COSHH Assessment

Worked example: Cement and mortar for brickwork on a house extension

1. Assessment details

Where the substance is used, who made the assessment and when it will be looked at again. One assessment covers one substance or product.

Company	Holloway and Reece Building Ltd, Ipswich
Job or work area	Single-storey rear extension, 7 Wrenfield Close, Ipswich. Mixing is done outdoors on the drive at the side of the house.
Assessed by	Lena Reece, director, who read the cement and sand safety data sheets and watched the mixing on the last job.
Date and review date	02/11/2026. Reviewed if the cement, the sand or the task changes, if anyone develops skin or breathing problems, and in any case by 02/11/2027.

2. The substance

What the product is, from its label and safety data sheet (SDS). Keep the current SDS with this assessment.

Product name and supplier	General purpose grey Portland cement in 25 kg bags, from the local builders' merchant (safety data sheet dated March 2026). Mixed with bagged building sand to make mortar.
Form	Fine grey powder in the bag. A wet paste once mixed into mortar, which is strongly alkaline.
Hazard pictograms and statements	Pictograms: corrosion and exclamation mark. Signal word: Danger. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation.
Workplace exposure limit (WEL)	Portland cement: 10 mg/m³ inhalable dust and 4 mg/m³ respirable dust, 8-hour average (EH40/2005). The sand contains crystalline silica: respirable crystalline silica 0.1 mg/m³, 8-hour average.

3. How it is used

The real task, because how the substance is used decides how people are exposed.

Task	Two labourers tip cement and sand into a 110 V electric drum mixer on the drive, add water and mix mortar, barrow it to the bricklayers, and wash out the mixer and tools at the end of the day. Two bricklayers lay blocks and bricks and point the joints by hand.
Amount, frequency and duration	About six 25 kg bags of cement a day for about four weeks. Mixing in short spells through the day, about two hours in all. The bricklayers handle wet mortar for most of the day.
Who might be exposed	The two labourers (mixing) and the two bricklayers (laying and pointing). The homeowners and their two children, aged 6 and 9, use the back garden, away from the mixing area. Nobody in the team has a history of dermatitis or asthma (asked at induction).
Routes of exposure	Skin contact with wet mortar and cement. Splashes in the eyes. Breathing in dust when tipping bags into the mixer. Swallowing it from unwashed hands. Wet cement can burn the skin, and the burns may not show for some hours.

4. Controls and PPE

The controls in the order regulation 7 of COSHH sets: avoid or substitute, control at the source, then personal protective equipment as well.

Avoiding or substituting it	Cement cannot be avoided for this brickwork. Ready-to-use mortar in tubs, which removes the mixing and most of the dust, was priced and turned down for a job this size, and is the first choice on small jobs. Bags are used within the date printed on them, while the additive that limits chromium(VI), the main cause of cement dermatitis, still works.
Controls at the source	Mixing outdoors, upwind of the bricklayers and away from the house. Water and some of the sand go in first. Bags are opened low at the mouth of the drum and tipped slowly, so the dust stays in the drum.
Ways of working and hygiene	No kneeling or sitting in wet mortar, and sleeves kept rolled down. Wet mortar washed off skin at once. Hands washed with soap and warm water before breaks and at the end of the day, then after-work cream. Welfare unit on site with hot and cold running water, soap and towels. No eating, drinking or smoking in the mixing area.
Personal protective equipment	Nitrile-coated gloves to EN ISO 374 for mixing and laying, changed if they get wet inside. Safety goggles to EN 166 when mixing and tipping bags. Disposable FFP3 mask to EN 149 when tipping bags; both labourers have been face-fit tested for it. Long sleeves, work trousers, and waterproof knee pads when pointing the low courses.

5. Storage, spills and disposal

How the substance is kept and dealt with outside the task itself.

Storage and handling	Bags kept on a pallet in the locked garage, dry, covered and off the floor, with no more than a week's supply on site. Used in date order, and bags past the date printed on them are not used. One 25 kg bag lifted at a time, from waist height where possible.
Spills and leaks	Spilt powder dampened and shovelled up, or picked up with an M-class vacuum, never dry swept. A torn bag is put inside a heavy-duty sack straight away.
Waste and disposal	Empty bags folded into a sack for the general waste skip. Hardened mortar goes in the inert waste skip. Mixer wash-out water is kept in a settling tub on the drive, never let into a drain, gully or the garden, and the solids go in the skip once set.

6. First aid and emergencies

What to do if someone is exposed. Everyone who uses the substance should know this before they start.

First aid	Eyes: rinse at once with the eyewash kept at the mixer, holding the eyelids open, keep rinsing, and go to A&E. Skin: wash off wet cement straight away with plenty of clean water, and get medical advice for any redness or burn. Breathed in: move to fresh air. Swallowed: rinse the mouth and drink water, do not make the person sick, and get medical advice.
Fire and other emergencies	Not flammable and does not react dangerously. For any fire on site: raise the alarm, get out and call 999. Nearest A&E: Ipswich Hospital emergency department, Heath Road, about 15 minutes by car.

7. Monitoring, health surveillance and training

How you check that the controls work and that nobody is being harmed.

Exposure monitoring	Not needed: mixing is outdoors, in short spells, with the controls above, so dust exposure is expected to stay well below the WELs. Looked at again if mixing moves indoors or if dry cutting starts.
Health surveillance	Skin checks for dermatitis: Lena Reece, trained to recognise its early signs, checks everyone's hands and forearms once a month and records it. Anyone with redness, a rash or cracking skin is referred to their GP or an occupational health provider.
Information, instruction and training	Everyone was briefed on this assessment at induction on 09/11/2026: the hazards of wet cement, the controls, the PPE, washing and skin care, reporting skin problems early, and the first aid. A toolbox talk on cement burns and dermatitis is repeated in the second week.

8. Exposure risks and controls

List each way the substance could harm someone on this job: the task and the route of exposure, such as breathing in dust when tipping out bags. Score it before controls: likelihood (1 rare, 2 unlikely, 3 possible, 4 likely, 5 almost certain) times severity (1 negligible, 2 minor, 3 moderate, 4 major, 5 catastrophic, meaning death or permanent disability). Write the controls you will actually use, then score it again. 1 to 4 is low, 5 to 9 medium, 10 to 16 high, 17 to 25 critical. If a risk is still high or critical after controls, change the task or the product before work starts.

#	Task and route of exposure	Who might be exposed	Initial risk (L x S = score)	Control measures	Residual risk
1	Skin contact with wet mortar and cement when mixing, laying and pointing, causing irritation and cement burns	The labourers and bricklayers	16 4 x 4, High	• Nitrile-coated gloves for all mixing and laying, changed if they get wet inside. • Sleeves kept down, and no kneeling or sitting in wet mortar; waterproof knee pads for the low courses. • Wet mortar washed off skin at once, with hot and cold running water in the welfare unit. • Anyone with redness or a burn gets medical advice the same day, because cement burns can take hours to show.	8 2 x 4, Medium
2	Allergic dermatitis from repeated skin contact over weeks, through chromium(VI) in cement	The labourers and bricklayers	12 3 x 4, High	• Only cement within the date on the bag, while its chromium(VI) reducing additive still works. • Gloves as above, with hands washed and after-work cream used at breaks and at the end of the day. • Monthly skin checks by a trained person, recorded, with early referral for any signs. • Everyone told to report itching, redness or cracking straight away.	4 1 x 4, Low
3	Splashes of cement or mortar in the eyes when mixing, tipping bags or pointing above head height	The labourers and bricklayers	12 3 x 4, High	• Safety goggles to EN 166 worn when mixing, tipping bags and pointing above head height. • Eyewash kept at the mixer and in the welfare unit, checked each Monday. • Bags tipped slowly and low, and the mixer never overfilled.	4 1 x 4, Low
4	Breathing in cement dust and silica dust from the sand when tipping bags and loading the mixer	The labourers, and anyone downwind	12 3 x 4, High	• Mixing outdoors, upwind of the bricklayers and away from the house. • Water and some sand in the drum first; bags opened low at the mouth of the drum and tipped slowly. • Disposable FFP3 mask, face-fit tested, worn when tipping bags. • Spills cleaned up damp or with an M-class vacuum, never dry swept.	4 1 x 4, Low

#	Task and route of exposure	Who might be exposed	Initial risk (L x S = score)	Control measures	Residual risk
5	Swallowing cement or mortar from unwashed hands when eating, drinking or smoking	The labourers and bricklayers	**4** 2 x 2, Low	• Hands washed with soap and warm water before every break. • No eating, drinking or smoking in the mixing area or at the workface.	**2** 1 x 2, Low
6	Children or the homeowners coming into the mixing area or touching wet mortar or the wash-out water	The homeowners and their children, aged 6 and 9	**6** 2 x 3, Medium	• Mixing area on the drive fenced off with barriers and signs. • Agreed with the homeowners that the children stay in the back garden while work is going on. • Wet mortar, cement bags and tools never left unattended, and the settling tub covered. • Mixer switched off and isolated whenever the labourers step away.	**3** 1 x 3, Low

9. Sign-off

	Name	Signature	Date
Prepared by			
Approved by			

Briefing register

Signing below confirms you have been briefed on this COSHH assessment and understand the hazards, the controls and the first aid.

Name	Company	Signature	Date

Risk scoring key

Find the cell where Likelihood meets Severity to get the risk score and level.

		SEVERITY				
	LIKELIHOOD	1 Negligible	2 Minor	3 Moderate	4 Major	5 Catastrophic
5	Almost Certain	5	10	15	20	25
4	Likely	4	8	12	16	20
3	Possible	3	6	9	12	15
2	Unlikely	2	4	6	8	10
1	Rare	1	2	3	4	5

Low (1 to 4)

Medium (5 to 9)

High (10 to 16)

Critical (17 to 25)

Risk Score = Likelihood (1 to 5) x Severity (1 to 5)