

SUSPENSION MOUNTED HEATING



This design guide provides the information necessary to help our engineering professionals design your nVent RAYCHEM Suspension Mounted Heating (SMH) System. For other applications or for design assistance, contact your nVent representative or call (800) 545-6258. Also, visit our web site at nVent.com.

CONTENTS

INTRODUCTION	1
How to Use this Guide	2
Warranty	2
SMH SYSTEM OVERVIEW	3
Typical SMH System	4
SMH SYSTEM DESIGN	6
Design Step by Step	6
Step 1 Customer Provides Preliminary Design Inputs	6
Step 2 nVent Prepares a Budgetary System Proposal	6
Step 3 Customer Reviews SMH System Budgetary Proposal	6
Step 4 nVent Finalizes the SMH System Proposal	6
Step 5 Customer Approves Final System Design	6
Step 6 nVent Provides the Materials for the Project	7
Step 7 Field Support Services Provide Project Support, as applicable	7
Step 8 Installer Installs and Tests the SMH System	7
PMPH & SMH SYSTEM ESTIMATE FORM	8

INTRODUCTION

The SMH System is a complete snow melting solution designed to be installed under suspended metal surfaces such as stairs, walkways and catwalks. The system utilizes high wattage self-regulating cable installed in an engineered aluminum tray assembly offering efficient, high performance snow melting that keeps your suspended surfaces free of snow and ice.

How to Use this Guide

Our nVent engineering professionals work with Customers—architects, contractors, or building owners—to understand the design requirements for a project.

This design guide presents the key design and performance data that we need to collect in order to design your system.

For questions, please contact your nVent representative, or call 888.313.5666, or email: RIMCustomerCare@nVent.com.

Warranty

nVent's standard limited warranty applies to nVent RAYCHEM Snow Melting Systems.



An extension of the limited warranty period to ten (10) years from the date of installation is available, except for the control and distribution systems, if a properly completed online warranty form is submitted within thirty (30) days from the date of installation. You can access the complete warranty on our web site at nVent.com.

The SMH Systems are designed to melt snow on suspended surfaces such as metal stairs, catwalks, walkways etc. They are mounted against the underside of these surfaces to ensure maximum thermal contact between the SMH System and the heated surface.

The SMH System consists of a top section which includes high wattage nVent RAYCHEM QTVR electric heating cable [A], aluminum channels positioned to provide a path [B] for the cable, top aluminum plate (C) in contact with the heated surface and the bottom section which includes aluminum tray (D) with insulation (E). The closed cell foam insulation minimizes the heat loss from the bottom surface of the SMH System. Once installed, the complete SMH System provides efficient and uniform heat transfer across the heated surface. The SMH System uses 4 linear runs of 20QTVR-CT cable.

SMH Systems provide:

- Long term snow melting solution by mechanically protecting the heating cable
- Aesthetically pleasing solution by concealing the heating cable
- Efficient and uniformed heat transfer across the heated surface
- High performance and reliable solution for heavy snow load areas

Typical SMH System

SMH System embeds multiple runs of high wattage QTVR self-regulating heating cable offering the highest performing heating system with the most efficient heat.

A typical SMH System includes the following:

- SMH panels and connection kits
- Snow Control system and sensor
- Power distribution

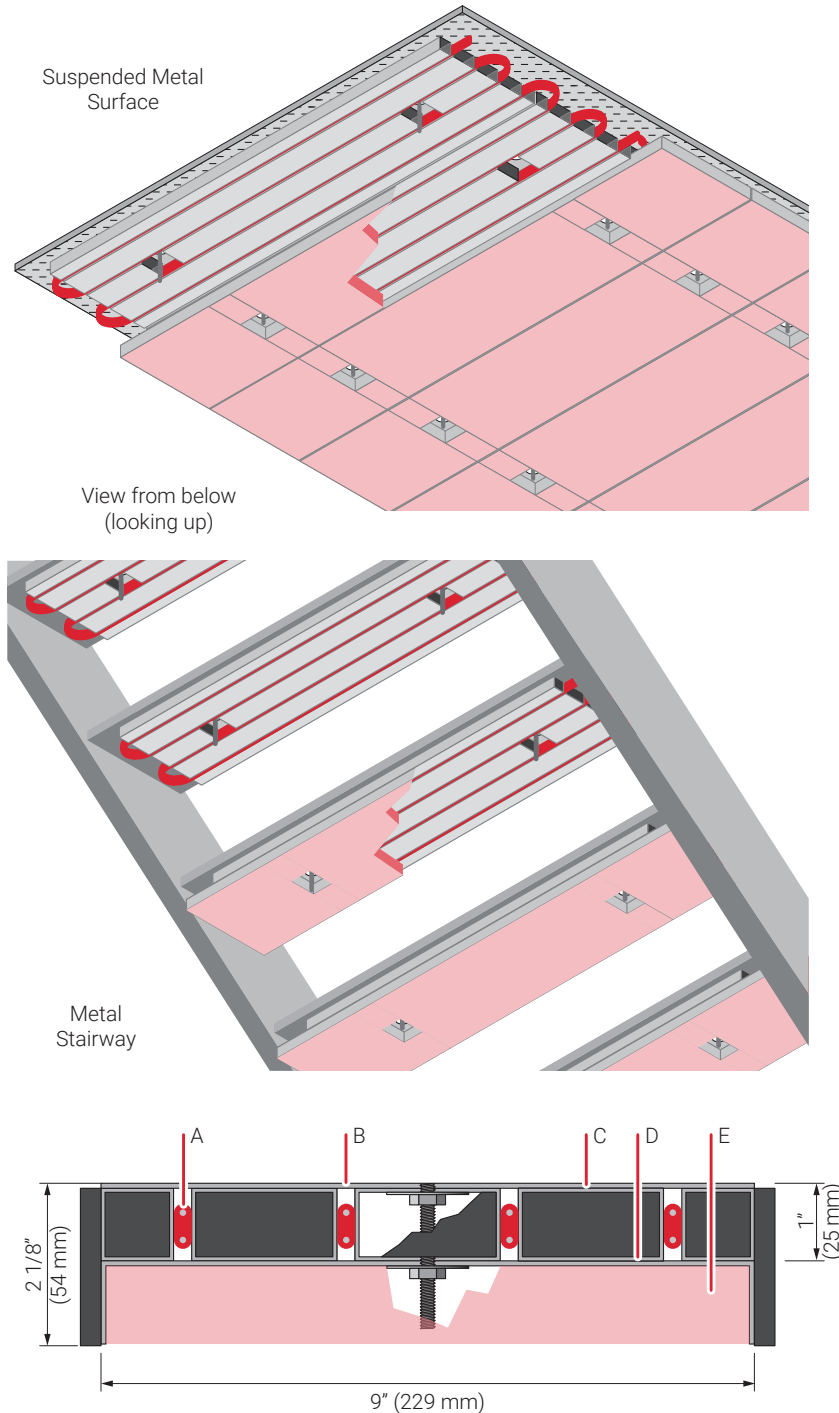


Fig. 1 Typical SMH System

Design Step by Step

These simple steps depict how Customers work with nVent design professionals to incorporate the SMH System into a project.

Step 1 Customer Provides Preliminary Design Inputs

For new construction or retrofits, provide the following to our nVent engineering professionals:

- Site plan locating stairs and platforms to be heated
- Power distribution
- Complete the Estimate Form that will determine the basis for the design

Step 2 nVent Prepares a Budgetary System Proposal

- Prepare the design with recommended scope, SMH materials layout and power requirements.

Step 3 Customer Reviews SMH System Budgetary Proposal

- Review the proposal and either confirm the scope or specify changes to the proposal as needed for the SMH System installation you desire.

Step 4 nVent Finalizes the SMH System Proposal

- Implement the requested changes and make any final recommendations that are appropriate, such as a control and monitoring solution or any relevant Field Support / Engineering Services that are best suited for the project.

Step 5 Customer Approves Final System Design

- Approve the final system design and Field Support / Engineering Services, as applicable.

Step 6 nVent Provides the Materials for the Project

- Supply the SMH materials to the customer, including:
 - Metal base panel for attachment to the suspended surface or stairs
 - Safe, self-regulating heating cable
 - Accessory components as required
 - Appropriate control system, as applicable.
- Provide the following details to the project's Engineer and/or Contractor:
 - Engineering designs and installation instructions
 - Junction box locations (per design recommendations)
 - Control panel loads and location, circuit breaker sizing
 - Material layout plans with circuit design loads and circuit breaker sizing
 - Control panel layout and system testing procedures

Step 7 Field Support Services Provide Project Support, as applicable

- Perform the electrical evaluation/ testing procedure
- Train the installer to install the SMH System
- Commissioning, supervision and troubleshooting

Step 8 Installer Installs and Tests the SMH System

- Install the SMH System per the installation instructions as per design layouts
- Conduct control panel layout and system testing procedures
- Perform commissioning tests and complete warranty documentation

Email completed form to your nVent Sales Rep for a complete Bill of Materials and quote!

PMPH & SMH SYSTEM ESTIMATE FORM

Need Quote For: ☐ PMPH ☐ SMH

1. Building Type & Conditions: (check all that apply)	<input type="checkbox"/> House	<input type="checkbox"/> Small shop / strip mall	<input type="checkbox"/> High-rise residential / multi-use bldg.	<input type="checkbox"/> Commercial building
	<input type="checkbox"/> New Construction		<input type="checkbox"/> Retrofit	
	Annual Snow Fall	<input type="checkbox"/> less than 100 inches	<input type="checkbox"/> more than 100 inches	
2. Area Name:				
3. Pavers:	Length: _____ Inches	Length: _____ Inches	Length: _____ Inches	Length: _____ Inches
	Width: _____ Inches	Width: _____ Inches	Width: _____ Inches	Width: _____ Inches
	Height: _____ Inches	Height: _____ Inches	Height: _____ Inches	Height: _____ Inches
4. Paved Area:	<input type="checkbox"/> Dimensioned sketch of heated area or Estimated Width: _____ ft	<input type="checkbox"/> Dimensioned sketch of heated area or Estimated Width: _____ ft	<input type="checkbox"/> Dimensioned sketch of heated area or Estimated Width: _____ ft	<input type="checkbox"/> Dimensioned sketch of heated area or Estimated Width: _____ ft
	Length: _____ ft	Length: _____ ft	Length: _____ ft	Length: _____ ft
5. Stairs or Platforms:	Number of stairs _____	Number of stairs _____	Number of stairs _____	Number of stairs _____
	Width: _____ ft	Width: _____ ft	Width: _____ ft	Width: _____ ft
	Length: _____ ft	Length: _____ ft	Length: _____ ft	Length: _____ ft
6. Voltage:	<input type="checkbox"/> 120 V <input type="checkbox"/> 208 V <input type="checkbox"/> 240 V <input type="checkbox"/> 277 V	<input type="checkbox"/> 120 V <input type="checkbox"/> 208 V <input type="checkbox"/> 240 V <input type="checkbox"/> 277 V	<input type="checkbox"/> 120 V <input type="checkbox"/> 208 V <input type="checkbox"/> 240 V <input type="checkbox"/> 277 V	<input type="checkbox"/> 120 V <input type="checkbox"/> 208 V <input type="checkbox"/> 240 V <input type="checkbox"/> 277 V
7. Circuit Breaker Size:	<input type="checkbox"/> 15 A <input type="checkbox"/> 20 A <input type="checkbox"/> 30 A	<input type="checkbox"/> 15 A <input type="checkbox"/> 20 A <input type="checkbox"/> 30 A	<input type="checkbox"/> 15 A <input type="checkbox"/> 20 A <input type="checkbox"/> 30 A	<input type="checkbox"/> 15 A <input type="checkbox"/> 20 A <input type="checkbox"/> 30 A
8. Controllers:	<input type="checkbox"/> Ambient Temperature Only	<input type="checkbox"/> Ambient Temperature Only	<input type="checkbox"/> Ambient Temperature Only	<input type="checkbox"/> Ambient Temperature Only
	<input type="checkbox"/> Snow and ice melting controller	<input type="checkbox"/> Snow and ice melting controller	<input type="checkbox"/> Snow and ice melting controller	<input type="checkbox"/> Snow and ice melting controller
	<input type="checkbox"/> Snow Sensor	<input type="checkbox"/> Snow Sensor	<input type="checkbox"/> Snow Sensor	<input type="checkbox"/> Snow Sensor
9. Notes:				
10. Customer name:	<div style="text-align: center;"> BUSINESS CARD </div>			
Company:				
Phone:				
Email:				
Project name:				
Project location:				

North America

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[nVent.com](https://www.nVent.com)

Our powerful portfolio of brands:

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