

## Solar Powered Furnace Installation Technical Specifications Sheet

### I. General

- 1.1 Summary -- Provide and install vertical wall mounted Solar Powered Furnace (SPF) systems including the panels, ducting, high temperature insulation, fan, controller unit, thermostat and wiring
- 1.2 References
  - A. Complete installation in accordance with all applicable building standards and local ordinances
  - B. Complete installation in accordance with ASTM Standard fixed designation E683
  - C. Complete installation in accordance with all applicable ANSI and NEC standards
  - D. It is the responsibility of the installer to follow the appropriate health and safety standards
- 1.3 Submittals
  - A. Appropriate energy efficiency improvements completed prior to solar deployment
  - B. SPF Site Assessment form completed by qualified Rural Renewable Energy Alliance (RREAL) staff or certified SPF dealer
  - C. Solar Pathfinder site reading
  - D. Floor plans, drawings and/or photos detailing site
- 1.4 Quality Assurance
  - A. All panels shall be verified using the QA/QC inspection checklist
  - B. All panels shall be inspected by RREAL manufacturing plant before entering inventory
  - C. All panels shall bear a label containing information as required by the third party certifying body, Solar Rating and Certification Corporation (SRCC)
- 1.5 Delivery, Storage and Handling
  - A. Materials and panels to be delivered to the job site in good condition
  - B. Any open ports on SPF panels will be sealed for transport
  - C. Panels shall be stored as recommended by manufacturer until deployment date
- 1.6 Project Conditions
  - A. For all components, maintain manufacturer's recommended environmental conditions; do not install components outside of recommended conditions
  - B. Ensure correct dimensions and project plan prior to beginning project

## II. Products

### 2.1 Manufacturing

- A. All SPF panels to be manufactured by RREAL, Rural Renewable Energy Alliance, 2330 Dancing Wind Rd SW, Suite #2, Pine River, MN 56474, 218-587-4753.
- B. Eagle 2 controller and thermostat to be manufactured by IMC Instruments

### 2.2 Materials

- A. SPF collectors are the only allowable solar air heat collector for installation, manufactured by RREAL, Rural Renewable Energy Alliance, 2330 Dancing Wind Rd SW, Suite #2, Pine River, MN 56474, 218-587-4753. Collector substitutions not allowed.
- B. Ducting
  - 1. Use ducting for job-specific requirements, as detailed by RREAL in attached drawings and specifications
  - 2. Use Aluminum or galvanized steel starter collars, elbows and joints as detailed by RREAL in attached drawings and specifications
  - 3. Filtered return air grille as detailed by RREAL in attached drawings and specifications
  - 4. Seal penetrations, ducting and high temperature insulation in accordance with Chapter 16 of the International Residential Code and all other applicable building standards and local ordinances
- C. Fan Unit -- Use fan/blower appropriate to the installation as detailed by RREAL in attached drawings and specifications
- D. Mounting Rails
  - 1. 6063 Aluminum 1"x2"x0.125" Rectangular Tubing
  - 2. Or 6063 Aluminum 1"x2"x0.125" Architectural Channel
- E. Controller and Thermostat
  - 1. Eagle 2 Controller manufactured by IMC Instruments
  - 2. Eagle 2 Thermostat manufactured by IMC Instruments
  - 3. Thermistor with high temperature wire manufactured by IMC Instruments
  - 4. Thermostat wire
- F. Array Interconnect (AI) System
  - 1. Silicone (AI) receivers from RREAL
  - 2. Silicone (AI) stints from RREAL

- G. Fasteners
  - 1. GRK Fasteners Rugged Structural Screw 5/16" Climatek coated
  - 2. ITW Buildex 12-24x1-1/4 HWH TEKS®/5 Climaseal Self-Drilling Fasteners

H. Pipe Insulation – Knauf 1000° Fiber Glass Pipe Insulation

I. Sealant - ChemLink DuraSil Low VOC silicone sealant

### 2.3 Fabrication

- A. SPF Panels to be manufactured in RREAL manufacturing plant in accordance to RREAL manufacturing standards and protocol
- B. Any array interconnect (AI) ports to be cut in RREAL manufacturing plant and receivers installed

## III. Execution

### 3.1 Preparation

- A. Prepare surfaces in accordance with SPF Wall Mount installation method
- B. Ensure adequate space for SPF panel to mount flush
- C. Ensure proper vapor barrier is installed according to local building code
- D. All panels to be mounted plumb and level

### 3.2 Installation

- A. Install in accordance with SPF Wall Mount installation method
- B. Ensure that ducting is properly fitted and insulation properly installed in wall cavities
- C. Ensure that panel is properly flashed and trimmed

### 3.3 Protection

- A. Protect product in a manner that ensures no damage to product through project completion
- B. Ensure that all ports or holes cut in SPF panel are covered or sealed until ready to install to prevent debris from entering system
- C. Repair or replace damaged products as a result of transport or installation processes, do not install damaged or compromised components