

AzuRe155



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

Amostras: Fragmentos e uma secção semi-polida; em depósito no *Museu Nacional do Azulejo*, Lisboa.

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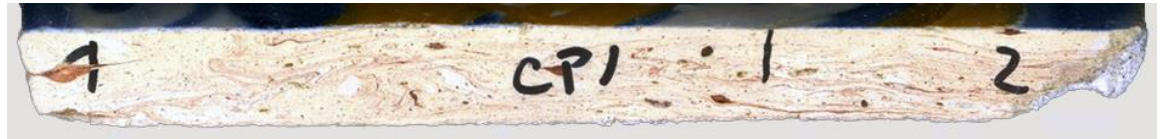
- **Caracterização Morfológica**
 - ✓ Imagens macroscópicas
 - ✓ Imagens de microscopia electrónica (SEM)
- **Caracterização Física**
 - ✓ Propriedades hídricas / Porosidade
 - ✓ Porosimetria de Mercúrio
- **Caracterização Química**
 - ✓ Análise por SEM/EDS

AzuRe155





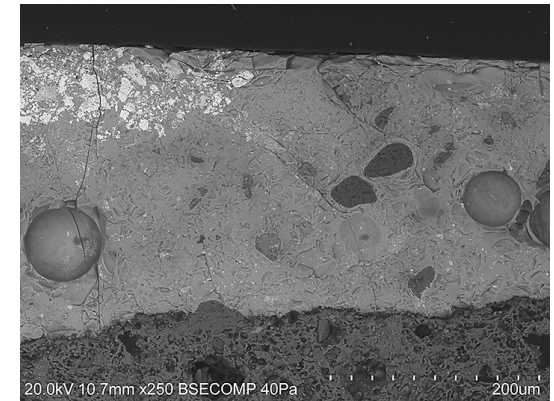
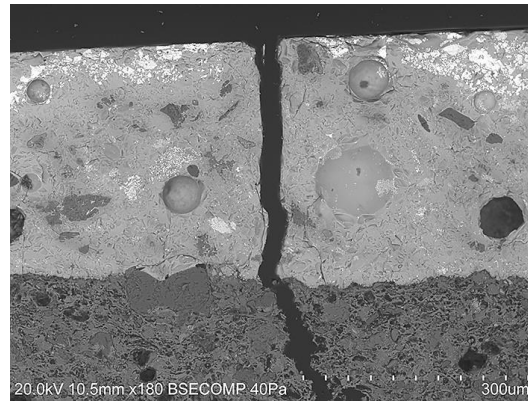
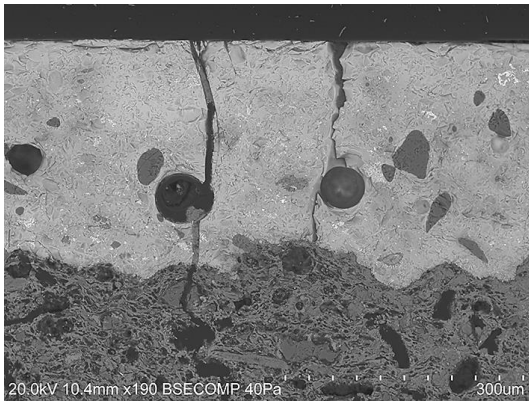
Azulejo com falhas de vidro ao centro e nas arestas. Apresenta várias linhas de fissura nas arestas com prolongamento para a chacota. O vidro é pouco brilhante, com craquelé e algum desnível entre as respetivas tesselas.



- Espessura do Azulejo = 13 mm

Chacota amarelada com poros circulares e alongados; marmoreada de filamentos de barro vermelho e bege decorrentes da amassadura; inclusões; areias.

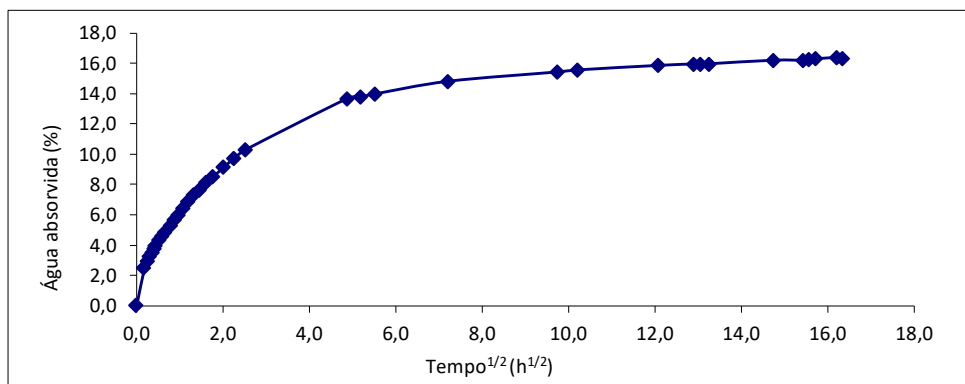




- Observa-se craquelé.
- Espessura do Vidrado = 228-287 μm

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

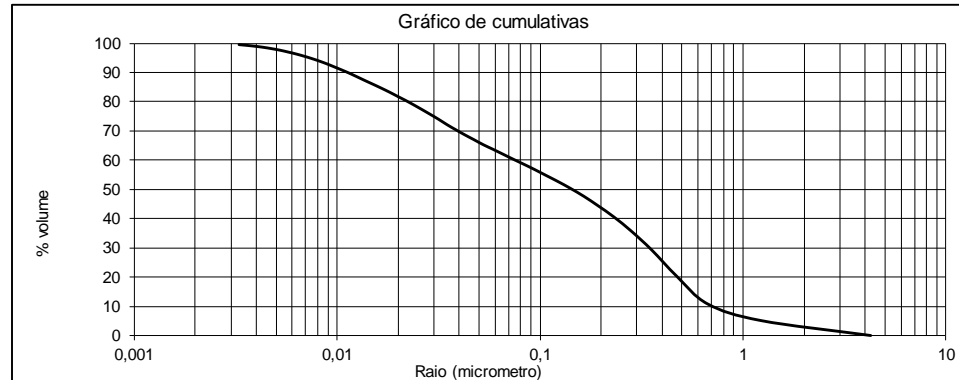
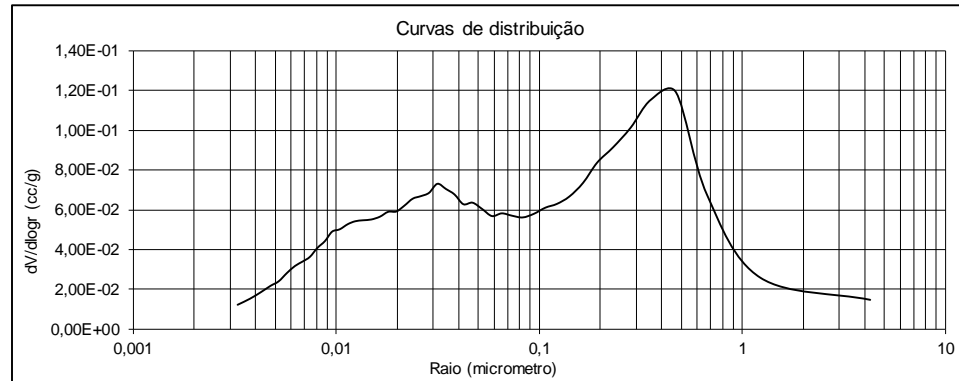
Curva de Absorção de Água (Chacota)



Massa volúmica real (kg/m³)	2678
Massa volúmica aparente (kg/m³)	1843
Porosidade aberta (vol %)	36,8
Coefficiente de capilaridade (kg/m²/h^{1/2})	0,9
Teor máximo de água (%)	21,2

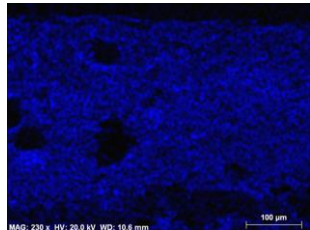
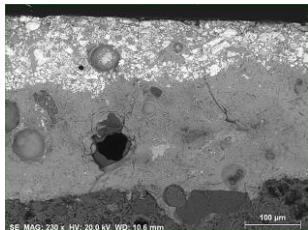
Procedimento: baseado na norma NP EN-13755.

Curvas de Porosimetria (Chacota)

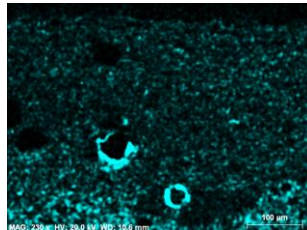


Procedimento: baseado na norma ASTM D4404-84.

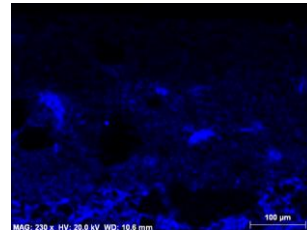
Equipamento: Porosímetro Quantachrome Autoscan



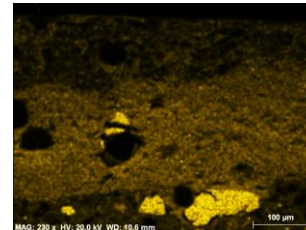
Na



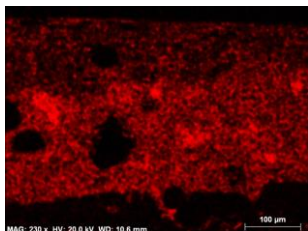
Mg



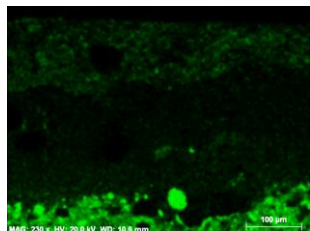
Al



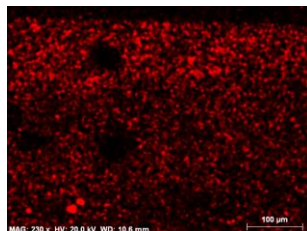
Si



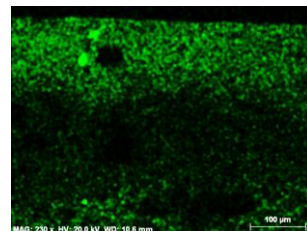
K



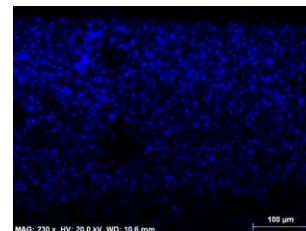
Ca



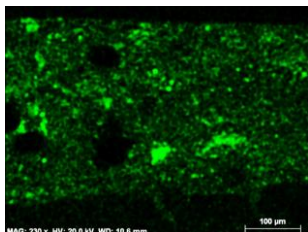
Ti



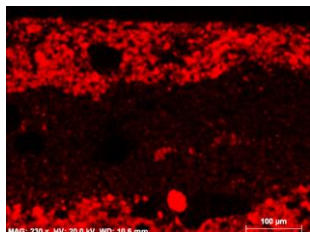
Fe



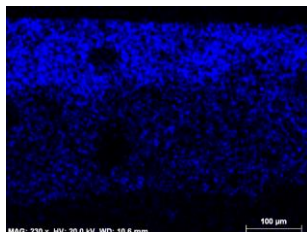
Zn



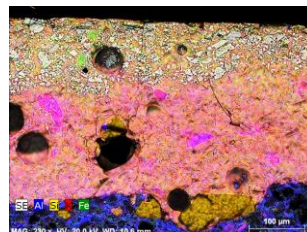
Sn



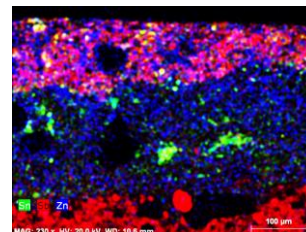
Sb



Pb



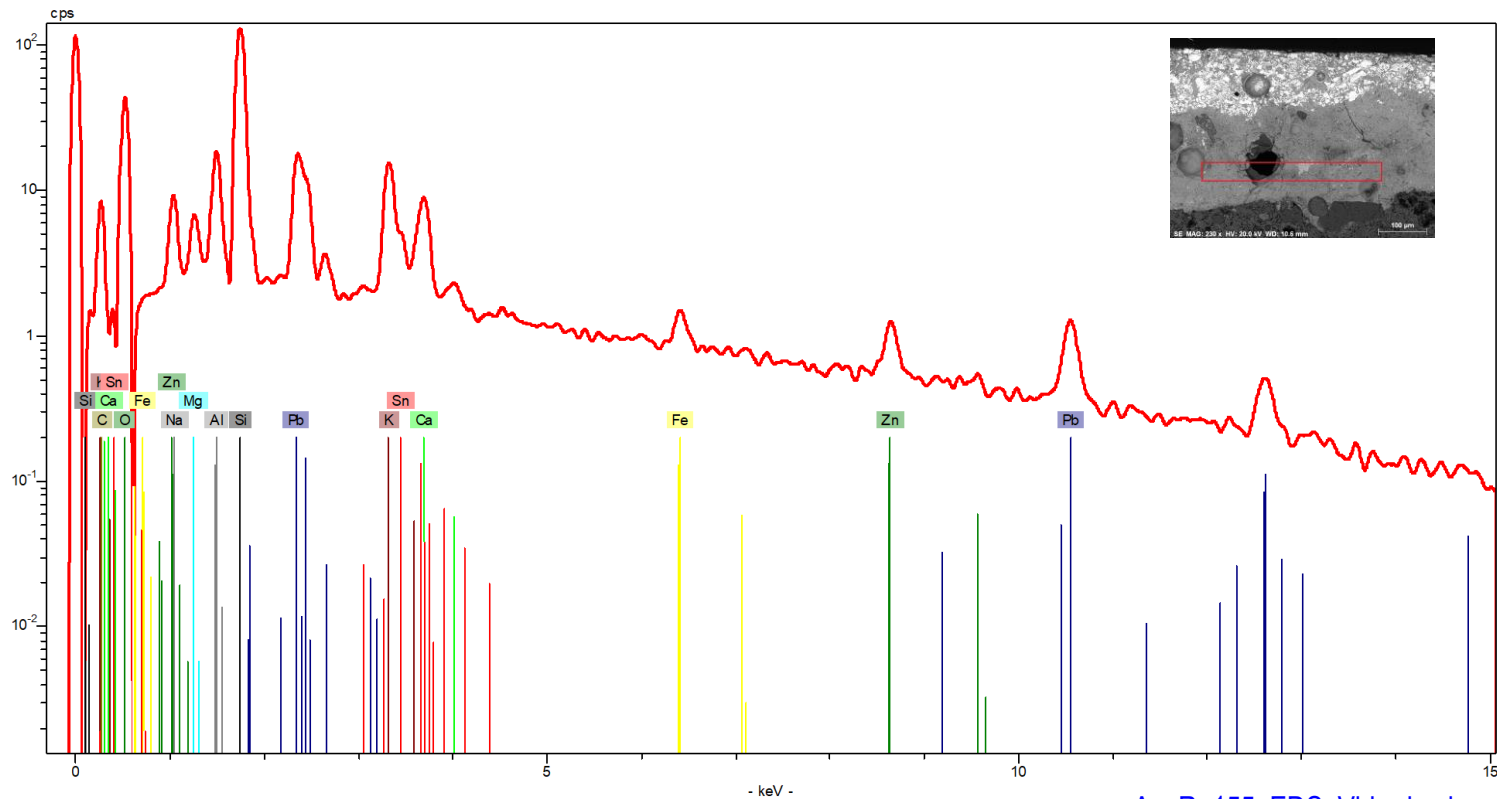
Combinação
Al_Si_K_Fe



Combinação
Sn_Sb_Zn

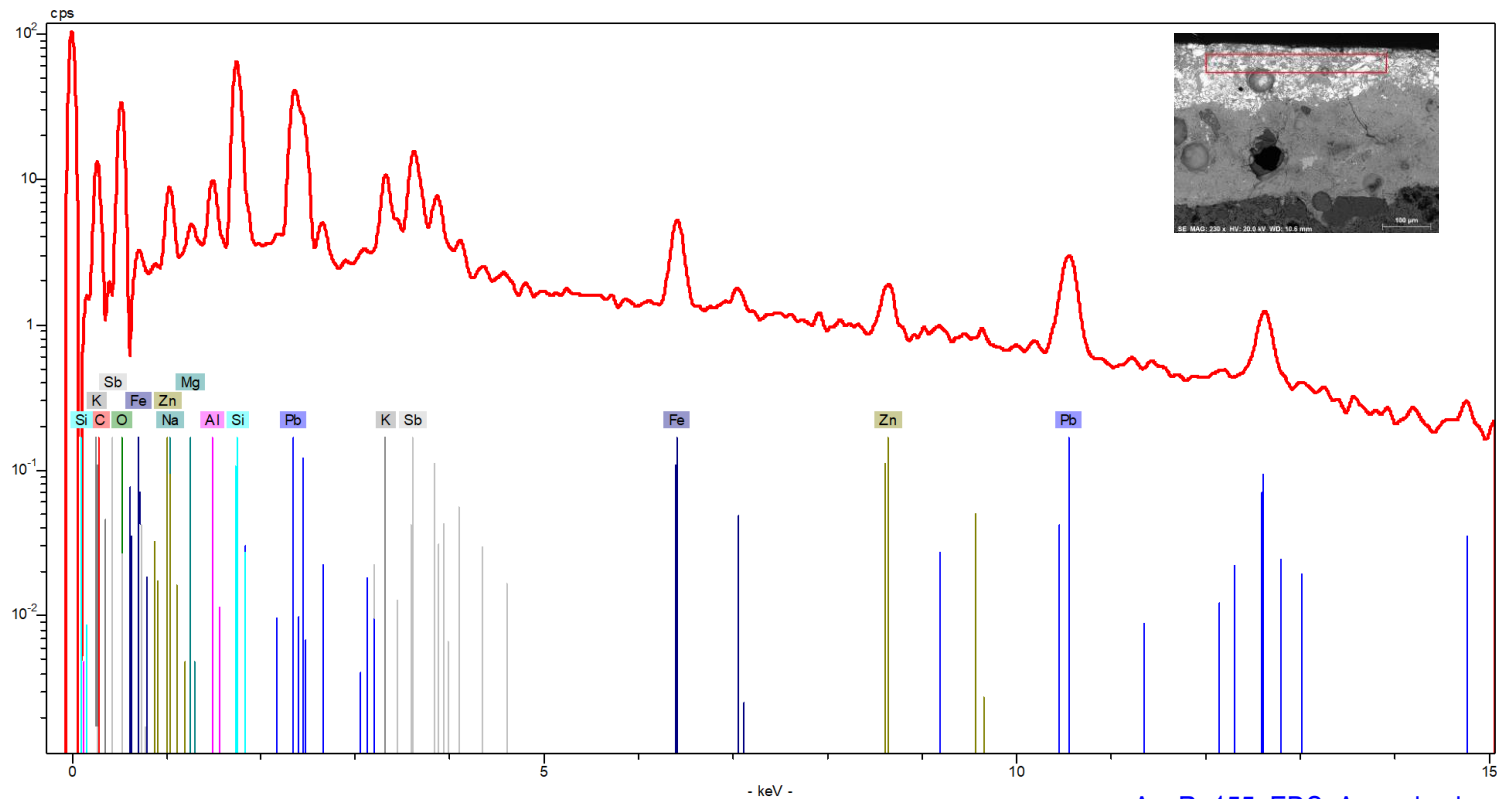
Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

VIDRADO BRANCO

[Azure155 EDS Vidrado.xls](#)

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

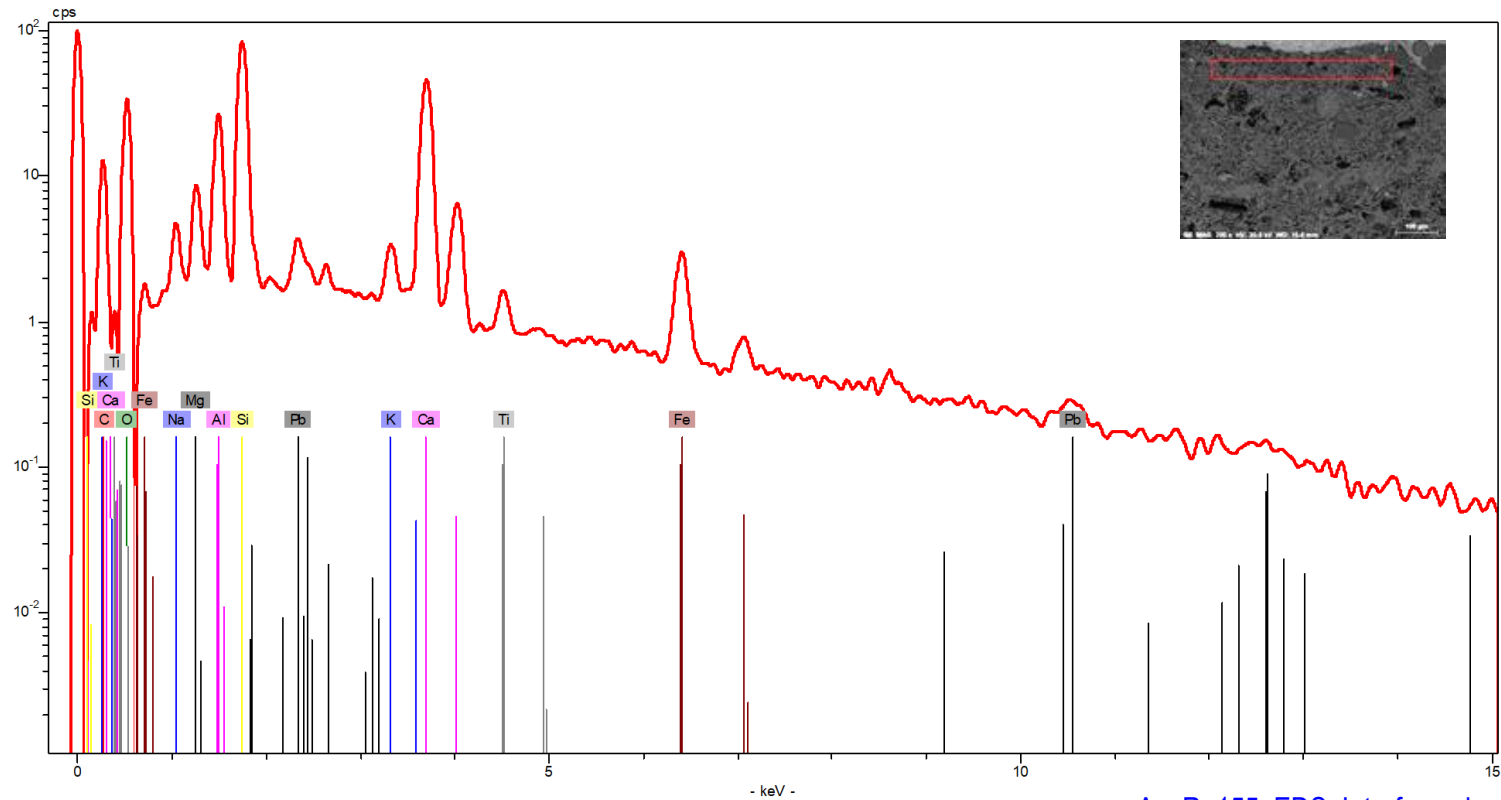
PIGMENTO AMARELO



[AzuRe155 EDS Amarelo.xls](#)

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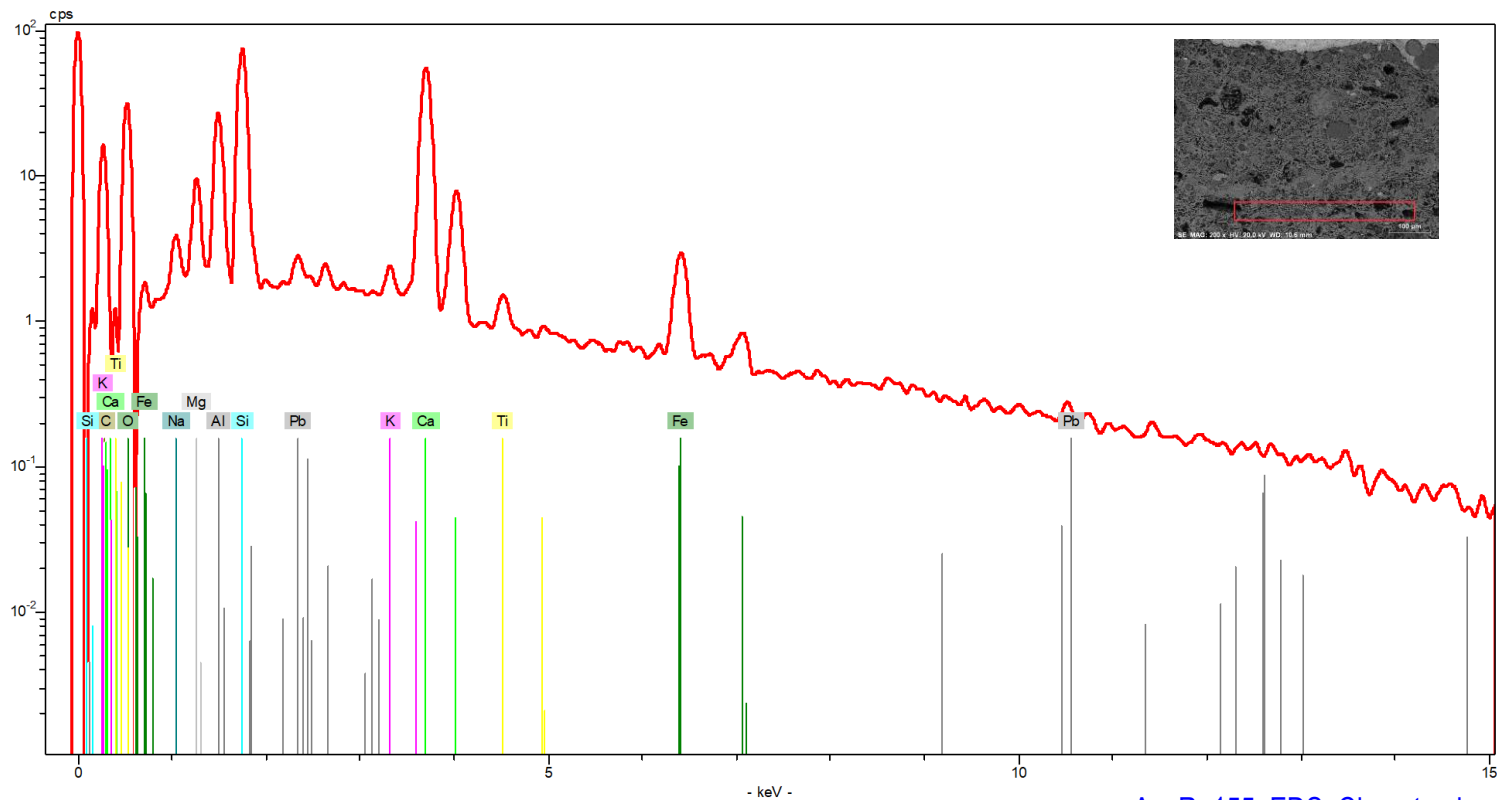
INTERFACE



[Azur155 EDS Interface.xls](#)

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

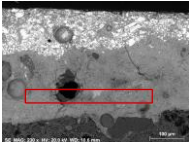
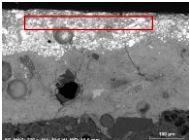
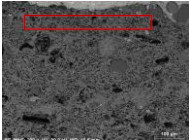
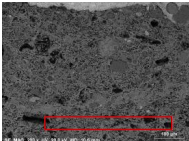
CHACOTA



[Azure155 EDS Chacota.xls](#)

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

Composição química (% m/m)*

Área Analisada	Na	Mg	Al	Si	K	Ca	Ti	Fe	Zn	Sn	Sb	Pb
 vidrado branco	2,82	1,81	5,83	39,34	9,10	4,86	--	1,13	2,84	6,45	--	25,81
 pigmento amarelo	2,50	0,85	2,18	15,72	4,38	--	--	5,29	2,89	--	18,18	48,01
 chacota (próximo interface)	2,22	3,38	11,09	32,61	1,31	39,81	1,05	5,57	--	--	--	2,96
 chacota	1,64	0,84	11,29	28,88	0,51	46,00	0,88	5,58	--	--	--	1,38

* - 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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