

UNLIMITED LENGTH STEEL DECK DIAPHRAGMS

WAREHOUSE ROOF STRUCTURES DESIGN INNOVATIONS

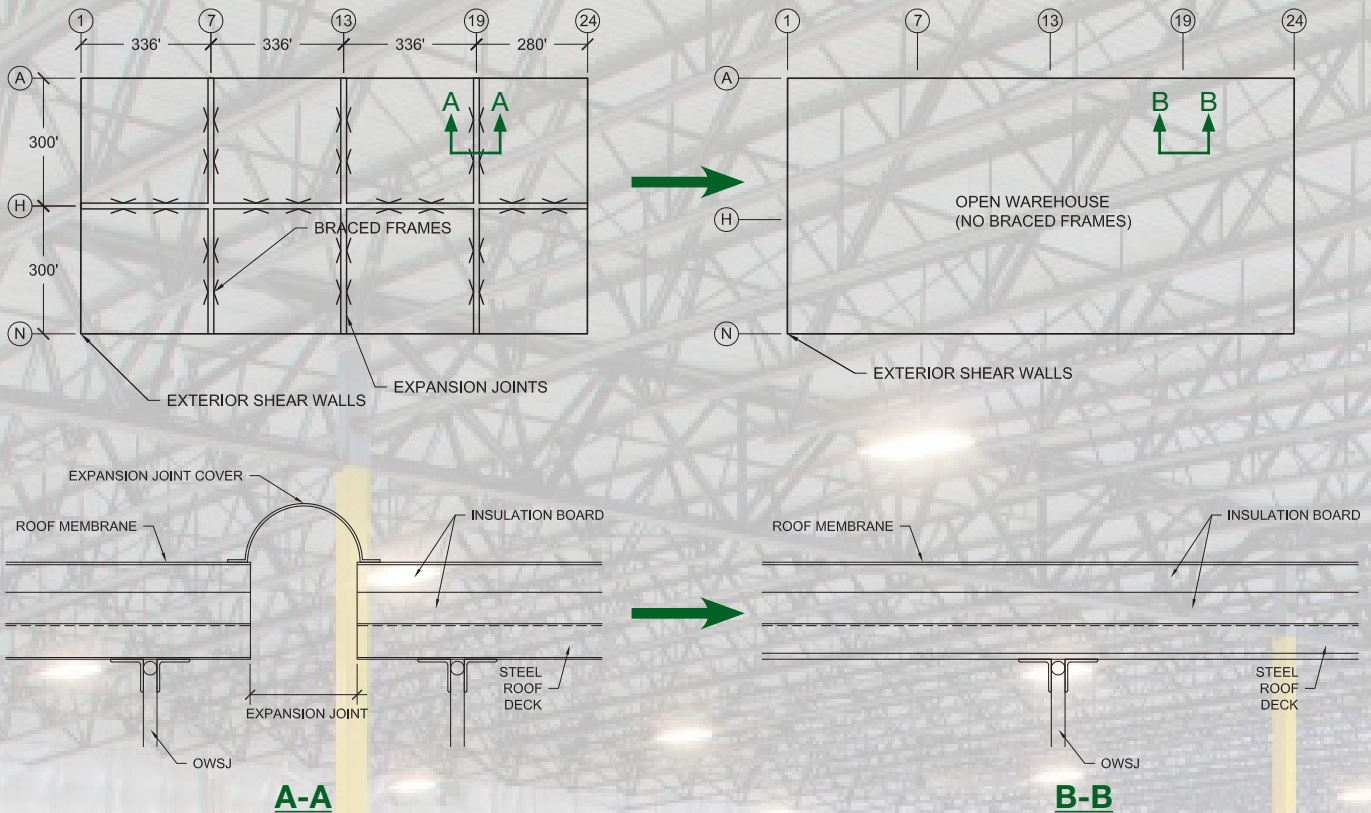
Deliver Increased Value On Your Next Warehouse Project

Eliminating Steel Deck Thermal Expansion Joints:

- Reduces Design Effort
- Improves Interior Space Utilization
- Increases Customer Satisfaction
- Simplifies Project Erection

By:

- Eliminating Interior Braced Frames
- Eliminating Leak-Prone Interruptions in Roof Membranes



Design roofs free from steel deck thermal expansion joints thru the inherent ductility of the Verco PunchLok® II System in combination with Hilti PAFs as recognized in IAPMO UES ER-2018. Specify these market proven components to simplify project erection:

- Verco Roof Deck with PunchLok® II Sidelap Connections,
- Attached to Vulcraft OWSJ with Hilti X-HSN 24 or X-ENP-19 PAFs

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Excerpt from IAPMO UES Evaluation Report ER-2018

STEEL ROOF DECK DIAPHRAGM LENGTH FOR DIFFERENTIAL THERMAL EFFECTS

The length, L, and width, b, of the roof diaphragm, in accordance with the definition sections of the IBC or ASCE 7, including the steel roof deck, support members (framing), chords and collectors shall be permitted to be of unlimited length between joints for differential thermal expansion or contraction (thermal expansion joints) provided the following conditions exist:

- a. Vertical Load system, including the vertical lateral force resisting system, does not have Building Separation Joints, Seismic Joints, Expansion joints or similar joints that interrupt the diaphragm chord with respect to the area of the diaphragm under consideration.
- b. Wall systems, both perimeter and interior, to be constructed as continuous walls, individual wall panels, or wall segments. Individual wall panels or wall segments are permitted to be precast concrete walls, site cast concrete walls, tilt-up concrete walls, masonry walls with or without crack control joints, stud wall system with or without crack control joints, or wind girt framed wall systems with or without crack control joints. A combination of these systems may be used. See Figures A and B.
- c. Diaphragm has continuous chord members and a positive load path capable of transferring diaphragm forces between the diaphragm and the Vertical Lateral Force Resisting System.
- d. Steel Roof Deck Diaphragm is covered by a roofing membrane system; deck is not directly exposed to sun or elements in final occupied condition.
- e. Steel roof deck support members consists of one or a combination of the following.
 1. Vulcraft Open Web Steel Joists and Joist Girders in accordance with SJI-100.
 2. Structural Steel members in accordance with AISC 360.
 3. Cold-Formed Steel members in accordance with AISI S100.
 4. Bearing walls.
- f. Steel Roof Deck Diaphragm Attachment:
 1. Sidelap Connection: PunchLok II System with VSC2 sidelap connections.
 2. Connection to Supports: Hilti X-HSN 24 or X-ENP-19 Power Actuated Fasteners.

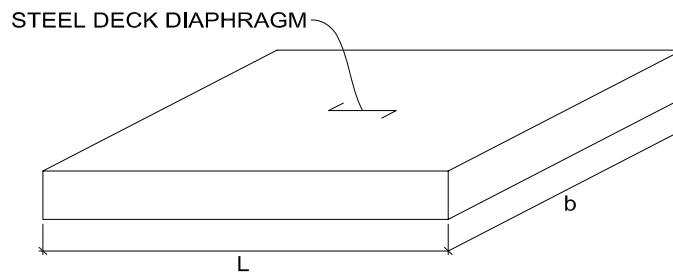


Figure A: Structure with Continuous Walls

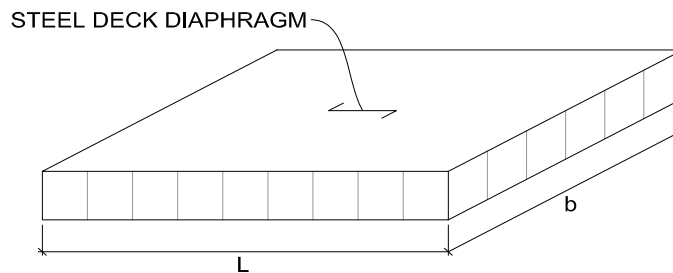


Figure B: Structure with Individual Wall Panels or Wall Segments

See Vercodeck.com for current report

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