



Risk assessment and method statement

Steel erection RAMS

Erect structural steelwork. Pre-filled with typical hazards, controls and sequence: edit it for this site.

PROJECT

SITE ADDRESS			
ACTIVITY Erect structural steelwork		RAMS REFERENCE	
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)

Delivery, offloading and erection of the structural steel frame shown on drawings [refs], including columns, beams, rafters, bracing and temporary bracing, bolting up, lining and levelling, and landing decking bundles for the decking contractor. Erection sequence to [method statement ref]. Not included: [decking, stud welding or other exclusions].

Location and access

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

Site access via [gate]. Steel delivered to the laydown area at [location] in erection order. Crane set up at [position] on ground checked for the outrigger loads. Exclusion zone below the erection area barriered as shown on the plan. Working hours [08:00 to 17:00].

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

Decking contractor [name] lays and fixes decking after nets are in. Other trades stay outside the exclusion zone until the frame is handed over: [trades]. Temporary bracing is not removed or altered by anyone other than the erection team, with permission.

Documents this RAMS relies on

Erection drawings [refs]. Erection sequence and temporary bracing details from the frame designer [ref]. Lift plans [ref]. Base handover [ref]. Temporary works register. Net handover certificates. Rescue plan and construction phase plan.

The team, and their competence

CDM REGULATION 8

ROLE	NAME	CARD, TICKET OR TRAINING NEEDED	CONTACT
Steel erectors		Trained and experienced erectors; a CSCS card backed by an NVQ Level 2 in steel erection is what most principal contractors expect.	
Erection supervisor		An experienced erector with supervisory training, on site throughout erection.	
Appointed person		Plans the lifts and writes the lift plans, trained to the BS 7121 recommendations.	
Slinger signallers		Trained to sling steel and give signals, such as the CPCS A40 category.	
MEWP operators		IPAF trained for the MEWP category and familiarised on the model.	
Net riggers		FASET trained riggers who install nets to BS EN 1263-2 and issue a handover certificate.	

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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
Plan the erection	Agree the erection sequence, temporary bracing and decking interface with the frame designer. Write the lift plans, choose the crane and MEWPs, and agree crane positions and the exclusion zone with the principal contractor.	Erection method statement, bracing details and lift plans approved before steel is delivered.	Contracts manager
Accept the bases	Check foundations, holding down bolts, levels and grid lines against the drawings. Check the ground for crane outriggers and MEWP routes, and the access for deliveries.	Bases and ground handed over in writing; errors resolved with the designer before erection.	Erection supervisor
Arrival and briefing	Sign in, attend the site induction, then brief the team on this RAMS, the lift plan, the exclusion zone and the rescue plan. Check harnesses, lanyards, accessories and tools.	Briefing signed against this revision; cards checked; accessories in date.	Erection supervisor
Deliver and offload	Take deliveries in erection order. Offload from the ground where practicable and stack on bearers in the laydown area, checking members for transit damage.	Load stable before straps are released; laydown area barriered.	Slinger signaller
Erect columns	Lift each column onto its base, fit nuts and washers to the holding down bolts, then brace or guy it as the method statement shows before the crane releases it.	Exclusion zone kept; nobody under the load; column stable before release.	Erectors
Erect beams and bracing	Lift beams and rafters into place from MEWPs, make each connection with the bolts the method statement requires before releasing the hook, and complete each braced bay before the next.	Stability checked bay by bay; no walking on top flanges; tag lines in use.	Erectors
Bolt up, line and level	Fit the remaining bolts, plumb and line the frame, then tighten connections to the specification and record each one against its grid reference.	Work from MEWPs or platforms; bolts in bags; tools on lanyards.	Erectors
Nets and decking	Rig safety nets and fit edge protection, then land decking bundles at the agreed positions for the decking contractor to lay and fix.	Net handover certificate before work above; bundles on connected, braced steel only.	Erection supervisor
Remove temporary bracing	Once the designer confirms the permanent structure is complete and stable, remove temporary bracing in the order agreed, and record each removal.	Permission from the named temporary works person; register updated.	Temporary works lead
Hand over the frame	Inspect the completed frame, clear loose bolts, offcuts and packing, take down the exclusion zone and hand the frame to the principal contractor.	Connection records and as-built checks handed over; area agreed with the site manager.	Erection supervisor

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

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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		SEVERITY		
	1	2	3	4	5
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
	1	2	3	4	5

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
Falls while bolting up connections	Erectors making connections at column heads and beam ends before the floor or roof is in.	4 x 5 = 20 High	- Connections made from MEWPs or other working platforms wherever the ground and the frame allow. - Safety nets below the work where platforms cannot reach, rigged and handed over before erectors work above them. - Full harness with twin lanyard as the backup, clipped to an anchor the designer or supervisor has confirmed.	1 x 5 = 5 Med	Supervisor
Walking or straddling beams	Erectors tempted to walk a top flange or sit on a beam to reach a connection.	3 x 5 = 15 High	- Walking on the top flange of a beam is banned on this job, as HSE guidance says it must never be done. - Beam straddling only on I-beams, for short specific tasks named in the method statement, sitting astride with both feet on the bottom flange. - Harness and twin lanyard worn and clipped whenever straddling.	1 x 5 = 5 Med	Supervisor
Collapse of the part-erected frame	Erectors on the frame and anyone nearby, when columns or bays are left unbraced or out of sequence.	3 x 5 = 15 High	- Erection sequence and temporary bracing agreed with the frame designer and written into the method statement. - Each column held by its holding down bolts, braces or guys as the method statement shows before release, and each bay made stable before the next starts. - Frame checked for line, level and plumb at the end of each shift, and left stable overnight.	1 x 5 = 5 Med	Erection supervisor
Temporary bracing removed too early	Everyone on and near the frame, if bracing comes out before the permanent structure is complete.	3 x 5 = 15 High	- Bracing, guys and props recorded as temporary works, with a named person who controls them. - Nothing struck until the designer confirms the permanent bracing, floors or walls are in and connected. - Removal recorded in the temporary works register; other trades told not to touch bracing.	1 x 5 = 5 Med	
Foundations and holding down bolts	Erectors landing columns on bases that are out of position, under strength or not ready.	3 x 5 = 15 High	- Bases handed over in writing by the principal contractor, with holding down bolt positions and levels checked. - Packs and shims to the drawing; nuts and washers fitted to every holding down bolt before the crane releases a column. - Grouting carried out to the method statement and the designer's timing.	1 x 5 = 5 Med	
Steel falling during the lift	Slings and anyone below, when a member slips, a sling fails or a hook opens.	3 x 5 = 15 High	- Every lift under a lift plan from a competent person; slinging by trained slinger signallers. - Accessories marked with their safe working load, checked before use and examined at least every six months. - Nobody under a suspended load, and lifts routed away from people.	1 x 5 = 5 Med	Crane supervisor
Struck or trapped by swinging steel	Erectors guiding members into place at height and slingers at ground level.	3 x 4 = 12 Med	- Tag lines on long members, handled by people standing clear of the swing. - Hands kept off the member until it is close to its connection; nobody between the steel and a fixed structure. - Hook held until the connection has the bolts the method statement calls for.	2 x 4 = 8 Med	
Crane or MEWP overturning	Operators and people nearby, when ground gives way under outriggers or wheels.	3 x 5 = 15 High	- Ground under crane positions and MEWP routes assessed, with the bearing information from the principal contractor. - Outriggers set fully on mats sized to the loads; MEWPs kept off fresh backfill, covers and slopes beyond the manual. - Site traffic kept clear of plant in use.	1 x 5 = 5 Med	

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

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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
Offloading steel from trailers	Drivers and erectors on or beside the trailer while members are slung and lifted off.	3 x 4 = 12 Med	- Steel delivered in erection order and slung from the ground where practicable, so nobody works on the bed. - Load checked as stable before straps are released; bearers between layers. - Offloading area barriered, away from the public, with a banksman for reversing.	1 x 4 = 4 Low	
Dropped bolts, tools and materials	Other trades, visitors and erectors working below the frame.	4 x 4 = 16 High	- Exclusion zone below the erection area, barriered and signed, and no trades working underneath. - Bolts carried in bags or buckets; tools on lanyards at height. - Toe boards or edge protection fitted at open edges as soon as the frame allows.	2 x 4 = 8 Med	
Decking bundles landed on the steel	Erectors and deckers, when bundles overload a beam, slide or are opened before the area is ready.	3 x 5 = 15 High	- Bundles landed only at the positions agreed with the decking contractor and the designer, on connected and braced steel. - Bundles secured against sliding and wind, and not opened until the decking team is ready to fix. - Nets or other fall protection in place below before decking starts.	1 x 5 = 5 Med	
Falls at the decking leading edge	Deckers laying and fixing sheets, and anyone walking onto an unfixed sheet.	3 x 5 = 15 High	- Decking laid and fixed to the decking contractor's method statement, following the BCSA code of practice for metal decking. - Safety nets below and edge protection at the perimeter; loose sheets fixed or removed at the end of each shift. - Openings covered or guarded as soon as they are formed.	1 x 5 = 5 Med	
Wind on the frame and on lifts	Erectors at height and lift teams, when wind moves members, bundles or the part-built frame.	3 x 4 = 12 Med	- Forecast checked each morning; wind limits for lifts and for work at height set in the lift plan. - Lifting stopped at the limit; members with large areas lifted only in calm conditions. - Frame and loose materials made secure before the team leaves.	1 x 4 = 4 Low	
Overhead power lines	Lift teams and MEWP operators, if the jib, load or platform comes close to a line.	2 x 5 = 10 Med	- Lines found at the planning stage; the network operator asked to make them dead or divert them. - Where lines stay live, barriers and goal posts set out to HSE GS6 so plant cannot reach them.	1 x 5 = 5 Med	
Manual handling of members and bolts	Erectors and labourers moving small members, bolt boxes and packs.	3 x 3 = 9 Med	- Members lifted by crane, telehandler or trolley; only small items handled by hand. - Bolt boxes split into bags that are light enough to carry and pass up. - Grip gloves worn; team briefed on lifting technique.	2 x 3 = 6 Med	
Vibration and noise from bolting tools	Erectors using impact wrenches and torque tools for long periods while bolting up.	3 x 3 = 9 Med	- Bolting tools chosen for low vibration, maintained, and use planned to keep daily exposure down. - Hearing protection worn when using impact wrenches. - Regular users under health surveillance where the noise or vibration assessment calls for it.	2 x 3 = 6 Med	
Site welding and cutting	Erectors and others near site welds, cut-outs and stud welding.	3 x 4 = 12 Med	- Hot work done under a hot work permit and the separate hot works RAMS, with a fire watch. - Fume, sparks and falling slag controlled below the work, with the area under it kept clear.	1 x 4 = 4 Low	
Rescue after a fall	An erector suspended in a harness or caught in a safety net.	2 x 5 = 10 Med	- Written rescue plan before work starts, with MEWP or rescue kit on site and the team trained in it. - Never working alone at height; rescue started at once, without waiting for the emergency services.	1 x 5 = 5 Med	

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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
Mobile crane	Thorough examination in date; load chart for the set-up; rated capacity indicator tested.	Carded crane operator
Slings, chains, shackles	Marked with safe working load; pre-use check; examined every 6 months.	Slinger signaller
Boom and scissor MEWPs	Thorough examination in date; daily pre-use check; ground controls tested.	IPAF trained operator
Safety nets	Installed to BS EN 1263-2; handover certificate; checked after any impact.	FASET trained rigger
Harnesses and twin lanyards	Pre-use check; detailed inspection every three months, as HSE suggests for steel erection.	Each erector
Impact wrenches and torque tools	Checked before use; torque tools calibrated; tool lanyards at height.	Erectors

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	☒	EN 397 helmet with chin strap
Safety footwear	☒	Safety boots, toe protection, grip sole
High-visibility clothing	☒	Slinger signaller clearly identified
Gloves	☒	Grip gloves for steel, slings and bolts
Eye protection	☐	
Hearing protection	☐	
Respiratory protection Type, and face-fit tested	☐	
Harness or restraint Anchor points identified	☒	Full harness, twin lanyard; boom MEWPs

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CONTROLS

Substances, permits, emergencies and the environment

Hazardous substances

Each substance and its COSHH assessment.

COSHH 2002, REGULATION 6

SUBSTANCE	COSHH ASSESSMENT REFERENCE	CONTROLS

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.

Rescue plan for an erector suspended in a harness or caught in a net, with a MEWP or rescue kit on site and the team practised. First aider on site, the nearest accident and emergency department named on the briefing, and lifting stopped and the frame made safe if a member, the crane or the ground moves.

Environment and neighbours

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

Crane mats on finished surfaces. Engines switched off between lifts where practical. Packing, banding, offcuts and spare bolts collected each day and removed from site. Neighbours told of crane arrival and any road closure.

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Briefed before the work starts

BRIEFED BY	REVISION BRIEFED	DATE AND TIME

[illegible]

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