

**HSE DOCUMENTS**

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RISK ASSESSMENT FOR FIRE RESISTANCE CABLE INSTALLATION

Item	Detail
Doc Ref	HSE-RA-XXX-001
Rev/Date	Rev. 01 — [Issue Date]
Project	[Project / Contract Name]
Client	[Client / Principal Contractor]
Company	[Company Name]
Activity	Fire Resistance Cable Installation
Related Method Statement	HSE-MS-XXX-001
Industry	Electrical
Classification	CONTROLLED DOCUMENT — HSE / Quality Department
Standards	ISO 45001:2018, ISO 9001:2015

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Section 1 — Document Information & Assessment Team

1.1 Document Attributes

Attribute	Detail
Document Title	Fire Resistance Cable Installation Risk Assessment
Document Reference	HSE-RA-XXX-001
Revision	Rev. 01
Related Document	Fire Resistance Cable Installation Method Statement, HSE-MS-XXX-001
Project / Client	[Project / Contract Name] / [Client / Principal Contractor]
Assessment Method	5 × 5 Likelihood × Severity matrix (ISO 45001:2018 Cl. 6.1; ISO 31000:2018 principles)
Review Frequency	At each revision, incident, change of scope, or every six months

1.2 Assessment Team

Role	Name	Date	Signature
Prepared By			
HSE Officer			
Site Manager			
Authorised Person (Electrical)			
Worker Representative			

Section 2 — Scope & Methodology

2.1 Purpose. This assessment identifies hazards in the fire resistance cable installation, rates the risks before and after controls, and confirms that residual risk is acceptable under ISO 45001:2018.

2.2 Scope. It covers all 20 steps in the five phases of Method Statement HSE-MS-XXX-001: mobilisation, containment and supports, cable handling and pulling, isolation, termination and fire-stopping, and testing and handover. A general section covers cross-cutting hazards.

2.3 Method. Each hazard is rated by Likelihood (1–5) multiplied by Severity (1–5), first without controls beyond basic site rules (initial risk), then with the stated controls in place (residual risk).

2.4 Hierarchy of Controls. Controls are chosen in this order: elimination, substitution, engineering, administrative and PPE. PPE is the last line of defence and never the sole control for a high risk.

2.5 Acceptance. Residual risk must be Medium or Low. Any High or Very High residual risk stops the activity until further controls are added and the Site Manager approves.

Section 3 — Risk Rating Criteria

3.1 Likelihood

Score	Level	Description
5	Almost certain	Expected to occur during the works
4	Likely	Will probably occur, has happened often in similar work
3	Possible	Could occur, has happened in similar work

Score	Level	Description
2	Unlikely	Not expected, but possible
1	Rare	Would only occur in exceptional circumstances

3.2 Severity

Score	Level	Description
5	Catastrophic	Fatality or multiple serious injuries; loss of life-safety system function
4	Major	Serious injury, permanent disability or long-term illness; major damage
3	Moderate	Injury needing medical treatment and lost time; minor environmental harm
2	Minor	First-aid injury; short-term discomfort
1	Negligible	No injury or damage

3.3 Risk Matrix

Likelihood ↓ / Severity →	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

3.4 Action Levels

Risk Band	Score	Required Action
Very High	17–25	Stop. Do not start or continue until risk is reduced.
High	10–16	Urgent action. Add controls; work only with Site Manager approval.
Medium	5–9	Proceed with controls in place; monitor and supervise.
Low	1–4	Acceptable; manage through routine controls.

Section 4 — Risk Register

Ratings are Likelihood (L) × Severity (S). Controls follow the hierarchy: Elim (eliminate), Sub (substitute), Eng (engineering), Admin (administrative), PPE.

4.1 Phase 1 — Mobilisation & Pre-Installation Verification

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
P1-01	Briefing & competency check	Untrained or uncertified personnel carry out tasks, causing injury or poor workmanship	All operatives	3	4	12 High	Admin: site induction, signed MS briefing, competency and card check before start, supervision until verified. PPE: issue check at induction.	2	4	8 Medium	Site Manager
P1-02	Site survey & route verification	Contact with hidden live services; fall through voids or from unprotected edges; poor lighting	Surveyors, Foreman	3	4	12 High	Elim: re-route clear of hazards. Eng: edge protection, portable lighting. Admin: service drawings review, scanner use, permit areas identified. PPE: standard set.	1	4	4 Low	Foreman
P1-03	Material receipt & inspection	Manual handling injury; drum collapse or crush during unloading	Operatives, Storekeeper	3	4	12 High	Eng: forklift/telehandler unloading, drum chocks. Admin: weight check, trained driver, exclusion zone. PPE: gloves, boots, hard hat.	1	4	4 Low	Foreman
P1-04	Material receipt & inspection	Non-certified or counterfeit cable fails in fire, defeating life-safety circuit	Building occupants	2	5	10 High	Admin: verify IEC 60331 / BS 8434-2 certificates and batch traceability, quarantine non-conforming items, Quality Inspector sign-off.	1	5	5 Medium	Quality Inspector
P1-05	Work area set-up & storage	Slips and trips; temporary electrics shock; combustible packaging fire; unauthorised access	All personnel, public	3	3	9 Medium	Eng: RCD-protected low-voltage supply, LED lighting. Admin: barriers, signage, housekeeping, waste removal each shift. PPE: standard set.	1	3	3 Low	Site Manager

4.2 Phase 2 — Containment & Fire-Rated Support Installation

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
P2-01	Setting out & marking	Fall from height from ladders, MEWP or podium steps	Operatives	3	5	15 High	Eng: MEWP or podium steps instead of ladders. Admin: trained MEWP operators, ground check, ladders for short light tasks only. PPE: harness and lanyard in MEWP.	1	5	5 Medium	Foreman
P2-02	Penetrations & core drilling	Striking hidden live services or rebar causing electrocution or structural damage	Drill operative, others nearby	3	5	15 High	Eng: RCD-protected drill. Admin: scan and mark before drilling, signed scan record, structural approval, drilling permit. PPE: insulated gloves, glasses.	1	5	5 Medium	Foreman
P2-03	Penetrations & core drilling	Silica dust inhalation, noise and hand-arm vibration	Operatives, adjacent trades	4	3	12 High	Eng: water suppression or H-class extraction. Admin: exposure time limits, task rotation, area sealed. PPE: FFP2 mask, ear defenders, anti-vibration gloves.	2	3	6 Medium	HSE Officer

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
P2-04	Containment & support installation	Falling tools or materials; sharp edges; overhead work strain	Operatives, those below	3	4	12 High	Eng: tool lanyards, deburred edges. Admin: exclusion zone below, task rotation. PPE: hard hat, gloves, glasses, ear defenders.	1	4	4 Low	Foreman
P2-05	Containment inspection & earth continuity	Contact with unexpected live parts during testing	Inspectors	2	5	10 High	Elim: confirm area de-energised. Admin: only competent persons test; use calibrated low-resistance tester. PPE: insulated gloves.	1	5	5 Medium	Authorised Person

4.3 Phase 3 — Cable Handling, Pulling & Fixing

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
P3-01	Drum delivery & lifting	Crushing or dropped load during drum lift	Operatives, Banksman	3	5	15 High	Elim: use drum trailers to avoid lifts. Eng: certified lifting gear within WLL. Admin: lift plan, Appointed Person, banksman, exclusion zone. PPE: hard hat, boots, gloves.	1	5	5 Medium	Appointed Person
P3-02	Drum delivery & lifting	Rolling drum; manual handling injury	Operatives	3	3	9 Medium	Eng: drum jacks, chocks, drum trailers. Admin: team lifts, route cleared. PPE: gloves, boots.	1	3	3 Low	Foreman
P3-03	Cable pulling	Rope snap-back or entrapment in moving cable	Pulling team	3	4	12 High	Eng: rated ropes, tension limiter, rollers at bends. Admin: keep out of line of pull, radio checks, pull plan. PPE: gloves, hard hat.	1	4	4 Low	Foreman
P3-04	Cable pulling	Over-tension or tight bends damage cable, losing circuit integrity	Building occupants	3	4	12 High	Eng: calibrated tension monitoring. Admin: pull plan with manufacturer maximum tension and minimum bend radius, post-pull sheath inspection.	1	4	4 Low	Quality Inspector
P3-05	Cable laying & fixing	Fall from height; sharp edges; repetitive strain	Operatives	3	4	12 High	Eng: MEWP access. Admin: task rotation, trained operators. PPE: harness, gloves, glasses.	1	4	4 Low	Foreman
P3-06	Cable laying & fixing	Non-fire-rated clips or ties used, causing early cable collapse in fire	Building occupants	2	5	10 High	Admin: only approved fire-rated fixings issued to site, Quality Inspector fixing check at each hold point.	1	5	5 Medium	Quality Inspector
P3-07	Confined space & riser access	Oxygen deficiency, toxic gas, restricted egress, heat stress	Entrants	3	5	15 High	Elim: pull from outside where practical. Eng: forced ventilation, continuous 4-gas monitoring. Admin: Confined Space permit, attendant, rescue plan. PPE: harness, escape set.	1	5	5 Medium	Competent Person

4.4 Phase 4 — Isolation, Termination & Fire-Stopping

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
P4-01	Electrical isolation & lock-out	Electric shock or arc flash; inadvertent re-energisation	Authorised Person, team	3	5	15 High	Elim: work dead. Eng: lockable isolators. Admin: Electrical Isolation permit, prove-test-prove, personal locks and tags. PPE: insulated gloves, arc-rated face shield.	1	5	5 Medium	Authorised Person
P4-02	Stripping & gland termination	Cuts from sharp tools and conductor ends	Operatives	3	2	6 Medium	Eng: safety strippers. Admin: correct tool use training. PPE: cut-resistant gloves, glasses.	2	2	4 Low	Foreman

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
P4-03	Seal pot preparation (flame)	Fire or burns from torch use on mineral-insulated cable seal pots	Operatives, building	3	4	12 High	Elim: use approved cold-seal kits. Admin: Hot Work permit, fire watch for 60 minutes after work, extinguisher at hand. PPE: heat-resistant gloves, glasses.	1	4	4 Low	Site Manager
P4-04	Conductor connection	Mis-connection or loose terminal causing equipment failure or heat build-up	Building occupants	2	4	8 Medium	Elim: circuit remains isolated. Eng: insulated tools, torque screwdriver. Admin: two-person check against circuit schedule, torque marking.	1	4	4 Low	Authorised Person
P4-05	Fire-stopping of penetrations	Skin, eye and inhalation exposure to sealants and fire-stop chemicals	Operatives	3	3	9 Medium	Sub: low-VOC products. Eng: ventilation. Admin: COSHH assessment, SDS on site. PPE: nitrile gloves, glasses, respirator as per SDS.	1	3	3 Low	HSE Officer
P4-06	Fire-stopping of penetrations	Wrong fire-stop detail reduces compartment fire rating	Building occupants	2	5	10 High	Admin: tested systems only, trained installers, photographic record and labels, Quality Inspector sign-off.	1	5	5 Medium	Quality Inspector

4.5 Phase 5 — Testing, Commissioning & Handover

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
P5-01	Insulation resistance & continuity testing	Shock from test voltage or stored charge on long cables	Test operatives	2	5	10 High	Elim: circuits isolated at both ends. Eng: discharge cable after test. Admin: warning signage, authorised testers only. PPE: insulated gloves.	1	5	5 Medium	Authorised Person
P5-02	Circuit integrity & functional testing	Unplanned alarm or suppression release causing evacuation or discharge	Occupants, Client	3	3	9 Medium	Eng: isolate suppression release. Admin: notify Client and monitoring centre, test sequence agreed in advance.	1	3	3 Low	Authorised Person
P5-03	Re-energisation under permit	Energising a circuit with people still working on it; latent fault	Operatives	2	5	10 High	Admin: roll-call, sequence plan, permit cancelled before re-energising. Eng: verify protection settings. PPE: insulated gloves.	1	5	5 Medium	Authorised Person
P5-04	Labelling, as-builts & demobilisation	Manual handling, slips and waste spillage	Operatives	3	2	6 Medium	Admin: waste segregation, housekeeping, spill kit. PPE: gloves, boots.	1	2	2 Low	Foreman

4.6 General — All Phases

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
G-01	Works in occupied or live building	Struck by vehicles or other trades; congested access; interface clashes	All personnel	3	3	9 Medium	Admin: Client coordination meetings, exclusion zones, banksmen, interface plan. PPE: hi-vis vest, boots.	1	3	3 Low	Site Manager
G-02	Working in hot or poorly ventilated areas	Heat stress, dehydration and fatigue	Operatives	3	3	9 Medium	Eng: local ventilation. Admin: hydration points, rest breaks, work-hour limits. PPE: breathable clothing.	1	3	3 Low	Foreman

Ref	Activity	Hazard & Consequence	Who at Risk	L	S	Initial Risk	Control Measures	L	S	Residual Risk	Owner
G-03	Environmental releases	Dust, slurry or sealant entering drains or surrounding areas	Environment	3	2	6 Medium	Eng: slurry capture, banded storage. Admin: spill kits, waste segregation, licensed disposal.	1	2	2 Low	HSE Officer

Section 5 — Residual Risk Summary & Review

The table counts assessed hazards in each rating band before and after controls.

Risk Band	Initial Risk (count)	Residual Risk (count)
Very High (17–25)	0	0
High (10–16)	20	0
Medium (5–9)	10	13
Low (1–4)	0	17
Total hazards assessed	30	30

5.1 Conclusion

All residual risks fall in the Medium or Low bands once the controls in Section 4 are in place. No activity may start while any of its controls is unavailable.

5.2 Critical Controls

- **Electrical Isolation permit** and prove-test-prove before any termination or testing
- **Confined Space permit** with gas monitoring, attendant and rescue plan before entry
- **Hot Work permit** and fire watch for any flame use
- **Lift plan** and certified lifting gear for every drum lift
- **Scan record** before every core drilling location
- **Fire-rated fixings and fire-stopping** verified by the Quality Inspector at hold points

5.3 Review Triggers

Review this assessment at each revision of the Method Statement, after any incident or near miss, when scope, location, equipment or personnel change, when a control fails, and at least every six months.

Section 6 — Authorisation & Sign-Off

The signatories confirm that the hazards have been identified, the risks rated and the controls accepted for implementation.

Field	Details	Signature	Date
Prepared By			
Reviewed By (HSE)			
Reviewed By (Technical)			
Approved By			
Client / Principal Contractor Representative			

This risk assessment is valid only when all signatures above have been obtained prior to commencement of works.