

## Pandrol Brand Rail Fastenings e-Series Clip Installation Instructions

### Wood Tie Installation:

Components for one rail seat on a wood tie consists of a Pandrol rolled steel tie plate, two e-series clips (e-2055), and screw spikes. The number of plate fasteners required will depend upon the application.

The tie plate should be positioned on a new or freshly adzed tie, before the rail is laid in the plate and the holes are drilled for the plate hold down fasteners. The tie plate is canted and should be placed so that the cant runs towards the center of the tie. You should notice that the taller, raised heel seat is the field side of the plate. It is recommended that the tie is tamped before clip installation.

With the tie plate centered, drill the pilot hole for the screw spike. For a Pandrol 15/16" screw spike the hole should be 3/4" diameter and six inches deep from the top of the tie plate. A visual check should be made to insure that the plate fasteners are all the way down and the tie plate is tight against the tie.

The e-2055 clip is installed from the right hand side of the tie plate as you face the rail, with the "toe" or open end of the clip on the foot of the rail. The e-series clip can then be started by hand or with a few taps from a sledge hammer. The clip should be driven until there is approximately 3/8" gap (about the diameter of a pencil) between the edge of the tie plate and the inner edge of the rear arch of the clip. The e-2055 clip can also be mechanically installed to the above specifications. There are several types of equipment available for this purpose.

### Concrete Tie Installation:

Concrete tie components for one rail seat consists of the following: a tie pad, two insulators and two e-series clips. The correct Pandrol shoulders are already embedded in the tie by the concrete tie manufacturer. If questions concerning the assembly components arise, please contact Pandrol USA.



First, place the pad in the rail seat after making sure both are clean and free of debris. Next install the rail and tamp the tie. The insulators are installed next (one each side of the rail) making sure the insulator is fully seated against the base of the rail. Then start the e-2055 clip from the right side of the shoulder by hand or set with a few taps of a sledge hammer. The clip is fully driven when there is approximately 3/8" gap between the edge of the shoulder and the rear arch of the clip. As with the wood installation, the e-series clip can be installed by mechanical means.

When using a Deep Post style insulator make sure it seats securely on the rail base and into the recession in the pad. The Deep Post Pad must be placed on the tie with the thin membrane resting on the tie and the open area facing up. The Deep Post Insulator extends below the base of the rail and sits on the pad membrane. (If using a "sandwich pad" the membrane will rest on the steel plate.) Caution should be taken *never* to mix Deep Post Insulators with standard pads. Although standard insulators will work with Deep Post Pads, it is not recommended since the pad may try to shift.

**General:**

- ▶ The shipping tag supplied with every bag of clips illustrates a properly installed clip on wood and concrete ties.
- ▶ When installing or removing clips a sledge hammer should be used instead of a spiking maul because of the larger striking area.
- ▶ A quick visual check for proper clip installation is to have the end of the clip toe even or 1/4" past the edge of the tie plate or shoulder.
- ▶ e-series clips ending in an odd number, example e-2055 are right hand driven. Clips ending in an even number, example e-2056 are left hand applied.
- ▶ Clips can be installed and removed either manually or mechanically.
- ▶ Never use Deep Post Insulators with standard tie pads.
- ▶ Consult Pandrol USA for further details or specifications.



