

# PLASTERING

MADE EASY WITH



## OHORONGO cement

- If the product comes into **contact with the eyes**, immediately wash out thoroughly with water and **medical advice should be sought**.
- **Always wear protective clothing** to prevent skin irritation or caustic burning, which may result from prolonged contact with cement.
- The use of **dust masks is recommended**.
- To **avoid back injuries** when lifting cement bags, **bend the knees** while **keeping the back upright**.



## 1. MATERIALS

**CEMENT** Use Ohoronggo **CEM II B-LL 32.5N** cement or Ohoronggo **CEM II A-LL 42.5N** cement, depending on the purpose and function of the plaster.

**AGGREGATES: SAND** As sand is the major constituent of a plaster mixture, its quality has a significant influence on the performance and material cost of the plaster mix.

- Clean pit or river sand is suitable for plaster mixes;
- Sand with high clay content is unsuitable for plaster mixes;
- Crusher sand is suitable only in plaster mixes for applications such as squash court plastering, or if used as decorative textured plaster;
- Sand with an excessive amount of very fine particles is unsuitable;
- Sand containing oversized particles and lumps is unsuitable.

**WATER** Use clean, drinkable water.

## 2. MIXING PLASTER

Depending on the exposure to weather conditions of the plastered surface, different types of plaster mixes are recommended. Refer to section overleaf for the recommended mix proportions.

**Machine mixing is preferable to hand mixing. However, if the plaster is mixed by hand, special care should be taken to follow these instructions:**

- Ensure you have the correct proportions of cement, sand and water at hand;
- Mix the plaster on a clean, hard surface such as a concrete floor or steel sheet;
- Spread the sand in a 10 cm thick layer on the floor or sheet;
- Spread the cement uniformly over the sand;
- Blend until the cement and sand mixture is of a uniform colour;
- Add clean water while mixing until the right consistency is reached.

**FOR SUCCESSFUL PLASTERING, THE SURFACE SHOULD IDEALLY HAVE THE FOLLOWING PROPERTIES :**

- For the plaster to adhere to the surface, the surface must be clean: free of dust, oil and paints that could impair the bond between plaster and surface;
- The surface should be strong. As a rule of thumb, the strength of the surface material should be greater than or equal to that of the hardened plaster;
- To improve adhesion, the surface should be rough in order for the plaster to properly anchor against the surface.
- For smooth surfaces, a spatterdash coat should be applied to provide a sufficiently textured surface for the plaster to adhere to; Pre-moisten the surface and allow it to become surface-dry before applying the plaster to ensure adhesion of plaster. Please note that excessive absorption will dry out the plaster. The surface should therefore be absorbent only to a limited extent, as excessive absorption removes the water from the plaster, which weakens the plaster properties.

**Warning:** If the plaster mix has hardened and is not workable anymore, that batch of plaster mix has to be discarded. Do not attempt to mix additional water into the mix, as this reduces the strength and adhesive properties of the mixture. At any one time, only prepare the amount of plaster that can be used up within 90 minutes or before the mixture dries out.



### 3. APPLICATION

- Please ensure that the surface is clean.
- Pre-moisten the surface before the work commences.
- Apply screed strips before the wall is plastered.
- These narrow strips of plaster placed along the perimeter of the wall, or at suitable intervals on the wall, act as guides for the striker board. Using a rectangular plasterer's trowel, push the plaster onto the wall or ceiling using heavy pressure, in order to compact the plaster and ensure full contact with the substrate.
- Once the plaster starts to stiffen and dry, the surface should be smoothed off with a plane or using a light striker board or straight edge. Any material removed in this way should be discarded. If the plaster is to be applied in more than one coat, the undercoat(s) should be scored by roughly parallel lines about 20 mm apart and 5 mm deep. The purpose of scoring is twofold: to provide an anchor for the next coat and to distribute any cracking so that it is less noticeable.
- For the final coat, use a wood float to remove any ridges made by the striker board. At the same time, fill in any depressions and float flush with the surrounding plaster. If the plaster is applied in a single coat, the thickness should be 10 – 15 mm. A single coat should be no thicker than 15 mm. The recommended thickness for the second undercoat is 5 – 10 mm and for the finishing coat 5 – 10 mm.
- Ensure that the plaster is not continued across the line of a damp proof course (DPC), as this will allow moisture to rise above the level of the damp proof course.
- The plaster should be scored through to the applied surface where different surface materials meet, e.g. masonry and concrete.
- After the plaster has been applied and finished, it is essential to protect it from the sun and wind by covering it with a plastic sheet and keeping it moist for a minimum of 7 days.

**Note:** If a very smooth texture is required, a steel trowel may be used on the surface. However, such a surface is generally not recommended, as it tends to craze and show up imperfections. Various decorative finishes are possible. Techniques include brushing, flicking plaster onto the surface and lightly floating, etc.

**Warning:** Plaster should be protected from the sun and drying winds. Any batch of prepared plaster should be used up within 90 minutes of being mixed and never be re-tempered by mixing with additional water.

### 4. SURFACE PREPARATION

**SMOOTH CONCRETE** Spatterdash is a mixture of one part of cement to one and a half parts of coarse sand, with enough water for the concrete to have a sluggishly pourable consistency. Throw the mixture forcibly on the wall, using a scoop or a brush with long, stiff bristles. The spatterdash should cover the substrate surface completely and form a rough texture with nodules about 5 mm high. Spatterdash should be kept moist for at least three days. The surface should be tested for adhesion and strength by probing with a screwdriver or knife before plaster is applied to it.

**CONCRETE MASONRY** The texture of the masonry units should be sufficiently rough without need of further treatment. If not, apply a spatterdash coat. It should not be necessary to control suction of the surface by pre-moistening, unless the units are very absorbent.

**BURNT CLAY STOCK BRICKWORK** The texture of the bricks should be sufficiently rough without need of further treatment. If not, apply a spatterdash coat. Burnt clay stock bricks normally have a high level of water absorption, which results in rapid drying out of the plaster. If so, pre-moisten the wall and allow it to become surface-dry before applying the plaster.

### 5. TROUBLESHOOTING

NAME	DESCRIPTION	CAUSE	SOLUTION
<b>Grinning</b>	Positions of the mortar joints are clearly visible through the plaster	Different rates of suction between the mortar and the bricks	Apply plaster undercoat or spatterdash coat before plastering. Moisten Bricks
<b>Crazing</b>	Network of closely spaced, fine cracks	Over-trowelling a rich mixture or use of sand that contains too much fine particles	Use better quality plaster sand. Do not over trowel
<b>Cracking</b>	Larger cracks randomly spaced	Movement of the wall or shrinkage of the plaster caused by excessive loss of water from the plaster. Using badly graded sand that lacks fine material. Excessive suction by the bricks or blocks. Exposure to direct sun or wind	Do not use very rich mixes (too much cement). Use good quality sands. Limit plaster thickness to a maximum of 15mm per coat
<b>Lack of hardness</b>	Plaster is easily chipped away or is easily scraped off after hardening	Plastering in full sun and wind. Not wetting absorbent bricks. Addition of extra water after first mixing. Using a very lean mixture (too little cement)	Avoid the causes listed
<b>Debonding</b>	Plaster not adhering to the wall after hardening	Dust on the wall when plastering. Over-rich mixtures. Very thick layers of plaster (>15mm)	Prepare surface properly before plastering. Limit plaster thickness to a maximum of 15mm. Do not use very rich mixes

### PROPOSED MIXED PROPORTIONS

CEM II A-LL 42.5N / B-LL 32.5N	Sand	Stone	Volume
			m <sup>3</sup>
<b>EXTERIOR / DRY MORTAR AND PLASTER</b> Mortar and plaster exposed to dampness - mix designs are based on the use of good quality sand	1	2	- 0.1
<b>INTERIOR / DRY MORTAR AND PLASTER</b> Mortar and plaster not exposed to dampness - mix designs are based on the use of good quality sand	1	3	- 0.14m <sup>3</sup>

The volume of the wheelbarrow is 60 litres



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