

SECTION 07310

TAMKO® ELITE GLASS-SEAL THREE TAB SERIES FIBERGLASS ASPHALT SHINGLES



This three-part specification is for design professionals for use as a guide and must be edited to delete information and instructions not required on a particular project. Delete the "specifier notes" in red once the editing is completed. The design professional and not TAMKO is responsible for the final specification.

Rev 6/1/2016

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PART I GENERAL

1.01 SECTION INCLUDES

- A. Shingles – Granule surfaced asphalt shingle roofing
- B. Sheet membrane/Eave membrane – for eaves, valleys and ridges
- C. Shingle underlayments
- D. Roofing cements
- E. Attic Ventilation
- F. Nails
- G. Metal Flashing associated with shingle roofing

1.02 RELATED SECTIONS

Note: Delete sections below not relevant to this project

- A. Section 061000 – Rough Carpentry: Framing, wood decking, and roof sheathing
- B. Section 061500 – Wood Decking
- C. Section 071354 – Sheet Waterproofing
- D. Section 072600 – Vapor Retarders
- E. Section 076000 – Flashing and Sheet Metal: Sheet metal flashing not associated with shingle roofing; gutters and downspouts
- F. Section 077200 – Roof Accessories for Ridge Vents
- G. Section 086200 – Unit Skylights

1.03 REFERENCES

Note: Delete references below not relevant to this project

- A. American Society for Testing and Materials (ASTM) - Annual Book of ASTM Standards
 - 1. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 2. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 3. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - 4. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction.
 - 5. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials used as Steep Roofing Underlayment for Ice Dam Protection.
 - 6. ASTM D 3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan Induced Method).
 - 7. ASTM D 3462 - Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules.
 - 8. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
 - 9. ASTM D 4869 - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing.

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10. ASTM D 7158 - Standard Test Method for Wind-Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method).
11. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- B. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide
 1. UL 790 – Standard Test Methods for Fire Tests of Roof Coverings.
- C. Asphalt Roofing Manufacturers Association (ARMA)
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- E. National Roofing Contractors Association (NRCA)
- F. American Society of Civil Engineers (ASCE).
- G. Miami-Dade County
- H. Florida Building Code

1.04 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.05 SUBMITTALS

Note: Delete sections below not relevant to this project and delete show drawing paragraph unless unusual project conditions mandate shop drawings

- A. Product Data: Provide copies of manufacturer's product data information and samples for each type of roofing product.
- B. Manufacturers Application Instructions: Provide manufacturer's application instructions that indicate preparation required, installation procedures, and detail drawings.
- C. Shop Drawings: Provide drawings to indicate specially configured metal flashing, jointing methods and locations and installation details as required by project conditions indicated.

1.06 MANUFACTURER & CONTRACTOR QUALIFICATIONS

- A. Manufacturer Qualifications: Provide all primary roofing products, including shingles, underlayment, sheet membrane-eaves protection membrane, and ridge ventilation, offered by a single manufacturer.
- B. Installer Qualifications: Installer must be licensed or otherwise authorized by all federal, state and local authorities for installation of all roofing products to be installed under this section.

1.07 REGULATORY REQUIREMENTS

- A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.
- B. Install all roofing products in accordance with all applicable federal, state and local building codes.
- C. All work shall be performed in a manner consistent with current OSHA guidelines.

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1.08 PREINSTALLATION MEETING

Note: Delete sections below not relevant to this project

- A. General: Roofing Contractor to conduct a pre-installation meeting at the site prior to commencing work of this section. Require attendance of entities directly concerned with roof installation.
- B. Agenda: Installation procedures; safety procedures; coordination with installation and other work; availability of roofing materials; regulatory requirements; preparation and approval of substrate and penetrations through roof; and other items related to successful execution of work.
- C. Maintain one copy of manufacturer's application instructions on the project site.

1.09 DELIVERY, STORAGE, AND HANDLING

Note: Delete sections below not relevant to this project

- A. Deliver shingles and other materials to site in manufacturer's unopened labeled packaging. Promptly verify quantities and conditions. Immediately remove damaged products from site.
- B. Store all products in manufacturer's unopened, labeled packaging until they are ready for installation.
- C. Store bundles on a flat surface. Maximum stacking height shall not exceed TAMKO's recommendations. Store all rolls on end.
- D. Store and dispose of solvent-based materials in accordance with all applicable federal, state and local regulations.

1.10 WEATHER CONDITIONS

- A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with TAMKO® application instructions.
- B. Take special care when applying shingles in temperatures below 40 degrees F (4.4 degrees C) to avoid damage to the edges and corners of the shingles.
- C. Apply Moisture Guard®, TW Metal & Tile Underlayment and TW Underlayment only in fair weather and when air, substrate, and membrane temperatures are above 35 degrees F (1.66 degrees C) for Moisture Guard above 40 degrees F (4.4 degrees C) for TW Metal & Tile Underlayment and TW Underlayment.

1.11 LIMITED WARRANTY

SHINGLES BEGIN TO AGE AS SOON AS THEY ARE EXPOSED TO NATURE. BUILDING EXPERIENCE AGING FACTORS DIFFERENTLY, SO IT IS DIFFICULT TO PREDICT HOW LONG SHINGLES WILL LAST. THAT'S WHY TAMKO PROVIDES A LIMITED WARRANTY THAT INCLUDES A BINDING ARBITRATION CLAUSE AND OTHER TERMS AND CONDITIONS WHICH ARE INCORPORATED HEREIN BY REFERENCE. YOU MAY OBTAIN A COPY OF THE LIMITED WARRANTY AT TAMKO.COM OR BY CALLING 1-800-641-4691.

***Note: Choose Limited Warranty Option and delete sections not required ***

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IMPORTANT NOTE: THIS SECTION IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT SUPERCEDE, ALTER OR LIMIT THE LIMITED WARRANTY. Contact TAMKO® for a copy of the Limited Warranty and carefully read the Limited Warranty for complete and detailed limited warranty information

- A. **Manufacturer's Limited Warranty:** Provide to the owner a TAMKO Fiberglass/Asphalt Shingles Limited Warranty which includes a binding arbitration provision.
 - 1. TAMKO Elite Glass-Seal®: Fiberglass/Asphalt Shingle Limited Warranty, 25 year term, 5 Year Full Start. Available at TAMKO.com

PART II PRODUCTS

2.01 MANUFACTURERS

Note: Delete sections below not relevant to this project

- A. Acceptable Manufacturer: TAMKO® Building Products, Inc., 220 West 4th Street, Joplin, MO 64801. Toll Free: 1-800-641-4691.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted

2.02 SHINGLES

***Note: Select All Applicable Products and delete products not required ***

- A. **Elite Glass-Seal® Shingles:** Self-sealing, granule surfaced, asphalt shingle made with fiberglass mat, unique blends of granules, and Algae Relief – Algae Cleaning limited warranty coverage. Traditional self-sealing, square-tab design with a 5-1/8 inch exposure. UL Listed for Class A Fire Resistance (UL 790/E 108); UL Classified for Wind Resistance: ASTM D 3161, Class F and ASTM D 7158, Class H; UL Classified in accordance with ASTM D 3462 and ICC-ES Acceptance Criteria AC438; Florida Building Code Approved FL 18355; Texas Dept. of Insurance Listed; UL Evaluation Reports ER-2919-01 and ER-2919-02. Elite Glass-Seal® Fiberglass Asphalt Shingles, by TAMKO®.
 - 1. Color: As selected from manufacturer's full range of Colors.
 - 2. Color: _____
 - 3. Miami-Dade County Florida NOA: 11-0913.12 Expiration Date 04/11/2017 (Note: Frederick, Tuscaloosa production only or remove)

2.03 HIP & RIDGE SHINGLES

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Note: Select All Applicable Products and delete products not required

- A. **12-1/4" x 12" Hip & Ridge:** Self-sealing hip and ridge shingles complementing the color of selected roof shingle. UL Listed for Class A Fire Resistance (UL 790/E 108); UL Classified for Wind Resistance: ASTM D 3161, Class F; UL Classified in accordance with ASTM D 3462 and ICC-ES Acceptance Criteria AC438; Florida Building Code Approved FL 18355; UL Evaluation Reports; ER-2919-01 and ER-2919-02. Each bundle covers approx. 33 lineal feet (9.45 m) with a 5-1/8 inch (130.2 mm) exposure. 12-1/4" x 12" Hip & Ridge Shingles by TAMKO®.

2.04 STARTER STRIP

Note: Select All Applicable Products and delete products not required

- A. **TAMKO® 10 Inch Starter:** Self-sealing 10" x 40" starter shingle designed for all roof shingles. Each bundle covers approx. 100 lineal feet (30.48 m). TAMKO® 10 Inch Starter.
- B. **TAMKO® Shingle Starter:** Self-sealing 7" x 36" starter shingle designed for all roof shingles. Each bundle covers approx. 102 lineal feet (31.1 m). TAMKO® Shingle Starter.

2.05 SHEET MEMBRANES – EAVES MEMBRANE

Note: Select All Applicable Products and delete products not required

- A. **Moisture Guard® Ice & Rain Underlayment:** Self-adhering, fiberglass mat, rubberized asphalt ice and rain underlayment surfaced with fine mineral granules. UL Classified as a Prepared Roofing Accessory.
- a. **0.87 Square Roll** – Roll Coverage when applied according to instructions approx. 87.34 sq. ft. [±1.52 sq. ft.] (8.11 sq. m. [±0.14 sq. m.]), Roll Dimensions are 36" [±.07"] x 32'3" [±.05'] (91.44 cm. [±.17 cm.] x 9.83 m. [±.15m]) Roll Contains approx. 96.75 sq. ft. [±1.68 sq. ft.] (8.99 sq. m. [±0.16 sq. m.]). 55 mils thick. Moisture Guard® Ice & Rain Underlayment by TAMKO. Square equals 100 sq. ft.
- b. **1.74 Square Roll** – Roll Coverage when applied according to instructions approx. 174.69 sq. ft. [±1.52 sq. ft.] (16.23 sq. m. [±0.14 sq. m.]), Roll Dimensions are 36" [±.07"] X 64'-6" [±.50'] (.91.44 cm. [±.17 cm.] x 19.66 m. [±.15 m.]). Roll Contains approx. 193.5 sq. ft. [±1.68 sq. ft.] (17.98 sq. m. [±0.16 sq. m.]). 55 mils thick. Moisture Guard® Ice & Rain Underlayment by TAMKO. Square equals 100 sq. ft.
- B. **TW Metal & Tile Underlayment:** Self-adhering, fiberglass mat, rubberized asphalt sheet membrane surfaced with polymer film. UL Classified as a Prepared Roofing Accessory, ICC-ES ESR 1252, Florida Building Code Approved FL 12328.
- a. **1.79 Square Roll** – Roll Coverage when applied according to instructions approx. 179.73 sq. ft. [±2.95 sq. ft.] (16.70 sq. m. [±0.27 sq. m.]), Roll Dimensions are 39-3/8" [±7/16"] X 60' 11-1/2" [±3"] (1 m [±1.11 cm.]x 18.59 m[±.28 m.]). Roll Contains approx. 200.05 sq. ft. [±3.03 sq. ft.] (18.59 sq. m. [±0.28 sq. m.]). 75 mils thick. TW Metal & Tile Underlayment by TAMKO®. Square equals 100 sq. ft.

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- C. **TW Underlayment:** Self-adhering, non-reinforced, rubberized asphalt sheet membrane surfaced with polymer film. UL Classified as a Prepared Roofing Accessory, ICC-ES ESR 1252, Florida Building Code Approved FL 12328.
- a. **1.84 Square Roll** – Roll Coverage when applied according to instructions approx. 184.91 sq. ft. [± 2.97 sq. ft.] (17.18 sq. m. [± 0.28 sq. m.]), Roll Dimensions are 39-3/8" [$\pm 7/16$ "] X 61" [± 3 "] (1 m [± 1.11 cm.] x 18.59 m [$\pm .28$ m.]). Roll Contains approx. 200.05 sq. ft. [± 3.03 sq. ft.] (18.59 sq. m. [± 0.28 sq. m.]). 40 mils thick. TW Underlayment by TAMKO®. Square equals 100 sq. ft.

2.06 SHINGLE UNDERLAYMENTS

*****Note: Select All Applicable Products and delete products not required*****

- A. **Tam-Shield® Synthetic Underlayment:** Synthetic, non-asphaltic, woven, polypropylene constructed, non-breathable underlayment. Light grey surface. UL Classified as a Prepared Roofing Accessory, Florida Building Code Approved FL 14864 and ICC-ES ESR-3237.
- a. **4.68 Square Roll** – Roll Coverage when applied according to instructions approx. 468.75 sq. ft. [± 16.44 sq. ft.] (43.55 sq. m. [± 1.53 sq. m.]), Roll Dimensions are 48" x 125'-0" (1.21 m. x 38.10 m.). Roll Contains approx. 500.00 sq. ft. [± 17.38 sq. ft.] (46.45 sq. m. [± 1.61 sq. m.]). 10 mils thick. Tam-Shield® Synthetic Underlayment by TAMKO. Square equals 100 sq. ft.
- b. **9.37 Square Roll** – Roll Coverage when applied according to instructions approx. 937.50 sq. ft. [± 32.88 sq. ft.] (87.10 sq. m. [± 3.05 sq. m.]), Roll Dimensions are 48" X 250'-0" (1.21 m. x 76.20 m.) Roll Contains approx. 1000.00 sq. ft. [± 34.75 sq. ft.] (92.90 sq. m. [± 3.23 sq. m.]). 10 mils thick. Tam-Shield® Synthetic Underlayment by TAMKO. Square equals 100 sq. ft.
- B. **Synthetic Shield Underlayment:** Synthetic, non-asphaltic, woven, non-breathable underlayment. Black surface. UL Classified as a Prepared Roofing Accessory, Florida Building Code Approved FL 14864 and ICC-ES ESR-3237.
- a. **4.68 Square Roll** – Roll Coverage when applied according to instructions approx. 468.75 sq. ft. [± 16.44 sq. ft.] (43.55 sq. m. [± 1.53 sq. m.]), Roll Dimensions are 48" x 125'-0" (1.21 m. x 38.10 m.) Roll Contains approx. 500.00 sq. ft. [± 17.38 sq. ft.] (46.45 sq. m. [± 1.61 sq. m.]). 7 mils thick. Synthetic Shield® Underlayment by TAMKO. Square equals 100 sq. ft.
- b. **9.37 Square Roll** – Roll Coverage when applied according to instructions approx. 937.50 sq. ft. [± 32.88 sq. ft.] (87.10 sq. m. [± 3.05 sq. m.]), Roll Dimensions are 48" X 250'-0" (1.21 m. x 76.20 m.) Roll Contains approx. 1000.00 sq. ft. [± 34.75 sq. ft.] (92.90 sq. m. [± 3.23 sq. m.]). 7 mils thick. Synthetic Shield® Underlayment by TAMKO. Square equals 100 sq. ft.
- C. **Moisture Guard® Ice & Rain Underlayment:** Self-adhering, fiberglass mat, rubberized asphalt ice and rain underlayment surfaced with fine mineral granules. UL Classified as a Prepared Roofing Accessory.

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- a. **0.87 Square Roll** – Roll Coverage when applied according to instructions approx. 87.34 sq. ft. [± 1.52 sq. ft.] (8.11 sq. m. [± 0.14 sq. m.]), Roll Dimensions are 36" [± 0.7 "] x 32'3" [$\pm .05'$] (91.44 cm. [$\pm .17$ cm.] x 9.83 m. [$\pm .15$ m.]) Roll Contains approx. 96.75 sq. ft. [± 1.68 sq. ft.] (8.99 sq. m. [± 0.16 sq. m.]). 55 mils thick. Moisture Guard® Ice & Rain Underlayment by TAMKO. Square equals 100 sq. ft.
 - b. **1.74 Square Roll** – Roll Coverage when applied according to instructions approx. 174.69 sq. ft. [± 1.52 sq. ft.] (16.23 sq. m. [± 0.14 sq. m.]), Roll Dimensions are 36" [± 0.7 "] X 64'-6" [$\pm .50'$] (.91.44 cm. [$\pm .17$ cm.] x 19.66 m. [$\pm .15$ m.]). Roll Contains approx. 193.5 sq. ft. [± 1.68 sq. ft.] (17.98 sq. m. [± 0.16 sq. m.]). 55 mils thick. Moisture Guard® Ice & Rain Underlayment by TAMKO. Square equals 100 sq. ft.
- D. **TW Metal & Tile Underlayment:** Self-adhering, fiberglass mat, rubberized asphalt sheet membrane surfaced with polymer film. UL Classified as a Prepared Roofing Accessory, ICC-ES ESR-1252, and Florida Building Code Approved FL 12328.
- a. **1.79 Square Roll** – Roll Coverage when applied according to instructions approx. 179.73 sq. ft. [± 2.95 sq. ft.] (16.70 sq. m. [± 0.27 sq. m.]), Roll Dimensions are 39-3/8" [$\pm 7/16$ "] X 60' 11-1/2" [± 3 "] (1 m [± 1.11 cm.]x 18.59 m [$\pm .28$ m.]). Roll Contains approx. 200.05 sq. ft. [± 3.03 sq. ft.] (18.59 sq. m. [± 0.28 sq. m.]). 75 mils thick. TW Metal & Tile Underlayment by TAMKO®. Square equals 100 sq. ft.
- E. **TW Underlayment:** Self-adhering, non-reinforced, rubberized asphalt sheet membrane surfaced with polymer film. UL Classified as a Prepared Roofing Accessory, ICC-ES ESR-1252 and Florida Building Code Approved FL 12328.
- a. **1.84 Square Roll** – Roll Coverage when applied according to instructions approx. 184.91 sq. ft. [± 2.97 sq. ft.] (17.18 sq. m. [± 0.28 sq. m.]), Roll Dimensions are 39-3/8" [$\pm 7/16$ "] X 61" [± 3 "] (1 m [± 1.11 cm.]x 18.59 m [$\pm .28$ m.]). Roll Contains approx. 200.05 sq. ft. [± 3.03 sq. ft.] (18.59 sq. m. [± 0.28 sq. m.]). 40 mils thick. TW Underlayment by TAMKO®. Square equals 100 sq. ft.
- F. **TAMKO No. 15 ASTM D 4869:** No. 15 asphalt saturated organic felt. Tested by an independent laboratory for compliance with ASTM D-4869 Type I. UL Classified as a Prepared Roofing Accessory.
- a. **4.08 Square Roll** – Roll Coverage when applied according to instructions approx. 408 sq. ft. [± 4.41 sq. ft.] (37.9 sq. m. [± 0.41 sq. m.]), Roll Dimensions are 36" X 144' (.91 m. x 43.89 m.). Roll Contains approx. 432.00 sq. ft. [± 4.49 sq. ft.] (40.13 sq. m. [± 0.42 sq. m.]). TAMKO No. 15 ASTM D 4869 asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.
- G. **TAMKO No. 30 ASTM D 4869:** No. 30 asphalt saturated organic felt. Tested by an independent laboratory for compliance with ASTM D-4869 Type I or III. UL Classified as a Prepared Roofing Accessory.
- a. **2.04 Square Roll** – Roll Coverage when applied according to instructions approx. 204 sq. ft. [± 2.44 sq. ft.] (18.95 sq. m. [± 0.23 sq. m.]), Roll Dimensions are 36" X 72' (.91 m. x 21.95 m.). Roll Contains approx. 216.00 sq. ft. [± 2.49 sq. ft.] (20.07 sq. m. [± 0.23 sq. m.]).

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m.)). TAMKO No. 30 ASTM D 4869 asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.

- H. **TAMKO No. 15 ASTM:** No. 15 asphalt saturated non-perforated, organic felt. Tested by an independent laboratory for compliance with ASTM D-226 Type I. UL Classified as a Prepared Roofing Accessory and Florida Building Code approved.
- a. **4.08 Square Roll** – Roll Coverage when applied according to instructions approx. 408 sq. ft. [± 4.41 sq. ft.] (37.9 sq. m. [± 0.41 sq. m.]), Roll Dimensions are 36" X 144' (.91 m. x 43.89 m.). Roll Contains approx. 432.00 sq. ft. [± 4.49 sq. ft.] (40.13 sq. m. [± 0.42 sq. m.]). TAMKO No. 15 ASTM asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.
- I. **TAMKO No. 30 ASTM:** No. 30 asphalt saturated non-perforated, organic felt. Tested by an independent laboratory for compliance with ASTM D-226 Type II. UL Classified as a Prepared Roofing Accessory and is Florida Building Code approved.
- a. **2.04 Square Roll** – Roll Coverage when applied according to instructions approx. 204 sq. ft. [± 2.44 sq. ft.] (18.95 sq. m. [± 0.23 sq. m.]), Roll Dimensions are 36" X 72' (.91 m. x 21.95 m.). Roll Contains approx. 216.00 sq. ft. [± 2.49 sq. ft.] (20.07 sq. m. [± 0.23 sq. m.]). TAMKO No. 30 ASTM asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.
- J. **TAMKO No. 15 UL:** No. 15 asphalt saturated non-perforated, organic felt. Tested by an independent laboratory for compliance with ASTM D-226 Type I. UL Classified as a Built-up Type 15 Felt and Florida Building Code approved.
- a. **4.08 Square Roll** – Roll Coverage when applied according to instructions approx. 408 sq. ft. [± 4.41 sq. ft.] (37.9 sq. m. [± 0.41 sq. m.]), Roll Dimensions are 36" X 144' (.91 m. x 43.89 m.). Roll Contains approx. 432.00 sq. ft. [± 4.49 sq. ft.] (40.13 sq. m. [± 0.42 sq. m.]). TAMKO No. 15 UL asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.
- K. **TAMKO No. 30 UL:** asphalt saturated non-perforated, organic felt. Tested by an independent laboratory for compliance with ASTM D-226 Type II. UL Classified as a Built-up Type 30 Felt and Florida Building Code approved.
- a. **2.04 Square Roll** – Roll Coverage when applied according to instructions approx. 204 sq. ft. [± 2.44 sq. ft.] (18.95 sq. m. [± 0.23 sq. m.]), Roll Dimensions are 36" X 72' (.91 m. x 21.95 m.). Roll Contains approx. 216.00 sq. ft. [± 2.49 sq. ft.] (20.07 sq. m. [± 0.23 sq. m.]). TAMKO No. 30 UL asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.
- L. **TAMKO No. 15 asphalt saturated organic felt:** UL Classified as a Prepared Roofing Accessory.
- a. **4.08 Square Roll** – Roll Coverage when applied according to instructions approx. 408 sq. ft. [± 4.41 sq. ft.] (37.9 sq. m. [± 0.41 sq. m.]), Roll Dimensions are 36" X 144' (.91 m. x 43.89 m.). Roll Contains approx. 432.00 sq. ft. [± 4.49 sq. ft.] (40.13 sq. m. [± 0.42 sq. m.]). TAMKO No. 15 asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.

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- M. **TAMKO No. 30 asphalt saturated organic felt:** UL Classified as a Prepared Roofing Accessory.
- a. **2.04 Square Roll** – Roll Coverage when applied according to instructions approx. 204 sq. ft. [± 2.44 sq. ft.] (18.95 sq. m. [± 0.23 sq. m.]), Roll Dimensions are 36" X 72' (.91 m. x 21.95 m.). Roll Contains approx. 216.00 sq. ft. [± 2.49 sq. ft.] (20.07 sq. m. [± 0.23 sq. m.]). TAMKO No. 30 asphalt saturated organic felt by TAMKO®. Square equals 100 sq. ft.
- N. **TAMKO SuperX 30® asphalt saturated non-perforated felt:** UL Classified as a Prepared Roofing Accessory.
- a. **2.04 Square Roll** – Roll Coverage when applied according to instructions approx. 204 sq. ft. [± 2.44 sq. ft.] (18.95 sq. m. [± 0.23 sq. m.]), Roll Dimensions are 36" X 72' (.91 m. x 21.95 m.). Roll Contains approx. 216.00 sq. ft. [± 2.49 sq. ft.] (20.07 sq. m. [± 0.23 sq. m.]). TAMKO SuperX 30® asphalt saturated felt by TAMKO®. Square equals 100 sq. ft.

2.07 ROOFING CEMENTS

*****Note: Select All Applicable Products and delete products not required*****

- A. **TAM-PRO® SBS Flashing Cements** have been tested by an independent laboratory for compliance with ASTM D 4586, Type I.
- B. **TAMKO® Tam-Seal® Adhesive** have been tested by an independent laboratory for compliance with ASTM D4586, Type I.
- C. **TAM-PRO® Plastic Roof Cements** have been tested by an independent laboratory for compliance with ASTM D 4586, Type I.
- D. **TAMKO® Plastic Roof Cements** have been tested by and independent laboratory for compliance with ASTM D4586, Type I.

2.08 ATTIC VENTILATION

*****Note: Select All Applicable Products and delete products not required *****

- A. RIDGE VENTS
 1. **TAMKO® Roll Vent® Continuous Ridge Vent:** Lightweight, rolled, shingle over ridge ventilation. Use in conjunction with eave/soffit ventilation products. Provides 18 sq. inches Net Free Ventilation Area per lineal foot (0.3 sq.m./m.). Each package contains 20 lineal feet (6.10 m.) or 50 lineal feet (15.2 m.) of vent. Hand-nail installation. Roll Vent® Continuous Ridge Vent by TAMKO®.
 2. **TAMKO® Rapid Ridge® Nail Gun-able Ridge Vent:** Lightweight, rolled, shingle-over ridge ventilation. Use in conjunction with eave/soffit ventilation products. Provides 12.5 sq. inches Net Free Ventilation Area per lineal foot (0.3 sq.m./m.). Each package contains 20 lineal feet (6.10 m.) or 50 lineal feet (15.2 m.) of vent. Nail-gun installed. Rapid Ridge® Nail Gun-able Ridge Vent by TAMKO®.
 3. **TAMKO® CoolRidge® Sectional Ridge Vent** or **TAMKO® CoolRidge® Filtered Sectional Ridge Vent:** Lightweight, sectional injection molded polypropylene shingle-over ridge

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ventilation. Use in conjunction with eave/soffit ventilation products. Provides 18 sq. inches Net Free Ventilation Area per lineal foot (0.3 sq.m./m.). Each package contains 48 lineal feet (14.6 m.) of vent. Each piece is 14-3/4" x 48", 12 pieces per bundle, 48 ft. per bundle. CoolRidge® Sectional Ridge Vent by TAMKO® or CoolRidge® Filtered Sectional Ridge Vent by TAMKO®.

4. **TAMKO® Xtractor Vent® XLP Turbo Continuous Ridge Vent:** Lightweight, rolled injection molded polypropylene shingle-over ridge ventilation. Use in conjunction with eave/soffit ventilation products. Provides 12 sq. inches Net Free Ventilation Area per lineal foot (0.3 sq.m. /m.). Each package contains 25 lineal feet (7.6 m.) of vent. Nail-gun installed. Xtractor Vent® XLP Turbo Continuous Ridge Vent by TAMKO®
 5. **TAMKO® Quick Vent Nail Gun-able Continuous Ridge Vent:** Lightweight, rolled, shingle over ridge ventilation. Use in conjunction with eave/soffit ventilation products. Provides 13.5 sq. inches Net Free Ventilation Area per lineal foot (0.01 sq.m. /m.). Each package contains 20 lineal feet (6.10 m.) or 50 lineal feet (15.24 m.) of vent. Nail-gun installation. Quick Vent Nail Gun-able Continuous Ridge Vent by TAMKO®.
- B. FASCIA AND SOFFIT /UNDER EAVE VENTS: Soffit vents as required to provide balanced ventilation in accordance with TAMKO ventilation requirements.
- C. SOLAR POWERED ATTIC VENTS: Solar powered low-profile ventilators that mount to the roof surface, curb, or inside the attic space directly behind the gable vent as required in accordance with ventilation requirements.

***Note: Select All Applicable Products and delete products not required ***

D. ROOF LOUVERS OR GABLE LOUVERS

***Note: Select All Applicable Products and delete products not required ***

1. Rooftop mounted louvers as required to help provide balanced ventilation in accordance with ventilation requirements.
2. Gable Louvers as required to help provide balanced ventilation in accordance with ventilation requirements.

2.09 NAILS

- A. Standard round wire, zinc-coated steel or aluminum; min 12 gauge, smooth, barbed or deformed shank, with heads 3/8 inch (9mm) to 7/16 inch (11mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through roof deck by at least 1/8 inch (3.18mm).

Note: For use with Tam-Shield Synthetic Underlayment or Synthetic Shield Underlayment Only*

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- B. Standard round wire, zinc-coated steel or aluminum; min 12 gauge, smooth, barbed or deformed shank, with 1 inch round plastic caps. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through roof deck by at least 1/8 inch (3.18mm).

2.10 METAL FLASHING

***Note: Select All Applicable Products and delete products not required ***

- A. 24 gauge hot-dip galvanized steel sheet, complying with ASTM A 653/A 653M, G90/Z275.
- B. 16-oz/sq. ft. (0.56mm) copper sheet, complying with ASTM B 370.
- C. 0.032-inch (0.8mm) aluminum sheet, complying with ASTM B 209.

PART III EXECUTION

IMPORTANT NOTE: THIS SECTION IS FOR INFORMATIONAL PURPOSES AND DOES NOT SUPERCEDE, ALTER OR LIMIT THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. For a copy of the applicable installation instructions for complete and detailed product installation information visit our web site at www.tamko.com or contact TAMKO at 800-641-4691.

3.01 EXAMINATION

- A. Examine substrates, areas and conditions, with installer present for compliance with requirements for installation tolerances and other conditions affecting performance.
 - 1. Examine roof sheathing to verify the sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 - 2. Verify that the substrate is dry, sound, clean, smooth, sloped for drainage, and completely anchored, and that provision has been made for flashings and penetrations through asphalt shingles.
- B. Proceed with installation only after unsatisfactory conditions have been corrected and roof deck has been properly prepared.
- C. If roof deck preparation is the responsibility of another installer, notify the architect or building owner of unsatisfactory preparation before proceeding.

3.02 PREPARATION

Note: Tear-Off Only

- A. Remove all existing roofing down to the roof deck.
- B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal, all holes over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.
- C. Replace damaged deck with new materials.
- D. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and shingle underlayment.

3.03 PREPARATION

Note: New Construction

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- A. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and shingle underlayment.
- B. At areas that receive eaves protection membrane, fill knotholes and cracks with latex filler.
- C. Install crickets on the upslope side of all chimneys in the north, any chimney wider than 24" (610mm), and on all roofs steeper than 6/12.

3.04 PREPARATION

*****Note: Recover Only*****

- A. Verify that the deck is structurally sound and free of deteriorated decking. All deteriorated decking shall be removed and replaced with new materials.
- B. Verify that the existing shingles are dry, sound, clean and smooth. All curled, buckled or loose tabs shall be nailed down or removed.

3.05 INSTALLATION OF TAMKO UNDERLAYMENTS

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- A. General:
 - 1. Install using methods recommended by the manufacturer in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
- B. Eaves:
 - 1. Install eaves edge metal flashing tight with fascia boards; lap joints 2 inches (51mm) and seal with plastic cement or high quality urethane sealant; nail at the top of the flange.
 - 2. In the north, and on all roofs between 2/12 and 4/12 (low slopes) install TAMKO® Moisture Guard, TW Metal & Tile Underlayment, or TW Underlayment up the slope from eaves edge a full 36 inches (914mm) or to at least 24 inches (610 mm) beyond the interior "warm wall". Lap ends 6 inches (152mm) and bond.
- C. Valleys:
 - 1. Install eaves membrane at least 36 (914mm) inches wide and centered on the valley. Lap ends 6 inches (152mm) and seal.
 - 2. Where valleys are indicated to be "open valleys", install metal flashing over TAMKO® Moisture Guard® or TW Metal & Tile Underlayment before TAMKO® underlayment is installed; DO NOT nail through the flashing. Secure the flashing by nailing at 18 inches (457 mm) on center just beyond edge of flashing so that nail heads hold down the edge.
- D. Hips and Ridges:
 - 1. Install TAMKO® Moisture Guard®, TW Metal & Tile Underlayment, or TW Underlayment along entire lengths. If ridge vents are to be installed, position the TW Metal & Tile Underlayment, or TW Underlayment so that the ridge slots will not be covered.
- E. Roof Deck:

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1. Install one layer of TAMKO® underlayment over the entire area not covered by TAMKO® Moisture Guard®, TW Metal & Tile Underlayment, or TW Underlayment at the eaves or valley. Install sheets horizontally so water sheds and nail in place.
 2. On roofs sloped at more than 4:12, lap horizontal edges at least 2 inches (51mm) and at least 2 inches (51mm) over eaves membrane.
 3. On roofs sloped between 2:12 and 4:12, lap horizontal edges at least 19 inches (482 mm) and at least 19 inches (482mm) over eaves membrane.
 4. Lap ends at least 4 inches (102 mm). Stagger end laps of each layer at least 36 inches (914 mm).
 5. Lap TAMKO® underlayment over TAMKO® Moisture Guard® or TW Metal & Tile Underlayment in valley at least 6 inches (152mm).
- F. Tam-Shield® Synthetic Underlayment or Synthetic Shield Underlayment Application
1. Install in accordance with TAMKO®'s instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
 2. Tam-Shield or Synthetic Shield shall be installed over a clean, dry deck.
 3. Install TAMKO® Moisture Guard®, TW Metal & Tile Underlayment or TW Underlayment at eaves, rakes, skylights, dormers and other vulnerable leak areas. Install TAMKO® Moisture Guard® or TW Metal & Tile Underlayment in valleys.
 4. Lay Tam-Shield® or Synthetic Shield over deck and overlap 3" (76mm) at side laps and 6" (152mm) at end laps.
 5. Follow the nail pattern as marked on the underlayment. Fasten at the fastener locations marked for all applications as solid circles. Fasteners on vertical and horizontal laps must be spaced 8" (203 mm) o.c. for Tam-Shield or 12" (305 mm) o.c. for Synthetic Shield.
 6. For high wind applications follow the nail pattern as marked on the underlayment. Fasten at the fastener locations marked for all applications as solid circles and fasten at the additional nail locations that are marked as dotted circles. For high wind application fasteners on vertical and horizontal laps must be spaced (4" (102 mm) o.c. for high wind areas).
 7. For slopes less than 4:12, a double application of Tam-Shield® or Synthetic Shield is required. See complete Tam-Shield® or Synthetic Shield installation instructions for more information at TAMKO.com.
- G. Penetrations:
1. Vent pipes: Install a 24 inch (610 mm) square piece of eaves membrane lapping over roof deck underlayment; seal tightly to pipe.
 2. Vertical walls: Install eaves membrane extending at least 6 inches (152mm) up the wall and 12 inches (305mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
 3. Skylights and roof hatches: Install eaves membrane from under the built-in counter flashing and 12 inches (305mm) on to the roof surface lapping over roof deck underlayment.
 4. Chimneys: Install eaves membrane around entire chimney extending at least 6 inches (152mm) up the wall and 12 inches (305mm) on to the roof surface. Lap the membrane over the roof deck underlayment.

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5. Rake Edges: Install metal edge flashing over eaves membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches (51mm) and seal with plastic cement; secure with nails.

3.06 INSTALLATION OF TAMKO STARTER SHINGLES

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A. General:

1. Install in accordance with TAMKO®'s application instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Refer to application instructions for the selected starter strip shingles.

B. Placement and Nailing:

1. For maximum wind resistance along rakes & eaves, install any TAMKO® starter strip containing sealant or cement shingles to underlayment and each other in a 4" (102mm) width of TAM-PRO SBS Flashing Cement, TAMKO Tam-Seal Adhesive, or TAMKO or TAM-PRO Plastic Roof Cement.
2. Place starter strip shingles 1/4" – 3/4" (6 – 19mm) over eave and rake edges to provide drip edge.
3. Nail approximately 1-1/2" – 3" (38 – 76mm) above the butt edge of the shingle.
4. Rake starter course should overlap eave edge starter strip at least 3" (76mm).

3.07 INSTALLATION OF TAMKO SHINGLES

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A. General:

1. Install in accordance with TAMKO®'s application instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Minimize breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4.44 degrees C).
3. Handle carefully in hot weather to avoid scuffing the surfacing, or damaging the shingle edges.

B. Placement and Nailing:

*****Note: Tear-Off or New Construction*****

1. Secure with nails per shingle per TAMKO®'s application instructions or local codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

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3. Nails must be driven flush with the shingle surface. Do not overdrive or under drive the nails.
4. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

C. Placement and Nailing:

Note: Recover

1. Beginning with the starter strip, trim shingles so that they "nest" within the shingle located beneath it. This procedure will yield a first course that is typically 3 inch (76mm) to 4 inch (102mm) rather than a fully exposed shingle.
2. Laterally, offset the new shingles from the existing keyways, to avoid waves or depressions caused by excessive dips in the roofing materials.
3. Using the bottom of the tab on existing shingles, align subsequent courses.
4. *Note: DO NOT install standard sized shingles (5 1/8 inch exposure) over metric (5 5/8 inch exposure) shingles, as it will overexpose the shingles and reveal the nails. Use standard alignment methods to assure proper shingle placement.
5. Secure with nails per shingle per TAMKO®'s instructions or local codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
6. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
7. Nails must be driven flush with the shingle surface. Do not overdrive or under drive the nails.
8. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

D. Valleys

Note: Choose a Method

1. Install valleys using the "open valley" method:
 - a. Snap diverging chalk lines on the metal flashing, starting at 3 inches (76mm) each side of top of valley, spreading at 1/8 inch per foot (9mm per meter) to the eaves.
 - b. Run shingles to chalk line.
 - c. Trim last shingle in each course to match the chalk line; do not trim shingles to less than 12 inches (305mm) wide.
 - d. Apply a 2 inch (51mm) wide strip of plastic cement under ends of shingles, sealing them to the metal flashing.
2. Install valleys using the "closed cut valley" method:
 - a. Run the first course of shingles from the higher roof slope across the valley at least 12 inches (305mm).
 - b. Run succeeding courses of shingles from the lower roof slope across the valley at least 12 inches (305mm) and nail not closer than 6 inches (152mm) to center of valley.
 - c. Run shingles from the upper roof slope into the valley and trim 2 inches (51mm) from the center line.

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3.08 INSTALLATION OF ATTIC VENTILATION

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- A. General
 - 1. Ventilation must meet or exceed current F.H.A., H.U.D. and local code requirements.
- B. Ridge / Soffit Ventilation
 - 1. Install ridge vent along the entire length of ridges:
 - 2. Cut continuous vent slots through the sheathing, stopping 6 inches (152mm) from each end of the ridge.
 - 3. On roofs without ridge board, make a slot 1 inch (25mm) wide, on either side of the peak (2 inch (51mm) overall).
 - 4. On roofs with ridge board, make two slots 1-3/4 inches (44.5mm) wide, one on each side of the peak (3 ½ inch (89mm) overall).
 - 5. Install ridge vent material along the full length of the ridge, including uncut areas.
 - 6. Butt ends of ridge vent material and join using roofing cement.
 - 7. Install eaves vents in sufficient quantity to equal or exceed the ridge vent area.
- C. Roof and Gable Louvers:
 - 1. Cut vent hole through sheathing as specified by the manufacturer for the type of vent to be installed.
 - 2. Install a 24 inch (610mm) square of Moisture Guard® or TW Metal & Tile Underlayment, centered around the hole for roof louvers
 - 3. Install according to manufacturer's instructions for flashing vent penetrations
 - 4. Install eave vents in sufficient quantity to equal or exceed the exhaust vent area, calculated as specified by manufacturer.
- D. Solar Powered Ventilators:
 - 1. Cut vent hole through sheathing as specified by the manufacturer for the type of vent to be installed.
 - 2. On rooftop applications, install a 36 inches (914mm) square of Moisture Guard® or TW Metal & Tile Underlayment, centered around the hole
 - 3. Install according to manufacturer's instructions for flashing vent penetrations
 - 4. Install eave vents in sufficient quantity to equal or exceed the exhaust vent area, calculated as specified by manufacturer
- E. Whole House Fans
 - 1. Install at desired locations in ceiling below attic space per manufacturer recommended location and application instructions.

3.09 PROTECTION

- A. Protect installed products from foot traffic until completion of the project.
- B. Any roof areas that are not completed by the end of the work day are to be protected from moisture and contaminants.

END OF SECTION

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