SHEAR design
Consulting Civil and Structural Engineers
7 Ashtree Court - Woodsy Close - Cardiff Gate Business Park - Cardiff - CF23 8RW
Tel: 029 2054 7000 - Fax: 029 2054 7001 - www.shear-design.com - enquiries@shear-design.com

SPECIFICATION FOR MATERIALS AND WORKMANSHIP FOR MASONRY UNITS

1. GENERAL

All materials, workmanship and tests (where required) shall comply with the appropriate current British Standard/ Eurocode, the Building Regulations and be in accordance with the drawings and this specification all to the satisfaction of the Engineer.

The contractor shall provide a programme and a schedule of information requirements before commencing on site. Should the Contractor wish to vary his programme and consequently his schedule of information requirements then reasonable notice shall be given to the Engineer

All materials shall be stored so as to be adequately protected and kept free from contamination from all sources.

2. CEMENTS

Ordinary Portland Cement shall comply with British Standard BS EN 197 (latest revision including amendments), and sulphate resisting cement shall comply with British Standard BS 4027.

All cement shall be obtained from an approved source. Certificates of manufacturer's tests on the cement are to be forwarded to the Engineer and cement is not to be used before it has been accepted by the Engineer. Appropriate methods to minimise the risk of Alkali Silica reaction shall be taken as described in other parts of this specification.

The contractor shall store cement in a manner approved by the Engineer and such approved arrangements shall be maintained for the duration of the contract.

3. AGGREGATE

Sand grade to be 0/2 (FP or MP) to BS EN 13139. Fines contents where the proportion of sand in the mortar mix is specified as a range (eg) 1:1:5-6. Where a lower proportion of sand is specified, then use category 3 fines. Where a higher proportion of sand id required, then use category 2 fines. Sand for face-work mortar shall be maintained as a consistent colour and texture obtained from one source.

4. WATER

Water used for mixing and curing shall be clean and free from harmful matter, shall be obtained from the mains and shall comply with the requirements of BS EN 1008 (latest revision including amendments).

5. ADMIXTURES

The use of admixtures shall not be permitted without the express approval of the Architect.

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6. MAKING CEMENT GAUAGED MORTARS

Batching to be carried out by volume using clean and accurate gauge boxes or buckets. Mix proportions are to be based on the use of dry sand. Allowance should be made for bulking of damp sand. Materials are to be mixed thoroughly to uniform consistency and shall be free from lumps.

Mortars that contain air-entraining admixtures are to be mixed mechanically, and not over-mixed. The working time for the cement gauged mortars shall not exceed two hours at normal temperatures. Care should be taken to prevent the intermixing contamination by intermixing with other materials.

7. MASONRY UNIT

Masonry units in accordance with BS 5290. Masonry units shall have a minimum compressive strength of 5N/mm^2 and shall be frost resistant.

Colour and texture of units to match existing and be agreed with client.

8. MASONRY BELOW GROUND

Masonry units below ground to match those above ground.

Minimum mortar designation below ground to be (ii)

9. CAVITY

Wall ties should be in accordance with BS EN 845-1 and spaced in accordance with the shear Design drawings. No more than 450mm vertical and 900mm horizontally. Wall ties to be provided 225mm each side of an expansion joints in the wall and provided at 300mm vertical centres.

Wall ties to be long enough to be embedded a minimum of 50mm into the masonry leaf

Wall Ties are to be stainless steel or non-ferrous materials in accordance with NHBC Technical Requirement R3

10. EXPANSION JOINT

Setting out of expansion joint to Shear Design Drawings.

11. LAYING GENERALLY

Fill vertical joints and lay bricks on a full bed. Where not specified the bond must be half lapped.

Vertical joints in facework to be even widths and plumb at every fifth cross joint.

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12. ACCURACY

Courses to be level and true to line with faces, angles and features plumb.

Permissible deviations:

- Position in plan of any point in relation to be specified building reference line and/ or point at the same level ±10mm.
- Straightness in any 5m length ±5mm.
- Verticality up to 3m height ±10mm.
- Verticality up to 7m height ±14mm.
- Overall thickness of walls ±10mm.
- Level of bed joints up to 5m (Brick masonry) ±11mm.

13. HEIGHTS OF LIFTS IN WALLING USING CEMENT OR HYDRAULIC LIME MORTAR

- Quoins and advance work: Rack back.
- Maximum lift height: 1.2 m above any other apart of work at any time.
- Maximum lift height: 1.5 m for any one leaf.

14. COLD WEATHER WORKING

When laying masonry units at air temperatures when freezing, the following requirements shall be met:

i) Brickwork should not be built when the air temperature is below 3°C and falling.

ii) Work can resume when the temperature is 1°C and rising, with the expectation the temperature will exceed 3°C.

15. HOT WEATHER WORKING

When laying masonry units in hot weather above 30°C, the following requirements shall be met:

i) Store bricks in the shade to help control heat gain.

ii) Spraying with modest amounts of clean water can keep their temperature down and stop the suction, but do not soak them.

iii) Mixing equipment can be shaded from direct sunlight prior to use.

iv) Mortar tubs and mortar boards should be rinsed with cool water before coming into contact with the mortar.