

Article Materials and Structures (2016): **RILEM TC 243-SGM: CONSOLIDATION OF RENDERS AND PLASTERS**




Rob van Hees¹, Rosario Veiga², Zuzana Slížková³





¹ TNO, Delft & TU Delft, Netherlands




² LNEC, Lisbon, Portugal

³ ITAM, Prague, Czech Republic

Table showing the most diffused damage symptoms occurring on historic plasters and renders.

| Damage symptom | |
|--|--|
| <p>Crumbling</p>  | <p>The particles of the material are no longer bound; the affected material is reduced to small lumps. Damage can start from the surface of the material or can be found in depth.</p> |
| <p>Sanding / Powdering</p>  | <p>The particles of the plaster / render mortar are no longer bound; the affected mortar is reduced to sand. Damage starts from the surface of the material.</p> |
| <p>Chalking</p>  | <p>The particles of a lime or gypsum layer are no longer bound; the affected material is reduced to very fine powder. Damage starts from the surface of the material.</p> |
| <p>Alveolisation</p> | <p>The plaster shows a honey-comb like decay</p> |

| | |
|---|--|
|  | <p>pattern, which may be caused by salt.</p> |
| <p>Bursting</p>  | <p>Swelling of interior part of plaster together with disruption of the surface.</p> |
| <p>Crazing / craquelé</p>  | <p>Craquelé is a network of minor cracks. The origin of the damage may be found in the drying shrinkage.</p> |
| <p>Exfoliation</p>  | <p>Layering (more than one layer) of material with an originally not laminated structure.</p> |
| <p>Delamination</p> | <p>Layering of material with an originally</p> |

| | |
|--|---|
|  | <p>laminated structure, due to the type of plaster, applied in layers.</p> |
| <p>Loss of adhesion</p>  | <p>The bond between (originally bounded) materials within the masonry is lost, e.g. the bond between rendering and masonry.</p> |
| <p>Bulging</p>  | <p>Deformation of a rendering consisting in a deviation from its original form; the direction coefficient having changed, the shape of deviation is roughly a curve. It may appear together with cracking. The damage shows like a fat stomach.</p> |

Peeling



Other than dome-like (see blistering, which is dome-like) detachment of paint or coating.

Blistering



Dome-like (cf. peeling, which is other than dome-like) detachment of paint, coating, or surface layer of masonry or plaster.

Efflorescence



Deposit of salt crystals visible on the original surface (see also crypto-florescence).

Crypto-florescence



When not visible on the material surface (that is to say before any damage has occurred) a deposit of salt crystals (florescence) is called crypto-florescence (see also efflorescence). Crypto-florescence may lead to severe damage.