Service

Title: Procedure For Working On Roofs	Doc No: OHS-03-043
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Date	Reason for change	Rev
05/03	Procedure	A
05/04	Review procedure-reference to suspension trauma	B
11/04	Changes to paragraphs 1.2 and 3.11 (Distance and retention)	C

Rheem Technicians and Subcontractors to Rheem are often required to work on roofs to install and service a variety of solar water heaters. It is imperative that on these occasions the appropriate precautions are taken to minimise the risk of slipping or falling accidents.

This procedure must be followed in conjunction with:

Rheem Service OHS-03-009 Working with Ladders
Rheem Service OHS-03-040 Manual Handling

1. Scope

There are two categories of work when working on solar water heaters:

1.1. Minor maintenance
1.2. All other roof work

Minor maintenance is defined as maintenance to an existing solar installation which does not include replacing the panels or the tank (on thermosiphon installations). The installation where the risk of fall is greater than 2 metres and the work does not require the technician to work any closer than 2 metre to edge of the roof unless the edge is supporting the ladder and the job can be completed from the ladder. Roof pitches in excess of 26 ° are not included in the minor maintenance category. Work that can be completed with a maximum of 30 minutes on the roof is likely to be categorised as minor maintenance. Examples of minor maintenance are replacements of elements, thermostats, T&PR valves, etc.

2. Minor Maintenance Precautions

2.1. Always wear appropriate slip resistant shoes. Rheem technicians are supplied with joggers for this work.
2.2. Do not stand on a roof (unless it is considered to be flat roof) if the roof is wet from rain or dew.
2.3. Follow Rheem OHS-03-009 covering the access to the roof via ladders
2.4. If the distance from the point of roof access to the work site is greater than 2 metres a rollout rubber strip mat must be laid from the ladder access point to the work site. These mats are provided for Rheem technicians
2.5. Spend the least amount of time on the roof. Think what you need before accessing the roof and prepare as much as possible (taping threads, assembling fittings or components) prior to accessing the roof.
2.6. In sunny conditions cover skin as much as possible by wearing long trousers, long sleeved shirts and a brimmed hat. These are all available via Rheem Service. Exposed

skin must be protected by sunscreen. This is also available from Rheem Service. Wear tinted safety glasses wherever the roof material is reflective.

2.7. Materials, components and tools can become hot to handle if the sun is shining. Stagnant water in collectors can reach boiling point (100°C) if the system is not pressurised. If the system is pressurised the stagnant water may reach 170°C. These conditions require technicians to wear gloves and take extreme caution when handling water-carrying components.

2.8. Prior to moving onto a roof a survey of power lines (cables) must be done. At no time should you move closer than 2 metres to power lines. If the work cannot be completed without remaining more than two metres from power lines a supervisor must be consulted.

2.9. Tools, components and equipment shall be carried to the point of work in a properly constructed container, which can be carried in one hand and secured so that it will not slide off the roof or tip the contents out.

2.10. Cordless tools are the preferred option when working on roofs. If an extension lead is required it must carry an inspection tag with a date of inspection within the last 6 months. The extension lead needs to be secured so that its weight is not pulling against the user. Nor shall the lead be draped over or around the ladder. Residual Current Devices (RCDs) must always be fitted to extension leads.

3. All Other Roof Work Precautions

Any work not categorised, as minor roof work must be considered as other roof work. By nature there will be at least two people working together. Examples of Rheem work in this category are new solar thermosiphon and pumped (split) installations (Rheem or Solahart brands), "plonk-ons" where only the solar collectors are installed and a pumped system tank follows later and replacement of tanks or collectors.

Work in this category must take the following precautions:

3.1. Follow all requirements of Clause 2 above "Minor Maintenance Precautions".

3.2. Follow the requirements of Rheem OHS-03-040 "Manual Handling"

3.3. Safety helmets (with brims in sunny weather) must be worn by all technicians.

3.4. The ground area surrounding the point of access to the roof shall be kept free of packaging, equipment, loose tools and material that could restrict safe access and egress.

3.5. Green cards which demonstrate the technician has been trained to work on project sites are often a mandatory requirement of the site management. Appropriate technicians shall be sufficiently trained to meet this requirement.

3.6. On building sites (any project over $250k) you must follow the procedures set out by the major contractor. This will include induction training, special site considerations, the provision of Safe Work Method Statement (SWMS) and Job Safety Analysis (JSAs). Refer Rheem SWMS-03-044 for copy of SWMS relating to solar water heater work.

3.7. On major projects this type of work can often be scheduled to occur whilst the roof safety rails and scaffolds are still in place. Working on roofs with safety rails in place is the best option and negates the need to wear a safety harness.

3.8. If safety rails are not in place a correctly fitted safety harness and lanyard must be worn whenever a person is wholly on the roof.

3.9. The type of harness, static line and lanyard configuration must prevent a person who has slipped from falling off the roof. (Travel restraint system) This will require the length of the static line and lanyard being restricted so that on no occasion can a person slip, slide or fall from the roof surface. "Suspension trauma" can occur when a person is hanging in a harness in an upright position with little or no movement of the legs. If the static line and lanyard is secured at the appropriate length suspension trauma will be avoided.

3.10. A person must not rely on a safety harness unless there is documentary evidence of that person being properly trained in the use of the equipment.

3.11. Safety harnesses must be inspected (competent person) before and after use and every six months and any necessary repairs or replacements completed. Documentary records of these six monthly inspections must be kept. Inspections should be carried out in accordance with AS/NZS 1891:4:2000.

3.12. Heavy equipment required on the roof (oxy/acetylene bottles etc) must be carried to the point of work in compliance with Rheem OHS-03-040 "Manual Handling". Once the equipment is on the roof it must not be allowed to slide or roll. If the roof pitch is such that the equipment cannot remain in place under gravity then it must be securely roped in place.

4. Roof Training Course Technicians must attend a roof training course usually arranged by the State Service Manager.

5. Summary

Working on roofs is becoming more commonplace as the popularity of solar water heater increases. All technicians will find themselves faced with a roof job at some stage. With the above precautions in place the work can be completed with no increased risk of injury. Always spend that extra time to take all the appropriate precautions so that your mind can be on completing the work efficiently without being distracted by safety concerns.

6. Procedure Review

This procedure is to be reviewed at intervals no greater than 12 months by the Branch Safety Committees. Any roof incidents may trigger an earlier review.