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IN NO EVENT SHALL FIRESTONE BUILDING PRODUCTS BE LIABLE FOR ANY LOSS OF PROFIT OR ANY OTHER COMMERCIAL DAMAGE INCLUDING BUT NOT LIMITED TO SPECIAL, INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES.
To Whom It May Concern:

Firestone Building Products is pleased to inform you that the roofing system listed below has been renewed and is eligible for the 20-Year Firestone Red Shield Warranty:

**Firestone Mechanically Attached Roofing System**

**Construction:** Recover

**Deck:** 22-ga Steel

**Slope:** 1/4:12

**Existing System:** 3" ISO with EPDM membrane adhered, Grid Cut in 10'x10' sections

**Membrane:**
- ISO Firestone UltraFly TPO XR 115, 10 ft wide sheets
  - Attachment: Firestone Heavy Duty Plus Fasteners and Firestone Plates, attached 6.0" o.c. in the field,
  - Perimeter/Corner Attachment: (2) Half Sheets, Fasteners attached 6.0" o.c.

This Firestone Roofing System meets the following Performance Requirements as specified by the project roof designer, architect, or engineer:
- FL 10264 R-13 System R-121, -67.5 psf

**Firestone Mechanically Attached Roofing System**

**Construction:** Recover

**Deck:** 22-ga Steel

**Slope:** 1/4:12

**Existing System:** 3" ISO with EPDM membrane adhered, Grid Cut in 10'x10' sections

**Insulation (1" layer):** Firestone ISO 95+, 2"01" x 4'x8' boards

**Attachment:** Common-fastened

**Membrane:**
- ISO Firestone UltraFly TPO, 10 ft wide sheets
  - Attachment: Firestone Heavy Duty Fasteners and Invis/Plate Placing
  - Rate: Field/Perimeter Fasteners per board; Perimeter/Corner Fasteners per board

This Firestone Roofing System meets the following Performance Requirements as specified by the project roof designer, architect, or engineer:
- FL 10264 R-13 System SC-183, -60 psf

**PERFORMANCE REQUIREMENTS**

Performance standards and construction requirements regarding wind uplift and fire resistance are established by the agencies indicated in the construction specification. These agencies' construction requirements are subject to change; please consult the appropriate agencies for full information regarding compliance with their current standards and requirements.

**DEFINITION OF PERIMETER AND CORNER AREAS**

Following ANSI/ASTM guidelines, the perimeter area is defined as the outer boundary of the roof with a width equal to 40% of the building height or 10% of the building width, whichever is less, but not less than 6 feet (1.8 m). The perimeter area may be enlarged depending upon the building configuration. The corner area is defined as the portion of the perimeter area beginning at the intersection of two roof edges and proceeding in both directions a distance equal to the width of the perimeter area. Corner areas on buildings with minimum 3 feet high continuous parapet walls and a maximum 2 inch in 12-inch roof slope can be treated as perimeter areas. For buildings insured by FM Global, please consult FM Global's AS 2-29 for specific information.

Retro Fitness
6918 Gunn Highway
Tampa, FL

07 5423 - 2

THERMOPLASTIC-POLYOLEFIN ROOFING (TPO)
WARRANTY REQUIREMENTS

1. The Applicator must submit a Pre-Installation Notice (PIN) to Firestone, and must include an Approved Roof Drawing (ARD) with their PIN.
2. The roofing system must be installed by a licensed Firestone Red Shield Applicator, and installed in accordance with all current Firestone technical standards, warranty requirements, and detail drawings.
3. The roofing system installation must successfully pass an on-site audit by a Quality Building Services (QBS) Technical Representative, upon substantial completion.

PLEASE NOTE
Firestone does not engage in the practice of architecture or engineering; the Firestone review referenced in this letter is for warranty eligibility purposes. Firestone technical standards are subject to change; Please visit, http://firestonebpco.com/technical-information/, for the most current information regarding Firestone roofing system design guidelines, detail drawings, and product information. The information in this letter expires twelve (12) months after the date shown.

Please feel free to contact me with any questions, and thank you for choosing Firestone.

Regards,

FIRESTONE BUILDING PRODUCTS COMPANY, LLC

[Signature]

Todd Bagwell
Building System Advisor, South
FIRESTONE BUILDING PRODUCTS
O. 615.937.4079 | W. firestonebpco.com
200 4th Avenue South, Nashville, TN 37201
PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Name: Retro Fitness - 6918 Gunn Highway - Tampa, FL.
B. Thermoplastic membrane roofing system, including all components specified.
C. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.
E. Commencement of work by Contractor shall constitute acknowledgement by Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer. No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.

1.02 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 for definition of terms related to roofing work not otherwise defined in the section.
B. LTTR: Long Term Thermal Resistance, as defined by CAN-ULC-S770.

1.03 REFERENCE STANDARDS

J. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; Factory Mutual System; 2016.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Conference: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.
1. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work.
2. Notify Architect well in advance of meeting.
1.05 SUBMITTALS
   A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
   B. Product Data:
      1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements and with the membrane manufacturer's requirements and recommendations for the system type specified; include data for each product used in conjunction with roofing membrane.
   C. Samples: Submit samples of each product to be used.
   D. Shop Drawings: Provide:
      1. The roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, and drains.

1.06 QUALITY ASSURANCE
   A. Installer Qualifications: Roofing installer shall have the following:
      2. Fully staffed office within 100 miles of the job site.
      3. At least five years experience in installing specified system.
      4. Capability to provide a payment performance bond.

1.07 DELIVERY, STORAGE AND HANDLING
   A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.
   B. Store materials clear of ground and moisture with weather protective covering.
   C. Keep combustible materials away from ignition sources.

1.08 WARRANTY
   A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
   B. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
   C. Warranty: Firestone Limited Warranty covering membrane, roof insulation, and other indicated components of the system, for the term indicated.
      1. Limit of Liability: No dollar limitation.
      2. Scope of Coverage: Repair leaks in the roofing system caused by:
         a. Ordinary wear and tear of the elements.
         b. Manufacturing defect in Firestone brand materials.
         c. Defective workmanship used to install these materials.
         d. Damage due to winds up to 55 mph (88 km/h).
      3. Not Covered:
         a. Damage due to winds in excess of 55 mph (88 km/h).
         b. Damage due hurricanes or tornadoes.
         c. Hail.
         d. Intentional damage.
         e. Unintentional damage due to normal rooftop inspections, maintenance, or service.

PART 2 PRODUCTS
2.01 MANUFACTURERS
      1. Roofing systems by other manufacturers are not acceptable.
   B. Manufacturer of Insulation and Cover Boards: Same manufacturer as roof membrane.
C. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane.
   1. Field- or shop-fabricated metal roof edgings are not acceptable.
   2. Factory fabricated products manufactured by the companies listed below are acceptable provided they are completely equivalent in materials and performance:
      a. Metal Era.
D. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ROOFING SYSTEM DESCRIPTION
A. Roofing System: Thermoplastic polyolefin (TPO) single-ply membrane.
   1. Membrane Attachment: Mechanically fastened.
   2. Warranty: Full system warranty; Firestone 20 year Red Shield Limited Warranty covering membrane, roof insulation, and membrane accessories.
   3. Comply with applicable local building code requirements – FL 10264 R-13 System R-121
   4. Provide assembly complying with Factory Mutual Corporation (FM) Roof Assembly Classification, FM DS 1-28 and FM DS 1-29, and meeting minimum requirements of FM 1-90 wind uplift rating.
B. Roofing System Components: Listed in order from the top of the roof down:
   1. Membrane: Thickness as specified.

2.03 MEMBRANE MATERIALS
A. Membrane: Flexible, heat weldable sheet composed of thermoplastic polyolefin polymer and ethylene propylene rubber; complying with ASTM D6878/D6878M, with polyester weft inserted reinforcement and the following additional characteristics:
   1. Thickness: 0.060 inch (1.52 mm) plus/minus 10 percent, with coating thickness over reinforcement of 0.024 inch (0.61 mm) plus/minus 10 percent.
   2. Puncture Resistance: 265 lbf (1174 N), minimum, when tested in accordance FTM 101C Method 2031.
   3. Solar Reflectance: 0.79, minimum, when tested in accordance with ASTM C1549.
B. Membrane Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.
C. Curb and Parapet Flashing: Same material as membrane, with encapsulated edge which eliminates need for seam sealing the flashing-to-roof splice; precut to 18 inches (457 mm) wide.
D. Formable Flashing: Non-reinforced, flexible, heat weldable sheet, composed of thermoplastic polyolefin polymer and ethylene propylene rubber.
   1. Thickness: 0.060 inch (1.52 mm) plus/minus 10 percent.
   2. Tensile Strength: 1550 psi (10.7 MPa), minimum, when tested in accordance with ASTM D638 after heat aging.
   3. Elongation at Break: 650 percent, minimum, when tested in accordance with ASTM D638 after heat aging.
   4. Tearing Strength: 12 lbf (53 N), minimum, when tested in accordance with ASTM D1004 after heat aging.
E. Tape Flashing: 5-1/2 inch (140 mm) nominal wide TPO membrane laminated to cured rubber polymer seaming tape, overall thickness 0.065 inch (1.6 mm) nominal; TPO QuickSeam Flashing by Firestone.
F. Bonding Adhesive: Neoprene and SBR rubber blend, formulated for compatibility with the membrane other substrate materials, including masonry, wood, and insulation facings; UltraPly Bonding Adhesive by Firestone.

G. Pourable Sealer: Two-part polyurethane, two-color for reliable mixing; Pourable Sealer by Firestone.

H. Seam Plates: Steel with barbs and Galvalume coating; corrosion-resistance complying with FM 4470.

I. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches (33 mm) wide by 0.10 inch (2.5 mm) thick; Firestone Termination Bar by Firestone.

J. Cut Edge Sealant: Synthetic rubber-based, for use where membrane reinforcement is exposed; UltraPly TPO Cut Edge Sealant by Firestone.

K. General Purpose Sealant: EPDM-based, one part, white general purpose sealant; UltraPly TPO General Purpose Sealant by Firestone.

L. Coated Metal Flashing and Edgings: Galvanized steel with roofing manufacturer's bonded TPO coating; UltraPly TPO Coated Metal by Firestone.

M. Molded Flashing Accessories: Unreinforced TPO membrane pre-molded to suit a variety of flashing details, including pipe boots, inside corners, outside corners, etc.; UltraPly TPO Small and Large Pipe Flashing by Firestone.

N. Water Block Seal: Butyl rubber sealant for use between two surfaces, not exposed; Water Block Seal by Firestone.

O. Roof Walkway Pads: Non-reinforced TPO walkway pads, 0.130 inch (3 mm) by 30 inches (760 mm) by 40 feet (12.19 m) long with patterned traffic bearing surface; UltraPly TPO Walkway Pads by Firestone.

2.04 METAL ACCESSORIES

A. Parapet Copings: Formed metal coping with galvanized steel anchor/support cleats for capping any parapet wall; watertight, maintenance free, without exposed fasteners; butt type joints with concealed splice plates; mechanically fastened as indicated; Firestone PTCF.

1. Wind Performance:
   a. At least minimum required when tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3.
   b. Provide product listed in FM (AG) with at least FM 1-90 rating.

2. Description: Coping sections allowed to expand and contract freely while locked in place on anchor cleats by mechanical pressure from hardened stainless steel springs factory attached to anchor cleats; 8 inch (200 mm) wide splice plates with factory applied dual non-curing sealant strips capable of providing watertight seal.

3. Material and Finish: 24 gage, 0.024 inch (0.06 mm) thick galvanized steel with Kynar 500 finish in manufacturer's standard color; matching concealed joint splice plates; factory-installed protective plastic film.

4. Dimensions:
   a. Wall Width: As indicated on the drawings.
   b. Piece Length: Minimum 144 inches (3650 mm).
   c. Curved Application: Factory fabricated in true radius.

5. Anchor/Support Cleats: 20 gage, 0.036 inch (0.9 mm) thick prepunched galvanized cleat with 12 inch (305 mm) wide stainless steel spring mechanically locked to cleat at 72 inches (1820 mm) on center.

6. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, corners, intersections, curves, pier caps, and end caps; minimum 14 inch (355 mm) long legs on corner, intersection, and end pieces.

7. Fasteners: Factory-furnished; electrolytically compatible; minimum pull out resistance of 240 pounds (109 kg) for actual substrate used; no exposed fasteners.
PART 3 INSTALLATION

3.01 GENERAL
A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.

B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.

C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.

D. Perform work using competent and properly equipped personnel.

E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.

F. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F (15 to 25 degrees C).

G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
   1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
   2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
   3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.

H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.

I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.02 EXAMINATION
A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.

B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.

C. Examine roof substrate to verify that it is properly sloped to drains.

D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.

3.03 PREPARATION
A. Remove the wet areas of the existing roof system down to the roof deck including all existing composition base flashings. Dispose of all materials properly. Perform asbestos removal in accordance with federal, state and local regulations and dispose of waste in legal manner.
   1. At penetrations, remove all existing flashings, including lead, asphalt, mastic, etc.
   2. At walls, curbs, and other vertical and sloped surfaces, remove loose and unsecured flashings; remove mineral surfaced and coated flashings; remove excessive asphalt to provide a smooth, sound surface for new flashings.
B. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.

C. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.

D. Fill all surface voids in the immediate substrate that are greater than 1/4 inch (6 mm) wide with fill material acceptable insulation to membrane manufacturer.

E. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.

3.04 SINGLE-PLY MEMBRANE INSTALLATION

A. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.

B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.

C. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.

D. Install membrane mechanically attached to the substrate using seam battens, fasteners, and edge securement as specified and as required by membrane manufacturers.

E. Mechanical Attachment: Install fasteners in the seams, covered by membrane.
   1. Lay out fasteners in compliance with FM Class specified in PART 2, as recommended by membrane manufacturer, and as indicated, whichever is most stringent.
   2. Properly engage fasteners in the deck with head flush with the countersunk portion of seam plate.

F. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches (1:6) using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
   1. Exceptions: Round pipe penetrations less than 18 inches (460 mm) in diameter and square penetrations less than 4 inches (200 mm) square.
   2. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.

3.05 FLASHING AND ACCESSORIES INSTALLATION

A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.

B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
   1. Follow roofing manufacturer's instructions.
   2. Remove protective plastic surface film immediately before installation.
   3. Install water block sealant under the membrane anchorage leg.
   4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
   5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
   6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
   7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.
3.06 FINISHING AND WALKWAY INSTALLATION

A. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings.
   1. Use specified walkway pads unless otherwise indicated.

B. Walkway Pads: Adhere to the roofing membrane, spacing each pad at minimum of 1.0 inch (25 mm) and maximum of 3.0 inches (75 mm) from each other to allow for drainage.
   1. If installation of walkway pads over field fabricated splices or within 6 inches (150 mm) of a splice edge cannot be avoided, adhere another layer of flashing over the splice and extending beyond the walkway pad a minimum of 6 inches (150 mm) on either side.
   2. Prime the membrane, remove the release paper on the pad, press in place, and walk on pad to ensure proper adhesion.

3.07 FIELD QUALITY CONTROL

A. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).

B. Perform all corrections necessary for issuance of warranty.

3.08 CLEANING

A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.

B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.

C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.09 PROTECTION

A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

3.10 ALTERNATES

ALT 1 – Include a price to furnish and install (1) layer of 2" Firestone Iso 95 over the existing sliced EPDM roof system and then install Firestone .060 UltraPly TPO – Induction Welded (Invisiweld) per the requirements in the assembly letter and per FL 10264 R-13 System SC- 183.

END OF SECTION