

F20 Natural stone rubble walling

NATURAL STONE RUBBLE WALLING

To be read with Preliminaries/ General conditions.

TYPES OF WALLING

110 WALLING COURSED RANDOM RUBBLE.

- Stone:
 - Name (traditional): Sandstone.
 - Petrological family: Sandstone.
 - Colour: Buff.
 - Origin: Reused or imported matching second hand stone

Product reference: Pitch Faced.

- Size: to match existing
- Quality: Seasoned and free from vents, cracks, fissures or other defects deleterious to strength, durability or appearance.

- Mortar: As section Z21 NHL3.5 from an approved supplier
- Mix: 1:2 ½ lime:sand.
- Sand: To BS EN 13139; crushed stone graded to approval.
- Joints: flush joint.
- Other requirements: coloured to match stone colour.

LAYING AND JOINTING

300 REFERENCE PANELS

- General: Complete areas of specified walling types and obtain approval of appearance before proceeding.
- Walling type: Coursed Pitched Face Walling.
 - Location: Section of new wall.
 - Size: Minimum 2000mm long.

315 ADVERSE WEATHER

- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature: Do not lay stones:
 - In cement gauged mortars: At or below 3°C and falling or below 1°C and rising.
 - In hydraulic lime:sand mortars: At or below 5°C and falling or below 3°C and rising.
- Temperature of walling during curing: Above freezing until mortar hardened.
- Newly erected walling: Protect at all times from:
 - Rain and snow.
 - Drying out too rapidly in hot conditions and in drying winds.

325 LAYING GENERALLY

- Absorbent stones: Dampen in warm weather to reduce suction. Do not soak.
- Mortar joints:
 - Laying: Full bed of mortar with all joints and voids filled.
 - Appearance: Neat and consistent.
- Orientation for natural bed of stones: Appropriate to properties of stones and positions in walling/ dressings.
- Appearance and bonding: Consistent overall appearance and good bond.
 - Random walling: Distribute different shapes, sizes and colours evenly throughout the face of the wall. Avoid long continuous vertical joints.
- Accuracy:
 - Walling generally: Plumb, unless specified otherwise.
 - Setting out: Achieve satisfactory junctions and joints with adjoining or built-in elements and components.
- Cleanliness: Keep facework clean. Rubbing and other abrasive or chemical cleaning

methods to remove marks and stains, not permitted.

380 COURSED WORK

- Courses: True to line and level.

390 BRUSHED FINISH TO JOINTS

- General: After the initial set has taken place, brush joints to remove laitance/ excess fines and give a coarse texture.

Z21 NATURAL HYDRAULIC LIME : SAND MORTARS

100 MORTAR MIXES FOR HYDRAULIC LIME:SAND MORTARS - Specification:
Proportions and additional requirements for mortar materials are specified elsewhere.

250 SAND FOR LIME:SAND MASONRY 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. -; fine sharp sands to contractors proposals

600 MAKING MORTARS GENERALLY - Batching: By volume. Use clean and accurate gauge boxes or buckets. - Mix proportions: Based on dry sand. Allow for bulking of damp sand. - Mixing: Mix materials thoroughly to uniform consistency, free from lumps. - Mortars containing air entraining admixtures: Mix mechanically. Do not overmix. - Contamination: Prevent intermixing with other materials.

700 MAKING/USING HYDRAULIC LIME:SAND MORTARS GENERALLY: - Use operatives who are skilled and experienced in the making and use of hydraulic 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 hydraulic 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. - Do not use frozen materials and do not lay masonry units on frozen surfaces.

- Do not bed masonry units or repoint in natural hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising. Where it is anticipated that the temperature in the first few days might fall to 5°C, or lower, the structure should be protected with damp hessian to preserve the moisture and with sufficient cover, using bubble wrap or insulating material, to protect the structure itself and the mortar against frost. - Maintain temperature of the work above freezing until mortar has fully set for at least 28 days. - Protect masonry against rain and snow by covering when precipitation occurs and at all times when work is not proceeding.

- Prevent masonry from drying out too rapidly in hot conditions and in drying winds by covering with damp hessian as soon as possible to maintain moisture and then with additional cover to prevent the hessian drying out. For best results the moist conditions should be maintained, whilst allowing air movement over the mortar, for as long as is practicable.

710 SITE PREPARATION OF HYDRAULIC LIME:SAND MORTAR: - Thoroughly mix (dry) natural 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. NHL 2.0 & 3.5 mortars can generally be re-worked, or 'knocked-up', for up to 24 hours and can improve workability (NHL 5.0 limes have a shorter 'knock-up' life). - If the mix requires significant addition of water then it has reacted too far to be useable and must be rejected. Cover mortars intending to be re-worked to control water loss.