

SALT CRUST

Sample

Nostra Senyora del Remei Chapel. Monastery of Aviganya. LLeida. Spain.

Pathology Causes

Rising damp of water contaminated by debris and fertilizers that imparts potassium nitrate and other alkalis to the stone. Another less important source of salts comes from the existing tombs under the pavement.

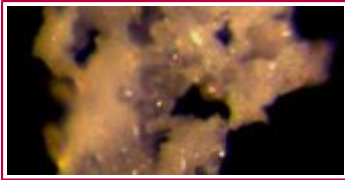
Visual Image



Author: CETEC-patrimoni

Description: Rising damp from the floor (the church is built on a geological structure that favours water and moisture retention).

Image detail / macro

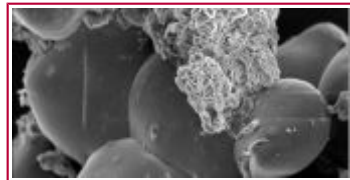
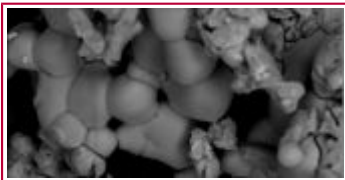


Author: CETEC-patrimoni

Magnification: x20

Description: Sub-rounded and amoeboid crystal habits. These habits indicate that salts are very hygroscopic and have grown into a very wet wall.

Microscope Image



Author: CETEC-patrimoni

Magnification: Figure 1. x750. Figure 2. x1000 - SEM-BSEI

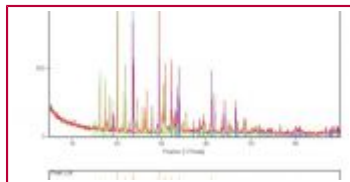
Description:

Sub-rounded and amoeboid crystal habits indicate that the salts have grown in a very wet wall in direct contact with moisture. Their tendency to cluster in nodules indicates long repeated cycles of crystallization, mainly linked to seasonal changes and different periods of rain.

Associated Pathologies

Flaking.
Sanding.
Blistering.
Alveolization.

Other Tests



DRX

Observations

Potassium nitrates and other alkali salts (niter) and magnesium sulphates (hexaedrite).

Bibliography

ARNOLD, A. & KUENG, A., (1985), Crystallization and Habits of Salt Efflorescences on Walls. Part I, Methods of Investigation and Habits. Vth International Congress on Deterioration and Conservation of Stone. Lausanne. pp. 255-268.

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CHAROLA, A. E. Salts in deterioration of porous material: an overview. JAIC, 39.2000. pp. 327-343.

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Geologo

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