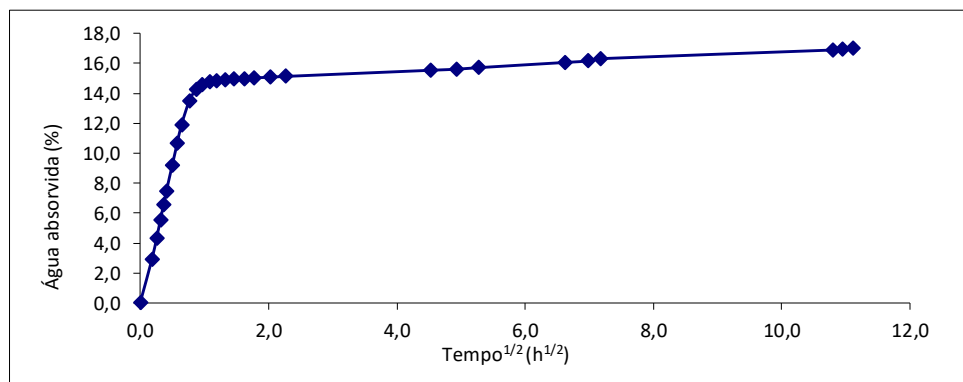


- Observa-se craquelé.
- Espessura do Vidrado = 565-572  $\mu\text{m}$



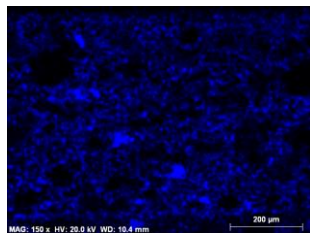
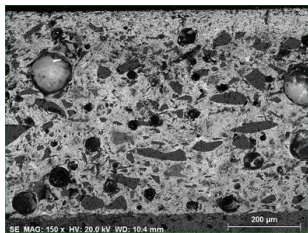
**Equipamento:** Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

Curva de Absorção de Água (Chacota)

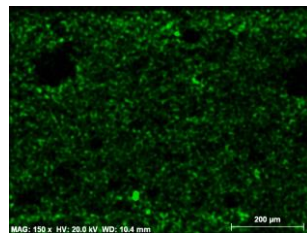


<b>Massa volúmica real (kg/m<sup>3</sup>)</b>	--
<b>Massa volúmica aparente (kg/m<sup>3</sup>)</b>	--
<b>Porosidade aberta (vol %)</b>	36,9
<b>Coefficiente de capilaridade (kg/m<sup>2</sup>/h<sup>1/2</sup>)</b>	6,2
<b>Teor máximo de água (%)</b>	21,4

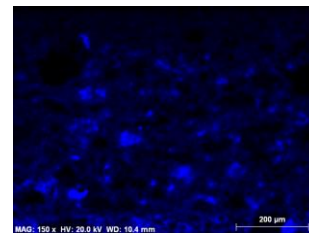
Procedimento: baseado na norma NP EN-13755.



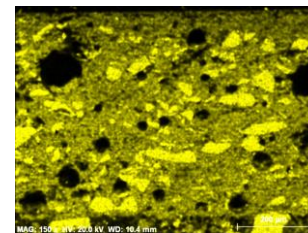
Na



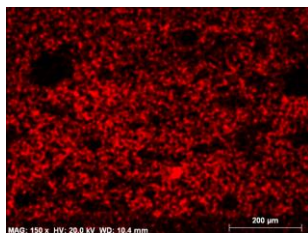
Mg



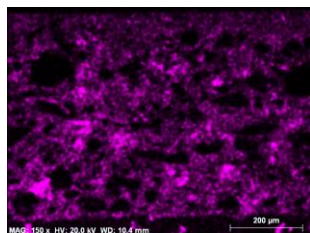
Al



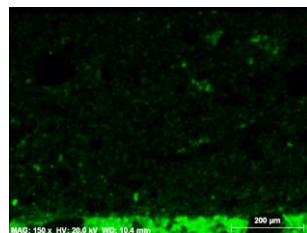
Si



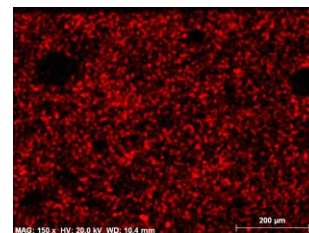
Cl



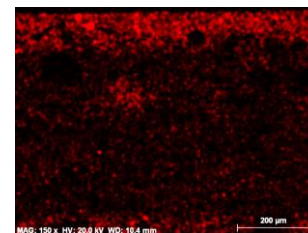
K



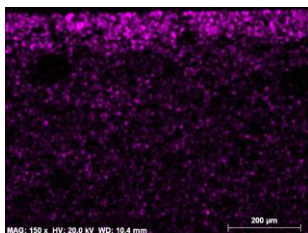
Ca



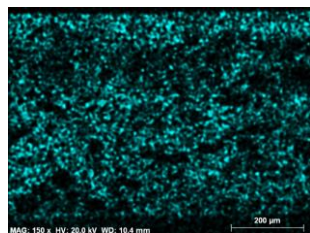
Ti



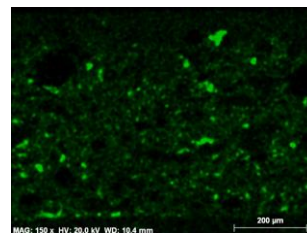
Fe



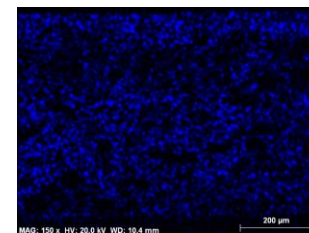
Co



As



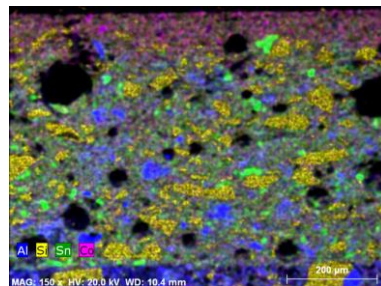
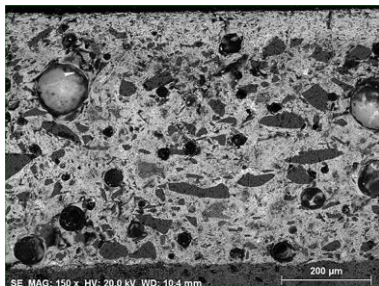
Sn



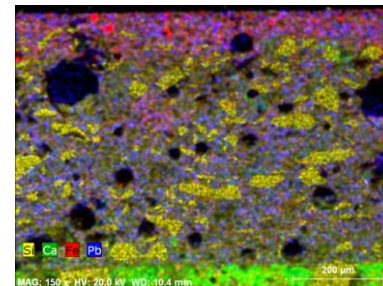
Pb

**Equipamento:** Microscópio eletrônico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.





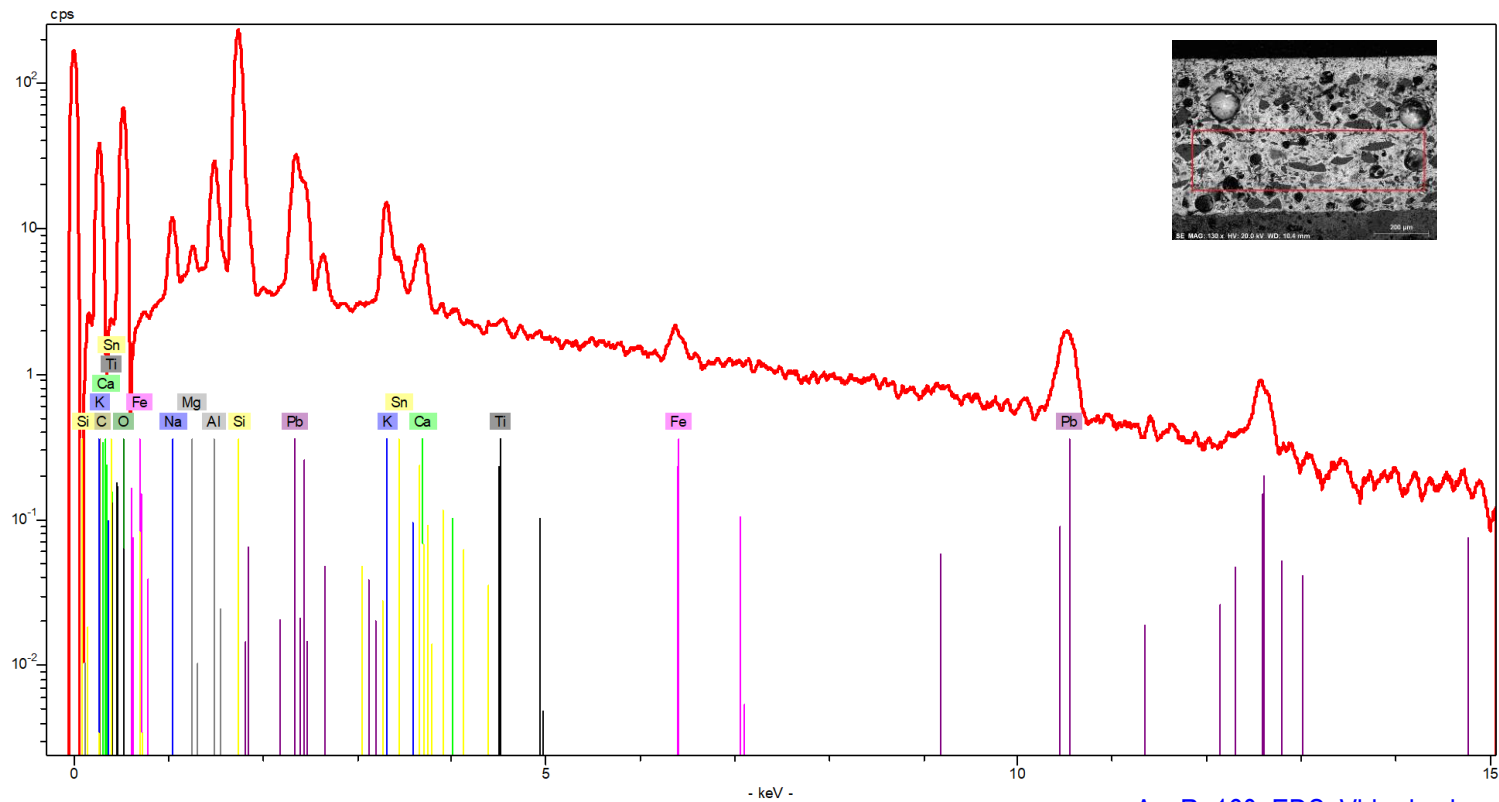
Combinação  
Al\_Si\_Sn\_Co



Combinação  
Si\_Ca\_Fe\_Pb

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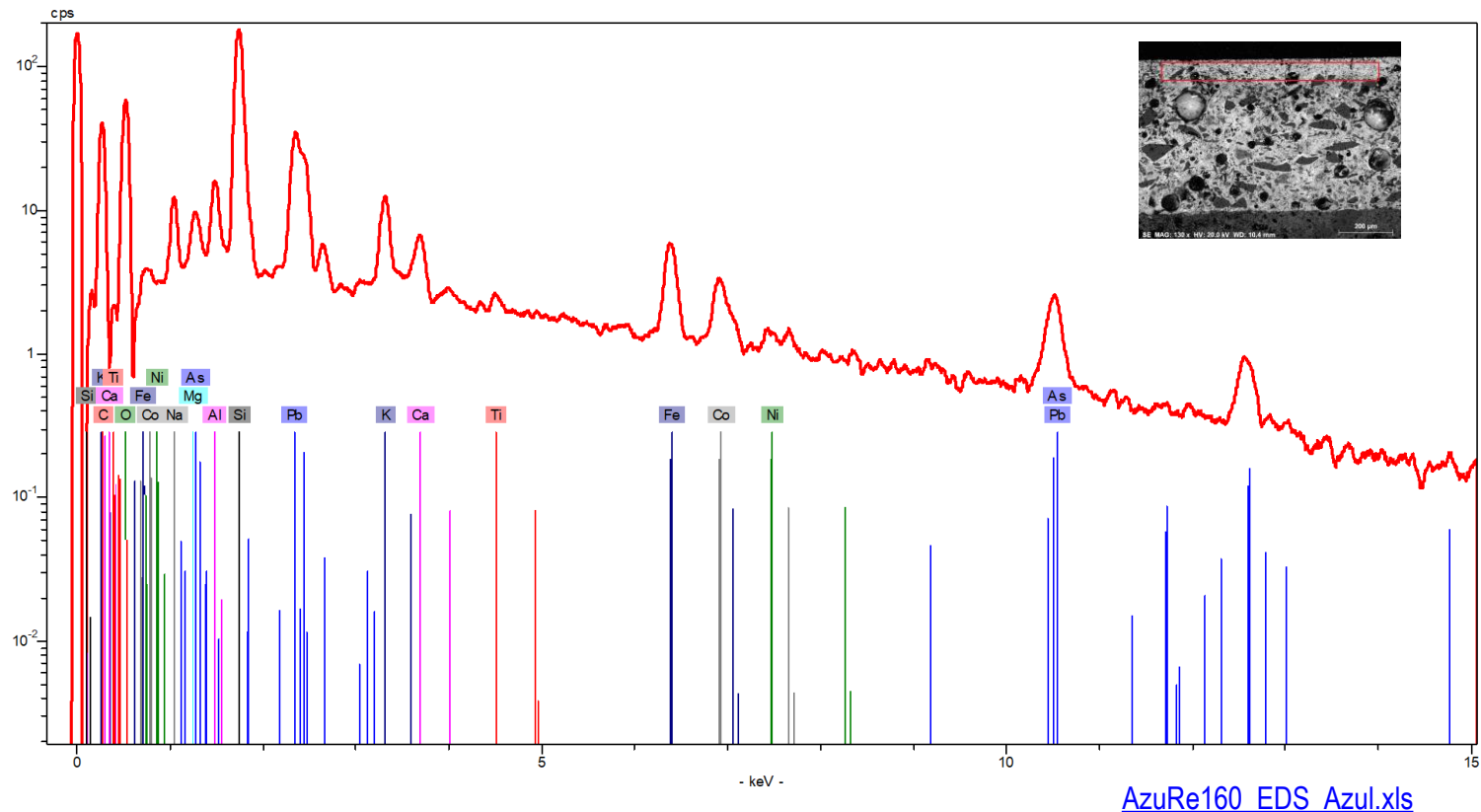
## VIDRADO BRANCO

[AzuRe160\\_EDS\\_Vidrado.xls](#)

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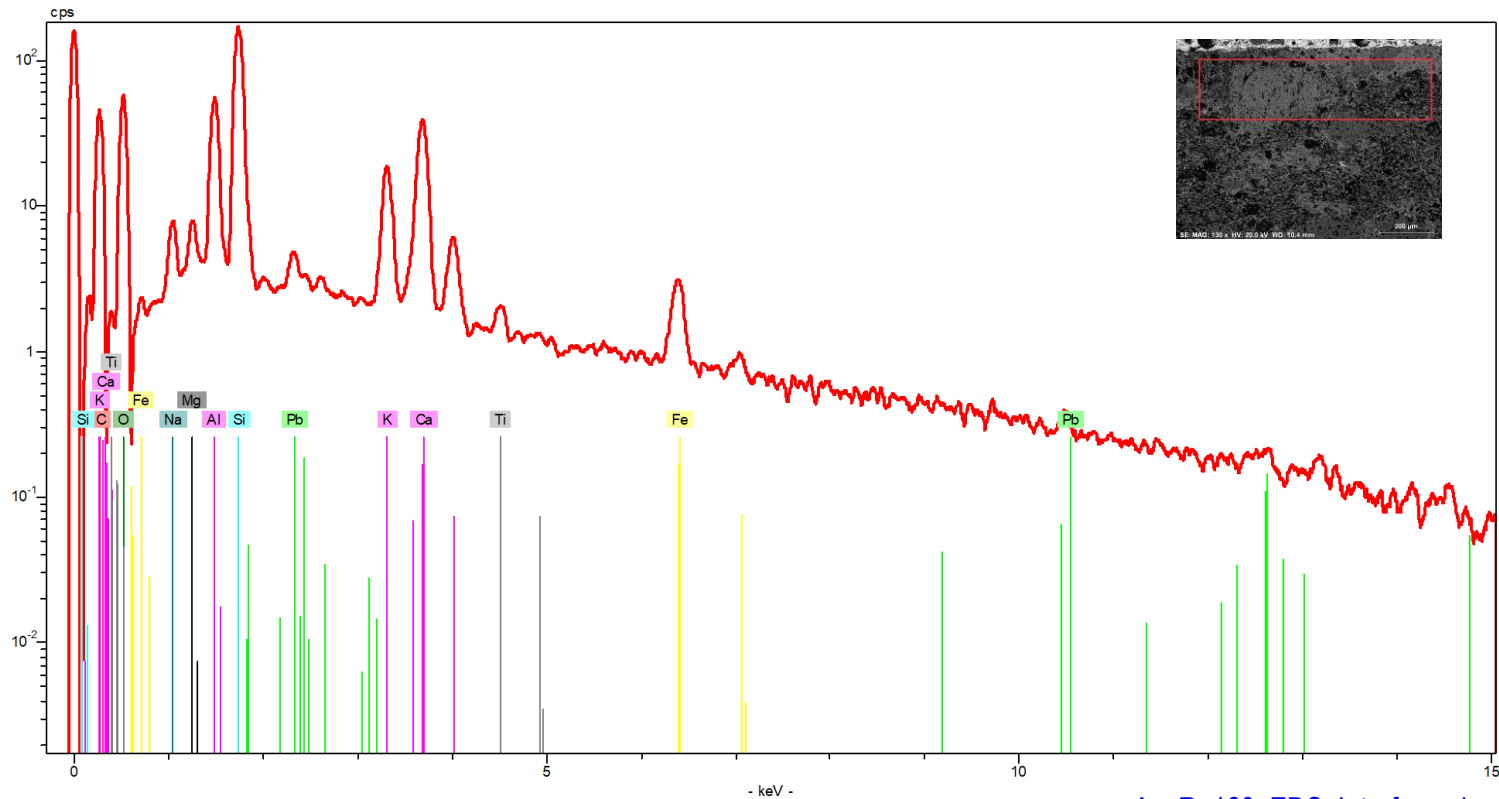


## PIGMENTO AZUL



**Equipamento:** Microscópio eletrônico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

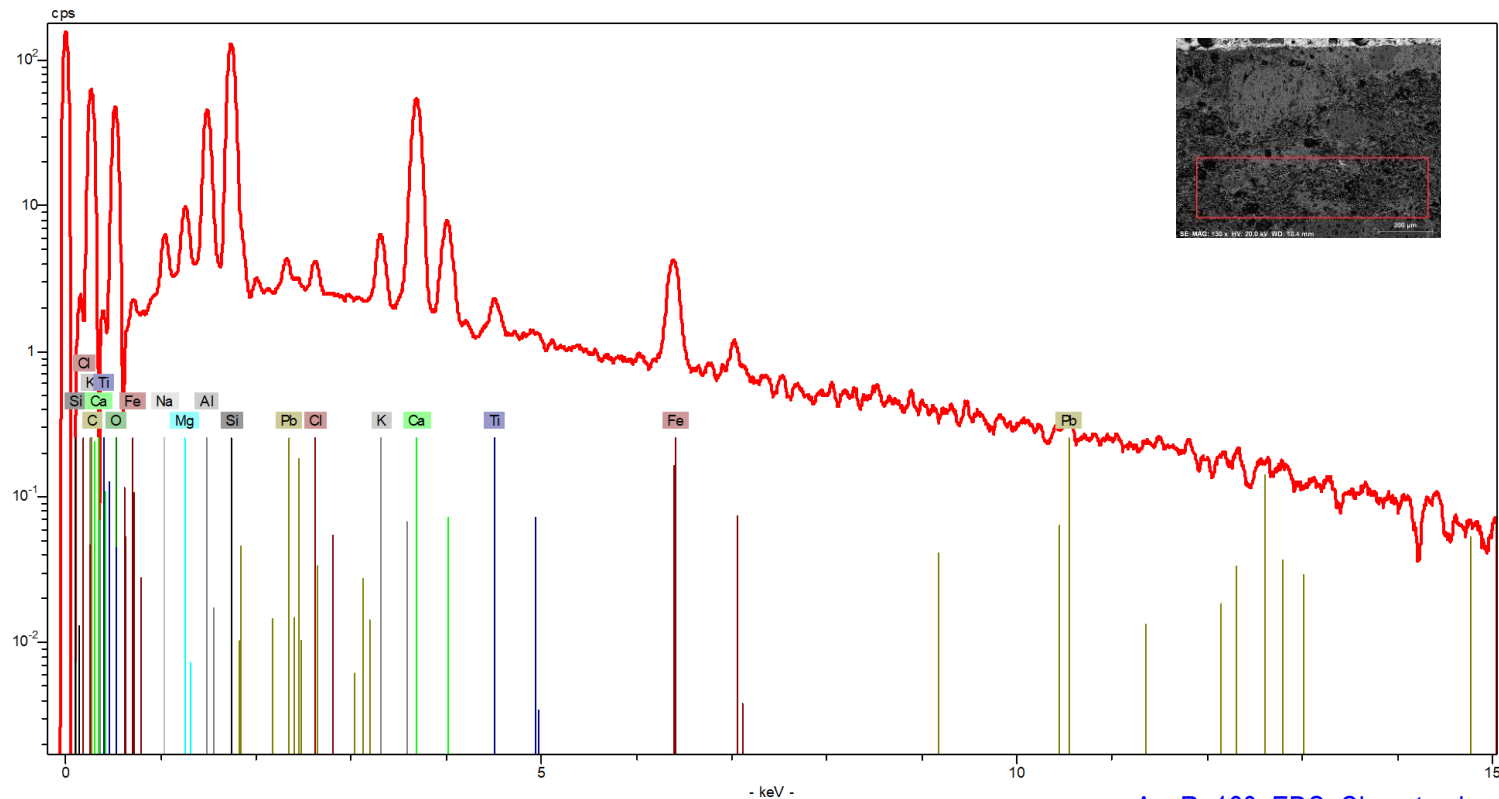
## INTERFACE



[Azure160 EDS Interface.xls](#)

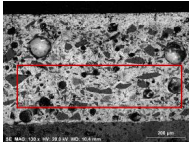
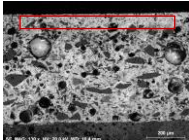
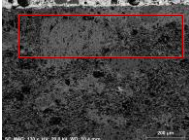
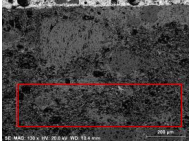
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CHACOTA

[AzuRe160\\_EDS\\_Chacota.xls](#)

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## Composição química (% m/m)\*

Área Analisada	Na	Mg	Al	Si	Cl	K	Ca	Ti	Fe	Co	Ni	As	Sn	Pb
 vidrado branco	3,34	0,81	5,71	43,72	--	5,15	1,81	0,02	0,89	--	--	--	3,45	35,12
 pigmento azul	3,88	0,99	3,04	37,16	--	4,28	2,17	0,25	5,87	3,65	0,91	5,44	--	32,36
 chacota (próximo interface)	2,81	1,76	15,38	43,18	--	8,01	22,45	0,58	3,68	--	--	--	--	2,16
 chacota	1,47	2,05	12,75	33,74	0,40	2,25	36,44	0,95	6,84	--	--	--	--	3,12

\* - Os valores apresentados na tabela correspondem às percentagens mássicas dos elementos detetados na amostra, não considerando o teor de oxigénio e normalizados a 100% ([ver aviso](#)).

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