# GENERAL

## SCOPE

This specification is to be read in conjunction with the Drawings and Bill of Quantities (BOQ). In the event of any discrepancy, the Specification and Bill of Quantities takes precedence over Drawings.

## Local regulations and standards

Work shall comply with local regulations and local construction standards. Discrepancies between designs and with regulations or standards shall be addressed before work commences.

Structural designs shall be reviewed by a local Engineer to confirm adequacy in relation to local regulations, construction practices, and site conditions.

# SITE

## SITE SELECTION

The site of works shall be selected to avoid risks of flooding, erosion, subsidence, exposure to high winds, contamination of ground water, and other avoidable risks.

## SITE SETOUT

The location of works shall be checked, set-out (marked) and approved before work commences.

## SOIL CONDITIONS AND TESTING

Site soil conditions shall be assessed prior to commencement of works for suitability in relation to structural and hydraulic requirements.

## soakage pits

Sizing of soakage pits, trenches and drain fields depends local site soil infiltration rates and the quantity of wastewater that is expected. Soakage pit dimensions should be determined by on-site soil infiltration tests, considering soil types and infiltration rates noted below.

|  |  |  |
| --- | --- | --- |
|  | Infiltration rate (litres/m2/day) | |
|  | clean water | wastewater |
| Sand | 720-2400 | 33-50 |
| Sandy loam | 480-720 | 24 |
| Silt loam | 240-480 | 18 |
| Clay loam | 120-240 | 8 |
| Clay | 24-120 | Unsuitable |
| *Source: Davis & Lambert (2002) Engineering in Emergencies, 2nd edition. Practical Action Publishing: Warwickshire* | | |

Water collection and usage points should be equipped with adequately designed soakage systems located at least 30 metres away from groundwater sources. A soakage pit base must be at least 1.5m above the highest average groundwater table level.

## prevention of surface or groundwater contamination

Location and construction of water supply related infrastructure must avoid contamination of surface water and groundwater sources. Risks are generally low and related to contamination from water treatment chemicals, water treatment by-products and contamination from wastewater.

# materials

## sand

Sand should be clean, sharp, angular (gritty to touch), clean and free from impurities. River or pit sand should be used rather than sea sand which contains salt and other impurities that affect structural applications. All sands should be washed before use to ensure a clay/silt content of no more than 6%.

A rough field test of sand may be carried out by rubbing a sample of sand between damp hands and noting the extent of discolouration from soil, dust or other impurities.

## water

Water used for construction should be non-saline, and free oils, acids, alkalies and from impurities including soil/mud and organic matter.

## Gravel and aggregate

Gravel and aggregate for concrete and compacted sub-bases shall be clean and free from impurities including soil, dust, and organic material. Aggregates for concrete shall be 12-25mm to minimise crack propagation across load bearing concrete structures and to ensure an adequate covering of steel reinforcement.

## Brick masonry

Bricks should be made from clay free of stone or other organic or inorganic impurities. Bricks shall be of a standard, consistent size that conforms with local standards, and shall have plane rectangular faces and right-angled edges. Bricks should be of sufficient strength, with a minimum crushing strength of 125kg/cm2, or to not break when dropped from a height of 1m. Bricks should be fired sufficiently such that, when immersed in water, a brick shall not absorb water more that 20% of its dry weight.

Bricks shall be soaked in water for minimum 15 minutes prior to laying in cement mortar.

Bricks shall be laid in horizontal courses, with brickwork laid in a single day not exceeding 1m height to avoid excessive pressure on newly laid lower courses.

Cement mortar joints should be 6-10mm. A cement : sand mix of 1:6 should be used for masonry mortar unless otherwise noted. Brickwork shall be covered with plastic sheeting or textile and kept wet (cured) for minimum 10 days after laying.