



Concrete Curing

Concrete is probably the most common material that we use on our construction projects, with the UK using approximately 90 million tonnes of concrete annually. Concrete curing is one of the most critical—and often underestimated—stages of the concreting process. In simple terms, curing is the process of maintaining adequate moisture, temperature, and time to allow concrete to properly hydrate and gain strength.

What is the curing process?

When concrete is first poured, the cement reacts with water in a process called hydration. This reaction is what gives concrete its strength. However, hydration only continues as long as sufficient moisture and suitable temperature conditions are maintained. If the concrete dries out too quickly or is exposed to adverse conditions, hydration slows or stops, resulting in weaker, more brittle concrete. Done properly, curing improves strength development, reduces shrinkage and cracking, enhances abrasion resistance, and protects against environmental attack such as freeze-thaw cycles or chemical ingress.



Benefits of Good Curing	Risks of Poor Curing
Increased strength development	Surface cracking
Reduced shrinkage & cracking	Dusting / weak finish
Improved durability & surface finish	Increased permeability
Better resistance to weather & chemical attack	Reduced service life

Curing Methods – Water Based

- Spraying, ponding, or covering the surface with wet hessian or geotextile materials. This method ensures a continuous supply of moisture but requires consistent attention to keep the materials wet.
- Curing compounds are another widely used option, particularly on large slabs or where water curing is impractical. These are sprayed onto the surface to form a membrane that reduces



Curing Methods – Physical Options

- Plastic sheeting is commonly used to trap moisture within the concrete. This should be properly secured to prevent wind uplift and ensure full contact with the surface.
- In colder conditions, insulated blankets or formwork can serve a dual purpose by both retaining moisture and maintaining temperature.
- In more controlled environments, such as enclosed pours, temporary enclosures and heating systems may be used to manage curing conditions more precisely.



Regardless of the method, consistency is key. Intermittent curing is almost as ineffective as no curing at all. Site teams should ensure that curing measures remain in place for the duration specified in the project requirements—typically a minimum of 7 days for standard concrete, though this may vary depending on the mix design and environmental conditions.

Be aware of high risk conditions, and plan to mitigate against – hot and windy weather / large slab areas / cold temperatures. In the extremes of weather consider the suitability to pour, and if pouring takes place ensure your contractor applies the appropriate curing method

There are several warning signs that curing may not be adequate. Early surface cracking, a dusty or weak surface finish, or rapid colour changes can all indicate that the concrete has dried out too quickly. These issues should prompt immediate review and corrective action where possible, although it is important to recognise that many curing-related defects cannot be fully rectified after the fact.

This advice should be used, where the above is applicable, and the information discussed with your team highlighting the following points:

- When does curing start on this pour?
- What method are we using?
- How will we maintain it continuously?
- Who is responsible for checks?
- Review Good Concrete Guide 8 – Guidance on the practical aspects of concreting

☐	Brickwork / Blockwork	☐	Design	☐	DFMA (Offsite Manufacture)	☐	Doors & Windows	☐	Drainage	☐	Electrical	☐	FFE (Furnishings, Fixing & Equipment)
☐	Fire & Lightening	☐	Floor Coverings	☒	Frames & Superstructure	☐	Internal Walls, Partitions & Ceilings	☐	Joinery & General Carpentry	☐	Miscellaneous	☐	Painting
☐	Public Health (Water)	☐	Roads, Paths, Paving & Surfacing	☐	Roof	☐	Services & Systems	☐	Site Preparation Works	☒	Substructure	☐	Walling (Tiling & Finished)

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