

Roughcast

Roughcasting is one of the oldest forms of external rendering. Its name is derived from the method of application, in which the material is “cast” or thrown at the wall with a trowel, not laid. It was known also as “wet dash” in the Lake District, and “harling” in Scotland. Pebble (or spar) dashing was introduced more recently.

Early history and uses

Roughcast was used widely in vernacular building from the Middle Ages onwards in certain areas of the British Isles, particularly in areas where local stone was either inferior or in short supply.

It was an economical form of render, relatively easy to apply, could be used to cover rounded surfaces and corners, with excellent weather resistance, durability and of an attractive appearance.

The method of application varied according to local custom and practice. It was generally cast on to the wall with a backhanded flick using a dashing trowel and a bucket. In Wales a vertical sweep was used, and in Ireland the mix was taken from a flat wooden board known as a “hawk”.

Traditional Lime Mortars

The use of traditional lime mortar in roughcast is largely responsible for its longevity and weather resistance.

Non hydraulic lime, a building material in continuous use from before the Roman period up until the mid 19th Century, was used to make up the mortar for early roughcast. It was then bound with aggregate containing coarse sand, washed gravel or stone chippings to produce what is known as roughcast.

Unlike cement mortars, lime mortars are flexible, permeable and contain fewer soluble salts.

There are many examples of roughcast to be found in a good state of preservation. Many old timber houses dating from the 15th to the 17th century have panels between the timbers filled in with roughcast. See below.

It weathers well because of its large surface area and porosity, absorbing rain and helping to protect windows and foundations, and allowing rapid evaporation once the rain has stopped. Larger aggregates shed the raindrops, protecting the softer surface underneath. It also withstands direct sunlight very effectively.

Most importantly, it protected the masonry underneath and the use of lime as one of the main ingredients allowed it to “breathe”, reducing the likelihood of damp developing in the building.

Other forms of roughcast

Both pebble dash and roughcast are classified as “rough render”, and are sometimes used interchangeably, but a distinction should be made between them.



▲ The mellow appearance of roughcast in the Suburb



▲ Unpainted roughcast on a group of Suburb houses



▲ Unpainted roughcast, c 1927

Pebbledash

Pebble dashing (dry dash) was introduced in the early part of the 20th Century and differs from roughcast in that washed small stones, shingle or crushed stone were left out of the mix, and thrown onto a cement render, with no lime, while it was still wet.

Roughcast in the Suburb

The use of pebbledash and roughcast was revived by architects of the Arts and Crafts period, (c. 1860 – 1910) who made no distinction between “roughcast” and “pebbledash”. It was seen to be a traditional craft, and was often used in combination with tile hangings or on gables, to provide variety and texture.

As a cost effective technique, its use became widespread in the suburban developments of the late 19th and early 20th Centuries such as Bedford Park, Port Sunlight and Hampstead Garden Suburb.

Cement renders were mostly used in the mix, generally a ratio of 1:1:6 or 1:2:9 (lime:cement:sand). An off-white shade of roughcast was favoured, and many houses were left unpainted.

Examples of unpainted roughcast houses by architects such as Baillie Scott in Hampstead Way, Bell in Thornton Way, Sutcliffe in Midholm and Aston and Sutcliffe in Eastholm can still be seen.

Many of the houses in Eastholm have a mixture of decorative unpainted roughcast panels and brickwork, in the Arts and Crafts manner.

Failure

Once cement render was introduced into the mix, or repairs carried out in cement, roughcast began over time to show signs of failure.

Impervious cement can crack and allow moisture to penetrate within the walls. Any moisture rising from the ground can also become trapped and cause the peeling of roughcast at the foot of a wall leading to salt attack, (associated with the use of cement render).

In some cases, roughcast may have lost its key to the original masonry backing and be “floating”, particularly unpainted roughcast.

Localised decay can occur as a result of defective copings or string courses which should be repaired, or flashing introduced.

Methods of repair

Even when damaged, roughcast is acting in a sacrificial manner and protecting the masonry underneath, and should not be removed unless absolutely necessary.

The condition of the masonry to be covered should be taken into account, and whether it will be able to provide an adequate key without damaging the mortar joints.

If repair is necessary, the existing material should be carefully analysed to establish its ingredients. It is important that lime based roughcast is never replaced with cement pebbledash.

The mix of the replacement should be weaker than the mix of the existing materials and each coat of render or roughcast applied should be weaker than the preceding one to facilitate the passage of moisture from the masonry to the open air.

The Society for the Protection of Ancient Buildings (SPAB) recommends a repair mix of 1:4 (lime putty:sharp sand) for the laying on coat and 2:4:5 (lime putty:sharp sand:shingle) for the cast coats. Proportions can be varied according to the texture required, increasing the amount of shingle will produce a coarser finish..



▲ Unpainted roughcast at 22 Hampstead Way, Hampstead Garden Suburb, Baillie Scott c 1909



▲ 5 Thornton Way, Bell c1927



▲ A mixture of decorative unpainted roughcast panels and brickwork on Eastholm

Small areas to be repaired should be built up in thin coats in a traditional manner with a plasterer's float so that the contours of the wall are followed easily. The cast coat should be applied by hand using a "dashing" float or a coal shovel, and should never be applied mechanically as it gives a bland uniform finish to the wall. If the aggregate "bunches", it should not be smoothed with a trowel, but removed and started again. The roughcast should then be brushed to add texture. When completely dry, it can be lightly sprayed with water and limewashed.

Whatever the type of roughcast used, it is important to allow it to dry out slowly, if necessary covering it with damp hessian but not plastic sheeting, which can inhibit the transfer of moisture and should be avoided.

Any plinths should be repaired and the roughcast finished against it. If there is no plinth, the roughcast should not be finished short of the ground both for aesthetic reasons and because decay of the unprotected masonry may occur just above the ground.

However, it should be pointed out that it can sometimes be difficult to match the colour and texture effectively, and it may sometimes be better to consider replacing it in its entirety.

New materials

The use of OPC (Ordinary Portland Cement) in roughcast for historic buildings is no longer recommended. The traditional conservation mix of equal parts of lime to cement (1:1:6 lime:cement:sand) used by Arts & Crafts architects still acts as a cement mortar and is potentially harmful when used in repairs.

The SPAB suggested mix for new roughcast (not repair) is 1:3 (lime putty:sharp sand) for the laying-on coats and 3:5:6 (lime putty:sharp sand:shingle or pea grit). Variations of this mix are acceptable according to the texture required.

The development of bagged hydraulic limes, marketed as 'natural hydraulic limes' (NHL), and guaranteed to have no additives, has removed the need to use OPC in traditional mortars. Unlike cement, NHL maintain good water vapour permeability and flexibility to accommodate structural movement.

Roughcast, when made up using traditional lime mortars, and correctly applied, is an excellent form of render. The development and use of natural hydraulic limes (NHL) in the mix has removed the need for cement.

These Design Guidance Leaflets are published by the Hampstead Garden Suburb Trust and are intended to give general background information and advice to residents, contractors, architects, and others commissioned to design new work, alterations or extensions in the Suburb. They are not intended to be a substitute for employing proper professional advice, and they assume that the reader will have the necessary technical background and practical experience.

There is a wide variety of types of building in the Suburb and it is impossible to lay down a series of rules which will be applicable in all cases. Therefore the advice and hints which are given in this paper must be applied in a sensitive and thoughtful way. It will be possible to find an exception to almost every rule and statement. All those with a specific interest should look around at the existing building or at others by the same architect. They should remember that alterations may have taken place since the building was built, and should not be misled into copying something which is not original.

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