

MIKE WYE — & ASSOCIATES —

Mixing NHL powder into a Hydraulic lime mortar

The [Hanson](#) technical department have produced the following useful guide to which we have added our own images:

It is essential that the lime is uniformly dispersed and that any fine agglomerations are broken down. The time of mixing will be controlled by the efficiency of the mixer. Roller-pan mixers and screed mixers have the most efficient action but simple tilting-drum cement mortar mixers can be used if a longer mixing time is allowed. If the job is sufficiently large use a mixer with a capacity for a full bag of lime. The following sequence will be suitable for a tilting-drum mixer.



Place sand in mixer



Add measured amount of clean water



Carefully place NHL powder in mixer...



Place cover over drum before restarting



...avoiding dust

When mixing wear protective goggles and water-proof gloves.

- Introduce half of the sand and add all of the lime, mix well for 2 to 5 minutes until a uniform colour is achieved.
- Stop the mixer and isolate the drive. Scrape down any material adhering to the back. Add the remaining sand and mix again for 2 to 5 minutes to get uniform dispersion.
- Continue mixing adding water slowly over at least 10 minutes and giving plenty of time for water to be fully incorporated. The mortar should be more like a dough than a slurry and the less water added to achieve this, the better the mortar performance will be.
- The longer the final mixing time the more workable (fatter) the mortar will be. Workability will be improved by allowing mixed mortar to stand for 15 minutes or longer before re-mixing for a further 5 minutes. (In hot weather do not over-mix as water will be lost through evaporation).

Admixtures

Admixtures may be used with natural hydraulic lime mortars, subject to any limitations imposed by the job specification. In particular the use of air-entraining admixture in mortars and renders exposed to severe frost can be particularly beneficial. It is recommended that trial mixes are produced to establish optimum dosage consistent with the required strength.



Dust is a potential hazard



Periodically stop drum & scrape to ensure good mix



After about 15 minutes the sand & NHL...



...should be well dispersed

Additions

Addition of pozzolanic materials can improve the hydraulic activity and performance in some applications of natural hydraulic lime mortars.

Materials such as traditionally used crushed brick, Hanson BS EN 450 Fly Ash, ground granulated blast furnace slag (GGBS) or [metakaolin\(Argical\)](#) may be used to increase the mortar strength designation. Pozzolans are also sometimes added to NHL mortars if there is a concern that the NHL powder may have lost some strength due to being in storage for a long time.

Addition of Hydrated Lime or [Lime Putty](#) will improve the mix plastic properties but reduce the mortar strength designation.

It is recommended that trial mixes be produced to establish the optimum properties for a particular application.



The mortar should be of the correct consistency...



...and sticky, then it is ready to use.

For more information please contact the Mike Wye & Associates friendly technical sales team, we are only too pleased to advise on materials we supply.

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