

Working safely with DIY materials

Cement burns skin, cutting dust scars lungs and heavy loads hurt backs through repetition. Here is what HSE says about each, and the kit that reduces the risk.

Why this page exists

Materials work carries real risks, and none of them are exotic. Wet cement burns skin. Cutting brick, tile and concrete releases a dust that scars lungs over years. Heavy loads injure backs through repetition rather than any single lift. Asbestos still sits in buildings put up before 2000.

Every calculator on this site carries notes for its own material — the risks, the kit, and the source for each claim. This page is the overview: the method behind those notes, the four risks that come up most, and where to find the notes for your job.

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The method HSE uses

HSE's guidance follows a single model through every risk: **assess, control, review**. Identify the task and who is at risk, put controls in place — with prevention preferred over protection — then check the controls still work.

"Follow the Assess, Control and Review model."

HSE — Construction hazardous substances: Cement

The order matters. A mask is the last line, not the first: ventilation, water suppression and a different tool come before it.

The four risks that come up most

Cement and concrete burn skin

Wet cement is strongly alkaline. Trapped against skin under a glove or a boot it will burn, and the injury can be serious.

"Wet cement is highly alkaline in nature. A serious burn or ulcer can rapidly develop if it is trapped against the skin."

HSE — Cement

Waterproof gloves rated for high-pH substances, wellington boots high enough that nothing runs in, trousers over the boot tops, and water on site to wash skin and flush eyes.

Cutting dust damages lungs

The fine fraction of dust from cutting, drilling and grinding — respirable crystalline silica — is too fine to see and reaches deep into the lungs. It is the biggest risk to construction workers after asbestos.

"Silica is the biggest risk to construction workers after asbestos."

HSE — Silica

Water suppression or extraction at the tool, a mask that is actually rated for the job, and keeping other people clear of the cloud.

Handling injures through repetition

Back and upper-limb injuries are the most commonly reported cause of over-seven-day absence in construction, and the mechanism is repetition and posture rather than one dramatic lift.

"Handling is also the most commonly reported cause of over seven day injuries in the industry."

HSE — Manual handling

Work between knee and chest height, keep loads close, use a barrow or a lifter instead of your hands, and take the rest before you need it.

Older buildings can contain asbestos

Asbestos was used in buildings until 1999 and can still be present in anything built before 2000. It becomes a risk when fibres are released by cutting, drilling or breaking.

"It was widely used within homes and other buildings until 1999."

HSE — Asbestos

If you are unsure what you are drilling into, stop and get it identified rather than taking the chance.

Kit that reduces the risk

Much of what HSE recommends is equipment rather than technique, which is why each calculator lists the kit for its material.

"using mechanical lifting aids like conveyors, hoists, telehandlers or cranes"

HSE — Manual handling

"block splitters instead of cut-off saws"

HSE — Noise

A mixer instead of hand-mixing, a plate compactor instead of a hand rammer, a board lifter for plasterboard, a slab lifter for paving. None of these are shop links on this site, and no one pays us to name them.

Read the notes for your material

Each calculator shows these notes under its results, keyed to the material. Direct links:

- Concrete — cement burns, silica, boots and gloves
- Sand, cement and mortar — dermatitis, powder, bag handling
- Brick and blockwork — repetitive handling, sharp arrises, cutting dust
- Plasterboard — boards up to 50 kg, two-person lifts, board lifters
- Insulation — fibres, loft access, covering up
- Paint — solvents, lead in older paint, ventilation
- Wallpaper — paste, stripping dust
- Tiles — wet cutting, kneeling, adhesive on skin
- Flooring — kneeling, cutting dust, packs
- Carpet and rugs — kneeling, old underlay
- Kitchen worktop — engineered stone dust, long heavy loads
- Skirting board — MDF dust, working low
- Paving and kerbs — kerbs over 70 kg, mechanical lifting
- Shed base — compaction, kneeling, slab handling
- Gravel — bulk bags, shovelling, dust
- Decking — treated timber dust, long boards
- Fencing — post driving, treated timber
- Turf — wet rolls, kneeling
- Topsoil — bulk bags, dust

Related: what to do with the material you have left over, and the building regs and standards library.

What this is not

These notes cover the risks that come up most often with each material. They are not a full risk assessment, and they are not a substitute for the product's own instructions or safety data sheet. HSE guidance is written for workplaces; a domestic job is usually lower risk but rarely zero.

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