How to Calculate Concrete for a Slab or Footing

Getting the numbers right

Ordering ready-mix concrete means committing to a volume before it arrives. Getting that figure wrong is expensive: too little and the pour stops short, too much and you pay for material you cannot use. The calculation itself is simple arithmetic, but a few practical checks make the difference between a slab that works and a costly mistake. This guide walks through the steps for a typical slab or footing, with what to watch at each stage.

Measure the space

Start with the three dimensions that define a rectangular pour: length, width and depth. For a slab, depth is the slab thickness. For a footing, it is the depth of the trench. Use the same unit throughout, metres are easiest because delivered concrete quantities are quoted in cubic metres.

Measure length and width along the centre line of the formwork or trench. If the slab is not perfectly square, take the longest and widest points and treat the shape as a rectangle. For irregular shapes, break the area into rectangles, calculate each separately and add them together. Avoid measuring from the outside of the forms, the concrete sits inside them, so the internal dimensions are what matter.

Depth is the trickiest. Ground is rarely level, and a trench bottom can vary by several centimetres. Take at least three depth readings along the length and average them. For a slab, measure from the top of the formwork to the ground or compacted base. If the base is uneven, compact it first, then take your measurements.

View the location on Google Maps

Convert to cubic metres

Multiply length by width by depth. The result is the volume in cubic metres if all dimensions are in metres. For example, a slab 5 metres long, 4 metres wide and 0.15 metres deep gives 5 × 4 × 0.15 = 3 cubic metres. That is the nominal volume before any allowance for waste or over-excavation.

If you work in centimetres, convert to metres by dividing by 100. A depth of 15 centimetres becomes 0.15 metres. A common mistake is to forget that conversion and end up with a volume a hundred times too large. Double-check the decimal places before you order.



Add a wastage allowance

No pour is perfect. Concrete spills, sticks to the mixer drum, gets left in the chute or settles into gaps you did not account for. A standard wastage allowance is 5 to 10 percent of the calculated volume. For a 3 cubic metre slab, 10 percent adds 0.3 cubic metres, bringing the order to 3.3 cubic metres.

Wastage depends on site conditions. A simple slab on a flat site with good access might need only 5 percent. A footing in a trench with tight corners and hand-mixing of small top-ups might need 10 percent or more. If the ground is soft and the trench widens as you dig, the extra volume can be significant. When in doubt, lean towards the higher figure. Leftover concrete can sometimes be used for a path base or a small pad, but it is better to have a little extra than to be short.

Check for over-excavation

Trenches dug by hand or machine are rarely exactly to plan. The sides can slump, the bottom can dip, and the width can open up. For footings, over-excavation of 10 to 15 percent is

common, especially in loose soil. Measure the trench after digging, not before. If the trench is wider or deeper than expected, recalculate the volume with the actual dimensions.

A simple way to catch this is to measure the trench at several points, take the average width and depth, and multiply by the length. That figure is what you actually need. Ordering based on the design dimensions alone is a gamble that often costs time and money waiting for a top-up load.

Understand delivered concrete quantities

Ready-mix suppliers deliver concrete by the cubic metre. The truck carries a fixed capacity, usually around 6 to 8 cubic metres, but you can order any fraction of that. The supplier will ask for the volume and the required strength grade. For a typical domestic slab, C30 is common. For footings, C40 is often specified for higher load-bearing ground. The supplier confirms availability and schedules the delivery.

One thing to watch is the minimum order charge. Many suppliers have a minimum volume, often 1 cubic metre, below which the price per cubic metre rises steeply. If your calculated volume is less than the minimum, consider combining the pour with another job or adjusting the project scope. Stacey Concrete Ltd offers a range of grades from C10 to C40 and more, and can advise on what works for your specific slab or footing dimensions. Their team can help match the grade to the application without over-specifying.



Double-check the formwork

Before the truck arrives, make sure the forms are secure and the ground is prepared. A blowout halfway through a pour is messy and wastes concrete. Peg the forms firmly, brace them at intervals, and check that the top edge is level. For footings, ensure the trench sides are stable and any loose soil is removed. If the ground is dry, dampen it slightly so it does not draw moisture from the concrete too quickly.

Also check access. The delivery truck needs to get close enough for the chute to reach the pour area. If the site is tight, measure the distance and discuss it with the supplier when you order. Some sites need a concrete pump, which adds cost and planning time. Knowing this in advance avoids a last-minute scramble.

Stacey Concrete Ltd is also on Facebook.

Plan the pour sequence

A slab or footing should be poured in one continuous operation if possible. Cold joints can weaken the structure. Work out the order of pouring so that each section flows into the next without stopping. For a large slab, start at one end and work towards the other, keeping a wet edge. For footings, pour the full length in one go, moving the chute as needed.

Have enough people on site to spread, level and finish the concrete while it is still workable. Ready-mix concrete starts setting within an hour or two depending on the temperature and mix. Hot weather speeds up setting, cold weather slows it down. Plan accordingly and have a spray bottle or damp cover ready if there is a delay.

Check the volume on delivery

When the truck arrives, the driver will have a delivery ticket showing the ordered volume. It is worth confirming that the amount matches what you requested. Some suppliers offer a batch ticket that shows the actual volume loaded, not just the ordered amount. If possible, measure the pour as it goes in. Mark the forms at the expected height and check that the concrete reaches that level. If it falls short, you have a record for the supplier.

For larger jobs, some contractors use a simple dip test in the truck drum to verify the volume. This is not standard practice for small domestic pours, but it is worth knowing that the volume can be checked. Stacey Concrete Ltd provides ready-mix concrete with consistent batch control, which reduces the risk of short measures.



Getting the calculation right for a slab or footing is a matter of careful measurement, a realistic wastage allowance and a clear understanding of delivered concrete quantities. The arithmetic is straightforward, but the site conditions are what make the difference. Measure the actual trench or formwork, not the plan. Add a sensible margin for waste. Confirm the order details with the supplier. And make sure the site is ready before the truck rolls in. That approach saves time, money and the frustration of a pour that does not go to plan.

For reliable supply of ready-mix concrete grades C10, C30, C40 and more, Stacey Concrete Ltd is based at Ryder Point Works, Wirksworth, Matlock DE4 4HE, UK, and can be reached at +44 1629 825188. They deliver across the East Midlands and can advise on the right grade and volume for your project.