Return Bid To:
MARSHALL COUNTY ENGINEERING
424 BLOUNT AVENUE, SUITE 305
GUNTERSVILLE, AL 35976
(256) 571-7712

BID NO: 56-23
0BID OPENING DATE & TIME: MONDAY, APRIL 15, 2024 - 2:00 P.M.

LOCATION: ROOM A319 - COMMISSION CHAMBERS - 3RD FLOOR - MARSHALL COUNTY COURTHOUSE - GUNTERSVILLE, AL

INVITATION FOR BIDS FOR EMA BUILDING ROOF

VENDOR'S RESPONSE:

VENDOR'S NAME: _____

VENDOR'S ADDRESS: _____

_____

TELEPHONE NO. _____

FAX NO. _____

E-MAIL _____

CONTRACTOR LICENSE NO. _____

TOTAL BID PRICE (complete in-place)

$ _____

VENDOR'S RESPONSE:
I hereby agree to furnish the above named items on or by the dates requested and hereby certify that all specifications set above will be met.

_____ _____
Authorized Representative Typed or Written Name

IKO Innovi™ TPO Mechanically Attached Roofing System

This is a Scope of Work to be performed at the Marshall County Emergency Management Agency located at

3550 Creek Path Road

Guntersville, AL. 35976

UPPER ROOF SOW

Contact Brad Kilpatrick, Chief Maintenance Supervisor, with any questions or to schedule an appointment to inspect the roof at (256) 264-3668

Section 07 54 23
Thermoplastic Polyolefin (TPO) Membrane Roofing

PART 1 – GENERAL 1.01 SUMMARY

A. Furnish and install a mechanically attached thermoplastic polyolefin membrane roofing system for the Upper Roof Area, including:
   1. Roofing membrane manufacturer's requirements for the specified warranty.
   2. Setup safety stands around perimeter of roof.
   3. Demo existing roofing system to metal deck.
   4. Demo existing sheet metal.
   5. Remove (2) existing exhaust fans and repair holes.
   6. Install (2) layers of 2.2" Plyiso roof insulation.
   7. Mechanically attach Thermoplastic polyolefin membrane roofing, .060 mil per manufacturers' specifications.
   8. Flashings.
   9. Walkway pads.
   10. Furnish and install new gutters and downspouts
   11. Other roofing accessories and items necessary to install a complete weatherproof roofing system.

B. The roofing applicator is responsible to dispose of roofing-related demolition debris and construction waste. Manner of disposal must comply with applicable federal, state, provincial, and local regulations.

C. Comply with the published instructions regarding material handling, storage, and installation as provided by the roofing membrane manufacturer, at www.IKO.com/innovi.

D. Commencement of work by the Contractor shall constitute their acknowledgement that this specification may be satisfactorily executed under the project conditions, and that they have met all pre-work requirements for warranty of the completed roofing system by the Manufacturer.

E. It is the roofing applicator's responsibility to read and comply with the entire specification for this section of the project's work. Failure to properly examine this specification and all other related project documents is not cause for any modification of the Contract Sum.

1.03 REFERENCES

A. Referenced Standards: These standards form part of this specification only to the extent they are referenced as specification requirements.

1. CAN/ULC S-704.1 Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced; 2017.
2. ASTM C 1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer; 2009.
3. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics; 2010.
4. ASTM D 1004 - Standard Test Method for Initial Tear Resistance of Plastic Film and Sheeting; 2009.
5. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing; 2011a.

1.04 SUBMITTALS

A. Applicator Approval Verification: Submit letter or certificate from Manufacturer verifying applicator's status as an Approved **IKO** Applicator to install the specified roofing system for the warranty type and term indicated elsewhere in the specification.

B. Product Data:

1. Submit Manufacturer's Product Data Sheets to show that all components of roofing system, including insulation, fasteners, plates, and all accessories necessary, comply with this specification.
2. Submit Manufacturer's installation instructions. Wherever these instructions allow installation options, clearly indicate which option will be used by marking up the instructions.

C. Sample Warranty: Submit a sample of the Manufacturer's warranty of the type and term indicated elsewhere in this specification, prior to starting work.

D. Executed Warranty: Submit the Manufacturer's executed warranty for this project, upon substantial completion of the work.

1.05 QUALITY ASSURANCE

A. Applicator Qualifications: Roofing installer shall have the following:

1. Current IKO Approved Applicator status.
2. At least five years' experience in installing TPO roofing systems.

1.06 DELIVERY, STORAGE AND HANDLING

A. Roofing products should be delivered to the job site in Manufacturer's original containers, dry, undamaged, with seals and labels intact and legible.

B. Store materials clear of the ground and moisture, and with weather protective covering.

C. Keep combustible materials well away from sources of ignition.

1.07 WARRANTY

A. The installed roofing system must comply with all warranty procedures required by Manufacturer, including warranty application and inspection procedures.

B. Warranty: Provide warranty coverage equal to the IKO 20 Year Diamond Shield Limited Warranty, covering membrane, roof insulation, and roofing accessories. C. Scope of Coverage:

1. Repair any leak in the roofing system caused by:
   a. Manufacturing defect.
   b. Defective workmanship used to install these materials.
   c. Ordinary wear and tear of the elements.
   d. Damage due to winds up to 55 mph.
2. Not Covered:
   a. Damage due to winds in excess of 55 mph.
   b. Damage due to hurricanes or tornadoes.
   c. Hail.
   d. Intentional damage.
   e. Unintentional damage due to normal rooftop inspections, maintenance, or service.
   f. Products not provided by the Manufacturer, unless where written approval of the Manufacturer is provided.

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. Basis of Design: IKO Innovi TPO Roofing System, by IKO Industries, Inc., 6 Denny Road, Suite 200, Wilmington, DE 19809; IKO Industries, Ltd., 1600 42 Ave SE, Calgary, AB T2G 5B5; www.IKO.com/innovi.

B. Roofing systems manufactured by others may be acceptable provided the roofing system is completely equivalent in materials and warranty conditions to the Basis of Design indicated.

2.2 TPO MEMBRANE

A. Membrane: Flexible, heat weldable sheet composed of thermoplastic polyolefin polymer, complying with ASTM D 6878, with polyester weft inserted reinforcement. Basis of Design: IKO Innovi TPO Membrane.

B. Membrane Thickness (nominal): 60 mil (1.52 mm)

C. Exposed Face Color: White

D. UL Listed and FM Approved.

E. Puncture Resistance: 265 lbf (1174 N), minimum, when tested in accordance FTM 101C Method 2031.

F. Solar Reflective Index: White: 94, minimum.

G. Attachment: Mechanically Attached with appropriate fasteners and plates.

H. Seams: Heat welded per Manufacturer's instructions.

2.3 TPO ROOFING ACCESSORIES

A. General:

1. Accessory materials supplied or recommended by Manufacturer for intended use and compatible with Manufacturer's membrane roofing system.
2. Volatile Organic Compounds: Liquids shall meet VOC content limits of the authorities having jurisdiction.

B. Reinforced Sheet Flashing: Manufacturer's scrim reinforced membrane with same thickness and color as sheet membrane. Basis of Design: IKO Innovi TPO Membrane .060 mil.

C. Non-reinforced Sheet Flashing: Manufacturer's unsupported membrane flashing with same color as sheet membrane. Basis of Design: InnoviFlash TPO Unsupported Flashing.

D. Primer: One-part penetrating primer solution to enhance the adhesion of roofing membranes and flashings. Basis of Design InnoviPrime TPO Primer-LVOC.

E. Membrane Flashings: Manufacturer's standard corner, curb, sealant pocket, pipe boot, scupper, joint covers, cover strips, and various other TPO flashings appropriate to the warranty term indicated above. Basis of Design: InnoviFlash TPO products.

F. Metal Termination Bars: Manufacturer's standard All-Purpose (AP) or predrilled stainless-steel or aluminum bars, with appropriate anchors by manufacturer. Basis of Design: InnoviFast Termination Bars, appropriate to substrate and warranty.

G. Fasteners & Plates: Manufacturer's standard fasteners and plates designed for fastening Manufacturer's membrane, insulation, cover board, termination bar, batten bar to substrate. Basis of Design: InnoviFast Fasteners and Plates, as appropriate to substrate and warranty.

H. Miscellaneous Roofing Accessories: Provide Manufacturer's other accessories required for full installation. Basis of Design: products for TPO roofing systems marketed by IKO as InnoviSeal, InnoviPrime, InnoviBoot, InnoviFlash, InnoviBond, InnoviTape, as appropriate to substrate, system, and warranty.

2.4 WALKWAY PADS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads sourced from membrane roofing system manufacturer. Basis of Design: InnoviStep TPO Walkway Pad.

2.6 ROOF INSULATION

A. Preformed polyisocyanurate roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated, in multiple layers: Reinforced Kraft Paper Facer

1. Reinforced Kraft Paper Facer Polyisocyanurate Foam Insulation. Basis of Design: IKOTherm Polyisocyanurate Insulation.

a. Compressive Strength: 20 psi per CAN/ULC S 704 and ASTM C 1289.
b. Provide insulation package in multiple layers (2), with maximum thickness per layer: 2.2".
c. Minimum Long-Term Thermal Resistance (LTTR): 5.7 per inch determined in accordance with CAN/ULC S770 at 75ºF (24ºC)
d. Attachment: Mechanically through-fastened

2.8 WOOD NAILERS

A. Wood Nailers: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."

PART 3 – INSTALLATION

3.1 GENERAL

A. Applicator must submit a Warranty Application to Manufacturer as notification that this project requires Manufacturer's warranty.

B. Install all components 7of the specified roofing system in accordance with Manufacturer's published instructions, detail drawings, and recommendations for the specified roofing system.

1. Maintain copies, in either written or electronic form, of Manufacturer's applicable instructions, detail drawings, and installation recommendations at project site for duration of installation period.
2. Where Manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards.

C. Comply with applicable federal, state, and local regulations.

D. Perform work using competent and properly equipped personnel.

E. Consult Manufacturer's instructions, Product Data Sheets, product labels, and Safety Data Sheets (SDS) for specific safety instructions. Always keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

F. Temporary closures and night seals, made to ensure that moisture does not infiltrate or damage any completed section of the specified roofing system, are the responsibility of the applicator. All temporary enclosure measures must subsequently be fully completed to provide a watertight condition, including completion of flashings and terminations.

G. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice. Never apply roofing membrane and/or system components during inclement weather or when ambient conditions will not allow proper application. Never use sealants, primers, and adhesives when material temperature is outside the range of 60 to 80 degrees F (15 to 25 degrees C), or any ranges provided on the Manufacturer's product data sheets.

H. Consult and follow all Manufacturer recommendations for Cold Weather Installation procedures.

I. It is the applicator's responsibility to take all appropriate measures to protect adjacent construction, property, vehicles, and persons from damage related to their roofing work, and to repair or restore damage caused by their roofing work, including but not limited to:

   1. Protection from spills and overspray from bitumen, adhesives, sealants and coatings.
   2. Protection of metal, glass, plastic, and painted surfaces within the range of wind-borne overspray.

J. Keep materials in their original containers as labeled by the Manufacturer until ready for use.

K. Protect all completed areas of work from all traffic, including traffic by other trades.

3.2 EXAMINATION

A. Verify that all decks, roofing surfaces, and substrates are sufficiently flat, rigid, able to support the weights of staged materials and installers, ready to receive work, and properly slope to drains.

B. Ensure that site conditions are properly prepared for commencing with the roofing installation.

C. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.

D. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

E. Any unacceptable deck, site, surface, and substrate conditions should be brought to the attention of the General Contractor and Project Owner's Representative. Proceed with installation only after unsatisfactory deck or site conditions have been corrected.

F. Confirm that the specifications and detail drawings provided in the project documents are not in conflict with the roofing manufacturer's recommendations, instructions, and requirements for the type and term of warranty specified.

3.3 PREPARATION

A. 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.

B. Fill all surface voids in the immediate substrate that are greater than 1/4 inch (6 mm) wide with cut strips of IKOTherm or IKOTherm III insulation.

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

3.5 INSULATION BOARD INSTALLATION

A. Install insulation with attachment method(s) specified in PART 2.

B. Install only as much insulation as can be covered with the completed roofing system before the end of each day's work or prior to arrival of inclement weather. C. Install roof insulation in courses parallel to roof edges.

D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch (6 mm). Fill gaps greater than 1/4 inch (6 mm) with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch (6 mm).

E. Mechanical Fastening: Use appropriate fasteners and insulation plates. Engage fasteners through insulation into deck to depth and in pattern required by Manufacturer (see www.IKO.com/innovi for pattern requirements), or by Factory Mutual for the FM Class specified in PART 2, and whichever is more stringent.

3.6 SINGLE-PLY MEMBRANE INSTALLATION

A. Beginning at the low point of roof, unroll the TPO membrane over the substrate without stretch-

ing it, and allow the membrane to relax at least 30 minutes before installing. Increase the relax time in colder weather.

B. Always position all membrane panels and flashing materials so that they will shed water.

C. Install TPO membrane without wrinkles and gaps ("fishmouths") in the seams. Perform test welds of the membrane seams and laps in accordance with the Manufacturer's instructions and details.

D. Mechanically attached the TPO membrane to the substrate using appropriate fasteners and plates, and install edge securement ("base tie-ins") as required by Manufacturer.

E. Install all fasteners and plates in the seams where indicated by the membrane markings, and ensure that they are fully covered by the overlapping membrane.

1. Position fasteners as recommended by Manufacturer or in compliance with FM Class specified in PART 2, whichever is most stringent.
2. Properly engage fasteners in the deck with head flush with the countersunk portion of the seam plate.

F. Edge Securement: Secure membrane with appropriate fasteners at all locations where membrane terminates or goes through an angle change greater than 1 in 12 inches (1:12"), using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by 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. Ensure anchorage of the TPO membrane at the roof edges using ES-1 rated edge metal or other edge metal products accepted by Manufacturer.

3.7 FLASHING AND ACCESSORIES INSTALLATION

A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, in accordance with Manufacturer's recommendations, instructions, and details.

B. Metal Accessories: Install edge metal, including TPO Coated Metal, drip edges, gutters, 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 Manufacturer's instructions, recommendations, and detail drawings.
2. Remove any protective surface film immediately before installation.
3. Install water block sealant under edge metal per Manufacturer's instructions.
4. Flash using Manufacturer's recommended flashing product per Manufacturer's detail drawings corresponding with the type and term of warranty specified, unless otherwise indicated.
5. Install flashing material to cover the edge metal products per Manufacturer's instructions and detail drawings. Apply addition flashing material wherever needed to meet the Manufacturer's requirements.
6. Install an additional piece of self-adhesive flashing membrane over edge metal laps to the top of the metal piece; apply appropriate TPO sealant at all intersections of flashing sections.
7. When the roof slope is greater than 1:12, apply appropriate TPO sealant along the back edge of the flashing.

C. Scuppers: Set in appropriate TPO sealant and secure to structure; flash as recommended by Manufacturer.

D. Roofing Expansion Joints: Install as shown on drawings and as recommended by Manufacturer.

E. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install Manufacturer's TPO flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing minimum 8 inches (200 mm) high above membrane surface.

1. Complete the splice on the horizontal before adhering flashing to the vertical surface.

2. Provide termination directly to the vertical substrate as shown on Manufacturer's detail drawings. F. Roof Drains:

1. Taper insulation around drains to promote water flow to drainage. Use tapered insulation whenever possible to improve slope to drains (slope not to exceed Manufacturer's or designer's recommendations).
2. Position membrane over substrate, then cut a hole for roof drain to allow for 0.5" to 0.75" (12 to 19 mm) of membrane to extend inside clamping ring past drain bolts.
3. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
4. Apply an entire tube of water stop mastic on top of drain bowl where clamping ring seats below the membrane
5. Install the roof drain clamping ring and clamping bolts; tighten all clamping bolts in order to achieve constant compression.

G. Flashings at Penetrations: All penetrations through the membrane must be completely flashed and sealed directly to the penetration.

1. Pipes, Round or Square Supports, and similar penetrations: Flash with specified pre-molded TPO pipe flashings wherever practical; otherwise use specified self-curing flashing, if allowed for warranty type and term.
2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration sealant pocket at least 2 inches (50 mm) deep, with at least 1 inch (25 mm) clearance from penetration, sloped to shed water.
3. Structural Steel Tubing: If corner radii are greater than 1/4 inch (6 mm) and longest side of tube does not exceed 12 inches (305 mm), flash as for pipes; otherwise, provide a standard curb with flashing.
4. Flexible and Moving Penetrations: Provide weathertight gooseneck set in sealant and secured to deck, flashed as recommended by Manufacturer.

3.8 WALKWAY PADS

A. Install walkway pads at all access points to the roof, around rooftop equipment that may require maintenance, and wherever indicated on the project drawings and documents. B. Unroll walkway pad and allow the pad to relax prior to installation.

C. Install walkway pad in maximum 10' (3 m) long sections. Leave minimum 1.0" (26 mm) space between each section to allow for proper drainage. Place each section of walkway pad so that it does not result in ponding water.

D. Avoid applying the walkway pad over any TPO membrane seams.

E. Fully heat weld the perimeter of each section of walkway pad to the TPO membrane, leaving one or two 1.0" (26 mm) gaps in the weld at the low (downslope) side of the pad to allow for moisture to escape.

3.9 FIELD QUALITY CONTROL

A. Inspections by Manufacturer: Provide for an inspection of the roofing system for warranty purposes by an IKO Field Service Technician; Technician will issue a punch list indicating any items which must be corrected prior to issuance of Manufacturer's warranty.

B. Roofing applicator will perform all corrections necessary for issuance of warranty.

3.10 CLEANING

A. Clean all contaminants generated by roofing work from building and surrounding areas, including any 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 non-roofing components and surfaces.

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

3.11 ONGOING CONSTRUCTION TRAFFIC AFTER ROOFING INSTALLATION

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

END OF SECTION

IKO Innovi™ TPO Fully Adhered Roofing System

Section 07 54 23

Thermoplastic Polyolefin (TPO) Membrane Roofing

LOWER ROOF AREA

PART 1 – GENERAL

1.1 SUMMARY

1. Furnish and install a Mechanically Attached thermoplastic polyolefin (TPO) membrane roofing system from a single-source manufacturer, for the Lower Roof Area, including:
    1. Roofing membrane manufacturer's requirements for the specified warranty.
    2. Setup safety stands around perimeter of roof.
    3. Setup fall protection before start of roofing application.
    4. Demo top layer of BUR material down to the lightweight concrete.
    5. Load new roof and prepare roof for installation.
    6. Adhere (1) layer of ½" DensDeck coverboard over concrete deck.
    7. Adhere 1 layer of TPO membrane (.060 mil) over DensDeck to manufacturers' specifications.
    8. Furnish and install new membrane flashings at perimeter walls, utilizing 24g slip flashing.
    9. Furnish and install new gutters and downspouts.
2. The roofing applicator is responsible to dispose of roofing-related demolition debris and construction waste. Manner of disposal must comply with applicable federal, state, provincial, and local regulations.
3. Comply with the published instructions regarding material handling, storage, and installation as provided by the roofing membrane manufacturer ("Manufacturer," hereafter), at www.IKO.com/COMM.
4. Commencement of work by the Contractor shall constitute their acknowledgement that this specification may be satisfactorily executed under the project conditions, and that they have met all pre-work requirements for warranty of the completed roofing system by the Manufacturer.
5. It is the roofing applicator's responsibility to read and comply with the entire specification for this section of the project's work. Failure to properly examine this specification and all other related project documents is not cause for any modification of the Contract Sum.

1.2 REFERENCES

1. Referenced Standards: These standards form part of this specification only to the extent they are referenced as specification requirements.

    1. ASTM C 1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer; 2009.
    2. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics; 2010.
    3. ASTM D 1004 - Standard Test Method for Initial Tear Resistance of Plastic Film and Sheeting; 2009.
    4. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing; 2011a.
    5. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

1.3 SUBMITTALS

1. Applicator Approval Verification: Submit letter or certificate from Manufacturer verifying applicator's status as an IKO Approved Applicator (IAAP) to install the specified roofing system for the warranty type and term indicated elsewhere in the specification.

2. Product Data:

    1. Submit Manufacturer's Product Data Sheets to show that all components of roofing system, including insulation, fasteners, plates, and all accessories necessary, comply with this specification.
    2 Submit Manufacturer's installation instructions. Wherever these instructions allow installation options, clearly indicate which option will be used by marking up the instructions.

1.4 QUALITY ASSURANCE

1. Applicator Qualifications: Roofing installer shall have the following:

    1. Current IKO Approved Applicator status.
    2. At least 5 years' experience in installation of TPO membrane systems.

1.5 DELIVERY, STORAGE AND HANDLING

1. Roofing products should be delivered to the job site in Manufacturer's original containers, dry, undamaged, with seals and labels intact and legible.

2. Store materials clear of the ground and moisture, and with weather protective covering.

3. Keep combustible materials well away from sources of ignition.

4. All materials should be stored in accordance with Manufacturer's recommendations

1.6 WARRANTY

1. The installed roofing system must comply with all warranty procedures required by Manufacturer, including warranty application and inspection procedures.

2. Warranty: Provide warranty coverage equal to the IKO 20 year] Diamond Shield Limited Warranty, covering membrane, roof insulation, and roofing accessories.

3. Scope of Coverage:

.1 Repair any leak in the roofing system caused by:

A. Manufacturing defect.

B. Defective workmanship used to install these materials.

C. Ordinary wear and tear of the elements.

D. Damage due to winds up to 55mph.

.2 Not Covered:

A. Damage due to hurricanes or tornadoes.

B. Damage due to hail.

C. Intentional damage.

D. Unintentional damage due to normal rooftop inspections, maintenance, or service.

E. Damage due to winds greater than 55mph.

F. Products not provided by IKO, unless where written approval by IKO is provided.

Part 2 PRODUCTS

2.1 MANUFACTURER

1. Basis of Design: IKO Innovi TPO Roofing System, by IKO Industries, Inc., 6 Denny Road, Suite 200, Wilmington, DE 19809; IKO Industries, Ltd., 1600 42 Ave SE, Calgary, AB T2G 5B5; www.IKO.com/COMM. Or approved equivalent.

2.2 TPO MEMBRANE

1. Use accepted materials meeting conditions of specified warranty/guarantee.

2. Membrane: Flexible, heat weldable sheet composed of thermoplastic polyolefin polymer, complying with ASTM D 6878, with polyester weft inserted reinforcement.

3. Membrane Thickness (nominal): 60 mil (1.52 mm)

4. Exposed Face Color: White

5. UL Listed and FM Approved, and tested in accordance with CSA A123.21.

6. Puncture Resistance: 265 lbf (1174 N), minimum, when tested in accordance FTM 101C Method 2031.

7. Solar Reflective Index: White: 94, minimum

8. Adhered membrane over adhered densdeck.

9. Seams: Heat welded per Manufacturer's instructions.

2.3 TPO ROOFING ACCESSORIES

1. General:

   1. Accessory materials supplied or recommended by Manufacturer for intended use and compatible with Manufacturer's membrane roofing system.
   2. Volatile Organic Compounds: Liquids shall meet VOC content limits of the authorities having jurisdiction.

2. Reinforced Sheet Flashing: Manufacturer's scrim reinforced membrane with same thickness and color as sheet membrane.

   1. Acceptable Material:
      .1 IKO Innovi TPO Membrane.

3. Non-reinforced Sheet Flashing: Manufacturer's unsupported membrane flashing with same color as sheet membrane.

   1. Acceptable Material:
      1. InnoviFlash TPO Unsupported Flashing.

4. Insulation Adhesive: Manufacturer's two-component Low-VOC (<5 g/L) urethane adhesive formulated to adhere roofing insulation to acceptable substrates.

   1. Acceptable Material:
      1. IKO Millennium Insulation Adhesive.

5. Membrane Adhesive: Manufacturer's [solvent based]_[Low VOC solvent based formulated to adhere membrane and flashings to acceptable substrates.

   1. Acceptable Material:
      1. InnoviBond TPO Membrane Adhesive] or approved equivalent

.6. Primer: One-part penetrating primer solution to enhance the adhesion of roofing membranes and flashings.

   1. Acceptable Material:
      1. InnoviPrime TPO Primer-LVOC or approved equivalent
      1. IKO Innovi TPO Membrane or approved equivalent

7. Membrane Flashings: Manufacturer's standard corner, curb, sealant pocket, pipe boot, scupper, joint covers, cover strips, and various other TPO flashings appropriate to the warranty term indicated above.

    1. Acceptable Material

        .1 IKO InnoviFlash TPO products or approved equivalent

8. Metal Termination Bars: Manufacturer's standard All-Purpose (AP) or Heavy Duty (HD) predrilled stainless-steel or aluminum bars, with appropriate anchors by manufacturer.

    1. Acceptable Material:

        1. IKO InnoviFast Termination Bars, appropriate to substrate and warranty or appr

9. Fasteners & Plates: Manufacturer's standard fasteners and plates designed for fastening Manufacturer's membrane, insulation, cover board, termination bar, batten bar to substrate

    1. Acceptable Material:

        1. IKO InnoviFast Fasteners and Plates, as appropriate to substrate and warranty or approved equivalent

2.4 Walkway Pads

1. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface textured walkway pads sourced from membrane roofing system manufacturer.

    1. Acceptable Material:

        1. IKO InnoviStep TPO Walkway Pad.

2.5 SUBSTRATE BOARD

1. Gypsum Board: ASTM C 1177, Heavy duty coated glass-mat facer, water-resistant gypsum substrate for fully adhered roof applications.
    1. Thickness: 1/2 inch (13 mm)
    2. Attachment: Adhered with Insulation Adhesive

Part 3 INSTALLATION

3.1 GENERAL

1. Applicator must submit a Warranty Application to Manufacturer as notification that this project requires Manufacturer's warranty a minimum of 2 weeks prior to job commencement.

2. Install all components of the specified roofing system in accordance with Manufacturer's published instructions, detail drawings, and recommendations for the specified roofing system.

    1. Maintain copies, in either written or electronic form, of Manufacturer's applicable instructions, detail drawings, and installation recommendations at project site for duration of installation period.
    2. Where Manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards.

3. Comply with applicable federal, state, and local regulations.

4. Perform work using competent and properly equipped personnel.

5. Consult Manufacturer's instructions, Product Data Sheets, product labels, and Safety Data Sheets (SDS) for specific safety instructions. Always keep all adhesives, sealants, primers, and cleaning materials away from all sources of ignition.

6. Temporary closures and night seals, made to ensure that moisture does not infiltrate or damage any completed section of the specified roofing system, are the responsibility of the applicator. All temporary enclosure measures must subsequently be fully completed to provide a watertight condition, including completion of flashings and terminations.

7. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice. Never apply roofing membrane and/or system components during inclement weather or when ambient conditions will not allow proper application.

8. Consult and follow all Manufacturer recommendations for Cold Weather Installation procedures.

9. It is the applicator's responsibility to take all appropriate measures to protect adjacent construction, property, vehicles, and persons from damage related to their roofing work, and to repair or restore damage caused by their roofing work, including but not limited to:

    1. Protection from spills and overspray from bitumen, adhesives, sealants, and coatings.
    2. Protection of metal, glass, plastic, and painted surfaces within the range of windborne overspray.
    3. Keep materials in their original containers as labeled by the Manufacturer until ready for use.
    4. Protect all completed areas of work from all traffic, including traffic by other trades.

3.2 EXAMINATION

1. Verify that all decks, roofing surfaces, and substrates are sufficiently flat, rigid, able to support the weights of staged materials and installers, ready to receive work, and properly slope to drains.

2. Ensure that site conditions are properly prepared for commencing with the roofing installation.

3. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.

4. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

5. Any unacceptable deck, site, surface, and substrate conditions should be brought to the attention of the General Contractor and Project Owner's Representative. Proceed with installation only after unsatisfactory deck or site conditions have been corrected.

6. Confirm that the specifications and detail drawings provided in the project documents are not in conflict with the roofing manufacturer's recommendations, instructions, and requirements for the type and term of warranty specified.

3.3 PREPARATION

1. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.

2. 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.

3. Fill all surface voids in the immediate substrate that are greater than 1/4 inch (6 mm) wide with cut strips of IKOTherm or IKOTherm III insulation.

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

5. Begin installation at the low point of the roof. Use chalk lines where necessary to ensure proper alignment. Note: If a drain is the lowest point, start here with the edge of the sheet bisecting the centerline of the drain.

3.4 INSULATION AND COVER BOARD INSTALLATION

1. Install only as much insulation as can be covered with the completed roofing system before the end of each day's work or prior to arrival of inclement weather.

2. Install roof insulation in courses parallel to roof edges ensuring boards are staggered as per manufacturers requirements.

3. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch (6 mm). Fill gaps greater than 1/4 inch (6 mm) with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch (6 mm).

4. Adhesive Attachment: Use appropriate insulation adhesive. Follow Manufacturer's requirements for bead spacing and/or spray pattern at www.IKO.com/COMM. Weight insulation boards during adhesive set-up period by using full buckets of adhesive or other material to ensure full contact of the adhesive to the boards.

3.5 SINGLE-PLY MEMBRANE INSTALLATION

1. Beginning at the low point of roof, unroll the TPO membrane over the substrate without stretching it, and allow the membrane to relax at least 30 minutes before installing. Increase the relax time in colder weather.

2. Always position all membrane panels and flashing materials so that they will shed water.

3. Install TPO membrane without wrinkles and gaps ("fishmouths") in the seams. Perform test welds of the membrane seams and laps in accordance with the Manufacturer's instructions and details.

4. Fully adhere the TPO membrane to substrate using Manufacturer's bonding adhesive, in accordance with published application rate and procedures. Note: Membrane adhesive should never be applied in the seam area; immediately clean any adhesive from these areas completely.

5. Edge Securement: Secure membrane with appropriate fasteners at all locations where membrane terminates or goes through an angle change greater than 1 in 12 inches (1:12"), using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by 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 Ensure anchorage of the TPO membrane at the roof edges using ES-1 rated edge metal or other edge metal products accepted by Manufacturer.

3.6 FLASHING AND ACCESSORIES INSTALLATION

1. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, in accordance with Manufacturer's recommendations, instructions, and details.

2. Metal Accessories: Install edge metal, including TPO Coated Metal, drip edges, gutters, gravel stops, and copings in locations indicated on the drawings, with horizontal let of edge member over membrane and flashing over metal onto membrane.

1. Follow Manufacturer's instructions, recommendations, and detail drawings.
2. Remove any protective surface film immediately before installation.
3. Install water block sealant under edge metal per Manufacturer's instructions.
4. Flash using Manufacturer's recommended flashing product per Manufacturer's detail drawings corresponding with the type and term of warranty specified, unless otherwise indicated.
5. Install flashing material to cover the edge metal products per Manufacturer's instructions and detail drawings. Apply addition flashing material wherever needed to meet the Manufacturer's requirements.
6. Install an additional piece of self-adhesive flashing membrane over edge metal laps to the top of the metal piece; apply appropriate TPO sealant at all intersections of flashing sections.
7. When the roof slope is greater than 1:12, apply appropriate TPO sealant along the back edge of the flashing.

3. Scuppers: Set in appropriate TPO sealant and secure to structure; flash as recommended by Manufacturer.

4. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install Manufacturer's TPO flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing minimum 8 inches (200 mm) high above membrane surface.

   .1 Complete the splice on the horizontal before adhering flashing to the vertical surface.

5. Provide termination directly to the vertical substrate as shown on Manufacturer's detail drawings.

6. Roof Drains:

   .1 Taper insulation around drains to promote water flow to drainage. Use tapered insulation whenever possible to improve slope to drains (slope not to exceed Manufacturer's or designer's recommendations).
   2. Position membrane over substrate, then cut a hole for roof drain to allow for 0.5" to 0.75" (12 to 19 mm) of membrane to extend inside clamping ring past drain bolts.
   3. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
   4. Apply an entire tube of water stop mastic on top of drain bowl where clamping ring seats below the membrane
   5. Install the roof drain clamping ring and clamping bolts; tighten all clamping bolts to achieve constant compression.

7. Flashings at Penetrations: All penetrations through the membrane must be completely flashed and sealed directly to the penetration.

1. Pipes, Round or Square Supports, and similar penetrations: Flash with specified pre-molded TPO pipe flashings wherever practical; otherwise use specified self-curing flashing, if allowed for warranty type and term.
2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration sealant pocket at least 2 inches (50 mm) deep, with at least 1 inch (25 mm) clearance from penetration, sloped to shed water.
3. Structural Steel Tubing: If corner radii are greater than 1/4 inch (6 mm) and longest side of tube does not exceed 12 inches (305 mm), flash as for pipes; otherwise, provide a standard curb with flashing.

   Flexible and Moving Penetrations: Provide weathertight gooseneck set in sealant and secured to deck, flashed as recommended by Manufacturer.

3.7 WALKWAY PADS

1. Install walkway pads at all access points to the roof, around rooftop equipment that may require maintenance, and wherever indicated on the project drawings and documents.
2. Unroll walkway pad and allow the pad to relax prior to installation.
3. Install walkway pad in maximum 10' (3 m) long sections. Leave minimum 1.0" (26 mm) space between each section to allow for proper drainage. Place each section of walkway pad so that it does not result in ponding water.
4. Avoid applying the walkway pad over any TPO membrane seams.
5. Fully heat weld the perimeter of each section of walkway pad to the TPO membrane, leaving one or two 1.0" (26 mm) gaps in the weld at the low (downslope) side of the pad to allow for moisture to escape.

3.8 FIELD QUALITY CONTROL

1. Inspections by Manufacturer: Provide for an inspection of the roofing system for warranty purposes by an IKO Field Service Technician; Technician will issue report indicating any items which must be corrected prior to issuance of Manufacturer's warranty.
2. Roofing applicator will perform all corrections necessary for issuance of warranty.

3.9 CLEANING

1. Clean all contaminants generated by roofing work from building and surrounding areas, including any bitumen, adhesives, sealants, and coatings.
2. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of non-roofing components and surfaces.
3. Remove all leftover materials, trash, debris, equipment from project site and surrounding areas.

3.10 ONGOING CONSTRUCTION TRAFFIC AFTER ROOFING INSTALLATION

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

Please Contact Brad Kilpatrick, Chief Maintenance Supervisor, with any questions or to schedule an inspection at (256) 264-3668.

SPECIAL INSTRUCTIONS TO BIDDERS:

(1) The contractor shall fill in all required blanks on the bid pricing form included herein.

(2) A bid bond in the amount of 5% of the total bid cost shall be included with each bid submitted, but not to exceed $10,000.00.

(3) A performance bond and payment bond each in the amount of 100% of the total bid price will be required within fifteen (15) days of the notice of award.

(4) Contractor shall submit with bid a copy of a certificate of insurance ($1.0 million minimum) and workman's compensation.

(5) The successful bidder shall begin work no later than 15 calendar days after date of notice to proceed.

(6) Work is to be completed within 30 calendar days.

(7) Should the contractor fail to complete the work within the time stipulated, a liquidated damage of $500.00 per calendar day shall be deducted from any monies due the contractor.

(8) The Contractor shall include in his/her bid price the cost for all materials, labor, equipment, and incidentals necessary for the work to be completed in-place.

(9) Payment will be made on a monthly basis for work completed. There will be retained five (5) percent of the amount of the work done and will be held until completion of all work and final acceptance by the Marshall County Commission. No further retainage will be held after 50 percent of work completed.

Upon completion of all work the contractor must give notice of completion of the project by advertising in a local newspaper, and a release of lien.

Advertisement must run for a period of four (4) consecutive weeks and provide the County with proof of advertising (affidavit) from the paper.

Upon completion and acceptance of all work, final payment will be made.

(10) The Contractor shall indemnify and save harmless Marshall County, Marshall County Commission, the officers and employees from all suits, actions, or claims of any character brought because of any injuries or damages received by any person, persons, or property on account of the said Contractor, or through use of unacceptable materials in constructing the work; or because of any claims or amounts arising or recovered under the "Workman's Compensation Act" or any other law, ordinance, order or decree.

(11) It shall be the bidder's responsibility to possess all proper City, County, State, and Federal licenses and shall familiarize himself with and shall comply with all Federal, State, and local laws, ordinances, and regulations.

(12) By signing this contract the contracting parties affirm, for the duration of the agreement that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

Each bidder is required to submit with the bid a certificate of E-Verify.

(13) Bids may be submitted either by mail or in person, however, Marshall County will not be responsible for the security of mailed bids. (Also, if mailing bid, please be advised that we do not receive mail before 10:00 A.M. daily, therefore mail early to ensure prompt arrival).

(14) By signing and submitting of this bid, the vendor certifies that he/she is an equal opportunity employer.

(15) Bidders are required to use this "Invitation For Bids". Bidders shall bid all items, sign, and return all sheets in the "Invitation For Bids" to ***Marshall County Engineering, 424 Blount Ave., Suite 305, Guntersville, AL 35976***. Failure to do so will be cause for rejection of bid.

(16) **Each individual bid must be submitted in a sealed envelope with the word "BID" and name of item marked on outside of envelope, along with the contractor's license number.**

* *

You are invited to bid on the above specifications. Any substitutes offered, other than the items specified, must include information showing that the substitute is of equal or better quality and equally or better suited for the purported use than the item specified. The right to reject any items or materials not of quality or under any provisions of this act is reserved.

THE MARSHALL COUNTY COMMISSION RESERVES THE RIGHT TO ACCEPT AND/OR REJECT ANY AND/OR ALL BIDS.

JAMES HUTCHESON, CHAIRMAN
MARSHALL COUNTY COMMISSION