

7.0 Aftercare & Surface Effects

High quality cast stone is a highly durable material, and if correctly installed will last for many decades with minimal care and maintenance.



7.1 Prevention

Every effort should be taken to protect the cast stone units from contamination. Care taken in transit, storage, fixing and protection during construction virtually negates any requirement for additional work.

Cast stone should not, in the natural course of events, require any maintenance over many years. The product will weather in a similar way to natural stone and consideration should be given to prevailing climatic conditions at design stage.

However, routine maintenance of other elements of the building fabric is important and such examples are keeping gutters, roof coverings, flashings and hoppers in good working order. Joints should be kept properly pointed, excessive vegetation removed or controlled, ferrous metal painted and judicious cleaning undertaken when necessary.



7.2 Cleaning

Cleaning is most frequently undertaken for aesthetic reasons. However, sometimes there are sound practical grounds for removing dirt when, for instance, decay is taking place around encrustations and cracks or open joints are being obscured.

Before undertaking any cleaning of cast stone there are several important considerations to review.

- Cast stone behaves in a similar way to natural stone and the precautions required for cleaning the natural material should be adopted with cast stone.
- Any cleaning will expose the underlying cast stone and various elements of the structure may have weathered differently causing changes in colour. The effect after cleaning may be a patchy finish.
- Although cast stone elements may get dirty, this is usually unlikely to cause any particular problem unless the encrustation of dirt is causing decay to the surface, or staining the underlying stone, especially at street level. In these cases some remedial action may be appropriate.

7.2.1 Precautions

Before the application of any treatment to cast stone it is recommended that the supplying UKCSA member is contacted for advice. Any subsequent treatment should be tested on a small sample area in an inconspicuous place prior to any major application.

7.2.2 Pointing

Particular attention should be paid to the condition of the joints prior to the commencement of any cleaning programme. These should be inspected to ensure that the pointing is in a sound condition.

7.2.3 Health & Safety

- In all cases of cleaning professional advice and/or the advice of the individual manufacturer should be sought prior to the commencement of any treatment.
- Always use experienced operatives for the cleaning process and follow the cleaning material manufacturer's instructions.



- Any company undertaking cleaning processes must complete a full risk assessment in accordance with Regulation 3 of the Management and Safety at Work Regulations and comply with the control measures necessary to fulfil their statutory obligations.
- Information on protective measures contained within this manual is given only as a guide and should not be assumed to meet all requirements indicated above.

7.3 Repair Work

In many cases it is possible to repair chips etc., but the recommended techniques vary from manufacturer to manufacturer and their advice should be sought. It should be noted that repair work is normally carried out with mixes very similar to those used in the original product and will therefore take time to weather to the colour of the item.

7.4 Weathering

Research commissioned by UKCSA and carried out by the Concrete Technology Unit of University of Dundee on semi-dry cast stone, confirmed that the material weathered in a similar way to original natural stone control samples when both were exposed to identical atmospheric conditions.



7.5 Efflorescence



Rain Dampens Surface



Slowly soluble salts dissolve and migrate towards the surface as the stone dries



This leaves minute white/courless crystals at the surface (known as Efflorescence)



Optical properties conceal the crystals when they are wet

Efflorescence, also known as lime bloom, may appear as a white deposit covering part or all of the surface of products containing cement. The result of light deposits is the lightening of the surface colour the heavier the deposit the lighter the colour. Except in very severe cases the phenomenon disappears completely when the unit is wet and reappears at it dries out. The phenomenon is temporary and will, with time, disappear as a result of normal weathering. The length of time will depend on many factors such as rainfall, atmospheric pollution etc.

7.5.1 Occurrence

Efflorescence is a temporary, naturally occurring phenomenon that occurs to a varying extent on all items containing cementitious binders. Mortar is particularly prone to efflorescence in the form of lime staining and this can contaminate other products (e.g. cast stone, bricks etc).

It is formed by soluble salts from the cement migrating to the surface where they react with the atmosphere to produce the white powder (calcium carbonate) known as efflorescence. Individual crystals are very small and are not firmly fixed to the surface.

The smallness of the crystals linked with their optical properties causes them to become invisible when wet. As they dry out they become visible and are unchanged. Products are more susceptible to efflorescence under damp conditions as this aids the movement of the soluble salts.

Efflorescence in no way affects the structural integrity of the cast stone.

7.5.2 Prevention

The risk of occurrence of efflorescence will be reduced by protection on site before and during installation.

7.5.3 Treatment

Whilst it is better to allow the phenomenon to disappear naturally, it may, however, be removed chemically by using a proprietary acid washing agent (e.g. dilute hydrochloric acid). The product should first be thoroughly soaked with clean water followed immediately by the application of the commercial acid washing material (which is generally available from most builders merchants) in accordance with the manufacturer's instructions and Health and Safety Guidelines.

A small trial area in an inconspicuous place is recommended to be treated prior to any major application. As the efflorescence dissolves there will be some frothing and once it has finished the whole surface should once again be thoroughly rinsed with clean water. In the vast majority of cases one treatment should be all that is necessary, but in severe cases retreatment may be required.

The cast stone manufacturer should be consulted before applying any chemical compounds to its products.