



## What mix? CEM1 or CEM2 or CEM3?

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Well guys, this hot weather is continuing (no rain, great eh!), so I thought I'd continue down the hot weather tips. We've done the shades and the polythene, so let's go onto a **BRIEF** bit on concrete, or more precisely, the cement in concrete.

We all know concrete contains cement! Lowering the cement content will reduce the speed of set (and reduce its strength). The minimum recommended cement content is 320kgs per m<sup>3</sup> for the type of work we are involved in.

But, do we know what we get if we order a P320 which is a CEM1, CEM2 or CEM3 mix, or if we order a P320 which is a 'blended' mix?

Put **SIMPLY**, a CEM1 mix contains 100% cement. A CEM2 mix is up to 35% cement **replacement**, (therefore, contains 65% cement). A CEM3 is up to 55% cement **replacement**, (therefore, contains 45% cement). **Please note**: These percentages refer to cement replacement referred to as ggbs / slag / PBF. The percentage replacements are different for PFA, but PFA is not recommended for PIC work).

Cement replacement will reduce the speed of set, which can of course be useful in the summer. **HOWEVER**, please be aware that a CEM3 mix is not recommended because unless it is cured absolutely correctly, (which is not always possible to do in the PIC world, or indeed the general construction industry) the concrete can fail dramatically. Certainly, for a range of different conditions, a superior installation will be constructed using CEM1. It's OK to use CEM2, but we wouldn't recommend using a CEM3.

If you order, or are offered, a 'blended' mix the concrete supplier will often supply a CEM3 rather than a CEM2. It is worth checking, if you are offered, or require, a blended mix / a mix with a cement replacement, that it is a CEM2.

Certainly there are many of you who will use cement replacements, but there are also many installers that stick with a CEM1 regardless of the temperature.

So, that's it. If you have any questions, comments or want the more detailed document that has been sent out previously, just ask, and we will whizz it off to you.

Dr Concrete

