

Fastening the MILLER RoofStrider to Existing Steel and Composite Flat Roof Structures

I APPLICATION

This supplement details the recommended procedure for fastening a **MILLER RoofStrider** fall protection system to an existing, flat roof, when performing roofing repairs and/or maintenance. Users should read and understand the Operation and Maintenance Manual provided with their **RoofStrider** system before proceeding with the following instructions.

NOTE: Use of a fastener pullout-strength gauge (Like the unit available from **Heely-Brown**, Atlanta, GA) is required to complete the procedures outlined in these instructions. **Failure to verify minimum screw pullout values prior to placing a newly installed RoofStrider system in service may result in an unsafe condition, endangering worker safety during a fall event!**

II REQUIREMENTS

A. Compatibility:

These instructions apply to the use of the (optional) SRMF-2 Screw-On Feet for the **MILLER RoofStrider** fall protection system, only (Ref. FIG. 1). Use of any other type may not provide sufficient strength for safe operation.

B. Hardware:

It is the responsibility of the system installer to ascertain, and provide, the proper size/length/number of fastener to match the type of construction used in your particular roofing application. It should also be noted that additional "test" screws will be expended during the pullout values verification phase of installation.

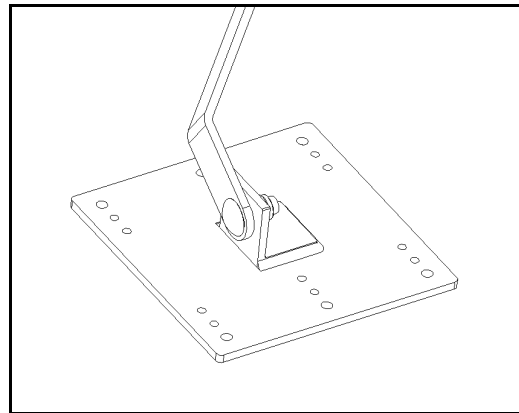


FIG. 1

C. Tools:

The following tools will be needed to test and install the fasteners as outlined in these instructions:

- High-Torque Power Drill/Driver (with correct bit/driver to match your fasteners)
- Fastener Pullout-Strength Gauge (**Heely-Brown** unit, or equivalent)
- Roof Sealant/Cement
- Calking Gun (optional)
- Calculator

III INSTALLATION

A. Fastener Selection and Testing:

Industrial, flat roofs can be of many different types of construction depending upon regional weather conditions, construction codes, etc. It is therefore left up to the installer to pick the correct length/style of fasteners to best suit the roof in question. Factors to be considered may include, but are not limited to:

- Surface Material (Steel, Fiberglass, Concrete, etc.)
 - Surface Treatment (Gravel, Tar, Plastic/Rubber Membrane, etc.)
 - Depth to Support Structure
 - Number/Composition of Layers
1. Choose a fastener that (in your opinion) best suits the roof's construction and drive it in using a High-Torque Drill/Driver. The fastener's head should **NOT** be driven down flush with the roof's surface, but left standing approximately 1" above (Ref. FIG. 2).
 2. Position your **Fastener Pullout-Strength Gauge** over the test fastener (screw), locking it over the screw-head, in preparation for pulling and reset the units peak-hold feature to "0", if available.
 3. Actuate your **Fastener Pullout-Strength Gauge** and watch for the unit's tension gauge to begin moving up the scale as tension on the fastener increases. On a manual unit; Turn the handle steadily at a rate of approximately one (1) turn every three-five (3-5) seconds.
 4. Continue until the pointer stops moving up the scale; indicating that the fastener has reached the limit of its hold in this substrate. The reading, at this point, indicates the peak pullout force for this particular fastener, in this particular roof.

[Miller Honeywell RM50G/50FT RoofStrider System Kit](#)

[Miller Honeywell RM50P/50FT RoofStrider System Kit](#)

[Miller Honeywell SRM30G/30FT RoofStrider II System Kit](#)

[Miller Honeywell SRM50G/50FT RoofStrider II System Kit](#)

[Miller Honeywell SRM50P/50FT RoofStrider II System Kit](#)

[Miller Honeywell SRM65G/65FT RoofStrider II System Kit](#)

NOTE: Fastener pullout occurs immediately after peak pullout force is reached and may happen suddenly. In some cases, the pullout device may jump up suddenly, affecting the final position/reading of the peak-hold pointer (if available). Observe the unit closely during Step 4 (above) to assure that accurate readings are being taken. Holding the unit firmly against the roof's surface during testing will help to minimize false readings.

5. Repeat steps 1-4 (above), in the immediate mounting area, to establish a consistent, average fastener pullout value to be used for calculating the minimum number of fasteners needed for safe system installation. A minimum of FOUR (4) test pulls should be performed to establish a good working number. More tests may be necessary if pullout values vary by more than $\pm 10\%$ between locations.
6. To prevent weather-related damage, after the completion of pull-testing; Fill all test holes with a compatible roof sealant/cement.

B. Calculating The Number Of Fasteners Needed For Installation:

Each **RoofStrider** System is designed to arrest a fall anywhere within its 360° range of motion. As such; each mounting foot must be anchored to withstand the full impact of potential fall-arrest forces.

The **MILLER** Retractable Lifeline unit on the top of each **RoofStrider** system limits fall arrest-forces to 900 LBS. Applying the (OSHA REQUIRED) 2:1 factor of safety means that:

EACH FOOT MUST BE ANCHORED TO WITHSTAND AN 1800 LB. FALL-ARREST FORCE.

Referring to the results obtained in, '**A. Fastener Selection and Testing,**' on the previous page:

1. Divide the **LOWEST** screw pullout value obtained (Example: **350 Lbs.**) into the 1800 LB. minimum requirement from the previous paragraph. The answer will be the minimum number of fasteners required to safely fasten the **RoofStrider** System to this particular roof, with these particular fasteners.

$$1800 \text{ Lbs. (Min Req.)} \div 350 \text{ Lbs. (per fastener)} = \underline{5.143} \text{ Fasteners}$$

2. Round the answer from step 1., above, **UP** to the next whole number. (**5.143 Fasteners** rounds up to **6 Fasteners**, in this example.)
3. Fasten the **RoofStrider** System's feet to the roof using at least the minimum number of fasteners, *PER FOOT*, as determined from the steps above.

NOTE: Pullout values of between 225 and 257 Lbs. will require Eight (8) fasteners to be used for EACH FOOT. Two, additional 1/4" holes may be drilled in each foot to accommodate the extra fasteners, required. (See FIG. 2) Based upon a maximum of Eight (8) fasteners per foot:

The minimum acceptable pullout value shall be 225 Lbs. per fastener!

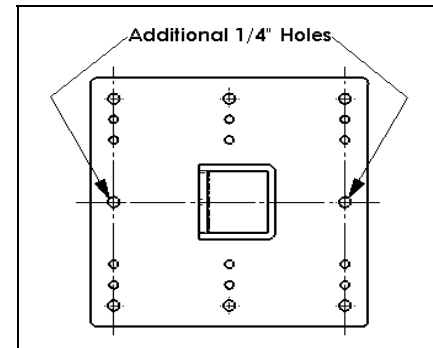


FIG. 2

NOTE: Regardless of actual pullout values obtained during testing; Always use a minimum of Four (4) fasteners, located at the corners of the SRMF-2 Screw-On Foot (See FIG. 3). Failure to comply may subject fasteners to a bending load for which they were not designed, and could render the **RoofStrider** System unable to arrest a fall!

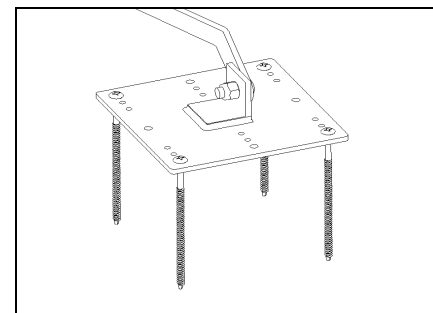


FIG. 3

IV REMOVAL

1. Un-screw all fasteners from the SRMF-2 Screw-On Feet and dispose of in accordance with applicable regulations. **DO NOT RE-USE FASTENERS!**
2. Remove the **RoofStrider** unit from the immediate area
3. To prevent weather-related damage; Fill all mounting holes with a compatible roof sealant/cement.