



Risk assessment and method statement

Plumbing and heating RAMS

Plumbing and heating installation and alteration. Pre-filled with typical hazards, controls and sequence: edit it for this site.

PROJECT

SITE ADDRESS			
ACTIVITY		RAMS REFERENCE	
Plumbing and heating installation and alteration			
CONTRACTOR CARRYING OUT THE WORK		PRINCIPAL CONTRACTOR	
PREPARED BY	APPROVED BY	REVISION	DATE

Revision record

Reissue and rebrief when the sequence, the programme, the team or the conditions change. If you would have written it differently had you known, it needs a new revision.

REV	DATE	WHAT CHANGED	BY

THE WORK

The activity, the place and the people

Pre-filled for this kind of work. Make every line specific to this site: this sequence, this access, these people, this weather.

Scope of the activity

What is being done, and what is not included.

MHSWR REGULATION 3(1)

Installation and alteration of [hot and cold water pipework, heating pipework, radiators, boiler and hot water cylinder] at [address], including draining down, removing old equipment, pressure testing and commissioning. Gas work by Gas Safe registered engineers only. Not included: [list any exclusions].

Location and access

Where on site, how people and materials get there, and the restrictions.

Access via [entrance], agreed with [occupier or site manager]. Working hours [08:00 to 17:00]. Loft access by [loft ladder or secured ladder], with crawl boards. Materials and old equipment kept at [area]. Water, gas and heating interruptions agreed in advance.

Programme and interfaces

When the work runs, and who else is working nearby.

CDM REGULATION 15(2)

START DATE

DURATION

WORKING HOURS

INTERFACES WITH OTHER TRADES

Electrician for [boiler and control wiring], and other trades: [trades]. Occupants are told before supplies are isolated or restored. Holes through fire-separating walls and floors are fire-stopped by [trade].

Documents this RAMS relies on

Drawings or specification [ref]; asbestos register or survey [ref]; manufacturer's installation instructions. Gas Safe registration and ID cards; building control notification or scheme self-certification; commissioning records; hot work permit where required.

The team, and their competence

CDM REGULATION 8

ROLE	NAME	CARD, TICKET OR TRAINING NEEDED	CONTACT
Gas engineers		On the Gas Safe Register, with the categories on their ID card covering the appliances and the work.	
Unvented systems		Competent person scheme registration, or a current skills card for unvented hot water systems.	
Plumbers		Trained and experienced in the work, with apprentices and trainees supervised.	
Asbestos		Asbestos awareness training, repeated at regular intervals.	
Confined spaces		Training for the entry and rescue arrangements wherever a void is a confined space.	
Access equipment		Trained in the safe use of ladders and steps, and PASMA for any mobile tower.	

PROJECT	DOCUMENT Plumbing and heating RAMS	REVISION	DATE	PAGE 2 of 8
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METHOD STATEMENT

The sequence of work

The order the team will work in on the day, with the controls built into each stage. If the sequence changes on site, revise the RAMS and brief it again.

STAGE	WHAT IS DONE, AND HOW	CONTROLS AT THIS STAGE	BY
Before the day	Survey the property. Confirm the scope, loft and void access, the asbestos information, the isolation points for gas, water and electrics, and whether the work is notifiable. Agree times with the occupier.	Asbestos information checked; Gas Safe categories confirmed for any gas work; RAMS approved by the client or contractor.	Contracts manager
Arrival and briefing	Sign in, meet the occupier or site manager, brief the team on this RAMS and agree the work area. Check blowlamps, gas cartridges, test equipment and tools.	Briefing signed against this revision; cards checked; extinguisher on site.	Supervisor
Protect the work area	Lay floor protection, clear a route for materials, and move furniture and stored items away from where any soldering will happen.	Walkways kept clear; occupants told which rooms are out of use.	Plumbers
Isolate and drain down	Isolate the water, gas and electrical supplies to the parts being worked on. Let the system cool, then drain down into suitable containers or to a drain.	Electrical supply locked off and proved dead; gas isolated and open ends sealed.	Plumbers
Remove old equipment	Disconnect and remove old boilers, cylinders, radiators and pipework, draining each item before it is lifted.	Asbestos check before disturbing flues or boards; heavy lifts planned and shared.	Plumbers
Install pipework and appliances	Install pipework, fittings, appliances and controls. Solder or braze only where press-fit or push-fit cannot be used, with a heat mat and extinguisher at each joint.	Hot work permit where the site requires one; no dead legs; loft and void access as planned.	Plumbers
Pressure and tightness test	Fill and pressure test the water system to the Water Fittings Regulations and the manufacturer's instructions. The gas engineer tests any gas pipework for tightness.	Joints checked before pressurising; others kept clear during the test.	Plumbers
Commission	Commission boilers and appliances to the manufacturer's instructions, checking the flue, combustion air, operating pressure or heat input, and safe operation. Set stored hot water to 60°C.	Gas Safe engineer for gas appliances; unvented safety devices checked; system flushed.	Gas engineer
Hand over	Show the occupier how to use the system, leave the manufacturer's instructions, and arrange the building regulations notification or self-certification.	Commissioning record completed; any unsafe situation reported to the owner in writing.	Supervisor
Clear the site	Remove old equipment, waste and packaging, take up floor protection, and make a last check for heat and leaks before leaving.	Area checked with the occupier or site manager before the team leaves.	Supervisor

CDM REGULATION 15(2): PLAN, MANAGE AND MONITOR THE WORK

PROJECT	DOCUMENT Plumbing and heating RAMS	REVISION	DATE	PAGE 3 of 8
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RISK ASSESSMENT

Hazards, controls and the risk that remains

Each significant hazard rated before and after its controls, as likelihood times severity. The ratings are typical: check them for this site.

LIKELIHOOD

5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
2	2	4	6	8	10
1	1	2	3	4	5

SEVERITY

1	2	3	4	5
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1 to 4 low

5 to 12 medium

15 to 25 high

HAZARD	WHO COULD BE HARMED, AND HOW	RISK BEFORE	CONTROLS	RISK AFTER	BY
Fire from soldering and brazing	The plumber, occupants and the building, from blowlamp flame near timber, insulation and dust in voids.	3 x 5 = 15 High	• Press-fit or push-fit fittings used instead of soldering where practicable. • Heat-resistant mat behind every joint, combustibles moved or protected, and an extinguisher within reach. • Hot work permit where the site requires one, with the fire watch it sets. • Area, void and the far side of the wall checked after the last joint, and again before leaving.	1 x 5 = 5 Med	Plumber
Gas escape, fire or explosion	Engineers, occupants and neighbours when gas pipework or appliances are opened up.	3 x 5 = 15 High	• Gas work only by Gas Safe registered engineers whose card covers the work, as GSIUR regulation 3 requires. • Supply isolated, open ends sealed with the appropriate fitting, and no source of ignition near exposed gasways. • Gas tightness test immediately after any work that could affect it.	1 x 5 = 5 Med	Gas engineer
Carbon monoxide from appliances and flues	Occupants and workers, from a blocked, disconnected or poorly installed flue or appliance.	2 x 5 = 10 Med	• After work on an appliance, the flue, combustion air supply, operating pressure or heat input, and safe operation are checked. • Any defect reported to the responsible person and the owner, as GSIUR regulation 26(9) requires, and unsafe appliances not left in use. • Flues and appliances installed to the manufacturer's instructions.	1 x 5 = 5 Med	Gas engineer
Unvented hot water failure	Occupants and plumbers, from stored water overheating or an uncontrolled discharge.	2 x 5 = 10 Med	• Installed only by someone with the skills for unvented systems, shown by competent person scheme registration or an unvented skills card. • Factory-fitted temperature and pressure relief valve left in place, with the discharge piped to where it is visible but safe. • Work notified to building control unless self-certified through a competent person scheme.	1 x 5 = 5 Med	
Electric shock from boilers, pumps and immersions	Plumbers disconnecting or reconnecting heating controls, pumps and immersion heaters.	3 x 5 = 15 High	• Electrical supply isolated, locked off and proved dead before work on any appliance or control. • Temporary continuity bond across any cut in metal pipework, and bonding restored before handover. • Electrical connections made by a competent person.	1 x 5 = 5 Med	
Scalds and burns	Plumbers draining hot systems, and occupants using outlets after commissioning.	3 x 3 = 9 Med	• Systems isolated and left to cool before draining or opening up. • In new dwellings, bath hot water limited to 48°C with a mixing valve, as Part G requires. • Occupants told before hot water comes back on.	1 x 3 = 3 Low	
Pressure testing	Plumbers and others nearby, if a joint or fitting fails under test pressure.	2 x 3 = 6 Med	• Test pressure and method set by the Water Fittings Regulations and the manufacturer's instructions, never exceeded. • Joints checked before pressurising, and others kept clear during the test. • Pump and gauge checked before use; pressure released slowly at the end.	1 x 3 = 3 Low	
Lifting boilers, cylinders and radiators	Plumbers carrying boilers, cylinders, radiators and baths up stairs and into lofts.	4 x 3 = 12 Med	• Avoided where reasonably practicable, then assessed by task, individual, load and environment, as the Manual Handling Operations Regulations require. • Cylinders, boilers and radiators drained before removal; two-person lifts, stair climbers or trolleys for heavy items. • Route checked and cleared before lifting.	2 x 3 = 6 Med	

MHSWR REGULATION 3(6): WITH FIVE OR MORE EMPLOYEES, RECORD THE SIGNIFICANT FINDINGS

PROJECT	DOCUMENT Plumbing and heating RAMS	REVISION	DATE	PAGE 4 of 8
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RISK ASSESSMENT, CONTINUED

More hazards, and those specific to this site

HAZARD	WHO COULD BE HARMED, AND HOW	RISK BEFORE	CONTROLS	RISK AFTER	BY
Falls in lofts and roof spaces	Plumbers working on joists, through hatches, and on ladders up to the hatch.	3 x 4 = 12 Med	- Crawl boards or boarded walkways across joists; nobody stands on ceiling plasterboard. - Loft ladder or a secured ladder at the hatch, with the opening guarded when people are below. - Temporary lighting in the loft before work starts.	1 x 4 = 4 Low	
Underfloor voids and confined spaces	Plumbers in underfloor voids, ducts, tanks and chambers with poor air or a difficult way out.	2 x 5 = 10 Med	- Entry avoided where the work can be done from outside the space. - Each space assessed; where it is a confined space, entry only under a safe system of work with gas testing and rescue arrangements. - Someone outside always knows who is in the void.	1 x 5 = 5 Med	
Asbestos in older properties	Plumbers near pipe lagging, flue pipes, boiler cupboard boards, textured coatings and old cisterns.	3 x 5 = 15 High	- Asbestos register or refurbishment survey checked before work in buildings built or refurbished before 2000. - Suspect materials presumed to contain asbestos and left undisturbed until sampled. - Asbestos awareness training for every plumber, repeated at regular intervals.	1 x 5 = 5 Med	
Legionella in new and altered systems	Occupants and the public, from stagnant or lukewarm water in new, altered or idle pipework.	2 x 5 = 10 Med	- No dead legs left in altered pipework; redundant branches cut back to the main run. - Hot water stored at 60°C or above, and cold water kept below 20°C where possible. - Systems flushed, and disinfected where the specification requires, before handover.	1 x 5 = 5 Med	
Dust from chasing, drilling and cutting	Plumbers chasing walls, core drilling and cutting masonry for pipe and flue runs, and occupants nearby.	3 x 4 = 12 Med	- Pipe routes planned to avoid chasing where practicable, with surface runs or boxing instead. - Chasers and core drills used with water suppression or on-tool extraction to an M or H class unit. - FFP3 RPE, face-fit tested, for dusty work; clean-up by vacuum, never dry sweeping.	1 x 4 = 4 Low	
Working in occupied homes	Residents, children and visitors in the property while the work is done.	3 x 4 = 12 Med	- Water, heating and gas interruptions agreed with the occupier, with vulnerable residents identified first. - Blowlamps, gas cartridges and tools never left unattended. - Floors protected, and hoses and pipes kept out of walkways.	1 x 4 = 4 Low	
Flooding and water damage	The property and its occupants, from a failed joint or a careless drain-down.	3 x 2 = 6 Med	- Stopcock found and checked before work; system isolated and drained into suitable containers or to a drain. - Joints checked under test before floors and boxing are closed up.	1 x 2 = 2 Low	

PROJECT	DOCUMENT Plumbing and heating RAMS	REVISION	DATE	PAGE 5 of 8
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EQUIPMENT

Plant, equipment and PPE

Plant and equipment

Each item, the checks and certificates it needs, and who may operate it.

PUWER 1998, LOLER 1998

ITEM	CHECKS AND CERTIFICATES	OPERATOR COMPETENCE
Blowlamp and gas cartridges	Hose, valve and nozzle checked; cartridges stored away from heat.	Each plumber
Press-fit tool	Jaws checked and the tool serviced to the maker's instructions.	Trained user
Pressure test pump and gauge	Gauge readable and in good order; valves checked before use.	Plumbers
Flue gas analyser and gas pressure gauge	In calibration and checked before use.	Gas Safe engineer
Stair climber or trolley	Pre-use check; rated for the load.	Trained user
Ladders and crawl boards	Pre-use check; ladder secured at the hatch.	Each plumber

Personal protective equipment

PPE is the last line of defence, after the controls above. Specify the type, not just the item.

PPE AT WORK REGULATIONS 1992

ITEM	NEEDED	TYPE AND SPECIFICATION
Safety helmet	☒	On construction sites, to site standard
Safety footwear	☒	Safety boots with toe protection
High-visibility clothing	☒	On construction sites, to site standard
Gloves	☒	Heat-resistant for soldering, cut-resistant
Eye protection	☒	For soldering, cutting and overhead work
Hearing protection	☐	
Respiratory protection Type, and face-fit tested	☒	FFP3, face-fit tested, for dusty voids
Harness or restraint Anchor points identified	☐	

CONTROLS

Substances, permits, emergencies and the environment

Hazardous substances

Each substance and its COSHH assessment.

COSHH 2002, REGULATION 6

SUBSTANCE	COSHH ASSESSMENT REFERENCE	CONTROLS
Solder flux	COSHH assessment ref	Use as the safety data sheet directs; gloves; avoid breathing the fume
Heating system inhibitor and cleaner	COSHH assessment ref	Gloves and eye protection; spills cleaned up at once
Solvent cement and jointing compounds	COSHH assessment ref	Good ventilation; gloves; no flames nearby
Loft insulation fibres and dust	COSHH assessment ref	Long sleeves, gloves, FFP3 mask, face-fit tested

Permits and plans

PERMIT OR PLAN	NEEDED	REFERENCE
Hot work permit	☒	
Permit to work	☒	
Permit to dig or break ground	☐	
Confined space entry	☒	
Lift plan	☐	
Temporary works design	☐	

Emergency and rescue

First aid, fire, and how someone is rescued.
The rescue plan belongs in the RAMS, not after it.

For a smell of gas, turn off the supply at the emergency control, open doors and windows, and use no switches or flames. Call the gas emergency number, 0800 111 999 in Great Britain. For fire, raise the alarm and get out. First aider and kit on site, and the nearest accident and emergency department named on the briefing.

Environment and neighbours

Dust, noise, vibration, waste, spills and hours of work.

Old boilers, cylinders, radiators and metal pipe separated for recycling. Drained system water disposed of as the inhibitor safety data sheet directs, never to a surface water drain. Packaging removed from site.

PROJECT	DOCUMENT Plumbing and heating RAMS	REVISION	DATE	PAGE 7 of 8
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Briefed before the work starts

DATE AND TIME

A SIGNATURE AGAINST A REVISION, ON A DATE, BEFORE THE WORK STARTED, IS HOW A BRIEFING IS EVIDENCED

A pre-filled starting point, not legal advice. Edit it for the site and have it approved.