

Uniclass L6411	EPIC F322	May 07
CI/SfB	Yq4	

Castle Fine Lime Plaster technical specification

Castle Fine Lime Plaster is a traditional 1: 2 lime: sand mortar mix.

It is produced using silver sand, soft sand and non-hydraulic (fat or pure) lime derived from high calcium quicklime (CaO) slaked and stored for a minimum of 30 days.

Applications

Fine Lime Plaster is particularly relevant for the repair of historic buildings. This includes as a fine finishing coat for plasterwork and the laying and re-pointing of fine joint or gauged brickwork.

Fine Lime Plaster is also highly compatible with soft building materials such as earth (cobb, shuttered earth, clay block, pisé, witchert), wood, straw bale, coppiced wood and soft brick.

Technical guidance on the use of Fine Lime Plaster is obtainable from Castle's Technical Helpline on 0845 722 7853.

Characteristics

- More flexible than Portland cement based mortars which means that expansion joints are not always necessary
- More flexible than gypsum based plaster and has excellent vapour permeability qualities which enables the building to breathe
- Consistent mix proportions
- Consistent quality of mortar
- Correct choice of sands
- Is pre-mixed so there is little or no need to re-mix or add water
- Can be re-worked up to the point of set
- Will keep indefinitely as long as the tub is kept air tight and evaporation of moisture does not occur
- Ideal for the repair of historic buildings
- Ideal as a finishing/ top coat plaster and for fine joint or gauged brickwork
- Fine Lime Plaster is a specialist product with different setting, strength development and application characteristics to Portland cement. If you are not experienced in the use of these products, we strongly recommend that you contact Castle's Technical Helpline for advice before use.

Quality

Fine Lime Plaster is manufactured using factory batching techniques with the end product being subject to regular quality control procedures and testing. It is a traditional 1: 2 lime: sand mix batched by volume. The materials used conform to the following standards:

Building Lime BS EN 459-1 : 2001

Sand BS EN 13139 : 2002

The sand used is a blend of silver and soft sands that produces a finely textured mortar.

Sand grading		
To sieve	% of sand retained	
	Silver sand (W.B.B. Minerals DA40)	Elsingham soft
>4mm	0	0
<4mm >2mm	0	0
<2mm >1mm	0	1.26
<1mm >500µ	5.0	12.52
<500µ >250µ	72.0	62.97
<250µ >125µ	22.0	18.45
<125µ >63µ	0.4	4.80
<63µ	0.6	0
Total	100	100

Strength

High strength is not normally required or desired of building mortar or plaster. An unnecessarily strong mortar will concentrate the effects of any differential movement between the mortar and the masonry which could lead to cracking, reducing durability and increasing the risk of rain penetration. A weaker mortar will accommodate some differential movement between the mortar and the masonry and if cracking does occur it will generally be distributed as fine hairline cracks, thus preserving the integrity of the building.

Fine Lime Plaster has no hydraulic properties and stiffens initially by the loss of moisture from the mix by evaporation and absorption. The hardening of mortar is due to the lime reacting with the carbon dioxide in the atmosphere that converts the lime to calcium carbonate. This hardening process is slow and it is important that consideration is given to providing adequate protection for the work in wet or cold weather.

Sitework

Fine Lime Plaster is a pre-mixed wet mortar. Generally there should be no need for the addition of water to the mix, however, if the mortar is particularly dry then a small amount of water can be added but should be controlled to ensure that the mix does not become saturated. As the mortar is pre-mixed, only a little additional mixing may be required for it to become fully "workable". A quick check can be carried out by placing an even spread of plaster onto the reverse side of a trowel, when the trowel is turned over (with the reverse face and mortar facing the ground) the mortar should stick to the underside and not fall away. Additional mixing is best undertaken using a spot board with a spade or hand trowel.

Traditional lime based mortars and plasters are slow setting due to being temperature and moisture sensitive. Practitioners should not be unduly worried if a full set takes weeks to achieve.

If used as a finishing/ top coat plaster Fine Lime Plaster should be applied as a skim not exceeding 3mm. Lime based plasters adhere due to two processes; the first is by mechanical means (e.g. the surface texture of brickwork or preceding plaster coats) and the second is by suction. If suction is not controlled and the plaster surface at the interface with the background is allowed to dry too quickly, adhesion will be lost and the plaster will fall away. Before application, backgrounds should be dampened down using a mist spray - this includes brickwork and preceding plaster coats. The surface should be damp without the formation of beads of water on surfaces. Once the plaster has been applied control the drying process by damping down with a fine mist spray. Through controlling the suction and drying the longevity of the plaster is greatly increased.

Protection should be given against frost, wind, rain and direct sunlight during the early setting period - Hessian and/or plastic sheeting may be required.

The application of artificial background heat to increase setting times is discouraged, unless at low temperatures (between 10-14°C) as quick drying will cause problems as outlined in the previous paragraph.

Storage

Fine Lime Plaster should be stored under cool, frost free conditions. This is necessary as the water in the plaster freezes in temperatures below 0°C, and could lead to separation. Part used tubs should have the lids tightly sealed to prevent carbonation.

Admixtures and additions

Fine Lime Plaster is a pre-mixed lime: sand mortar. The addition of admixtures is not recommended and could adversely affect the performance of the finished product.

Shelf life

Not applicable under the Chromium (VI) Directive.

Availability

Available in 25kg tubs.

For further information please contact:

Castle Cement Limited
Park Square 3160 Solihull Parkway
Birmingham Business Park
Birmingham B37 7YN

Technical Helpline:

tel: 0845 722 7853

(calls charged at local rate)

fax: 01780 727154

technical.help@castlecement.co.uk

Customer Services:

tel: 0845 600 1616

(calls charged at local rate)

fax: 0121 606 1436

customer.services@castlecement.co.uk

Please note: Reference to a Technical Standard number in this leaflet is deemed to include the latest published edition and/or any published amendments issued after the standard's publication, unless a date of issue is quoted in which case reference is to the provisions stated in that edition.

L006(HH)/05/07/pdf