

# BIOLOGICAL COLONIZATION (MOSS AND ALGAE)

## Sample

Basement of the apse built in carbonated sandstone. Santa Maria la Mayor church. Alcañiz. Teruel. Spain.

---

## Pathology Causes

Water and moisture retention, deposition and fixation of structures from colonizing species on sanded areas of the ashlar.

Soluble salts from the ground, from the repair mortars, and probably from fertilizers used in the maintenance of the garden, with which this area is in contact, added to repeated drying-moisturising cycles. This has generated flaking and disintegration of the surface stone texture creating a surface roughness that has favoured the fixation and growth of moss (and probably algae, too).

---

## Visual Image



**Author:** Manuel Iglesias

**Description:** Biological colonization in detached surfaces of the ashlar.

---

## Image detail / macro



**Author:** Manuel Iglesias

**Magnification:** scale

**Description:** Different species of mosses (and probably algae, too) developed on the sanded areas of the ashlar. Their growth and development favours the contour scalling of the ashlar surface initiated by crystallization cycles of soluble salts.

---

## Associated Pathologies

Contour scalling.

Flaking.

Sanding.

Moisture retention.

---

## Bibliography

ICOMOS-ICS (2008). Illustrated glossary on stone deterioration pattern.

[http://international.icomos.org/publications/monuments\\_and\\_sites/15/pdf/Monuments\\_and\\_Sites\\_15\\_ISCS\\_Glossary\\_Stone.pdf](http://international.icomos.org/publications/monuments_and_sites/15/pdf/Monuments_and_Sites_15_ISCS_Glossary_Stone.pdf)

ORDAZ, J., & ESBERT, R. (1988). Glosario de términos relacionados con el deterioro de las piedras de construcción. *Materiales de Construcción*, 38 (209): 39-45. doi: 10.3989/mc.1988.v38.i209.847

---

**Author**

Manuel Iglesias Campos. manuel.iglesias@cetec-patrimoni.com

Restorer

---

**Institution or Company**

Universitat de Barcelona

---