



SITE TESTING OF SOIL SUITABILITY
FOR THE
MULTIBLOC BREPAK

- 1) Sieve analysis to BS1377/1975 : A sample of soil should be oven dried at a temperature of 105° to 100° and passed through a 5mm sieve before carrying out the sieve analysis. The percentage passing a 2 micron sieve will give an indication of the combined silt and clay content. If this percentage is above 30% then the stabilising agent used should ideally be hydrated lime in quantities of approximately 6/8% by weight. If the silt and clay content is below 30% of the sample then ordinary portland cement in quantities of 4/6% by weight should be used to stabilise the material.
- 2) Linear shrinkage : To carry out a simple test it is recommended that an open topped wooden mould be made to give a section 40 x 40 mm and a length of 600 mm. A sample of dried soil is passed through a 5 mm sieve to remove large particles and the resulting material is then mixed with water until saturation point has been reached. The prepared material sample is placed in the mould and left for approximately 7 days, protected from direct sunlight and the amount of shrinkage is measured. If the shrinkage is greater than 8% then hydrated lime should be used as the stabilising agent, if the shrinkage is less than 6% then ordinary portland cement may be used.
- 3) Elasticity or thread test : A small sample of soil is mixed with water so that the sample can be easily moulded in the hand without being too dry or too wet. The sample is then rolled on a flat surface for example a piece of glass and if a thread of soil approximately 6 mm in diameter can be obtained then this indicates a clay soil which can be used for the production of blocks. If however the thread cannot be formed this is an indication that the clay content is low and there may be a high proportion of sand. In this case the amount of stabilising agent would have to be increased to approximately 10% of ordinary portland cement.
- 4) Compaction Test : A small sample of soil is prepared with water as for Test No. 3 above and this is dropped from a height of approximately 1 m onto a hard surface. If the sample disintegrates as a result of the impact then the indication is that the quality of material is poor. If however the sample breaks into two or three smaller pieces then the indication is that the material is a good basis for block production.
- 5) Because a clay soil is a variable and unknown quantity its suitability for the production of building blocks and for stabilisation cannot be pre-determined to an exact degree. However the high compaction pressure achieved with the Brepak block machine enables a wider selection of soils to be used effectively.
- 6) The Brepak brick is highly resistant to rain, it is far better than the mud or clay block and does not require external rendering for added protection. This is primarily due to the high compressive force applied to the soil maker when using the Brepak machine.



- 7) Resistance to wind forces is largely dependant upon the overall design of the structure. If sufficiently reinforced or adequately designed then the building may be considered to be resistant to normal wind loads. The quality of the Brepak block will, at the end of the day, depend largely upon raw materials used, operating techniques, stabiliser content and curing etcetera.