Anchors

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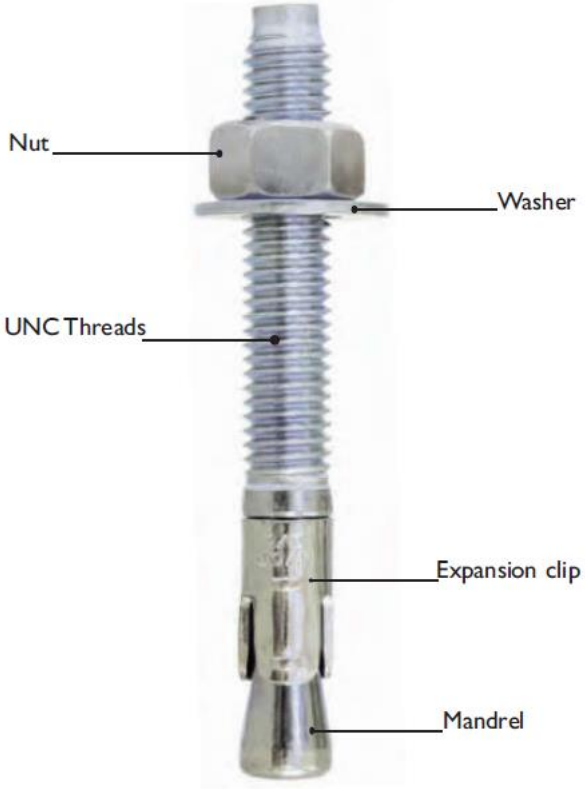
Expansion Anchors

- Can be used to secure heavy objects to walls or floors.
- Can handle vertical and horizontal loads.
- By tightening the bolt, the nut on the opposite end pulls into the shell, expanding it outward and wedging it inside the hole in the wall or floor.
- Anchors, and other connection hardware should be installed and tightened according to the manufacturer’s specifications.



Floor Collapse

During concrete pour

Steel deck supported by OWSJ

OWSJ (North wall) was supported by steel shelf angle

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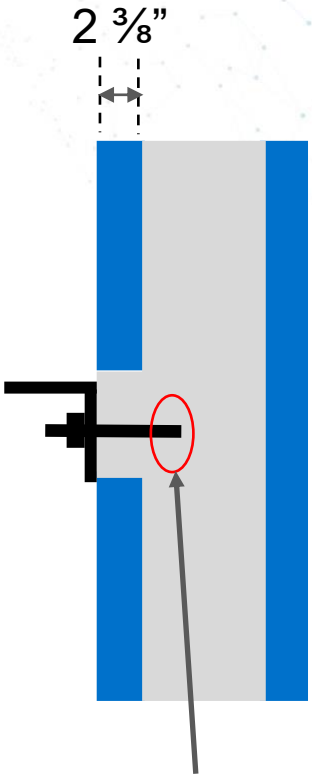
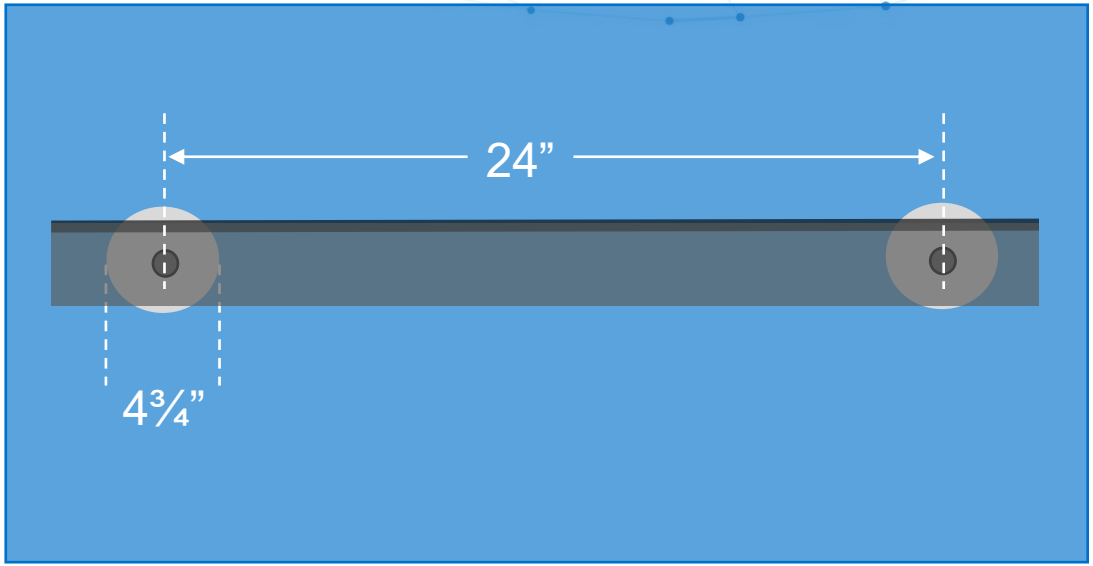
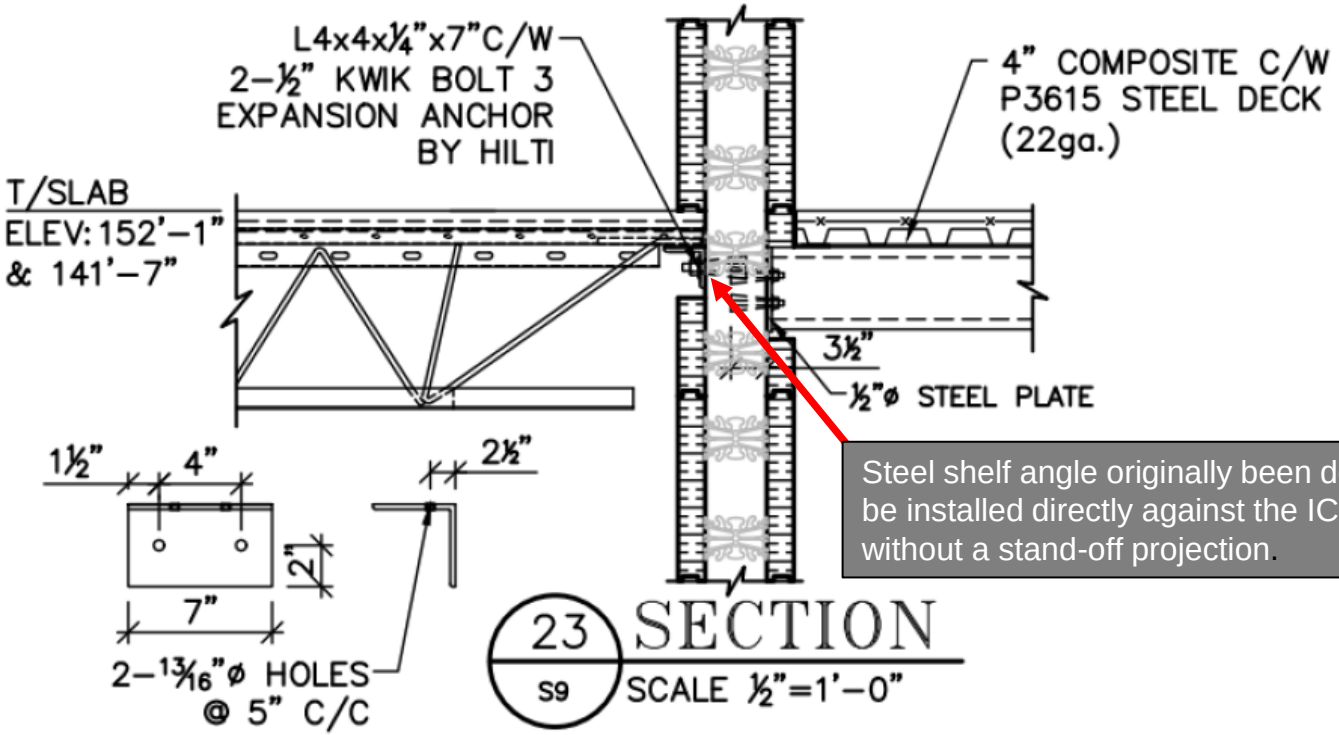




- Only about ¾” effective embedment within wall core
- Loaded edge distance of 2⅜” in concrete projections
- Some anchors off centre, others not a right angle (< 90°)

Diagram not to scale

Project Drawings



Steel shelf angle originally been designed to be installed directly against the ICF wall core without a stand-off projection.

Field Pictures

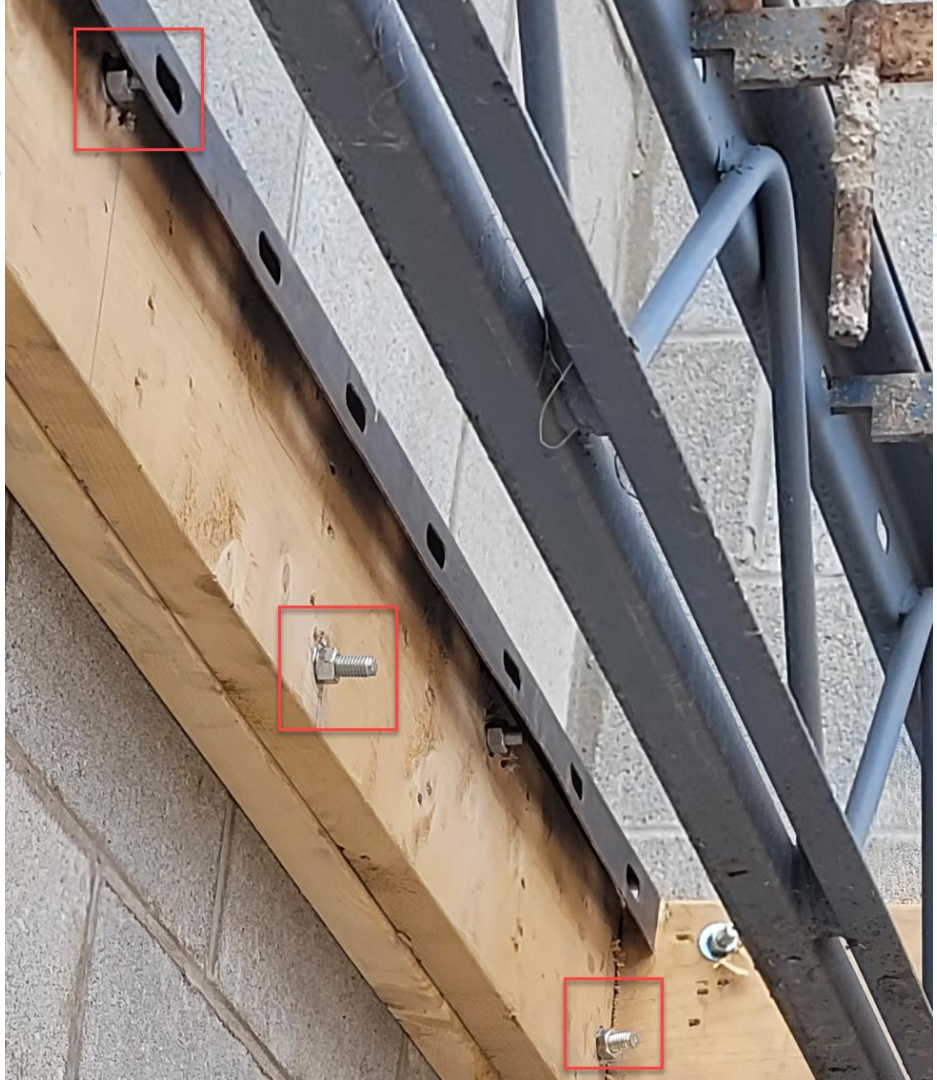
Thickness of insulation - 2⅜”

Anchor embedment depth

Field Pictures

Anchor installed off-centre

Anchor installed on a skew



Drop in anchors

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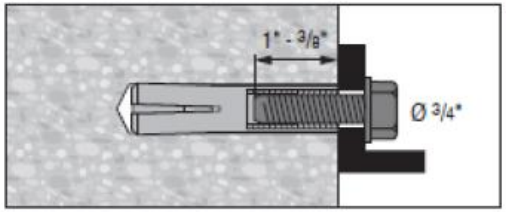
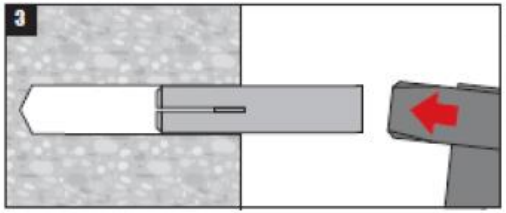
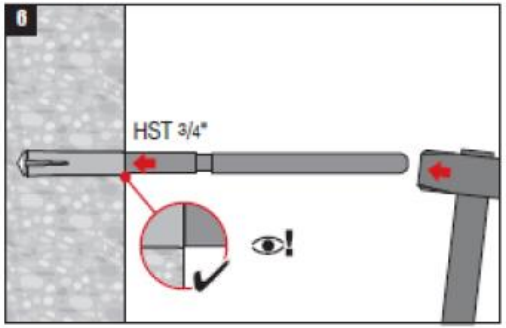
HILTI

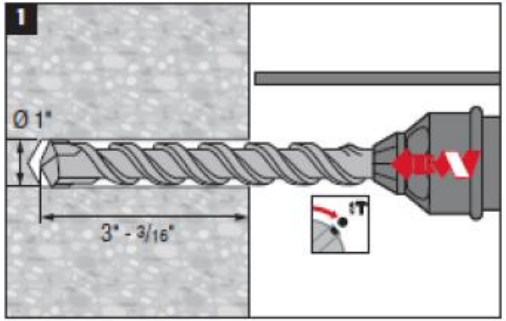
HDI 3/4"

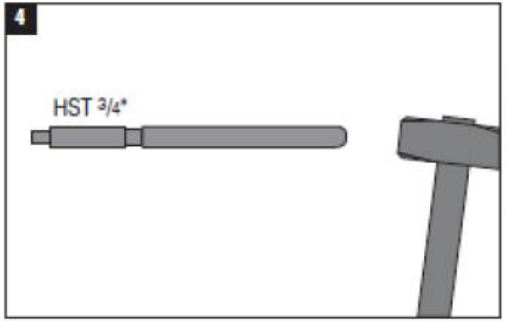
2198201 A1-11.2017

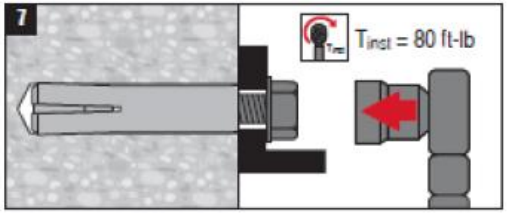


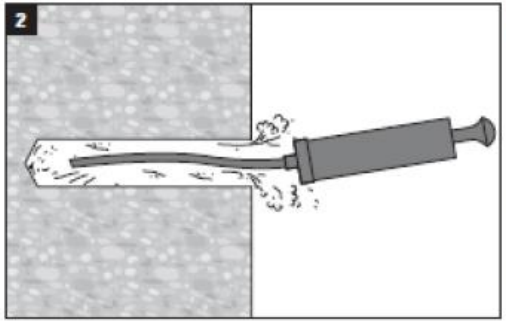


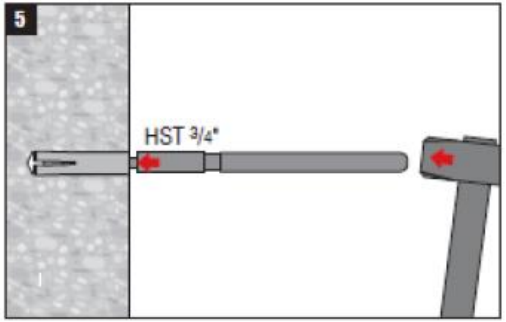













Drop in anchor was not properly installed
Ceiling eye bolt that broke


Eye bolt not
properly installed


Drop in anchor not properly installed and the concrete is broken


Other eye bolt not properly installed in the ceiling

Questions?

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