Metal Roof and Wall Systems

# PRODUCT EVALUATION REPORT
# CRAFTSMAN HB PANEL

**FLORIDA BUILDING CODE 7TH EDITION (2020)**
**FLORIDA PRODUCT APPROVAL**
**FL 11903.2-R4**
**ROOFING**
**METAL ROOFING**


**Prepared For:**
**MBCI, part of the Cornerstone Building Brands family.**
**14031 West Hardy**
**Houston, TX 77064**
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**This report consists of**
**Evaluation Report (3 Pages including cover)**
**Installation Details (6 Pages)**

**Report No. C2424-2**
**Date: 12.18.2020**

BALA SOCKALINGAM LICENSE No 62240 STATE OF FLORIDA PROFESSIONAL ENGINEER

12.18.2020

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|---|---|
| Manufacturer: | MBCI, part of the Cornerstone Building Brands family. |
| Manufacturing Locations: | Houston: 14031 West Hardy, Houston, TX 77064<br>Atlanta: 2280 Monier Ave., Lithia Springs, GA 30122<br>Adel: 1600 Rogers Road, Adel, GA 31620 |
| Product Name: | Craftsman HB |
| Panel Description: | Max. 16.5" wide coverage with 1-7/8" high corrugations. Panel sidelaps are locked together with 3/8" wide, 7/8" high snap-on battens. |
| Materials: | Panel and Batten: Min. 24 ga., 50 ksi steel. Galvanized coated steel (ASTM A653) or Galvalume coated steel (ASTM A792) or painted steel (ASTM A755). Corrosion resistant as per FBC 2020 Section 1507.4.3. |
| Deck Description: | Min. 19/32" plywood for new or existing constructions. All butt joints are sealed against leakage by using tape and/or caulk. Deck fastened with 8d x 2.5" long ring shank nails or #8 x 2" long wood screws at 6" o.c. in the field and edges. Designed by others and installed as per FBC 2020.<br>Or<br>Min. 22 ga., Grade 80 B-deck. The deck and its attachment to supports must be designed by other to carry the panel loads. Designed as per FBC 2020. |
| Underlayment: | For plywood deck, minimum underlayment as per FBC 2020 Section 1507.4.5.1 |
| Slope: | 3:12 or greater in accordance with FBC 2020 Section 1507.4.2. |
| Design Uplift Pressure: (Factor of Safety = 2) | -52.5 psf at clip spacing of 24" o.c. |
| Panel Attachment: | Panels will be fastened to plywood deck in accordance with UL Construction No. 282 and to steel deck in accordance with UL Construction No. 309. Panel clips are 1.875" high, 1.5" wide, 2" long one-piece clips fastened with one fastener to the deck. |
| Test Standards: | Roof assembly tested in accordance with UL580-06 ‘Uplift Resistance of Roof Assemblies. |
| Code Compliance: | The product described herein has demonstrated compliance with FBC 2020 Section 1507.4. |
| Product Limitations: | Design wind loads shall be determined for each project in accordance with FBC 2020 Section 1609 or ASCE 7-16 using allowable stress |

design. The maximum clip spacing listed herein shall not be exceeded. This evaluation report is not applicable in High Velocity Hurricane Zone. Fire classification is not within scope of this Evaluation Report. Refer to FBC 2020 Section 1505 and current approved roofing materials directory or ASTM E108/UL790 report from an accredited laboratory for fire ratings of this product.

Supporting Documents: UL580 Roof Deck Construction No. 282
UL580 Roof Deck Construction No. 309

# TGKX.282 - Roof Deck Constructions



## Roof Deck Constructions

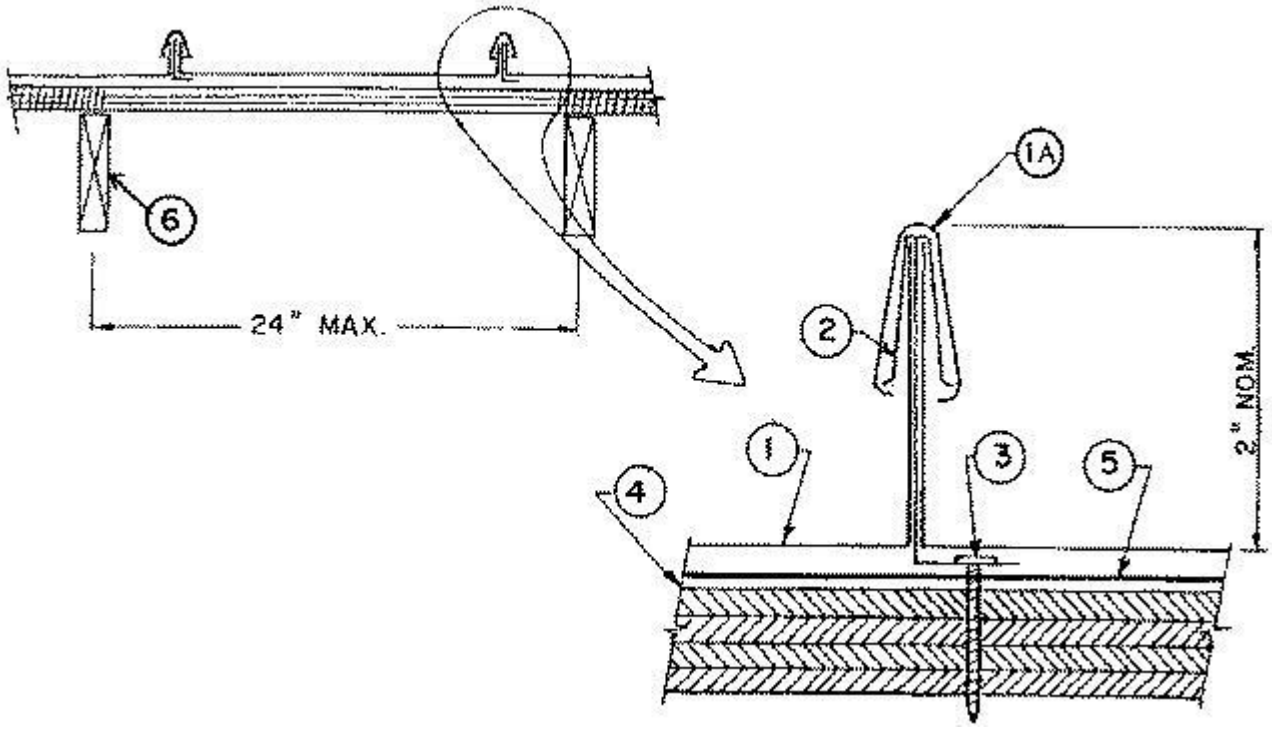
See General Information for Roof Deck Constructions

### Construction No. 282

November 21, 2005

### Uplift — Class 90

### Fire — Not Investigated



1. **Metal Roof Deck Panels* —** No. 24 MSG min coated steel. Max panel width 22-1/2 in. and rib height 1-7/8 in. Panels continuous over two or more spans. End-laps to occur adjacent to supports with panels overlapped 4 in. A line of sealant may be used at panel ends and side laps.
**CENTRAL TEXAS METAL ROLLFORMING INC** (View Classification) — "BATTLOC 200"

**MBCI** (View Classification) — "Craftsman Series HB"

**NCI BUILDING SYSTEMS L P** (View Classification) — "Craftsman Series HB"

**BEACON SALES ACQUISITION INC, DBA COASTAL METAL SERVICE** (View Classification) — "Classic Batten"

1A. **Metal Roof Deck Panels* —** (Battens) — Battens covering panel ribs and clips to be 3/8 in. wide and 7/8 in. high, formed from the same type and thickness material as that used to fabricate metal panels (Item 1).
**MBCI** (View Classification) — "Small Batten"

**NCI BUILDING SYSTEMS L P** (View Classification) — "Small Batten"

2. **Roof Deck Fasteners* —** (Panel Clips) — One piece clip, 1-7/8 in. high, 1-1/2 in. wide by 2 in. long. Clips are spaced max 24 in. OC, located at the panel sides with guide holes in bottom to accommodate screw fasteners (Item 3).
**NCI BUILDING SYSTEMS L P** (View Classification) — "HB Clip"

**BEACON SALES ACQUISITION INC, DBA COASTAL METAL SERVICE** (View Classification) — "Classic Batten Clip"

3. **Fasteners —** (Screws) — Screws used to attach the panel clips to plywood or OSB to be No. 10 by 1 in. long Pancake head wood screw with a No. 2 Phillips head size. One screw per clip.
Screws used to attach plywood or OSB substructure (Item 4) to wood trusses or joists (Item 6) to be No. 8 by 2 in. Bugle head screws. As an optional fastener, 2-1/2 in. long 8d common deformed shank nails may be used.

When light gauge structural steel joists are used, screws to be No. 12 by 1-5/8 in. long with a Phillips head.

Spacing of screws to be 6 in. OC at plywood or OSB ends and 12 in. OC at interior joists.

4. **Substructure (Plywood or OSB ) —** Plywood decking to be a nom 5/8 in. thick, exposure sheathing span C-D, 40/20 plywood or oriented strand board (OSB), nom 9/16 in. thick . (All butt joints to be sealed against leakage by using tape and/or caulk).

5. **Waterproof Membrane —** (Not Shown) — (Optional) — Used to protect plywood or OSB (Item 4). Installed under panels (Item 1).

6. **Joists —** Joists spaced at a max of 2 ft, 0 in. OC max, may be one of the following:

A. Nom 2 by 6 in. wood joists No. 2 or better.

B. Nom 2 by 4 in. wood when used on a top chord of a wood truss , No. 2 or better.

C. Light gauge structural steel framing with the member against the plywood or OSB to be a min No. 22 MSG coated steel.

7. **Insulation —** (Optional)(Not Shown) — Any compressible blanket insulation 3 in. max thickness before compression. Insulation to be sandwiched between substructure (Item 4) and joists (Item 6).
Refer to General Information, Roof Deck Construction, (Roofing Materials and Systems Directory) for Items Not Evaluated.

# * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2005-11-21

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The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

# TGKX.309 - Roof Deck Constructions

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

## Roof Deck Constructions

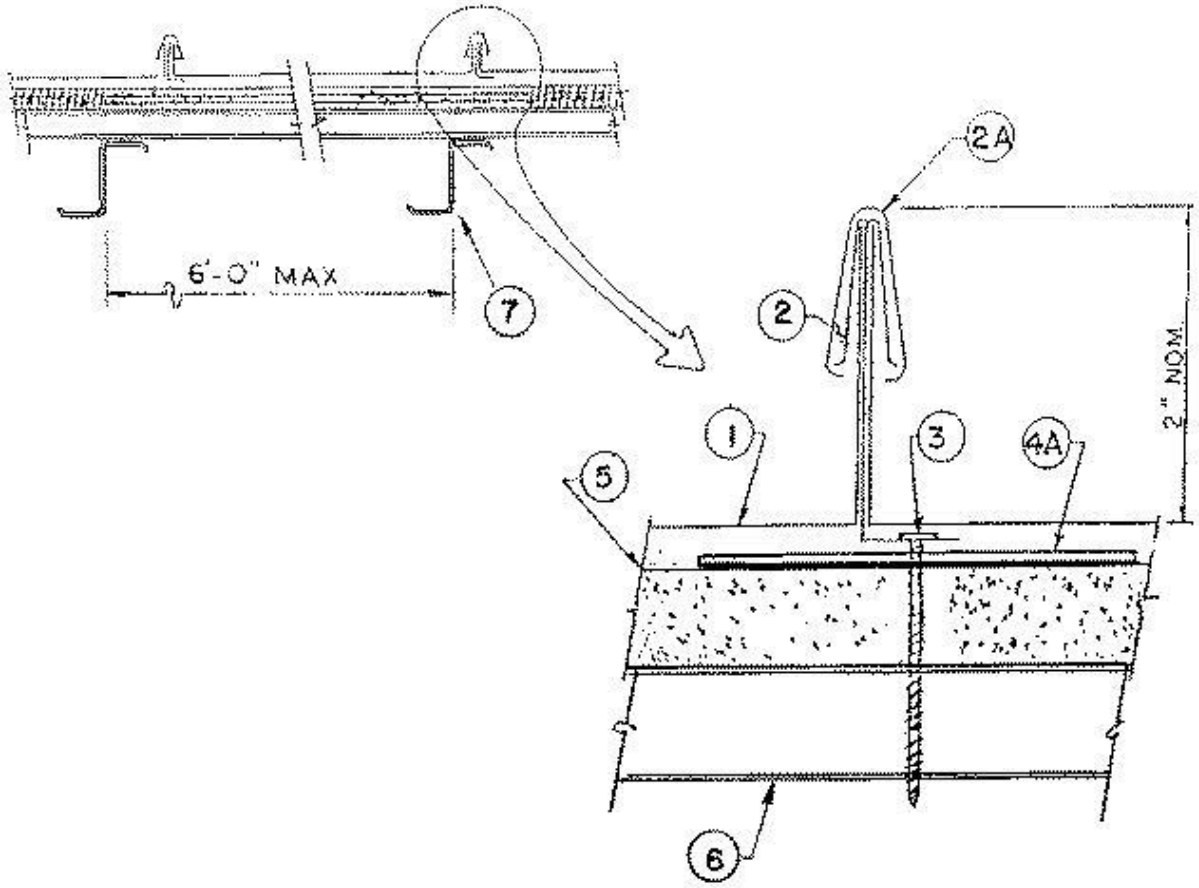
See General Information for Roof Deck Constructions

### Construction No. 309

November 21, 2005

### Uplift — Class 90

### Fire Not Investigated




1. **Metal Roof Deck Panels* —** 24 MSG min coated steel. Max panel width 16-1/2 in. and rib height 1-7/8 in. Endlaps to occur adjacent to supports with panels overlapped 4 in. min.
**CENTRAL TEXAS METAL ROLLFORMING INC** (View Classification) — "BATTLOC 200"

**MBCI** (View Classification) — "Craftsman Series HB".

**NCI BUILDING SYSTEMS L P** (View Classification) — "Craftsman Series HB"

**BEACON SALES ACQUISITION INC, DBA COASTAL METAL SERVICE** (View Classification) — "Classic Batten" .

1A. **Metal Roof Deck Panels* (Battens) —** Battens covering panel ribs and clips to be 3/8 in. wide and 7/8 in. high, formed from same type and thickness material as that used to fabricate metal panels (Item 1).
**MBCI** (View Classification) — "Small Batten" .

**NCI BUILDING SYSTEMS L P** (View Classification) — "Small Batten"

2. **Roof Deck Fasteners* (Panel Clips) —** One piece clip, 1-7/8 in. high, 1 in. wide by 2 in. long. Clips are spaced max 24 in. OC and located at panel sides. Guide holes in bottom of clip to accommodate screw fasteners (Item 4).
**NCI BUILDING SYSTEMS L P** (View Classification) — "HB Clip" .

**BEACON SALES ACQUISITION INC, DBA COASTAL METAL SERVICE** (View Classification) — "Classic Batten Clip" .

3. **Fasteners (Screws) —** Screws used to attach plywood or OSB substructure (Item 4) to metal deck to be No. 14 type with Phillips head. Fastener length to be min of 1/2 in. longer than total thickness of the plywood, insulation and metal deck. Spacing to be 6 in.

OC at plywood or OSB ends and 12 in. OC at 2 ft 0 in. pattern down length of plywood. (Total of 33 fasteners per 4 by 8 ft plywood sheet).
Screws used to attach panel clips to plywood or OSB to be No. 10 by 1 in. long pancake head wood screw with No. 2 Phillips head size. One screw per clip.

(Alternate — When bearing plates replace plywood or OSB ). Screws used to attach panel clips through bearing plate into metal deck to be No. 14 type with Phillips head. Fastener length to be min of 1/2 in. longer than the total thickness of the insulation and metal deck. One per clip. An optional No. 10 by 1 in. self-drilling fastener may be used to attach clip to the bearing plate when installer chooses to install rigid board insulation and use bearing plate to hold it in place until clips and panels are installed.

4. **Plywood or OSB —** (Optional) — (Not shown).
Min APA Rated plywood, exposure sheathing span C-D 40/20, nominal 1/2 in. thick or oriented strand board (OSB), nominal 7/16 in. thick, 4 x 8 ft. Sheets to be installed on top of Rigid Insulation (Item 5) in lieu of bearing plates (Item 4A ) to be used with rigid insulation (Item 5) max thickness 4 in.

4A. **Substructure —** Bearing Plates (Optional) — To be used in lieu of plywood or OSB (Item 4) with rigid insulation (Item 5) up to a max thickness of 6 in. Bearing plates to be 16 MSG min coated steel. Located under each clip (Item 2) for support.

5. **Rigid Insulation —** (Optional) — Foamed plastic, max thickness 4 in. when plywood or OSB (Item 4) is used 6 in. when bearing plates (Item 4A) are used. Compressive strength to be 2 PCF.

5A. **Gypsum Board —** (Optional) (Not Shown) — Any 5/8 in. thick gypsum wallboard supplied in sheets 2 x 4 to 4 x 12 ft. Applied perpendicular to steel deck direction with adhesive. End joints to occur over crests of steel roof deck and be staggered 2 ft. in adjacent rows. The total cumulative thickness of the rigid board (Item 5) and gypsum board may not exceed total thickness shown under Item 5.

5B. **Waterproof Membrane —** (Optional) (Not Shown) — Used to protect plywood or OSB (Item 4). Installed under panels (Item 1).

5C. **Vapor Barrier —** (Optional)(Not Shown) — Installed on top of metal deck (Item 6) or on top of gypsum wallboard (Item 5A) if used. Minimum 6 mil plastic sheet.

6. **Metal Deck —** 22 MSG min thickness coated steel. Min depth 1-1/2 in. with ribs at 6 in. OC. End lap to be 4 in. min and occur over purlin. Metal deck to be welded to purlin in every other low flute, except for end laps which are welded in every low flute.

7. **Purlin —** Min 14 MSG steel (55,000 psi min yield strength).

## * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2005-11-21