Roof Heating Systems

OWNER'S MANUAL & INSTALLATION GUIDE

VALLEY HEATER

ROOF SNOW & ICE MELTING SYSTEM
ICE DAM PREVENTION TECHNOLOGY

Manufactured by

Roof Heating Systems

Engineered for reliable winter protection and roof drainage management



RHS VALLEY HEATER
PORTABLE SAFETY SERIES

x1



RHS VALLEY HEATER MAT
Available in multiple lengths.

x1



WATERPROOF ROOFING FASTENERS
With Rubberized Washers

x1



Owner's Manual Guide

CRITICAL SAFETY PROTOCOLS

MANDATORY WARNING

Proper installation and operation reduce the risk of electric shock, fire, and roof damage. Always follow there safety guidelines when installing RHS roof heating systems.

- Use grounded outdoor-rated outlets only.
- Use GFCI-protected, grounded circuits (recommended).
- Never cut, puncture, or modify heating element.
- Do not overlap mats.
- Do not operate heaters while folded or rolled.
- Inspect heater and power cord before each winter season.
- Disconnect power before repositioning or servicing.
- Do not install or operate if heater or cord are damaged.
- Ensure heater lies flat against the roof surface.

PACKAGE CONTENTS

Verify all system components are present before beginning installation.

Included in the package



x1 **RHS VALLEY HEATER MAT**
AVAILABLE IN 5 FT TO 30 FT.

x1 **WATERPROOF ROOFING FASTENERS**
Included for secure installation.

x1



RHS VALLEY HEATER MAT
AVAILABLE 5 FT TO 30 FT.

x1



AT **WATERPROOF ROOFING FASTENERS**
Included for secure installation.

x1



Owner's Manual Guide

SPECIFICATIONS

STANDARD SPECIFICATIONS

RAPID HEATING RESPONSE

RHS heating systems deliver higher watt density and evenly expanded area coverage than traditional heat cables, allowing faster melting and more effect-ive drainage paths.

FEATURE	DETAIL	DETAIL
Width	13 inches	
Standard Lengths	**5 ft – 30 ft, (120V)**	
Voltage	110V Standard	
Optional Voltage	220V Available Upon Request **(5 ft – 65 ft)**	
Watt Density	**~45–50 Watts per Linear Foot**	
Outer Material	**UV-Resistant PVC**	
Waterproof	Outdoor Rated	
Power Lead	**5 ft Standard** (Custom Up to 25 ft Available)	



RHS Valley Heater — Cross-Section Construction'

Custom Manufacturing Available

Roof Heating Systems can manufacture custom lengths, voltages, and mounting configurations depending on specific project requirements.

- Long roof valleys
- Special voltage requrements
- Custom roof geometries

Contact Roof Heating **Systems** for engineering support on custom installations.



Installed RHS Valley Heater creating a drainage path through snow accumulation.

PRODUCT ADVANTAGE

RHS heating systems deliver **higher watt density** and more evenly **distributed heating coverage** than **traditional heat cables**, allowing **faster snow melting** and more effective drainage paths.

Traditional heat cables typically produce **5–8 watts per foot**, heating only a narrow line along the roof surface. In contrast, **RHS heating mats provide substantially higher output** and **full-surface heating**, helping create a **larger heated drainage path.**

This increased coverage improves:

- Snow melting speed
- Water drainage paths
- Ice dam prevention performance



Traditional Heat Cable

Uneven melting



RHS Heating Mat

Full heated surface

Water drainage

INSTALLATION GUIDE

INSTALLATION STEPS

Step 1: Remove loose snow, debris, and ice from the installation area.
Step 2: Position the heater in the roof valley or drainage problem area.
Step 3: Secure the heater using one of the following methods:

- Waterproof roofing fasteners with rubberized washers (included with the system)
- Roofing clips (not included)
- Approved mounting hardware (not included)

Alternative Installation Method
Installers may also use liquid roofing adhesive to bond the heater directly to the roof surface. Roofing adhesives are available at most hardware or roofing supply stores.

- **Factory Custom Mounting Options**
  - The following mounting options can be installed at the factory prior to shipment.

AREA PREPARATION

Ensure the surface is clean and dry. For adhesive systems, the surface must be flat and free of deep ridges.

Factory Custom Mounting Options
The following mounting options can be

- **Peel-and-Stick Adhesive System**
  Compatible with:
  – Metal roofs
  – EPDM roofs
  – TPO roofs
  – PVC roofing membranes

Step 4: Route the power lead toward a protected outlet.
Step 5: Ensure the heater lies flat with no folds or overlaps.
Step 6: Plug the heater into a grounded outlet. A GFCI outlet is recommended for additional safety, although not required.



Unroll mat and determine optimal placement in roof valley.



Lay mat flat in the valley, ensuring it conforms to the roof's shape.



Fasten mat using provided waterproof grommet screws at designated points.



Plug the cord into a grounded 120V outlet. Enjoy an ice-free roof!

PERFORMANCE & ICE DAM PREVENTION

Snow Melting Performance

RHS heating systems are engineered to **prevent snow and ice** buildup in critical roof drainage areas.

Under normal **winter conditions**, RHS heating mats can melt falling snow at a rate of **up to 2 inches per hour.**

Performance may vary depending on:

- temperature
- snow density
- wind exposure
- roof insulation conditions
- snowfall rate

These systems are designed primarily **for ice dam and snow accumulation prevention,** helping protect roofs from expensive repair costs.

Ice Dam Prevention

Ice dams occur when melting snow **refreezes on the roof,** preventing proper drainage and causing water to back up beneath roofing materials.

Ice dams can form at:

- roof edges
- roof valleys
- around roof penetrations
- any area where melting water refreezes



References

energy.gov/rate://professirouse.com
https://ecarts:/https:/ecarts:/bridhhouse.com/thisoldhouse.com

ELECTRICAL LOAD EXAMPLES

Electricians calculate electrical load using:

Amps = Watts ÷ Voltage

https://www.ecmweb.com/basics/article/20890849/how-to-calculat-electrical-loads

Examples below are based on the **13-inch RHS Valley Heater** operating at 50 watts per linear foot on a 120V circuit.

5 ft Heater 50 W × 5 ft = **250 W**	**250 0** 250 ÷ 120 V = **2.08 amps**
10 ft Heater 50 W × 10 ft = **500 W**	**490 0** 500 ÷ 120 V = **4.17 amps**
15 ft Heater 50 W × 15 ft = **750 W**	**580 0** 750 ÷ 120 V = **6.25 amps**
20 ft Heater 50 W × 20 ft = **1000 W**	**1000 0** 1000 ÷ 120 V = **8.33 amps**
30 ft Heater 50 W × 30 ft = **1500 W**	**1500 5** 1500 ÷ 120 V = **12.5 amps**

Electrical Installation Guidance

- Verify circuit capacity before installation.
- Avoid exceeding 80% of breaker capacity.
- Consult a licensed electrician when installing multiple heaters.

Reference

https://www.nfpa.org/nec

ADDITIONAL RHS PRODUCTS

Roof Heating Systems manufactures additional snow and ice melting products for roofs, wakways, and Stairs.



Under-Shingle Heater
- 6" wide, up to 50 ft long



RHS Stair Treads
- 11" × 34" • Connect up to 14 steps





Diamond Walkway Mat
- 24" wide, up to 10 ft long • 120V – 100 W/ft





Herringbone Walkway Mat
- 30" wide • 120V up to 10 ft

RHS
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ENGINEERED FOR WINTER EXCELLENCE.