

# SITE GUIDE

## MORTAR

### SITE GUIDE No 12: EFFLORESCENCE AND LIME BLOOM

#### CAUSES

The main causes of inconsistent masonry are;

- Bloom
- Efflorescence
- Constructional blemishes

Good quality bricklaying enhances/improves the appearance of a building, but weather and condition of materials can affect this. Rain can wet the brickwork and mortar, which increases the amount of laitance and causes a lighter joint.

#### EFFLORESCENCE

Many building materials have water soluble salts and the water that is used in construction initiates the salts to pass into solution. As the building dries these salts reappear near or at the surface, this type of efflorescence continues unless water can infiltrate through the masonry. It will usually disappear under the effect of rain and is short lived. The salts accountable for efflorescence vary on the specific building materials used, however contamination from other sources should not be ignored.

#### BLOOM

Bloom is a common issue that occurs in cold weather conditions and this is caused by free lime that is present in cement mortars. The process/reaction when water reacts with the cement as it hydrates and sets, a thin surface layer of carbonated material is formed on top, which lightens the pigmented mortar. This usually occurs in cold weather as lime is more soluble in cold water than in warm water. The effect of this may be more visible when darker shades of pigmented mortar are used.

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#### PREVENTATIVE ACTION

There are three measures that can be implemented to overcome this;

- 1) Design and plan: Attention must be given to elements of design such as; sills, copings, parapet walls etc. The masonry should be kept moist and water must not permeate into the masonry.
- 2) Select the correct mix: Use a factory produced mortar that is supplied by a MPA Mortar producer member, to create a durable, defect-free product.
- 3) Site care and workmanship: It is essential that cement and gypsum etc is maintained hydrated, however excess can cause issues like drying shrinkage, efflorescence etc. Post care protection is key therefore builders must ensure material is covered on site before and after construction. If ever the instance occurs of walling materials this can aid in minimising efflorescence and bloom. It is important to consider that caring for materials should drive good workmanship, lessen constructional blemishes, and save remedial costs.

#### REMEDIAL ACTION

Efflorescence should weather away unless it has been derived by permanent dampness and does not cause long-lasting deformity/defect. The ideal method to remove blemishes is by using a stiff brush, removal can also be affected by treatment with proprietary materials or diluted hydrochloric acid.

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Please note that prior to commencing remedial work always experiment with a small trial area and check with the brick manufacture.

#### **NOTE**

*\*Ensure the correct PPE is worn including Hi-Viz, gloves, hard hat, glasses and boots and full health and safety precautions are always observed\**