

# FM-90

## SPECIFICATIONS

### BASE SHEET TO LIGHTWEIGHT INSULATING CONCRETE AND VARIOUS GYPSUM ROOFDECKS

#### COMPOSITION

**Fastener:** Precision formed from polymer coated steel to prevent corrosion. Rectangular dual gripping legs, 1.7" long.

**Disk:** Precision formed from coated steel to prevent corrosion. Integrally locked to fastener. Rib reinforced cap, 2.7" diameter.

#### TECHNICAL DATA

**Approvals:** FM-90 fasteners maintain Factory Mutual, Underwriters Lab Approvals, and Miami-Dade County Approvals.

**Fastening Pattern:** Consult Factory Mutual, Underwriters Lab, or Miami-Dade requirements for recommended pattern in normal, exposed, and hurricane areas.

**Field Testing:** On-site withdrawal testing should always be performed to evaluate the ability of the roofing substrate to satisfactorily accept and retain fasteners. Such testing may alter fastener selection and modify applicable fastening patterns.

#### INSTALLATION

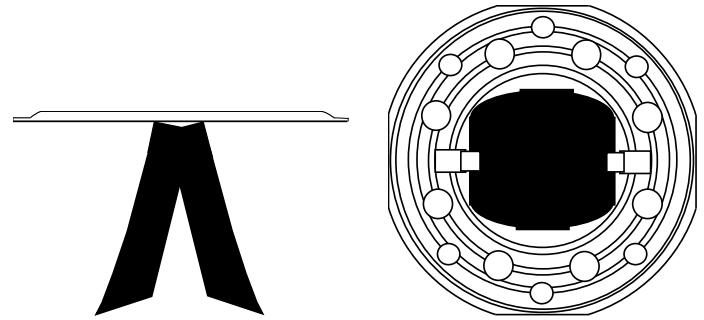
**Equipment:** Always use the ES Magnetic Driver to assure proper fastener installation.

**Method:** Drive FM-90 as an ordinary nail. DO NOT TOE. Seat cap flush with roofing surface (see illustration).

**Operation:** As FM-90 is driven, dual legs diverge and cut a plug of deck material that wedge and anchor the FM-90 in its own hole. No pre-drilling is required.

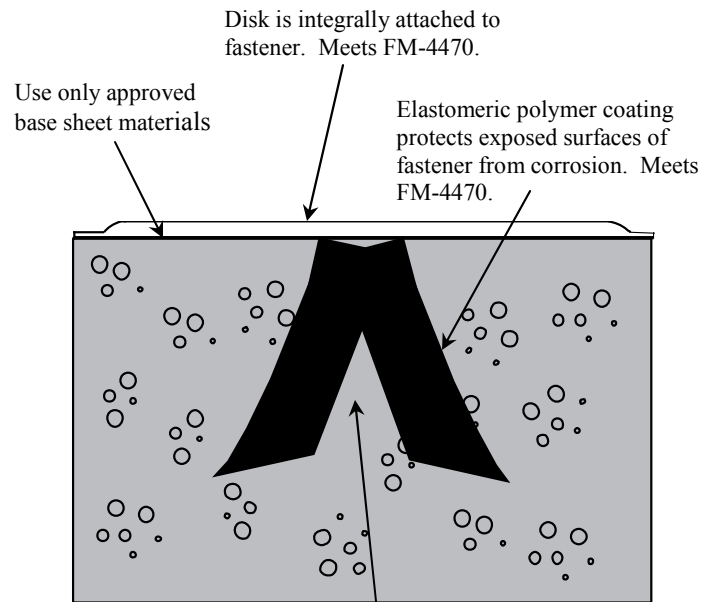
**Availability:** FM-90 is a proprietary product manufactured only by ES Products, Inc. and distributed by leading roofing material and equipment wholesalers throughout the United States.

**Packaging:** 1,000 FM-90 fasteners per carton. Gross weight: 40 lbs. Shrink wrapped and palletized.



Length: 1.7 inches

Diameter: 2.7 inches



Disk is integrally attached to fastener. Meets FM-4470.

Use only approved base sheet materials

Elastomeric polymer coating protects exposed surfaces of fastener from corrosion. Meets FM-4470.

Fastener anchors itself in its own hole by cutting an inverted wedge of concrete. No pre-drilling required.

#### PROUDLY MADE IN THE U.S.A.

**Warranty:** ES Products, LLC warrants its products for one year from date of sale against defective workmanship and material, and its liability therefore shall be limited to replacing defective products reported defective during the warranty period. ES Products is not responsible for any failure attributable to improper use or installation in any manner inconsistent with manufacturer's specifications. THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, ALL OF WHICH ARE EXPRESSLY DISCLAIMED INCLUDING ANY WARRANTY OF MERCHANTABILITY AND ANY WARRANTY OF FITNESS FOR PARTICULAR USE. This warranty provides specific legal rights and remedies that may vary from state to state.



# ESPRODUCTS

280 Franklin Street • Bristol, RI 02809  
800-493-ROOF (7663) • esproducts.com

# BASE SHEET ATTACHMENT TO LIGHTWEIGHT INSULATING CONCRETE

## USING THE FM-90

Fastener density and spacing vary depending on applicable uplift requirements. Local codes, governing approval bodies, membrane manufacturers, and individual roofdeck manufacturers all may have specific requirements that need to be addressed prior to beginning any roofing project. The following illustrates a typical Factory Mutual Approved fastening pattern widely accepted for use by membrane and roofdeck manufacturers.

### FASTENING GUIDE CLASS 1-90 WINDSTORM CLASSIFICATION

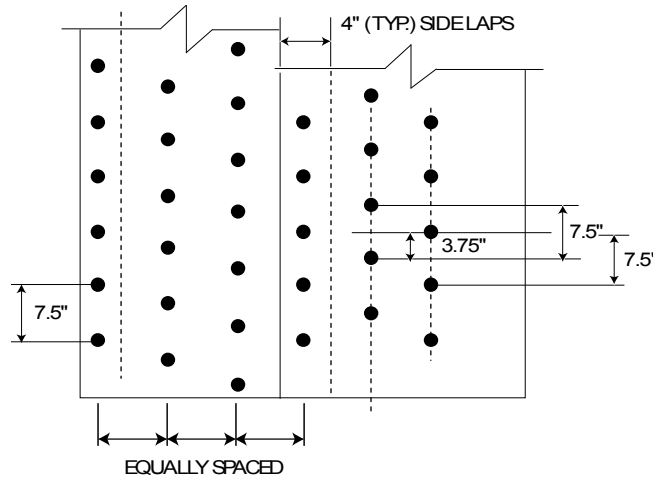
An FMRC-approved base sheet is secured to an FMRC-approved lightweight insulating concrete roofdeck as outlined in the current edition of the FMRC Approval Guide and/or RoofNav.

The base sheet is secured in the field of the roof with FM-90 fasteners installed 7.5" on center in 4" wide side laps and 7.5" on center in two staggered rows, equally spaced, between the side laps.

When fastening meter-wide material with this pattern, expect to use approximately 165 fasteners per square (100 ft<sup>2</sup>).

#### IMPORTANT:

Prior to roofing, on-site withdrawal testing should always be performed to evaluate the ability of the roofing substrate to satisfactorily accept and retain fasteners. Such testing may alter fastening selection and modify applicable fastening patterns.



Magnetic Driver

### FASTENING GUIDE CLASS 1-120 WINDSTORM CLASSIFICATION, CELCORE NEW CONSTRUCTION ONLY

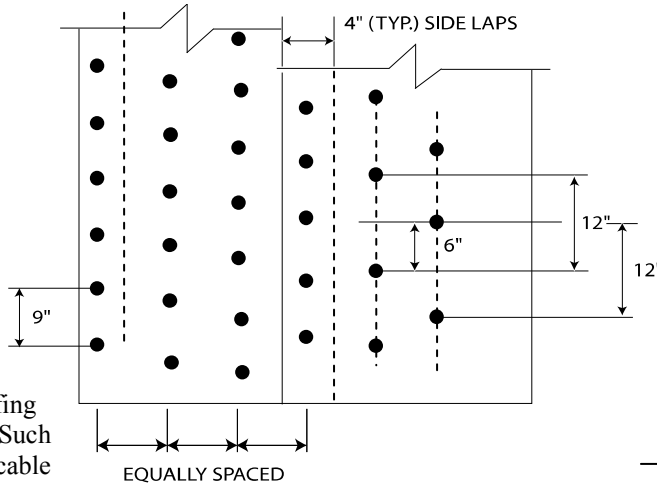
An FMRC-approved base sheet is secured to an FMRC-approved lightweight insulating concrete roofdeck as outlined in the current edition of the FMRC Approval Guide and/or RoofNav.

The base sheet is secured in the field of the roof with FM-90 fasteners installed 9" on center in 4" wide side laps and 12" on center in two staggered rows, equally spaced, between the side laps.

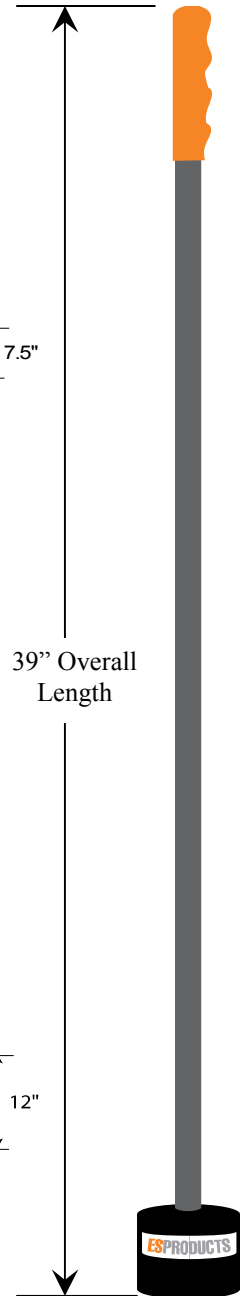
When fastening meter-wide material with this pattern, expect to use approximately 113 fasteners per square (100 ft<sup>2</sup>).

#### IMPORTANT:

Prior to roofing, on-site withdrawal testing should always be performed to evaluate the ability of the roofing substrate to satisfactorily accept and retain fasteners. Such testing may alter fastening selection and modify applicable fastening patterns.



39" Overall Length



Face of Driver

# ESPRODUCTS

280 Franklin Street • Bristol, RI 02809  
800-493-ROOF (7663) • esproducts.com