Clip plates	Published D ate: 05/06/2009

Clip plates are a simple restraint fixing used for panel-to-panel restraints. In its simplest form it is literally a plate, but in heavier loaded situations it may be an angle or channel section for greater bending resistance.

Traditionally, plates used to be detailed as shown in diagram 1 below.

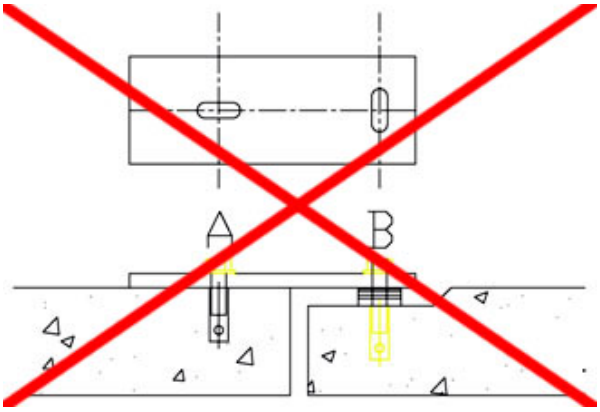

Diagram 1 – Traditional arrangement

This has two tolerance slots at 90 degrees to each other.

The theory is that the load is applied at B, causing maximum bending at A. It is desirably therefore that the plate is not reduced excessively at A.

As drawn, the plate is OK, but if put in the wrong way around, the section is greatly reduced (by the transverse slot) in the very place where it is needed most, causing overstress and possible failure. It should not be used.

It is far more efficient, (and cheaper) to have a plate as shown in diagram 2.

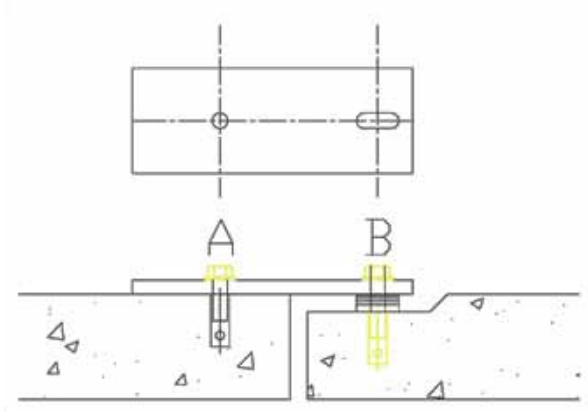

Diagram 2 – Preferred arrangement

This has a round hole at the fixed end, and a tolerance slot at the free end. Even if put in the wrong way around, it does not reduce the effective width beyond the design value.

If tolerance is required, the slot allows movement in one direction. In the other direction tolerance is achieved by rotating the plate as shown in diagram 3. This will give a considerable degree of tolerance without the need for additional slotted holes.

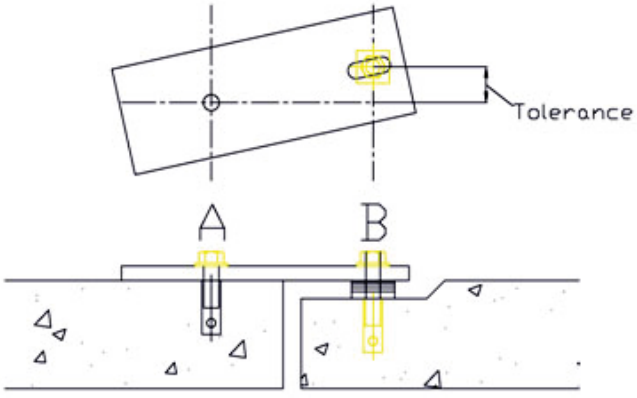

Diagram 3 – Tolerance arrangement

By swivelling the plate, the tolerance can be achieved

General detailing factors

It may be seen that the plate end distance at A is much greater than that at B. The lever distance at A affects the tension in the socket at A and is a design factor, whilst the distance at B is simply a standard edge distance. If the plate is erected the wrong way around, the socket may be overstressed. It should be made clear on the drawings which way around the plate goes.