Agg Net Standards & Specifications

C2 – Factory-produced Mortars

This Topic page covers the routine use of aggregates and cement in factory produced mortars.

There are two main types of factory produced mortar:

- Ready to use mortars
- Lime:sand mortars.

Factory produced mortars are specified in:

BS EN 998 Specification for mortar for masonry

This BS EN Standard is published as two Parts:

BS EN 998-1 Part 1: Rendering and plastering mortar

BS EN 998-2 Part 2: Masonry mortar

Guidance on the use of BS EN 998-2 is published by BSI as:

PD 6678 Guide to the selection and specification of masonry mortar

The BS EN Standards for mortar are written in terms of performance. This is a departure from traditional UK practice based on recipes – generally based on the relative ratios of sand, lime and cement.

BS EN 998 replaced the established British (BS) Standard:

BS 4721 Specification for ready-mixed building mortar

Mortars used in floor screeds are specified in a separate Standard:

BS EN 13813 Screed material and floor screeds – properties and requirements

The trade association for the factory mixed mortar industry is the Mortar Industry Association (MIA). MIA is a Product association within the Quarry Products Association (QPA). A series of data sheets about factory produced mortar is published on the MIA website: www.mortar.org.uk

Ready to use mortars

Ready to use mortar is delivered to site. Because the mix proportions are assured, the uncertainty of controlling the quality and consistency of site-batched mortars is avoided.

Ready to use mortars are delivered in two forms:

- Wet ready to use
- Dry ready to use.

Wet ready to use mortar

Wet ready to use mortar is usually delivered to site in bulk, often in a truck mixer. It is stored in plastic tubs (with a typical capacity of 0.25 or 0.33 cubic metres) that can be transferred to the point of use by site handling equipment.

Wet ready to use mortar is usually made with a retarding agent that allows it to be used over an extended period – usually 36 hours. This means that it can be delivered before work starts and can still be used at the end of the day.

Dry ready to use mortar

Dry ready to use mortar is usually delivered to site in a transportable silo fitted with an integral mixer. Once a power supply and water have been connected, mortar can be produced at a rate that suits the activities on site.

Liquid pigments and admixtures can also be added using calibrated dispensers fitted to the mixer.

Lime:sand mortars

Lime:sand mortars are a prepared blend of sand and lime. Cement and water are added on site to produce masonry mortar.

Pigments are often added during the production of lime:sand mortars to produce an extensive range of colours and shades that can enhance the aesthetic appearance of masonry.

The use of lime in mortar has been recognised since Roman times, when natural hydraulic lime mortars were used. Modern mortars use hydrated lime.

The use of lime improves the plasticity and workability of mortar. It also improves the waterretaining properties of fresh mortar. Better water retention improves the bond to the bricks and reduces the risk of cracks within the hardened mortar joint.

Autogenous healing

Mortars that contain lime have a beneficial property known as autogenous healing.

All mortars crack when they harden, but mortars that contain lime tend to have only a small number of fine (micro) cracks.

The movement of rain water over the surface of a mortar joint dissolves free lime from the mortar and deposits it in surface cracks. This free lime reacts with carbon dioxide in the air to form solid calcium carbonate. In time, the amount of calcium carbonate that forms is enough to fill (heal) the cracks.