

SOLAR PV AND ROOF-INTEGRATED PANELS

Roof-level work · DC strings live in daylight · the roof interface

ACTIVITY RAMS — ADAPT TO SITE BEFORE USE

KD-RAMS-EL-010 Rev A0

Statutory basis: Electricity at Work Regulations 1989 regs 4(3), 12, 13, 14 and 16, with HSE guidance HSG85 (3rd edition, 2013) and HSR25 (3rd edition, 2015). Test instruments and leads to GS38 (4th edition, 2015). Site distribution assemblies to BS EN 61439-4:2013. Installations designed, installed and verified to BS 7671:2018+A4:2026 — Amendment 4 was published on 15 April 2026 and the previous amendment is withdrawn on or about 15 October 2026, so confirm which amendment the design was issued against. COSHH 2002 applies to the dusts, resins and fumes generated by the containment and fixing work. Roof-mounted PV is roof work: the Work at Height Regulations 2005 apply, with HSE HSG33 (5th edition, 2020), and a PV string is live in daylight and cannot be isolated at the panel. CDM 2015 regs 13 and 15 apply to this work. This document is the recorded safe system of work required by HSWA 1974 s.2(2)(a) and MHSWR 1999 regs 3 and 5.

1 DOCUMENT AND PROJECT IDENTIFICATION

RAMS REFERENCE	PROJECT / SITE REF	SITE NAME AND ADDRESS	DATE PREPARED	NEXT REVIEW DATE
CLIENT / PRINCIPAL CONTRACTOR	PLANNED START	DURATION	OPERATIVES	SUPERVISING THE WORK

2 SCOPE OF WORKS

Installation of roof-mounted and roof-integrated solar PV: mounting systems and roof penetrations, panels, DC string wiring, inverter and isolation, up to connection and commissioning.

This document does not cover: the PV design and structural assessment of the roof, DNO notification, and inverter commissioning where the scheme reserves it.

SITE-SPECIFIC SCOPE, LOCATIONS AND LIMITATIONS

3 RISK ASSESSMENT — SCORE EACH RISK FOR THIS SITE, THEN ADD WHAT IS MISSING

The hazards and controls below are the starting point for this activity, written by a working main contractor. They are not complete for your site until a competent person has scored each risk, added the site-specific hazards, and struck out anything that does not apply. Rate risks High / Medium / Low before and after controls.

1. DC strings live in daylight, with no way to switch them off

At risk: Installers, and anyone who works on that roof later

Controls: A PV panel generates as soon as light falls on it and it cannot be isolated at the panel — the string is live from the moment it is uncovered. Panels stay covered, or their connectors stay open, until the string is ready to terminate. DC-rated gloves and tools; connectors mated dry and never under load. Polarity is proved before connection to the inverter, and every isolation point is labelled so the next person on that roof knows what is live.

INITIAL (H/M/L)	RESIDUAL (H/M/L)	SITE-SPECIFIC ADDITIONAL CONTROLS, OR N/A	ACTION OWNER	BY WHEN

2. Falls through the roof or from the edge during PV installation

At risk: Installers, anyone below

Controls: Every roof is treated as fragile until a competent person confirms otherwise in writing. Edge protection and scaffold before any material goes up; roof ladders spread the load and are never rested on the gutter. A panel is a sail — the wind limit for panel handling is set for the panel area and measured at working height, not judged from the ground.

INITIAL (H/M/L)	RESIDUAL (H/M/L)	SITE-SPECIFIC ADDITIONAL CONTROLS, OR N/A	ACTION OWNER	BY WHEN

3. Work at height from steps, podiums, towers or MEWPs

At risk: Operatives, and anyone below

Controls: Select access by the Work at Height hierarchy — podium or tower before steps; MEWPs operated by trained (IPAF) operators only. Inspect access equipment before use, establish an exclusion below overhead work, and secure tools against dropping.

INITIAL (H/M/L)	RESIDUAL (H/M/L)	SITE-SPECIFIC ADDITIONAL CONTROLS, OR N/A	ACTION OWNER	BY WHEN

4. Manual handling of containment, cable drums, boards and fittings

At risk: Operatives

Controls: Mechanical aids first — trolleys, drum jacks, hoists. Two-person lifts for tray runs, boards and drums; order materials in manageable lengths; keep carrying routes clear and lit.

INITIAL (H/M/L)	RESIDUAL (H/M/L)	SITE-SPECIFIC ADDITIONAL CONTROLS, OR N/A	ACTION OWNER	BY WHEN

5. Striking hidden services when drilling, chasing or fixing

At risk: Operatives

Controls: Check drawings and the Services register, scan with a CAT before drilling or chasing, respect BS 7671 safe zones, use battery tools where practicable, and stop and reassess if an unrecorded service is found.

INITIAL (H/M/L)	RESIDUAL (H/M/L)	SITE-SPECIFIC ADDITIONAL CONTROLS, OR N/A	ACTION OWNER	BY WHEN

6. Interface with occupants, other trades and the public

At risk: Occupants, other trades, the public

Controls: Segregate the work area — barriers, signage, sheeting; agree access routes and working hours with the occupier; never obstruct escape routes; deliveries and waste runs outside peak movement times where agreed.

INITIAL (H/M/L)	RESIDUAL (H/M/L)	SITE-SPECIFIC ADDITIONAL CONTROLS, OR N/A	ACTION OWNER	BY WHEN

Site-specific hazards not listed above — every site has at least one:

HAZARD	WHO IS AT RISK	CONTROLS	INITIAL HI/...	RESIDUAL...	ACTION OWNER	BY WHEN

4 METHOD — SEQUENCE OF WORK

- 01 Confirm the design, the structural assessment of the roof and the mounting detail before any load goes up.
 - 02 Treat every roof as fragile until a competent person confirms otherwise in writing; install edge protection first.
 - 03 Set out and fix the mounting system to the rafters, weathering every penetration as it is formed.
 - 04 Lay panels keeping them covered or connectors open until the string is ready — a panel in daylight is generating.
 - 05 Terminate DC strings with the correct connectors and polarity, tested string by string.
 - 06 Install the inverter and the DC and AC isolation; label every isolation point clearly.
 - 07 Test and commission, working to HSE HSG33 (5th edition, 2020) roof practice; hand over the string test record.
- SITE-SPECIFIC AMENDMENTS TO THE SEQUENCE

5 PLANT, EQUIPMENT AND MATERIALS

Scaffold with edge protection
Roof ladders and anchor points

DC-rated test equipment and gloves
Panel lifting aid or hoist

INSPECTION / THOROUGH EXAMINATION REFS

COSHH ASSESSMENT REFS

6 PPE — THE LAST LINE OF CONTROL, NOT THE FIRST

Head protection
Safety footwear
High visibility

Gloves — task-rated
Eye protection
Hearing protection

Arc-rated PPE where assessed
DC-rated insulating gloves for string work
Harness where edge protection cannot be provided

RPE TYPE, FACE-FIT STATUS, AND ANY OTHER PPE REQUIRED

7 PERMITS REQUIRED BEFORE THIS WORK STARTS

A permit authorises this work in that place, on that day. It extends the safe system of work in this document — it does not replace it (HSE HSG250). The site issues the permit; record its number before work starts.

KD-PTW-RF-007 — Roof Work Permit
For all roof-level installation.

PERMIT NUMBER

KD-PTW-EL-010 — Electrical Permit to Work
For DC and AC isolation and connection.

PERMIT NUMBER

8 EMERGENCY ARRANGEMENTS — COMPLETE FOR THIS SITE

FIRST AIDER AND LOCATION

NEAREST A&E

ASSEMBLY POINT

HOW THE ALARM IS RAISED

EMERGENCY ACCESS FOR THIS WORK AREA

SPILL / ENVIRONMENTAL RESPONSE

9 BRIEFING RECORD — EVERYONE WORKING UNDER THIS RAMS SIGNS BEFORE STARTING

By signing you confirm the contents of this RAMS have been explained to you, you understand the hazards and controls, and you will work to the sequence stated. Tell the supervisor if the work or the site does not match this document — work stops until it does.

NAME	COMPANY	SIGNATURE	DATE

10 PREPARED AND ACCEPTED

Prepared / adapted for this site by — I confirm I have adapted this document to the site, scored the risks, and that it describes how the work will actually be done.

PRINTED NAME	ROLE / COMPETENCE	COMPANY	SIGNATURE	DATE	TIME

Accepted for the site by — principal contractor or site manager review.

PRINTED NAME	ROLE	COMPANY	SIGNATURE	DATE	TIME

Review this RAMS if the work, the site or the law changes, and at least before each new phase of the works. Flatten the completed PDF before filing so the record cannot be silently edited.

R REVISION HISTORY

Every revision of this document, and every review that found nothing to change. The revision on the front of this sheet is the one you are holding — check kubitdocs.com for the current one before use.

Rev	Date	Class	What changed	Authorised by
D0	2026-08-11	first-issue	First issue.	— not yet approved —
D1	2026-08-11	editorial	Printed legal note corrected. The sentence on fire detection and alarm cabling to BS 5839-1:2025, which applies to KD-RAMS-EL-007 alone, was being printed on every document in the electrical set and has been removed from this one. The HSG33 roof-work citation, which governs this document, is retained. No control, field, scope or applicable instrument changed.	— not yet approved —
D2	2026-08-11	material	PPE section corrected. "DC-rated insulating gloves for string work" and "Harness where edge protection cannot be provided" were written for this document but were never printed: the build applied the trade-wide PPE list and discarded anything added for an individual activity. Both now print alongside the arc-rated PPE requirement, which is retained. No PPE has been removed.	— not yet approved —
D3	2026-08-11	material	Printed legal note extended to name the Work at Height Regulations 2005 — previously the note cited HSE HSG33 without the regulation it guides — and CDM 2015 regs 13 and 15. Both were already listed as the statutory basis on the product page but did not appear on the document itself. Nothing has been removed.	— not yet approved —
A0	2026-08-27	review	Approved for issue by the author. Content unchanged from D3; the draft status strip is removed. No independent third-party review has been carried out.	Author — director, UK principal contractor, SMSTS. Not an independent review.

Class: first-issue · material (the law, a control, a field or the scope changed — past buyers are notified) · editorial (wording or layout only) · review (checked, nothing changed) · withdrawal. Revision prefix D = draft, not approved and not for sale; A = approved for issue by the person named, on the date shown.