Your Company Ltd

RISK ASSESSMENT & METHOD STATEMENT

Solar Panel Installation - Warehouse Roof

Reference	EX0001
Issue	1
Assessment Date	14/11/2026
Review Date	14/11/2027
Client	Your Client Ltd
Site Location	Warehouse, Bristol
Assessor	Your Name, Health & Safety Manager

Executive Summary

This Risk Assessment and Method Statement (RAMS) details the health, safety, and environmental control measures for the installation of a 200kW solar PV array on an existing flat-roofed warehouse in Bristol. The scope includes structural loading verification, mechanical lifting of materials, roof-edge protection, working around fragile roof sections at 12m, mechanical installation of mounting hardware, DC/AC wiring, and inverter commissioning. Under the Construction (Design and Management) Regulations 2015, strict adherence to Work at Height and Electrical safety protocols is mandatory.

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1. Project Details

Client:	Your Client Ltd	**Site Location:**	Warehouse, Bristol
Assessment Date:	14/11/2026	**Review Date:**	14/11/2027
Assessor:	Your Name, Health & Safety Manager	**Staff Count:**	5

2. Method Statement

Step 1: Mobilisation and Site Setup — Arrive at site, sign in with the client/site manager, and complete site induction. Setup welfare facilities, secure material laydown areas, and establish ground-level exclusion zones.

Step 2: Roof Access and Edge Protection — Install BS EN 13374 compliant perimeter edge protection. Identify, mark, and cover all fragile roof sections and roof lights. Ensure secure access route (scaffold staircase) is in place.

Step 3: Structural Verification — Site supervisor checks roof condition against structural engineer’s report. Mark out load-bearing points where pallets/ballast can safely be landed.

Step 4: Material Lifting — Use certified lifting equipment (telehandler/crane) to hoist solar panels, rails, and ballast to the roof. Land materials precisely on pre-marked, structurally approved loading zones. Never overload.

Step 5: Substructure Installation — Set out and install mounting rails and ballasts according to the manufacturer's layout plan. Ensure walkways and trip hazards are managed continuously.

Step 6: DC Cabling — Route DC string cables along containment systems. Do not connect to panels yet. Ends must be made safe. All work conducted with insulated tools.

Step 7: Panel Mounting — Utilising a 2-person lift, move panels from pallets to mounting rails. Secure with manufacturer clamps. Connect MC4 connectors as panels are laid, leaving the string ends disconnected and safely isolated.

Step 8: Inverter Installation — Mount inverters in designated locations using mechanical lifting aids if required. Ensure AC isolators are locked OFF.

Step 9: AC Connection (Dead Working) — Qualified electrician to run AC cables from inverter to main distribution board. Implement LOTO, prove dead, and complete final electrical terminations.

Step 10: Testing and Commissioning — Complete full electrical testing (insulation resistance, earth continuity) as per BS 7671. Energise system, test DC polarity and voltage, and commission inverters.

Step 11: Handover and Demobilisation — Clear roof of all off-cuts, tools, and packaging. Remove edge protection safely. Hand over MCS certificates and O&M manuals to the client.

Resources Required

- 5x Qualified Personnel: 1x Site Supervisor (SSSTS), 2x Roofers/Labourers, 2x Qualified Electricians (ECS/JIB)
- BS EN 13374 Edge Protection System & BS EN 12811 Access Scaffold
- Telehandler / Mobile Crane (subject to separate lifting plan)
- Pallet trucks / Roof trolleys
- VDE Insulated hand tools, 2-pole voltage indicators (GS38), calibrated multifunction tester
- First Aid Kit, Fire Extinguisher (CO2/Dry Powder), and Spill Kit

Site Setup

Establish welfare facilities within the warehouse or via mobile welfare unit. Create a hard-barriered exclusion zone at the crane lifting point and directly below the roof work area. Segregate site pedestrian traffic from warehouse operational traffic. Ensure the Fire Assembly Point is clearly marked.

3. ALARP Justification

As Low As Reasonably Practicable (ALARP) Declaration

The residual risks identified in this assessment have been reduced to as low as reasonably practicable (ALARP) through the application of the hierarchy of control. Fall risks have been addressed via engineering controls (edge protection, roof light covers) rather than relying solely on PPE. Electrical hazards are controlled through safe systems of work, dead working protocols, and the use of insulated equipment. Manual handling risks are minimised through mechanical lifting aids. Further risk reduction measures would be grossly disproportionate to the additional safety benefit gained. This assessment remains dynamic and will be reviewed if site conditions, particularly weather, change.

4. Risk Matrix Reference

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

1-5 Low 6-12 Medium 15-25 High

5. Risk Assessment

1. Working at Height - Fall from Roof Edge

20 HIGH → 5 LOW

Description	Risk of personnel falling 12 metres from the unprotected edges of the flat roof during installation, leading to fatal injuries.		
Persons at Risk	Staff, Contractors		
Control Measures	• Install continuous perimeter edge protection (guardrails and toe boards) to BS EN 13374 standard prior to any roof access. • Ensure all roof access is via a secured, inspected scaffold staircase (BS EN 12811) or a compliant MEWP (LOLER 1998). • Restrict access to roof strictly to operatives holding valid Work at Height certification. • Implement a strict 2-metre exclusion zone from any unprotected edge using high-visibility physical barriers if full perimeter protection is not viable.		
Initial Risk (Pre-Control)	Likelihood **4**	Severity **5**	Score **20** (High)
Residual Risk (Post-Control)	Likelihood **1**	Severity **5**	Score **5** (Low)

2. Working at Height - Fall through Fragile Roof Sections

20 HIGH → 5 LOW

Description	Risk of personnel stepping on and falling through fragile roof lights or deteriorated roof sheets, resulting in a 12m fall.		
Persons at Risk	Staff, Contractors		
Control Measures	• Identify and clearly mark all fragile roof materials (e.g., roof lights, asbestos cement sheets) prior to commencement. • Install physical barriers or proprietary roof light covers capable of sustaining human weight over all fragile sections. • Utilise crawl boards or roof staging (BS EN 1004) to distribute weight when navigating near fragile materials as per Work at Height Regulations 2005. • Deploy underslung safety netting (BS EN 1263-1) beneath the roof structure as a secondary fall arrest measure where practicable.		
Initial Risk (Pre-Control)	Likelihood **4**	Severity **5**	Score **20** (High)
Residual Risk (Post-Control)	Likelihood **1**	Severity **5**	Score **5** (Low)

3. Falling Objects - Tools and Materials

12 MEDIUM → 4 LOW

Description	Risk of solar panels, brackets, or tools being dropped from the 12m roof, striking pedestrians or workers below.		
Persons at Risk	Public, Staff, Contractors		
Control Measures	• Establish and maintain a taped-off exclusion zone at ground level directly below the work area with clear 'Danger: Overhead Works' signage. • Ensure toe-boards are fitted to all perimeter edge protection and scaffold platforms. • Mandate the use of tool lanyards for all hand tools used near the roof edge. • Do not store loose materials within 2 metres of the roof edge; secure all lightweight materials (e.g., packaging) against wind.		
Initial Risk (Pre-Control)	Likelihood **3**	Severity **4**	Score **12** (Medium)
Residual Risk (Post-Control)	Likelihood **1**	Severity **4**	Score **4** (Low)

4. Electrical Shock - Live DC Wiring

16 HIGH → 4 LOW

Description	Exposure to live Direct Current (DC) from solar panels, which generate electricity instantly upon light exposure, risking severe shock or arc flash.		
Persons at Risk	Staff		
Control Measures	• Employ qualified electricians (ECS card holders) for all electrical connections in accordance with BS 7671 (18th Edition) and IET Code of Practice for Solar PV. • Use VDE approved insulated tools (EN 60900) for all DC wiring tasks. • Connect string cables only when the DC isolator is in the open (OFF) position. • Leave panel connectors unplugged or covered with manufacturer-supplied caps until final string testing. • Wear appropriate arc-rated electrical safety gloves (EN 60903) when handling live terminals.		
Initial Risk (Pre-Control)	Likelihood **4**	Severity **4**	Score **16** (High)
Residual Risk (Post-Control)	Likelihood **1**	Severity **4**	Score **4** (Low)

5. Electrical Shock - AC Grid Connection

12 MEDIUM → 4 LOW

Description	Contact with live Alternating Current (AC) during the installation of inverters and integration with the building's main distribution board.		
Persons at Risk	Staff		
Control Measures	• Strict adherence to Electricity at Work Regulations 1989; dead working must be the default method. • Implement safe isolation procedures: lock off, tag off (LOTO), and prove dead using an approved two-pole voltage indicator (GS38 compliant). • Issue a formal Permit to Work (Electrical) for connection to the main distribution board. • Ensure AC isolators are locked in the OFF position during inverter mounting and cabling.		
Initial Risk (Pre-Control)	Likelihood **3**	Severity **4**	Score **12** (Medium)
Residual Risk (Post-Control)	Likelihood **1**	Severity **4**	Score **4** (Low)

6. Manual Handling - Solar Panels

12 MEDIUM → 6 MEDIUM

Description	Lifting and maneuvering heavy/awkward solar panels (typically 20-25kg each) on a roof, leading to musculoskeletal injuries.		
Persons at Risk	Staff		
Control Measures	• Mechanise lifting of panels to roof level using a telehandler or mobile crane complying with LOLER 1998. • Mandate a two-person lift for maneuvering panels across the roof into mounting positions. • Provide manual handling training to all operatives in accordance with Manual Handling Operations Regulations 1992. • Store panels at waist height where possible on appropriate staging to prevent repetitive bending.		
Initial Risk (Pre-Control)	Likelihood **4**	Severity **3**	Score **12** (Medium)
Residual Risk (Post-Control)	Likelihood **2**	Severity **3**	Score **6** (Medium)

7. Manual Handling - Inverters and Ballast

12 MEDIUM → 6 MEDIUM

Description	Lifting heavy electrical inverters and mounting system ballast blocks, risking back and shoulder injuries.		
Persons at Risk	Staff		
Control Measures	• Utilise a pallet truck or roof trolley to transport heavy ballasts and inverters across the flat roof. • Break down pallet loads into smaller, manageable units before manual movement. • Use mechanical hoists for positioning large multi-string inverters onto wall brackets. • Ensure operatives wear safety footwear (EN ISO 20345) to protect against dropped ballasts.		
Initial Risk (Pre-Control)	Likelihood **4**	Severity **3**	Score **12** (Medium)
Residual Risk (Post-Control)	Likelihood **2**	Severity **3**	Score **6** (Medium)

8. Structural Overloading

10 MEDIUM | 5 LOW

Description	Point loading of pallets of solar panels or ballasts causing the existing warehouse roof structure to collapse.		
Persons at Risk	Staff, Public		
Control Measures	• Follow the approved structural engineer's loading plan, placing materials only on designated load-bearing zones (e.g., above stanchions/beams). • Never stockpile pallets of panels in the centre of roof spans; distribute weight evenly across the structure. • Ensure the structural assessment is physically verified by the site supervisor before landing any materials on the roof. • Halt works and consult the structural engineer if roof deflection or distress is observed.		
Initial Risk (Pre-Control)	Likelihood **2**	Severity **5**	Score **10** (Medium)
Residual Risk (Post-Control)	Likelihood **1**	Severity **5**	Score **5** (Low)

9. Weather Conditions - Wind

12 MEDIUM | 4 LOW

Description	High winds creating a sail effect on solar panels during installation, risking operatives being pulled off balance or panels blowing off the roof.		
Persons at Risk	Staff		
Control Measures	• Monitor local weather forecasts daily; site supervisor to halt roof works if wind speeds exceed 23mph (or lower if deemed unsafe). • Never leave panels loose or un-fixed overnight; secure all installed panels and clamp down loose materials. • Maintain a firm grip and use two persons when carrying panels in breezy conditions. • Secure the site fully at the end of each shift against unexpected weather events.		
Initial Risk (Pre-Control)	Likelihood **3**	Severity **4**	Score **12** (Medium)
Residual Risk (Post-Control)	Likelihood **1**	Severity **4**	Score **4** (Low)

10. Weather Conditions - UV Exposure and Heat

8 MEDIUM | 4 LOW

Description	Working on a flat roof with high UV reflection during summer months, leading to sunburn, dehydration, and heatstroke.		
Persons at Risk	Staff		
Control Measures	• Mandate the wearing of tops with sleeves (no bare chests) and UV-protective safety sunglasses (EN 166). • Provide broad-spectrum sunscreen (SPF 30+) at the site welfare facility. • Provide unlimited access to cool drinking water and mandate regular hydration breaks. • Rotate strenuous tasks among the 5 operatives during peak heat hours (12:00 - 15:00).		
Initial Risk (Pre-Control)	Likelihood **4**	Severity **2**	Score **8** (Medium)
Residual Risk (Post-Control)	Likelihood **2**	Severity **2**	Score **4** (Low)

11. Slips, Trips, and Falls on Level

8 MEDIUM | 4 LOW

Description	Tripping over trailing DC cables, mounting rails, tools, or uneven roof surfaces, causing impact injuries.		
Persons at Risk	Staff		
Control Measures	• Maintain excellent housekeeping; continuously clear packaging, cable ties, and off-cuts to designated waste bags. • Route DC and AC cables systematically through designated cable trays or hook them off the walking surface. • Establish clear, unobstructed walkways across the roof structure. • Operatives to wear anti-slip safety footwear (EN ISO 20345 S3 SRC) suited for roof membranes.		
Initial Risk (Pre-Control)	Likelihood **4**	Severity **2**	Score **8** (Medium)
Residual Risk (Post-Control)	Likelihood **2**	Severity **2**	Score **4** (Low)

12. Exposure to Asbestos (Existing Building)

15 HIGH → 5 LOW

Description	Disturbance of Asbestos Containing Materials (ACMs) in the existing warehouse roof or electrical switchgear during drilling/fixing.		
Persons at Risk	Staff, Contractors		
Control Measures	• Review the building's Asbestos Register and Demolition/Refurbishment survey prior to commencing works as per Control of Asbestos Regulations 2012. • All operatives must hold valid UKATA Asbestos Awareness certification. • If suspected ACMs are discovered, STOP WORK immediately, evacuate the area, and inform the site manager. • Do not drill, abrade, or disturb any unidentified materials.		
Initial Risk (Pre-Control)	Likelihood **3**	Severity **5**	Score **15** (High)
Residual Risk (Post-Control)	Likelihood **1**	Severity **5**	Score **5** (Low)

13. Noise and Vibration - Power Tools

9 MEDIUM → 6 MEDIUM

Description	Use of impact drivers and hammer drills causing noise-induced hearing loss and Hand-Arm Vibration Syndrome (HAVS).		
Persons at Risk	Staff		
Control Measures	• Select low-vibration tools (PUWER 1998) and ensure they are well-maintained. • Monitor trigger times to ensure they do not exceed the Exposure Action Value (EAV) under the Control of Vibration at Work Regulations 2005. • Provide hearing protection (EN 352) to be worn when drilling into concrete/steel. • Rotate drilling and fixing tasks among the operative team.		
Initial Risk (Pre-Control)	Likelihood **3**	Severity **3**	Score **9** (Medium)
Residual Risk (Post-Control)	Likelihood **2**	Severity **3**	Score **6** (Medium)

6. Required PPE


Head protection


Eye protection


Hi-vis clothing


Gloves


Safety harness


Safety footwear

- Safety Helmet with chin strap for working at height (EN 397)
- Safety Footwear - anti-slip, composite toe (EN ISO 20345 S3 SRC)
- High-Visibility Vest/Jacket (EN ISO 20471 Class 2 or 3)
- Cut-Resistant Gloves for panel handling (EN 388)
- Insulated Electrical Gloves for live testing (EN 60903)
- Safety Glasses/UV Sunglasses (EN 166)
- Fall Restraint Harness & Lanyard (EN 361/EN 354) - if dictated by specific roof layout

7. Site Rules

1. All personnel must sign in at the site office and complete a site-specific induction prior to starting work.
2. No access to the roof is permitted unless edge protection and fragile roof mitigation are fully installed and inspected.
3. Strict compliance with Electrical Permits to Work; no live working is permitted unless essential for testing.
4. Mandatory 5-point PPE must be worn at all times outside welfare areas.
5. No eating, drinking, or smoking on the roof structure.
6. Daily housekeeping is mandatory; the roof must be cleared of debris and loose materials continuously to prevent trip/fire/wind hazards.

8. Competency Requirements

Qualification	Description	Required For	Verification
Site Supervisor Safety Training Scheme (SSSTS) or SMSTS	CITB-accredited training for site supervisors regarding legal responsibilities, CDM compliance, and risk management.	Site Supervisor (1 person minimum)	Visual check of CITB certificate / online card checker prior to site commencement.
CSCS (Construction Skills Certification Scheme) Card	Proof of passing the CITB Health, Safety and Environment test and holding relevant occupational qualifications.	All operatives accessing the roof.	CSCS Smart Check app or physical card inspection at induction.
Electrotechnical Certification Scheme (ECS) Card / JIB Gold Card	Validates the competence of electricians working on AC/DC installations and adherence to BS 7671.	Electricians carrying out wiring, terminations, and testing.	ECS card check at induction.
UKATA Asbestos Awareness (Category A)	Training to identify potential asbestos materials and know emergency procedures if discovered.	All operatives.	Certificate check (must be within 12 months validity).
Emergency First Aid at Work (EFAW)	HSE-approved 1-day course to respond to medical emergencies.	At least one person on site.	Certificate check (must be within 3 years validity).

9. Regulatory Compliance

Regulation / Standard	Section	Relevance to This Assessment
Construction (Design and Management) Regulations 2015	Part 4, Regulation 15 - General duties of contractors	Contractors must plan, manage and monitor construction work carried out by workers under their control, ensuring works are safe.
Work at Height Regulations 2005	Regulation 6 & 9 - Avoidance of risks from work at height / Fragile surfaces	Mandates the use of edge protection to prevent falls and strict procedures/physical barriers to prevent falling through fragile roof sections.
Electricity at Work Regulations 1989	Regulation 14 - Work on or near live conductors	Prohibits working on live conductors unless absolutely necessary; dictates strict isolation and dead-working procedures for AC and DC connections.
Manual Handling Operations Regulations 1992	Regulation 4 - Duties of employers	Requires the avoidance of manual handling where possible (using mechanical aids) and assessing/reducing the risk for lifting heavy solar panels.

10. Emergency Procedures

First Aid
First aid kit located in the main site welfare unit and supervisor's vehicle. Appointed First Aider on site: [Site Supervisor Name].

Fire Emergency
In the event of fire or arc flash: Raise the alarm immediately. Do not attempt to extinguish electrical fires with water (use CO2/Powder if safe). Evacuate the roof via the designated scaffold stair access. Muster at assembly point.

Spillage Response
Not highly applicable for PV, but any chemical/sealant spills must be contained using the site spill kit and disposed of as hazardous waste.

Serious Injury
For serious injury (e.g., fall from height or electrocution): STOP WORKS. Call 999 immediately. Do not move the casualty unless in immediate danger. For electrical shock, ensure the power is isolated before touching the casualty. Preserve the scene.

Evacuation Point
Site Assembly Point: [Main Warehouse Car Park - Check Induction].

Emergency Contacts
Site Supervisor: [Number], Client Contact: [Number], Emergency Services: 999, HSE Incident Contact Centre: 0345 300 9923

11. Inspection & Monitoring

Supervision Arrangements
A competent SSSTS-qualified Site Supervisor must be present on site at all times during high-risk activities (lifting operations, roof work, live testing).

Inspection Schedule
Daily pre-start visual checks of edge protection, access stairs, and tools. Formal documented weekly inspection of scaffold/edge protection (Scaffold Register). Testing of electrical isolation equipment before each use.

Responsible Person
Site Supervisor

Review Triggers
- Wind speeds exceeding safe working limits (e.g., >23mph) or heavy rain/ice.
- Discovery of suspected asbestos or structural defects on the roof.
- Changes to the planned mounting system or lifting methodology.
- Following any near-miss, accident, or HSE intervention.

12. Incident & Near-Miss Reporting

Minor Injury
Administer first aid via the site First Aider. Record the incident in the site Accident Book (BI 510). Report to the Site Supervisor and complete an internal company incident report within 24 hours.

Serious Incident
STOP ALL WORK. Call 999 for emergency services. Do not move the casualty unless in immediate danger (ensure power is off if electrical). Secure the area. Notify the Project Manager and Company Health & Safety Director immediately. Preserve the scene for HSE investigation.

Near-Miss Reporting
All near misses (e.g., dropped tools, slipping on roof, arc flash without injury) must be reported to the Site Supervisor immediately. Record on a Near Miss form, investigate the root cause, and implement corrective actions. Discuss at the next toolbox talk.

RIDDOR Reporting
The employer must report to the HSE under RIDDOR 2013 for fatalities, specified injuries (e.g., fractures, amputations), over-7-day incapacitation, or dangerous occurrences (e.g., scaffold collapse, electrical short circuit causing fire). Report online at www.hse.gov.uk/riddor or call 0345 300 9923.

Emergency Contacts
Site Supervisor: [Number], H&S Manager: [Number], Emergency Services: 999, HSE Incident Contact Centre: 0345 300 9923

13. Applicable Legislation

- Health and Safety at Work etc. Act 1974
- Management of Health and Safety at Work Regulations 1999
- Work at Height Regulations 2005
- Electricity at Work Regulations 1989
- Construction (Design and Management) Regulations 2015 (CDM)
- Manual Handling Operations Regulations 1992
- Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
- Provision and Use of Work Equipment Regulations 1998 (PUWER)
- Control of Asbestos Regulations 2012
- Personal Protective Equipment at Work Regulations 1992 (as amended 2022)
- BS 7671:2018 (IET Wiring Regulations 18th Edition)
- BS EN 13374 (Temporary Edge Protection Systems)
- BS EN 12811 (Temporary Works Equipment - Scaffolds)

14. Toolbox Talk

Solar PV Installation: Roof Safety and DC Electrical Hazards

10-15 minutes

Key Hazards	• Falling from edges or through fragile roof lights. • Electrocution from live DC cables (panels are live in daylight). • Manual handling injuries from carrying heavy panels across uneven roofs. • Wind catching panels and causing loss of balance or dropped materials.
Key Controls	• Never cross safety barriers or approach unprotected edges. Stay on designated walkways and crawl boards. • Treat all DC cables as live. Never connect strings with the isolator turned ON. Use insulated tools only. • Always use two people to lift and carry a solar panel. Communicate your movements. • If the wind picks up, stop carrying panels. Secure all loose materials immediately.
PPE Required	• Safety Helmet (with chin strap) • Safety Footwear (Anti-slip) • Cut-resistant & Insulated Gloves • Hi-Vis Clothing
Key Message	A solar panel produces electricity the second it sees the sun, and a fall through a fragile roof is fatal. Respect the electricity, respect the height.
Discussion Points	• Where are the fragile roof sections on this specific warehouse, and how are they protected? • What is the safe isolation procedure before we touch any electrical terminations today? • How are we communicating with the ground team during lifting operations?

15. Site Staff Acknowledgment

I confirm that I have been inducted, understand the hazards identified, and agree to follow the control measures outlined in this assessment.

Name	Position	Date Signed	Verification

No staff acknowledgments recorded yet.

Assessor Declaration & Client Acceptance

I confirm that this assessment has been prepared by a competent person and represents a suitable and sufficient assessment of the risks associated with the described work activity, in accordance with the Management of Health and Safety at Work Regulations 1999.

Prepared By (Assessor)

Your Name, Health & Safety Manager

Name & Position

Signature

Date

Accepted By (Client / Principal Contractor)

Name & Position

Signature

Date