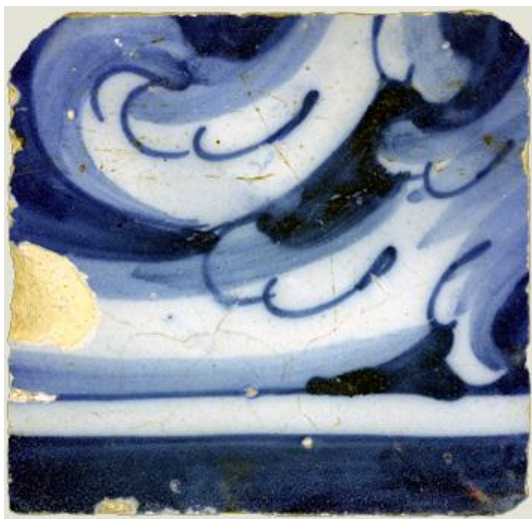


AzuRe164



Descrição: Azulejo do século XVIII (1700-1720); Origem: Lisboa.

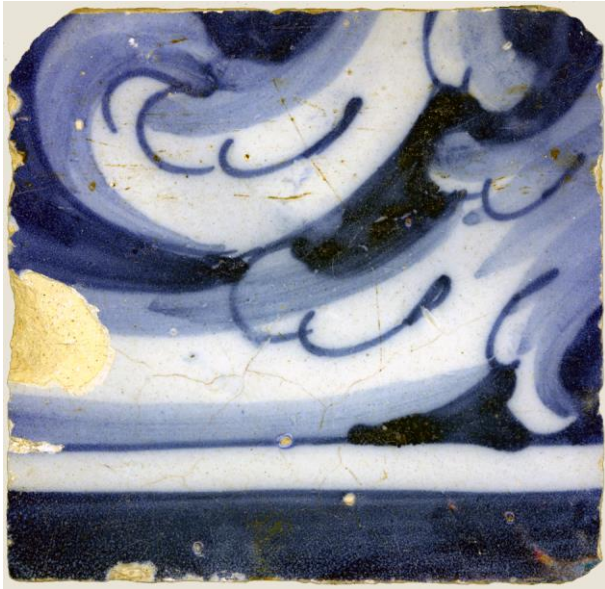
Amostras: Fragmentos, uma secção semi-polida e uma amostra de chacota moída em depósito no *Museu Nacional do Azulejo* em Lisboa.

Índice

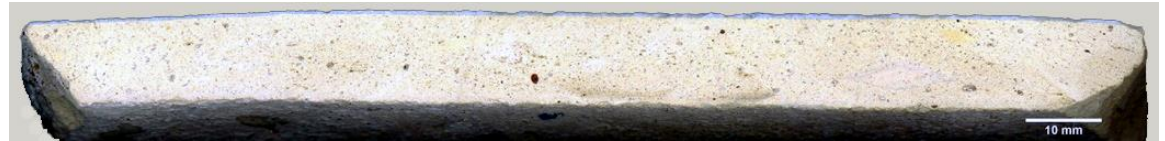
- **Caracterização Morfológica**
 - ✓ Imagens macroscópicas
 - ✓ Imagens de microscopia electrónica (SEM)
- **Caracterização Física**
 - ✓ Propriedades hídricas / Porosidade
 - ✓ Porosimetria de Mercúrio
- **Caracterização Química/Mineralógica**
 - ✓ Análise por SEM/EDS
 - ✓ Análise por XRD

AzuRe164





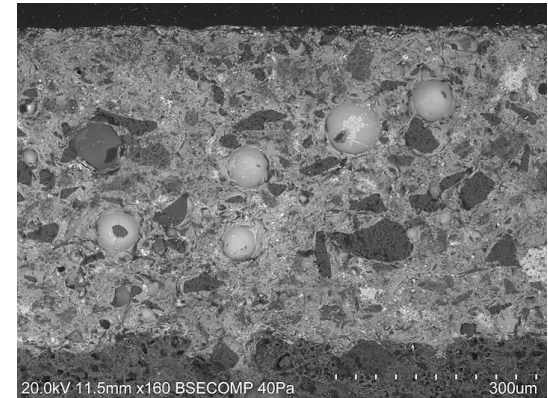
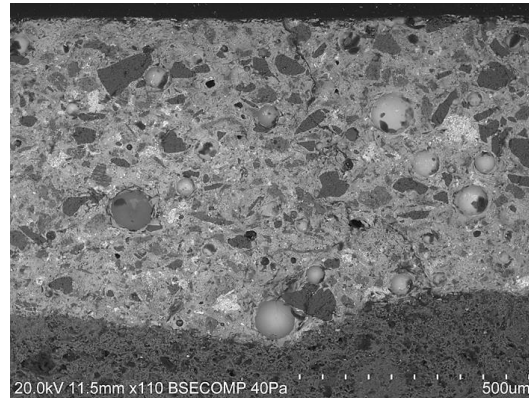
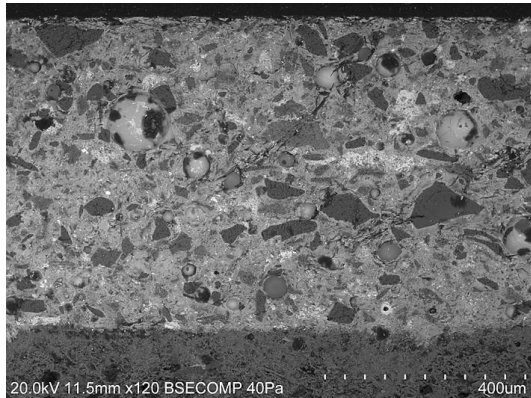
Azulejo com algum craquelé.



- Espessura do Azulejo = 12 mm



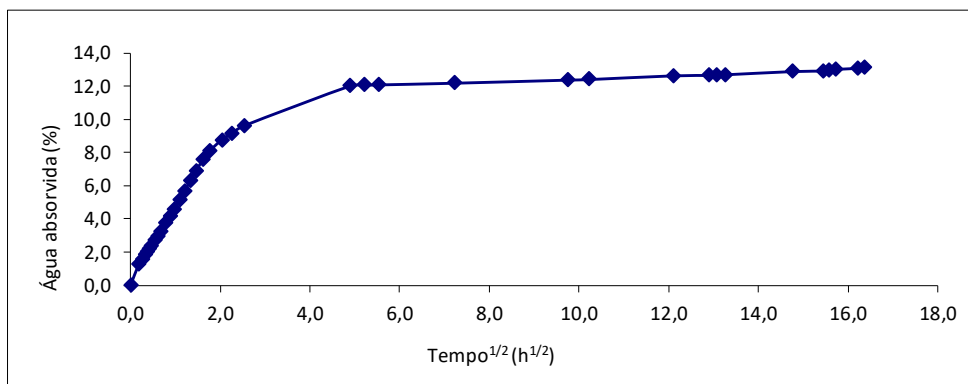
Chacota bege compacta com poros circulares e alongados; poucas inclusões.



- Espessura do Vidrado = 702 μm

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

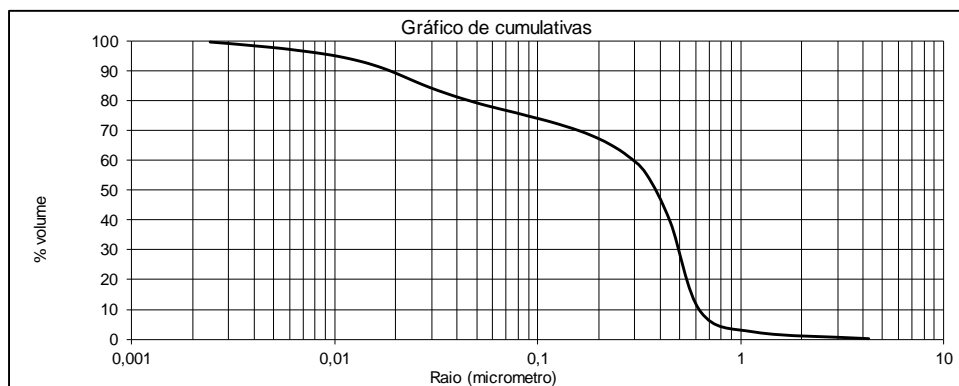
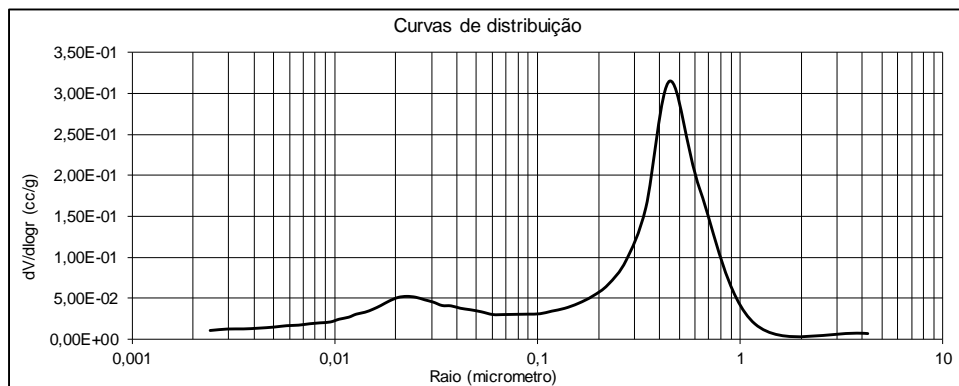
Curva de Absorção de Água (Chacota)



Massa volúmica real (kg/m³)	2634
Massa volúmica aparente (kg/m³)	1803
Porosidade aberta (vol %)	35
Coefficiente de capilaridade (kg/m²/h^{1/2})	0,9
Teor máximo de água (%)	19,9

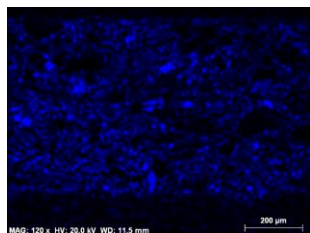
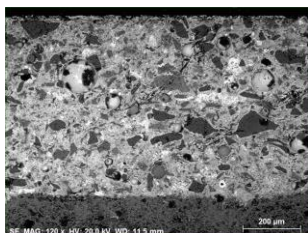
Procedimento: baseado na norma NP EN-13755.

Curvas de Porosimetria (Chacota)

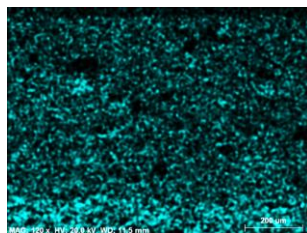


Procedimento: baseado na norma ASTM D4404-84.

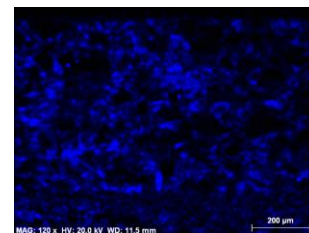
Equipamento: Porosímetro Quantachrome Autoscan



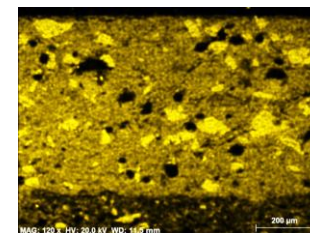
Na



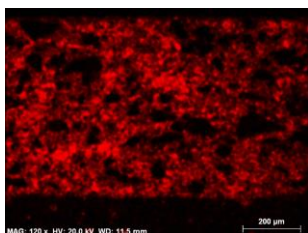
Mg



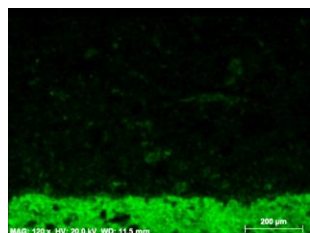
Al



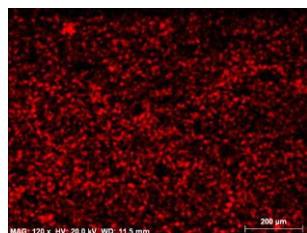
Si



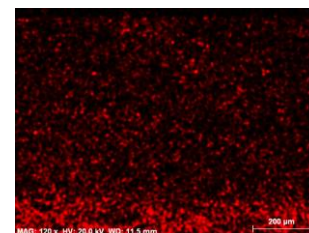
K



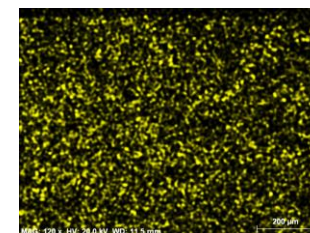
Ca



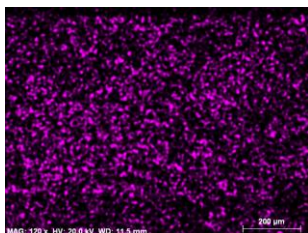
Ti



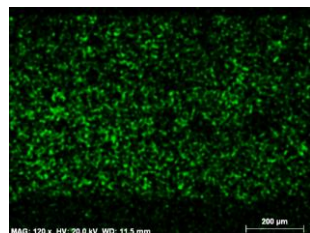
Fe



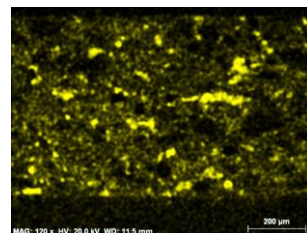
Co



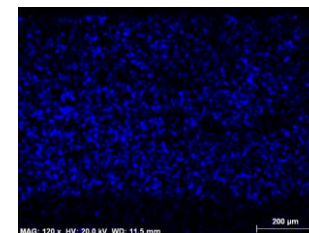
Ni



As

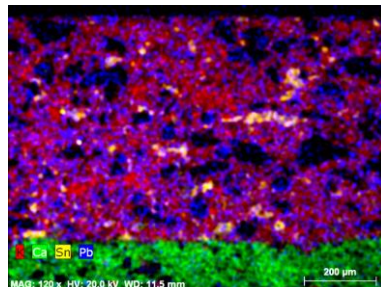
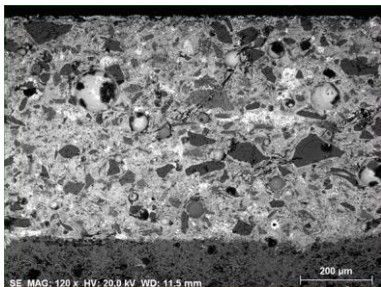


Sn

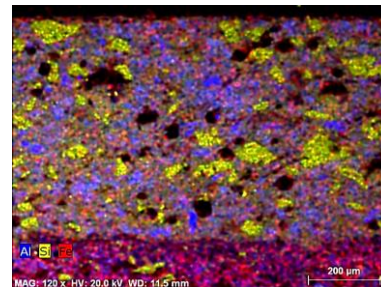


Pb

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



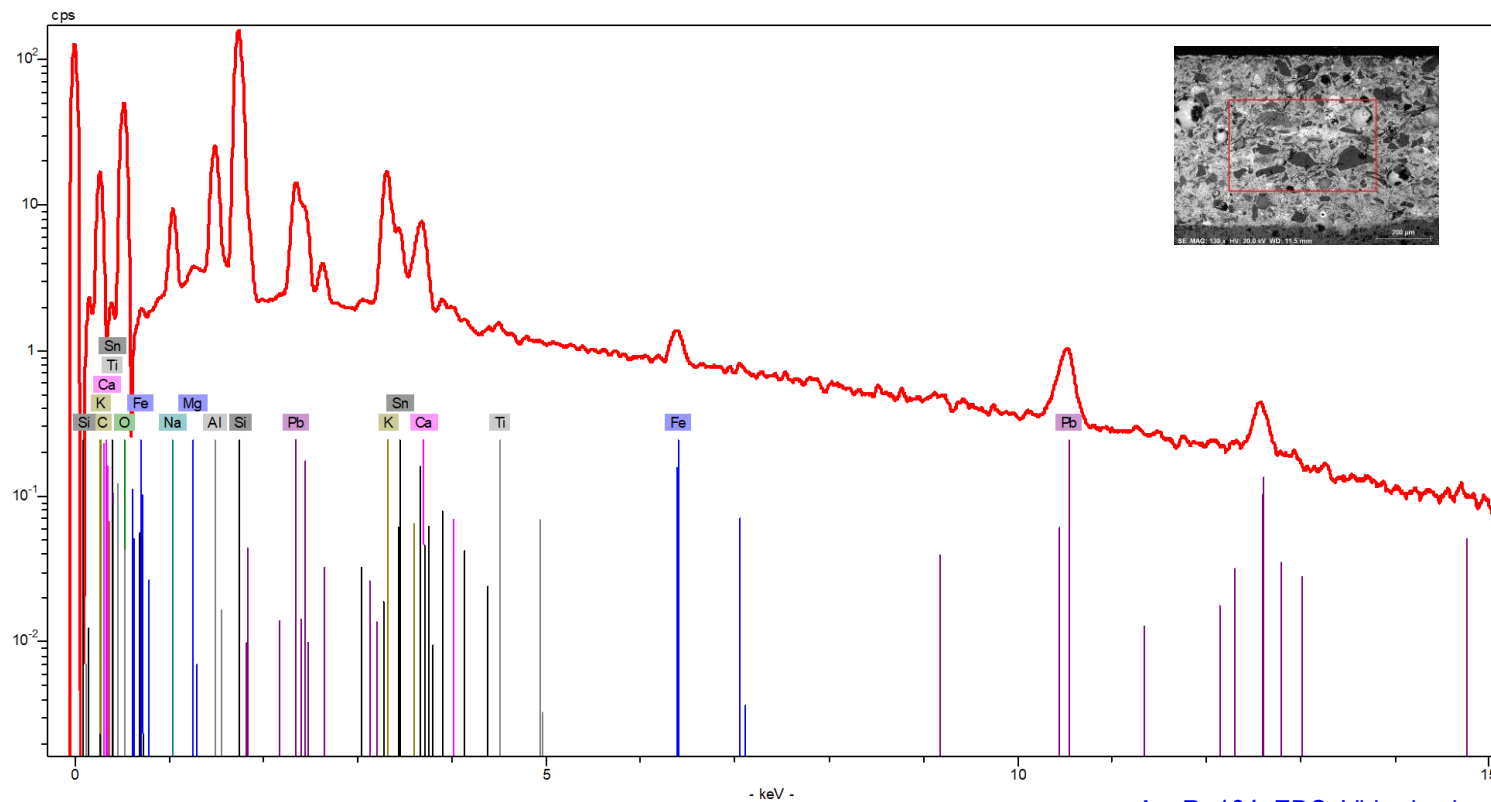
Combinação
K_Ca_Sn_Pb



Combinação
Al_Si_Fe

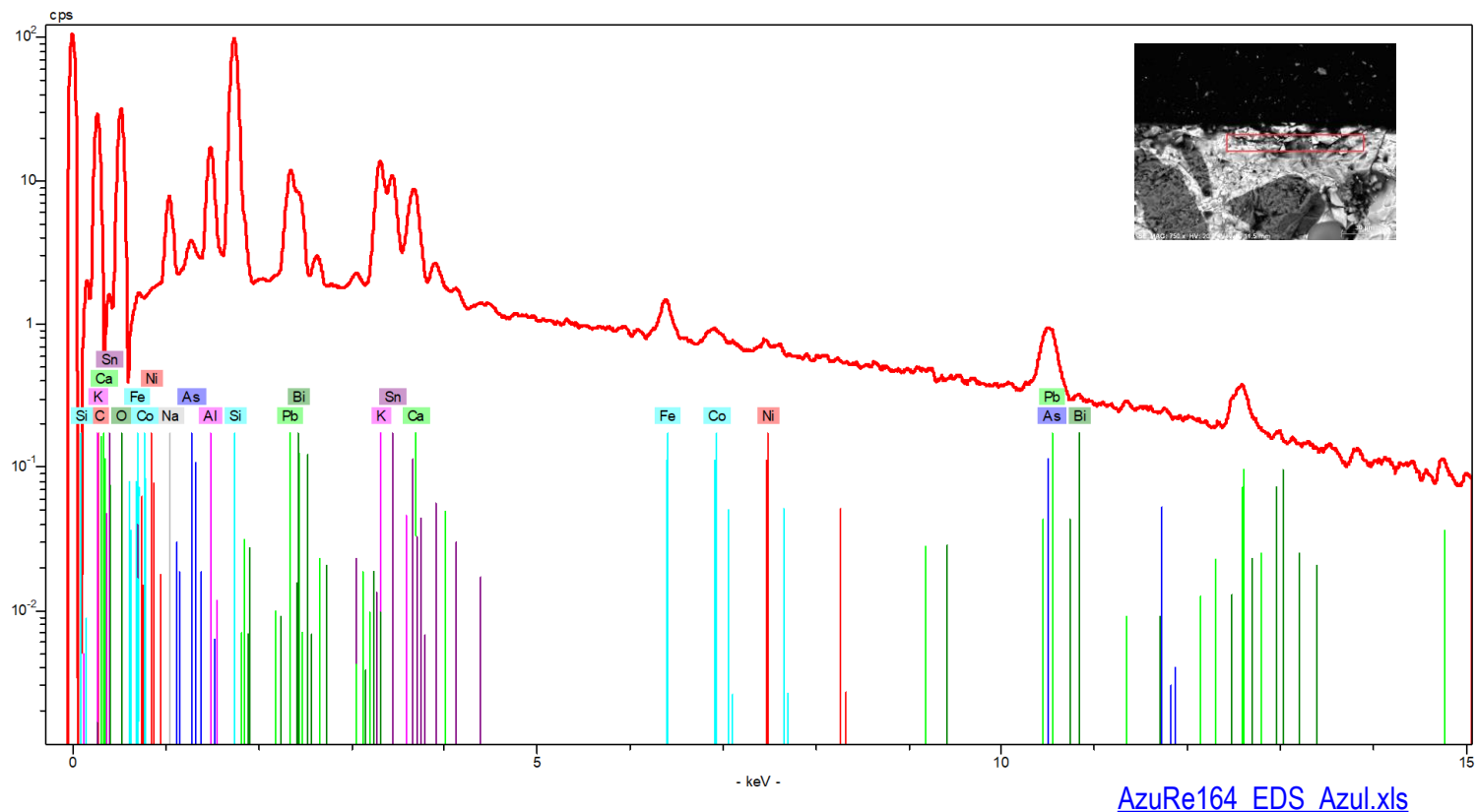
Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

VIDRADO BRANCO

[AzuRe164 EDS Vidrado.xls](#)

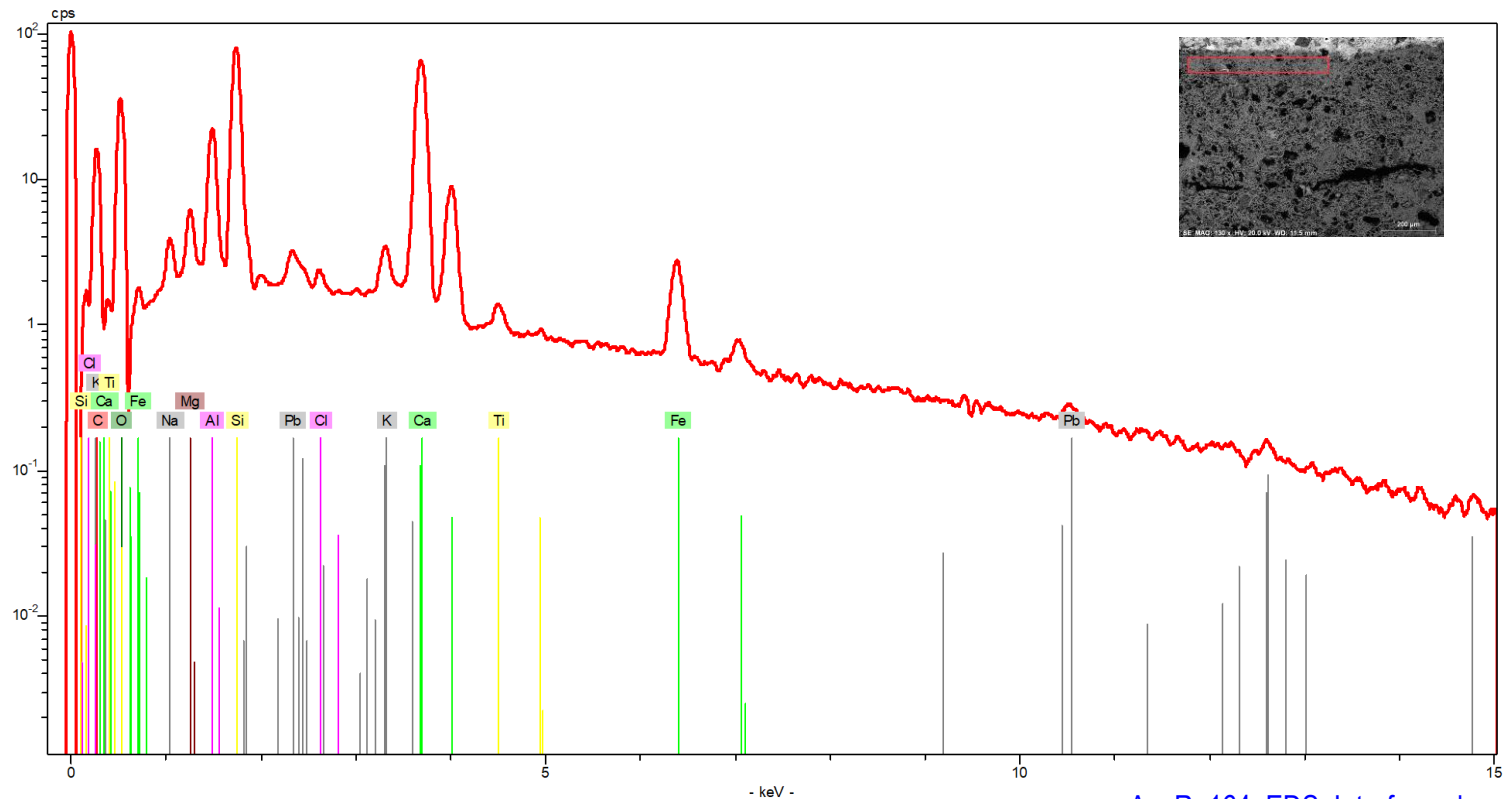
Equipamento: Microscópio eletrônico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

PIGMENTO AZUL



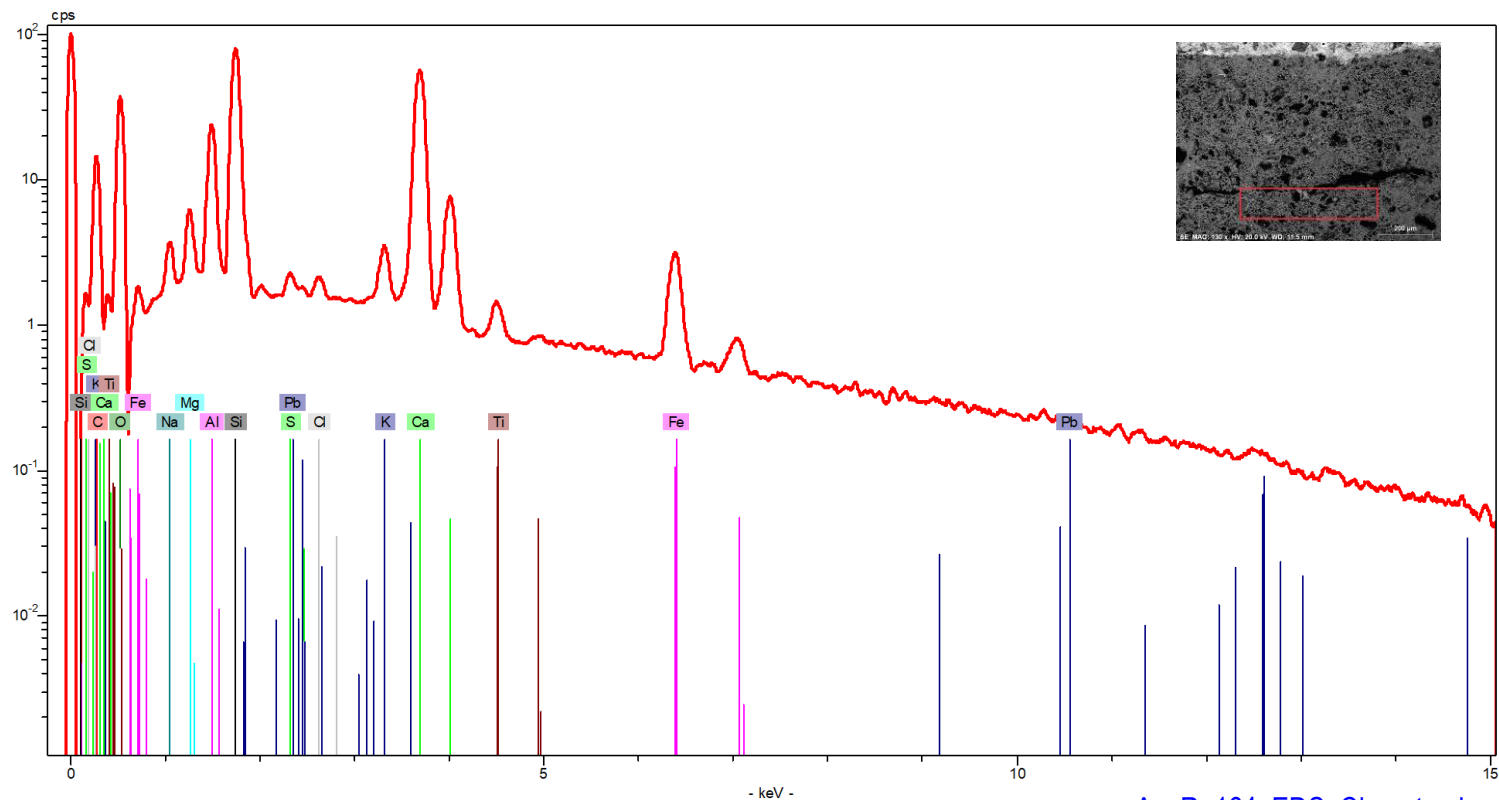
Equipamento: Microscópio eletrónico de varrimento HITACHI 3700N acoplado a um espectrómetro de energia dispersiva de raios-X Bruker Xflash 5010.

INTERFACE

[AzuRe164 EDS Interface.xls](#)

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

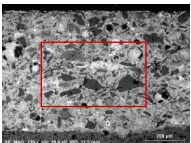
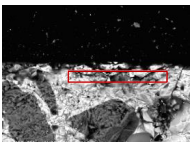
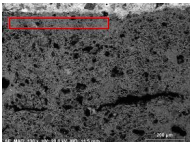
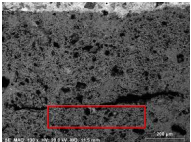
CHACOTA



[AzuRe164 EDS Chacota.xls](#)

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

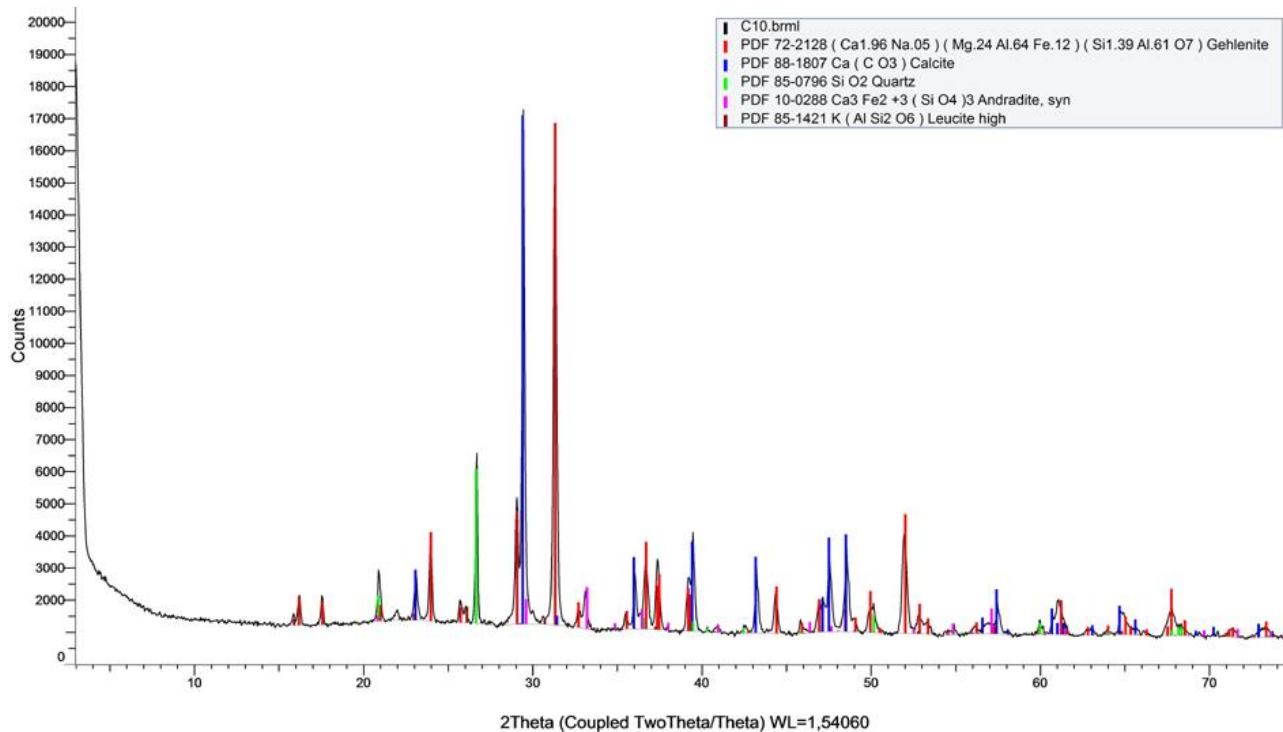
Composição química (% m/m)*

Área Analisada	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Co	Ni	As	Sn	Pb	Bi
 vidrado branco	3,21	0,10	6,99	42,59	--	--	9,64	2,88	0,09	1,08	--	--	--	7,91	25,51	--
 pigmento azul	3,21	--	5,49	32,04	--	--	8,52	2,52	--	1,58	0,79	0,63	3,70	16,42	20,13	4,97
 chacota (próximo interface)	1,25	1,72	7,76	25,70	--	0,15	1,47	52,88	0,54	4,88	--	--	--	--	3,64	--
 chacota	1,23	1,85	8,93	28,15	0,06	0,09	1,57	48,62	0,60	6,46	--	--	--	--	2,44	--

* - 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](#)).

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

CHACOTA



Composição mineralógica semi-quantitativa (% m/m)

Quartzo	Gelenite	Calcite	Andradite	Leucite
SiO ₂	Ca ₂ Al(AlSi ₇ O ₇)	CaCO ₃	Ca ₃ Fe ₂ (SiO ₄) ₃	K(AlSi ₂ O ₆)
11,08	45,38	35,37	7,13	1,04

Equipamento: Difrátometro de raio-X Bruker AXS-D8 Discover