



Profile of the Product

JenCol Innovations, LLC is the developer and manufacturer of the patented boltable embed plate known as **EM-BOLT™** which is used in the construction industry to attach steel beams to cast-in-place and pre-cast concrete. **EM-BOLT** was invented and designed by *Tim Hardy, PE of Hardy Structural Engineering*. **EM-BOLT** has revolutionized the connection of steel beams to concrete by utilizing a bolted connection, in lieu of the field welded connection that has been utilized in the past. In addition to the use of a bolted connection, **EM-BOLT** also utilizes detachable anchor bolts that are threaded into the embed plate after the embed plate is installed in the concrete form. This greatly reduces the size and weight of the plates, which in turn reduces the labor required to install the embed plates in and around the rebar.

The major benefits of **EM-BOLT** include:

- Bolted connection is more reliable and requires less field inspection than field welded connections.
- The design of **EM-BOLT** provides a direct load transfer from the steel beam structural connection bolts to the anchor bolts in the concrete. Whereas, the field welded embed design relies on the assumption that the plate distributes the load to all the welded anchors “evenly”.
- Bolted connection does not damage the fresh concrete like a field welded connection can, due to the intense heat generated during welding.
- Bolted connection requires less labor than a field welded connection, which increases steel erection production in the field, saving the Owner both time and money.
- The ability to install the anchor bolts after **EM-BOLT** is installed in the form makes the embed plate lighter and easier to install around the wall or pier rebar.
- The plates are provided with a notch that indicates centerline of both the plate and beam for ease of installation, and to assure the plate is installed with the correct orientation in the field.
- All welding is completed by AWS Certified welders, and plates are assembled locally in Vermont.
- All **EM-BOLT** products are checked for quality control prior to being shipped to assure no misaligned threads in the field.
- Full scale load testing conducted at the Advanced Structures and Composites Center at The University of Maine Center revealed an average failure load equal to **5.5 times** the allowable working load in accordance with the 2012 International Building Code and Appendix D of ACI-318.
- Slotted holes in the connection angle account for potential misalignment of **EM-BOLT** in the field.
- The installed cost of **EM-BOLT** is less than or equal to the installed cost of the previously used field welded embed plates. In addition, **EM-BOLT** will yield substantial time savings in the field with increased production in the steel erection and overall project schedule. Time savings recognized in the beginning of a project will have an exponential impact on the overall schedule.

EM-BOLT is manufactured in six (6) different models, ranging from a 1-row connection used to anchor ledger angles to the standard AISC (6-row, 12 bolt) double angle beam connection. The plates are available standard painted on exposed surface or weather-shield coated for permanently exposed applications.

Please visit our website at www.em-bolt.com for more information, and to download PDF Drawings, CAD Details and Revit Families of our products.