

## **Z21 MORTARS**

To be read with Preliminaries/General conditions.

### **CEMENT GAUGED MORTARS**

- 110 MIX PROPORTIONS FOR CEMENT GAUGED MORTARS and other particular requirements are specified elsewhere.
- 120 SAND FOR CEMENT GAUGED MORTARS:
- To BS 1200 unless specified otherwise.
  - Sand for facework mortar to be from one source, different loads to be mixed if necessary to ensure consistency of colour and texture.
  - When a range is specified (e.g. 1:1:5-6) use lower proportion of sand for Grade G sands and higher proportion for Grade S.
- 131 READY-MIXED LIME:SAND FOR CEMENT GAUGED MORTARS:
- Unless specified otherwise, use ready-mixed lime:sand to BS 4721.
  - Coloured mortar, where required, to be made using a proprietary coloured ready-mixed lime:sand, colour to approval where not specified.
- 160 CEMENT FOR MORTAR: When not specified otherwise, to be Portland cement or Portland blastfurnace cement, to class 42.5 or 52.5, manufactured and supplied under the BSI Kitemark scheme for cement. All cements must comply with the appropriate British Standard.
- 170 RETARDED READY-MIXED CEMENT GAUGED MORTARS may be used provided they are:
- Of materials and proportions specified in this section and to BS 4721.
- 180 ADMIXTURES: Do not use in mortar unless specified or approved. Do not use calcium chloride or any admixtures containing calcium chloride. Admixtures, if specified, to be to BS 4887.
- 200 SITE STORAGE OF CEMENT GAUGED MORTAR MATERIALS:
- Store different sands and aggregates in different stockpiles on hard clean bases that allow free drainage.
  - Store factory produced premixed lime:sand for mortar and ready-to-use retarded mortars in covered containers to prevent excessive drying out or wetting.
  - Store bags of cement and hydrated lime in dry conditions, raised off the ground and not touching damp surfaces. Do not use cement or hydrated lime affected by damp.
  - Avoid intermixing and contamination between stored materials and other building materials, debris or other deleterious matter.
- 210 MAKING CEMENT GAUGED MORTAR:
- Keep plant and banker boards clean at all times.
  - Measure materials accurately by volume using clean gauge boxes or clean, undamaged buckets. Proportions of mixes are for dry sand; allow for bulking if sand is damp.
  - Mix ingredients thoroughly to a consistence suitable for the work and free from lumps. Mix mortars containing air entraining admixtures by machine, but do not overmix.
  - Do not mix mortar when the air temperature is at or below 3°C and falling or below 1°C and rising.
  - Use mortar within about two hours of mixing at normal temperatures. Use retarded mortar within the time and site temperatures recommended by the manufacturer. Mortar may be retempered to restore workability, but only within these time limits.

### **LIME:SAND MORTARS**

- 310 MIX PROPORTIONS FOR LIME:SAND MORTARS and other particular requirements are specified elsewhere.
- 320 SAND FOR LIME:SAND MORTARS:
- Sharp, well graded and conforming to the methods of sampling and testing and quality requirements of BS 882 or BS 1200, unless specified otherwise.
  - Source(s)/type(s) of sand are specified elsewhere.
- 350 SITE STORAGE OF LIME:SAND MORTAR MATERIALS:
- Store different sands and aggregates in different stockpiles on hard clean bases that allow free drainage.
  - Store bags of hydrated hydraulic lime powder in dry conditions, raised off the ground and not touching damp surfaces. Do not use hydrated hydraulic lime affected by damp.
  - Store ready prepared non-hydraulic lime putty in conditions that prevent drying out and protect from frost.
  - Store non-hydraulic lime:sand mortar either on clean bases or in clean containers that allow free drainage. Keep covered to prevent drying out or wetting and protect from frost.
  - Avoid intermixing and contamination between stored materials and other building materials, debris or other deleterious matter.
- 360 MAKING LIME:SAND MORTARS GENERALLY:
- Use operatives who are skilled and experienced in the making and use of lime:sand mortars. Provide evidence of their experience to the CA on request.
  - Keep plant and banker boards clean at all times. Avoid contamination of lime:sand mortar by other materials or by any set material (including Portland cement).
  - Measure materials accurately by volume using clean gauge boxes or clean undamaged buckets.
  - Do not mix mortar when the air temperature is at or below 5°C and falling or below 3°C and rising.
- 400 SITE PREPARATION OF HYDRAULIC LIME:SAND MORTAR:
- Thoroughly mix hydrated hydraulic lime powder with sand, first in the dry state and then with water. Follow the lime manufacturer's recommendations for each stage of the mix. Add only sufficient water to produce a workable mix.
  - Use mortar within time limits recommended by the lime manufacturer. Do not use mortar that has begun to stiffen.