SECTION 05 45 26

METAL RESIDENTIAL DECK FRAMING

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\*\* NOTE TO SPECIFIER \*\* Fortress Framing Products; metal residential deck framing.
This section is based on the products of Fortress Framing Products, which is located at:1720 N. 1st St.Garland, TX 75040Toll Free Tel: 866-323-4766Email: [request info (todds@fortressbp.com)](https://arcat.com/rfi?action=email&company=Fortress%252BFraming%252BProducts&message=RE%253A%2520Spec%2520Question%2520(05450ffp)%253A%2520&coid=51263&spec=05450ffp&rep=&fax=)
Web: <https://fortressbp.com/framing>
 [ [Click Here](https://arcat.com/company/fortress-framing-products-51263) ] for additional information.
Evolution light-gauge steel framing is uniform and straight, so pieces are simple to square and won't twist, warp, rot, crack or burn like wood. The interlocking joist and ledger system lets you build sturdy, safe decks with less labor. Our powder-coated option offers increased corrosion resistance and a more finished look.
Why build a long-lasting deck on a wood frame with no warranty? The steel used in our Evolution framing is the same type large commercial projects rely on, so you can depend on its strength. And with a 25-year limited warranty, you can be confident your frame will be as durable as the deck it supports.
Whether you've chosen modern synthetic deck boards or expensive hardwoods, Evolution steel deck framing will support your investment for decades. Our framing works with any brand of deck boards, providing a strong foundation for years of cookouts, summer parties, sunset dinners and family fun.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Metal residential deck framing of the following types:
			1. Joists.
			2. S-Ledgers.
			3. Beams.
			4. Double beam tracks.
			5. Rim joists.
			6. Posts and post brackets.
			7. Brackets.
			8. Accessories.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
		2. Section 05 40 00 - Cold-Formed Metal Framing.
		3. Section 06 15 00 - Wood Decking.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
			1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
			2. ASTM A992 - Standard Specification for Structural Steel Shapes.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern and color.
		2. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.
			1. Drawings to be signed and sealed by a Design Professional, whose licensure is recognized by authorities having jurisdiction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as a standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	4. WARRANTY
		1. Manufacturer's Warranty: Provide manufacturer's standard limited warranty.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Fortress Framing Products, which is located at:1720 N. 1st St.Garland, TX 75040Toll Free Tel: 866-323-4766Email: [request info (todds@fortressbp.com)](https://arcat.com/rfi?action=email&company=Fortress%252BFraming%252BProducts&message=RE%253A%2520Spec%2520Question%2520(05450ffp)%253A%2520&coid=51263&spec=05450ffp&rep=&fax=);Web: <https://fortressbp.com/framing>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. METAL RESIDENTIAL DECK FRAMING
		1. Performance and Design Requirements:
			1. Designed for compatibility with all decking material that can span 12 or 16 inches (305 or 406 mm).
			2. Designed to resist 200 lb (90.7 kg) guard load for up to 42 inch (1067 mm) high rail posts.
		2. Basis of Design: Evolution; as manufactured by Fortress Framing, A Subsidiary of Fortress Building Products.
		3. Benefits:
			1. Easy to install.
			2. Straight, uniform pieces.
			3. Engineered to provide greater spans between supports.
			4. Compatible with any type or brand of decking.
			5. 25 year limited warranty.
			6. Low-maintenance and durability.
			7. Fire and insect resistant.
			8. Insecticide free.
			9. Recycled and recyclable.

\*\* NOTE TO SPECIFIER \*\* Evolution's Joists are a familiar shape that install quickly and easily with minimal fasteners. The steel joists will hold their shape, providing a perfectly flat deck surface that will not sag or warp over the life of your deck. Delete if not required.

* + 1. Joists:
			1. Material: Steel complying with ASTM A992.
				1. Minimum Yield Stress: 50,000 psi (344,738 kPa).
				2. Minimum Tensile Stress: 65,000 psi (448,159 kPa).

\*\* NOTE TO SPECIFIER \*\* Joists of 18 gauge are available. Contact manufacturer for more details.

* + - 1. Thickness: 16 gauge, 0.0625 inches (1.59 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - * 1. Finish: Galvanized.
				2. Finish: Powder coated. Color: Black Sand.
			1. Depth: 6 inches (152 mm).
			2. Width: 2 inches (51 mm).

\*\* NOTE TO SPECIFIER \*\* Delete length options not required.

* + - 1. Length: 12 feet (3658 mm).
			2. Length: 14 feet (4267 mm).
			3. Length: 16 feet (4877 mm).
			4. Length: 18 feet (5486 mm).
			5. Length: 20 feet (6096 mm).
			6. Length: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Joist Cap: Color: Black Sand.

\*\* NOTE TO SPECIFIER \*\* Evolution's S-Ledger is an engineered, interlocking design with the Ledger Bracket that eliminates the need for excessive fasteners and drastically speeds up installation. The "S" shape provides a sturdy, safe deck connection that will offer peace of mind for decades. The S-ledger is available with pre-punched, standard spacing options that simplify deck construction. Delete if not required.

* + 1. S-Ledgers:
			1. Material: Steel complying with ASTM A653.
				1. Minimum Yield Stress: 40,000 psi (275,790 kPa).
				2. Minimum Tensile Stress: 55,000 psi (379,212 kPa).

\*\* NOTE TO SPECIFIER \*\* Delete pre-punch spacing options not required.

* + - 1. Pre-Punch Spacing: 12 inches (305 mm) on center.
			2. Pre-Punch Spacing: 16 inches (406 mm) on center.
			3. Pre-Punch Spacing: Blank, no pre-punches.
			4. Height: 8 inches (203 mm).
			5. Width: 2 inches (51 mm).

\*\* NOTE TO SPECIFIER \*\* Delete length option not required.

* + - 1. Length: 12 feet (3658 mm).
			2. Length: 20 feet (6096 mm).
			3. Length: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - 1. Finish: Galvanized.
			2. Finish: Powder coated, Black Sand color.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Ledger Bracket: Used to attach joist to S-Ledger.

\*\* NOTE TO SPECIFIER \*\* Evolution's Beam has been engineered to achieve longer spans between supports, eliminating excessive posts and obstructed views. Delete if not required.

* + 1. Beams:
			1. Material: Steel complying with ASTM A653.
				1. Minimum Yield Stress: 40,000 psi (275,790 kPa).
				2. Minimum Tensile Stress: 55,000 psi (379,212 kPa).
			2. Thickness: 0.064 inch (1.6 mm) with 0.22 inch (5.6 mm) stiffeners.
			3. Height: 11 inches (279 mm).
			4. Width: 2 inches (51 mm).

\*\* NOTE TO SPECIFIER \*\* Delete length options not required.

* + - 1. Length: 8 feet (2438 mm).
			2. Length: 12 feet (3658 mm).
			3. Length: 16 feet (4877 mm).
			4. Length: 20 feet (6096 mm).
			5. Length: As detailed on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - 1. Finish: Galvanized.
			2. Finish: Powder coated. Color: Black Sand.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Beam Cap: To match beam finish.

\*\* NOTE TO SPECIFIER \*\* Used to connect two beams to create a double beam. Delete if not required.

* + 1. Double Beam Tracks: Pair of tracks, attach to top and bottom of beams to create double beam.
			1. Material: Steel complying with ASTM A653.
				1. Minimum Yield Stress: 40,000 psi (275,790 kPa).
				2. Minimum Tensile Stress: 55,000 psi (379,212 kPa).
			2. Material Thickness: 0.064 inch (1.6 mm).
			3. Width: 4 inches (102 mm).
			4. Length: 4 feet (1219 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - 1. Finish: Galvanized.
			2. Finish: Powder coated, Black Sand color.

\*\* NOTE TO SPECIFIER \*\* For design loading data refer to manufacturer's span and loading charts. Contact the manufacturer or go to manufacturer's website for more information.

* + 1. Design Loading:
			1. Allowable Deck Loading (psf/kPa): \_\_\_\_\_\_\_\_.
			2. Joist Spacing (ft-in/mm): \_\_\_\_\_\_\_\_.
			3. Joist Span (ft-in/mm): \_\_\_\_\_\_\_\_ support to support.
			4. Joist Cantilever Length (ft-in/mm): \_\_\_\_\_\_\_\_ support to support.
			5. Beam Span (ft-in/mm): \_\_\_\_\_\_\_\_.
			6. Beam Cantilever (ft-in/mm): \_\_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Evolution's Rim Joist incorporates the same pre-punched and non-punched system as the S-Ledger for consistent, quicker installation without the hassle. Evolution's Rim Joists provide a solution for any installation application, including an option for curved decks. The Rim Joist attaches to the joist with minimal fasteners and provides a perfectly flat surface to attach trim or fascia. Delete if not required.

* + 1. Rim Joists:
			1. Material: Steel complying with ASTM A992.
				1. Minimum Yield Stress: 50,000 psi (344,738 kPa).
				2. Minimum Tensile Stress: 65,000 psi (448,159 kPa).

\*\* NOTE TO SPECIFIER \*\* Delete pre-punch spacing options not required.

* + - 1. Pre-Punch Spacing: 12 inches (305 mm) on center
			2. Pre-Punch Spacing: 16 inches (406 mm) on center pre-punch spacing.
			3. Pre-Punch Spacing: Blank, no pre-punches.
			4. Height: 6 inches (152 mm).
			5. Width: 2 inches (51 mm).
			6. Length: 8 feet (2438 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - 1. Finish: Galvanized.
			2. Finish: Powder coated, Black Sand color.

\*\* NOTE TO SPECIFIER \*\* Evolution's steel post and brackets provide the perfect solution to support your deck. The black powder coated posts look great on their own or can be customized with the trim of your choice. Delete if not required.

* + 1. Posts and Post Brackets:
			1. Material: Steel complying with ASTM A992.
				1. Minimum Yield Stress: 50,000 psi (344,738 kPa).
				2. Minimum Tensile Stress: 65,000 psi (448,159 kPa).
			2. Size: 3-1/2 x 3-1/2 inches (89 x 89 mm).
			3. Length: 10 feet (3048 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - 1. Finish: Galvanized.
			2. Finish: Powder coated, Black Sand color.
			3. Brackets:

\*\* NOTE TO SPECIFIER \*\* Delete bracket options not required.

* + - * 1. Post to Pier Bracket: Secures post to concrete landing or pier.
				2. Single Beam to Post Bracket: Secures post to single beam.
				3. Double Beam to Post Bracket: Secures post to double beam.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Brackets:
			1. Material: Steel complying with ASTM A992.
				1. Minimum Yield Stress: 50,000 psi (344,738 kPa).
				2. Minimum Tensile Stress: 65,000 psi (448,159 kPa).
			2. Bracket Types:

\*\* NOTE TO SPECIFIER \*\* Delete bracket options not required.

* + - * 1. F-10 Bracket: Secures joist to beam when non-standard spacing is required and as a cap on the bottom of the S-Ledger. Material Thickness: 0.040 inches (1.0 mm).
				2. F-50 Bracket: Used with S-Ledger, joist, and blocking. Material Thickness: 0.064 inches (1.6 mm).
				3. Single Hanger Bracket: Secures joist to flush beam applications.
				4. Double Hanger Bracket: Secures double joist or creates a double carry beam.
				5. Ledger Bracket: Used with the S-Ledger and joist or fastened to a flush beam. Material Thickness: 0.079 inches (2.0 mm).
				6. 45 degree Bracket: Used with Blank S-Ledger when joist extends at an angle to keep standard spacing. Material Thickness: 0.079 inches (2.0 mm).
				7. Rim Joist Bracket: Inserts into joist at the end of the deck for attaching the Curved Rim Joist. Material Thickness: 0.052 inches (1.3 mm).

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - 1. Finish: Galvanized.
			2. Finish: Powder coated. Color: Black Sand.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessory options not required.

* + - 1. Blocking: Match spacing with S-Ledger for easy blocking of joist on a dropped beam.
				1. Material Thickness: 0.040 inches (1.0 mm).

\*\* NOTE TO SPECIFIER \*\* Delete blocking option not required.

* + - * 1. Blocking: 12 inches (305 mm) on center.
				2. Blocking: 16 inches (406 mm) on center.

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - * 1. Finish: Galvanized.
				2. Finish: Powder coated, Black Sand color.
			1. Straps: Match same spacing as S-Ledger for easy mid-span blocking applications.
				1. Material Thickness: 0.40 inches (10 mm).

\*\* NOTE TO SPECIFIER \*\* Delete strap option not required.

* + - * 1. Strap: 12 inches (305 mm) on center.
				2. Strap: 16 inches (406 mm) on center.

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + - * 1. Finish: Galvanized.
				2. Finish: Powder coated, Black Sand color.
			1. Screws: 3/4 inch (19 mm) self-drilling metal screws. Head coated in black.
			2. Touch-Up Paint: See "Cleaning and Protection" Article in PART 3 for additional detail.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
			1. Install blocking as required by manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Bend curved rim joists by hand.
	1. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
	2. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturer's recommendations.
		2. Remove all metal shavings and chips.
		3. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION