

**ViewTite® DTIs are manufactured to ASTM F959 and are suitable for use in bolted structural steel framing connections in accordance with AISC-360.**

**ViewTite® DTIs can be installed in 3 simple steps:**

1. Install Structural Bolting Assemblies with the ViewTite® DTI on the 'nut side' of the connection with the bumps facing outward. Place an F436 hardened washer on top of the ViewTite® DTI, and place a hardened 2H or DH nut over the hardened washer. (See Figure 1 below)
2. Snug tighten the connection to draw the plies together into firm and near continuous contact.
3. Final tighten each bolting assembly until the polymer in the 'horse-shoe' bumps extrudes and becomes noticeably visible around the periphery of the ViewTite® DTI.

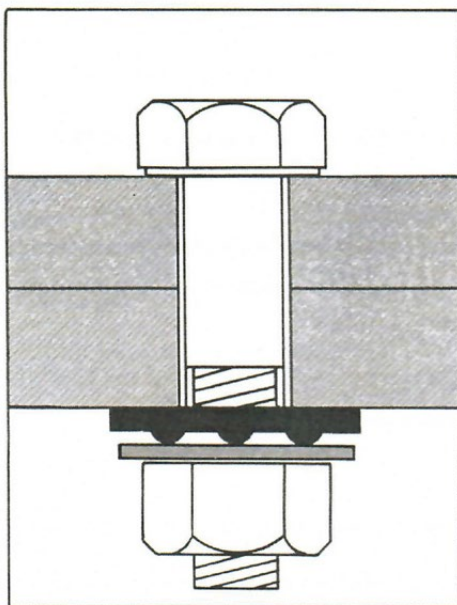


Figure 1. ViewTite Bolting Assembly

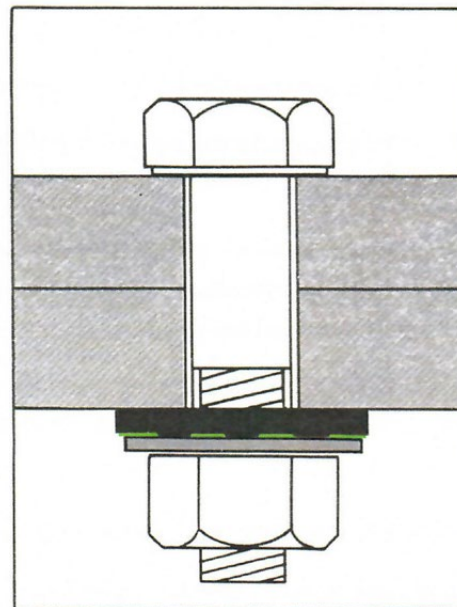


Figure 2. Tightened ViewTite Bolting Assembly

It must be noted that the basic function of all ASTM F959 DTIs remains the closure of gaps between two adjacent protrusions (see Inspection on opposite page). This gap can be verified using a feeler gage, then the visual appearance of the verified DTI (i.e. the amount of green elastomer showing) can be compared to additional DTIs on the project. Final inspection of assemblies may be performed visually.

Detailed Installation Instructions for all TurnaSure DTIs may be downloaded from our website.

**ViewTite® DTIs are suitable for use in bolted structural steel framing connections in accordance with AISC-360 and Section 2.6.2 of the Research Council on Structural Connections (RCSC) Specification for Structural Joints Using High-Strength Bolts.**

ViewTite® DTIs may be tested, installed, and inspected as follows:

### Pre-Installation Verification Testing

1. For each lot test three structural bolting assemblies in a bolt tension calibrator with the ViewTite® DTIs placed under the 'nut' side with the bumps facing out. Place a hardened F436/F436M washer on top of the ViewTite® DTI. Place a hardened 2H or DH nut over the hardened washer.
2. Tighten the structural bolting assembly until the ViewTite® DTI provides a visually obvious green indication on the tabs around the perimeter (outside diameter) of the ViewTite® DTI.
3. Read and record the tension reported on the bolt tension calibrator.
4. Compare the achieved tensions to the minimum tension requirements of Table 7.1 of the RCSC Specification.
5. As ViewTite® visual die emitting DTIs are made to ASTM F959 the fundamental mechanics are the same as with standard DTIs. The residual project inspection gaps after the metallic compression of the bumps are what remains basically measuring the correct bolt tensions. So, if feeler gauges are required for inspection verification simply apply the feelers, as with standard DTIs, making sure the feeler enters the required number of spaces between two adjacent protrusions at the minimum required bolt tensions. (See illustration below for applying the feeler gauges with ViewTite® DTIs).

### Installation

1. Install structural bolting assemblies assembled as above into steel framing and snug-tighten each connection in accordance with Section 8.1 of the RCSC Specification. Remove and replace any assembly which displays visually obvious green indication at the tabs around the perimeter (outside diameter) during snug-tightening.
2. Systematically fully tighten structural bolting assemblies progressing from the most rigid part of the joint to the free edges of the steel plies until each ViewTite® DTI provides a visually obvious green indication on the tabs.

### Inspection

1. Observe the pre-installation verification testing, and routinely observe snug-tightening operations per Section 8.1
2. Using routine observation, verify that fully tightened structural bolting assemblies provide a visually obvious green indication at the tabs around the perimeter (outside diameter) of the ViewTite® DTIs. Per Section 9.2.4, no further evidence of conformity is required, and a pretension that is greater than that specified in Table 8.1 shall not be cause for rejection.

With ViewTite® the appearance of the green elastomer very reliably confirms fully tightening and that the correct gap closures are met, and thus correct bolt tensioning is assured. Visual inspection can be completed at night with the aid of a black light.

3. For additional verification of tensioning using a feeler gage, simply use the feeler to check the spaces between two adjacent protrusions. With ViewTite® DTIs the space can be accessed from either side of the horseshoe shaped tubes containing the elastomer per illustration to the right. If one of those tries refuses, that constitutes a refusal fit or a "no-go" fit for that gap.

