

## KING MANUFACTURING CORP. / STEEL KING CONSTRUCTION

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The following describes Steel King Construction's standard canopy component specifications:

### I. STRUCTURAL STEEL FRAMING

- A. Columns shall be fabricated from hollow structural sections (HSS) conforming to ASTM A500 Grade C, with a minimum yield strength of 50 ksi. ASTM A36 structural steel plate with a minimum yield strength of 36 ksi with pre-drilled bolt holes shall be used for column top and base plates. Plates shall have a minimum thickness of  $\frac{3}{4}$ ". Gussets shall be used as required. Columns shall be provided with electrical access openings, cover plates, conduits, and drains (as requested).
- B. Wide flange beams conforming to ASTM A992 with a minimum yield strength of 50 ksi shall be used as the primary roof-framing members. Other roof-framing members (channel, angles), if used, shall conform to ASTM with a minimum yield strength of 50 ksi. Bracing shall be designed as required. All structural steel framing shall have pre-drilled bolt holes and be shop fabricated for field assembly.
- C. Structural angle shall be A36 with a minimum strength of 36 ksi.
- D. Structural bolts shall conform to ASTM A325 High Strength bolts for Structural Steel Joints and be at least  $\frac{3}{4}$ " in diameter.
- E. Anchor bolts shall conform to F1554 G55 with a minimum strength of 55 ksi. The standard anchor bolt size shall be 1" diameter by 30" long with 24" embedment and a forged head. Anchor bolts shall be placed with a minimum projection of 6" above top of footing exposed thread. Double nuts and washers shall be provided with each anchor bolt, with one set to be used for leveling columns on anchor bolts.
- F. All structural steel framing members shall be cleaned to remove loose mill scale and other foreign matter.
- G. After cleaning, all members shall be given one shop coat of red-oxide rust-inhibitive primer with a thickness of 1 – 2 mils or one shop coat of white alkyd metal primer/finish with a thickness of 2 – 4 mils.

### II. DECK PANELS

- A. Roof deck panels shall conform to ASTM A653 Grade 40 steel with a minimum yield strength of 40 ksi and a G90 galvanized surface per ASTM A924.

- B. Panel profile shall be 3” depth by 16” width, 4” depth by 14” width, or 5” depth by 12” width, as required by design, using 0.038 20 gauge material thickness, interlocking together.
- C. Panels shall have a finish side with a full coat of a high gloss white polyester paint baked on over an epoxy primer. A white wash coat baked on over an epoxy primer shall protect the interior side of the panel.
- D. Panels shall be fastened to the bottom flange of the wide flange purlin beams with a welded-on drive clip system, which requires no fasteners through the panels.

### III. FASCIA SYSTEMS

- A. Standard Smooth vertical 18 gauge preformed steel panels shall conform to ASTM A653 Grade CS with a minimum yield strength of 25 ksi and a G60 Galvanized surface per ASTM A924. Panel shall be provided with a paint finish, in a size and color per owner’s requirements. King Manufacturing keeps a couple of pre-finished color choices in inventory.
- B. Prefinished fascia panels shall have a finish side with a full coat of a medium gloss polyester paint baked on over a polyester primer. A white wash coat baked on over a polyester primer shall protect the interior side of the panel.
- C. As an option, fascia panels can be painted in King Manufacturing’s facility any color, using an electrostatic paint system to apply durable, automotive-grade paint. Colors can be chosen from a chip-book or the owner can supply sample material to be custom-matched.
- D. As an option, Aluminum Composite Material (ACM) fascia, foam core, backlit, or branded 2D or 3D fascia systems can be ordered.
- E. Fascia framing (outriggers) shall be cold formed 20 gauge steel gussets conforming to ASTM A653 Grade CS with a minimum yield strength of 40 ksi and a G90 galvanized surface per ASTM A924. Frame spacing per design requirements, but not to exceed 48” on center.
- F. Fascia panels shall be protected throughout fabrication and transportation with a factory-applied removable film.
- G. Vertical seams shall be sealed from backside with angle closure attached by screws.
- H. 26 gauge G60 galvanized flashing shall be used as required by design.

### IV. GUTTERS

- A. Perimeter box fascia gutter and center gutter shall conform to ASTM A653 Grade 40 steel with a minimum yield strength of 40 ksi and a G90 galvanized surface per ASTM A924.
- B. Profile of perimeter box fascia gutter shall be 8” wide and 5” deep or 9” wide and 4” deep, using 20 gauge steel.
- C. Profile of center gutter shall be 12” wide and 3” deep, using 20 gauge steel.
- D. Gutters shall have a finish side coated with a full coat of polyester paint baked on over an epoxy primer. A white wash coat baked on over an epoxy primer shall protect the interior side of the gutter.

- E. Gutter leaders to column drain shall be 8" wide and tapered as required by design using 20 gauge steel.

## V. DRAINAGE

- A. External drains shall typically be either external 3"x2.25" square or 4"x3" square (.015) 29 gauge G60 galvanized steel painted white downspout. Larger drains shall be used where required for proper drainage. The site drainage system will be extended to the Pre-engineered Canopy.
- B. Collector boxes shall be provided to all canopies with round columns, skewed columns, or internal drainage systems. Collector boxes shall be fabricated from 12 gauge mild steel and welded to columns.
- C. Internal downspouts are available per the customer's request. When used, they shall be made of Schedule 40 PVC and run through the top of the column entering at a 3" inside diameter, meeting an adaptor within the column, and penetrating base of columns at a 4" inside diameter. Short 90 elbows shall be used at the top of the column and long 90 elbows shall be used at the base. Drains shall extend at least 4" away from column, and end with a smooth finish.
- D. General contractor is responsible for storm sewer work required to connect downspout systems into storm water system.

## VI. LIGHTS

- A. As an option, Steel King can supply and/or mount canopy light fixtures, but will not do so unless specified. Mount means to cut holes in decking and fasten light fixtures into place. Steel King can also mount a variety of other electrical systems, such as lighted fascia systems or logos.
- B. Steel King will not supply or install any wiring or conduit supplying power for any light fixtures or other electrical system. An electrician needs to be hired by the owner to perform those duties.

## VII. HARDWARE

- A. Structural bolts (ASTM A325) required for all field-bolted connections shall be provided.
- B. Cadmium-plated self-drilling metal screws shall be provided for all sheet metal connections.
- C. Deck panel-to-beam drive clips shall be provided to attach all deck pans to structural steel.
- D. Anchor bolts and templates shall be shipped to the customer prior to pouring of canopy footings in accordance with permit drawings. Labor and materials to place footings shall be by others.

## VIII. SEALANTS

- A. Exposed joints shall be sealed with a high-quality esthetic white silicone caulk, Spectrum 2. Other colors are available for image-specific criteria.

- B. Non-exposed joints shall be sealed with a high-quality white polyurethane water-tight sealant, vulkem.

#### IX. WARRANTIES

- A. Except for warranties relating to painted surfaces, a one-year warranty shall be provided for labor and material. Warranty includes workmanship relating to fabrication, installation, leaks, and material defects.
- B. A five (5) year warranty shall be provided to our factory-applied painted surfaces (of roof deck and fascia panels) and a twenty (20) year warranty shall be provided to surfaces painted outside of our facility (roof deck, gutters, and fascia panels) against peeling, checking, chipping, or cracking and all other finish-related defects.
- C. Components not manufactured by Steel King are warranted by the manufacturer and are separate from the Steel King warranty.