

IICL TB 007, 5 April 2012

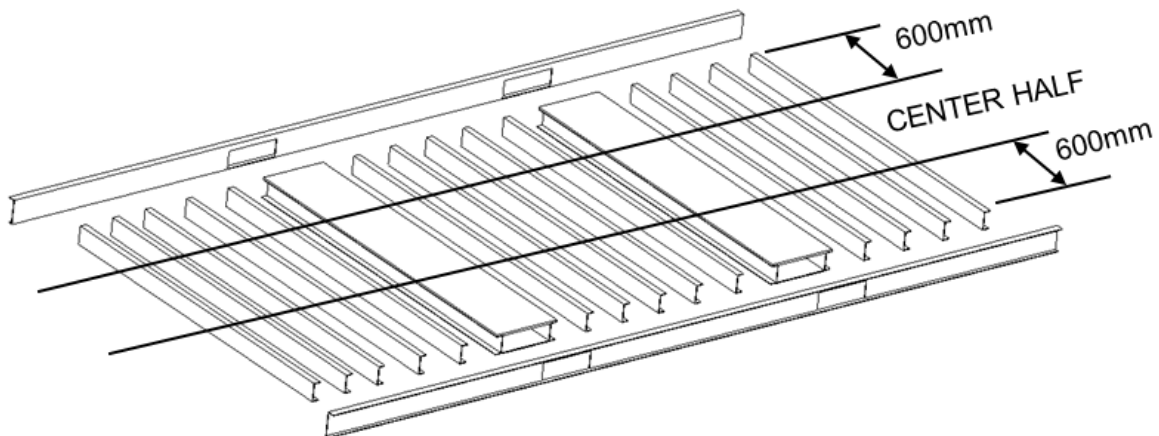
Title: LIMITATIONS ON CROSSMEMBER REPAIRS

Reference IICL “Repair Manual for Steel Freight Containers (fifth edition)
Section 8.2.3 Crossmember Inserting
Section 8.4.3 Forklift Pocket Side Inserting

The IICL has revised its criteria for crossmember / forklift pocket side wall) inserting as outlined below:

Revised Criteria

Weld repairs to members (crossmember / forklift pocket side wall) are not allowed within the center one half of two adjacent members. The center one half of a member is defined as that part of the member that is greater than 600mm from the nearest bottom side rail. If two adjacent members have weld repairs within the center halves, either one of the members must either be replaced or the inserts must be lengthened such that they do not terminate within the center half of the member.



BACKGROUND

The IICL has recently become aware of weld cracking in two repair techniques used to repair downward bowed members.

The most common repair involves the installation of a series of inserts at or near the centers of several adjacent members. The vertical welds—located near the members centers in the area of maximum bending stress and subject to the residual tension resulting from jacking the member's straight prior to installing the inserts—may have been, in a few cases, below IICL standards.

If the sub standard weld pulls apart, the floor load is passed to the adjacent member, and the adjacent insert welds may also pull apart, resulting in a series of weld failures until all inserted members have pulled apart.



A second, but less common, repair involves cutting relief notches at or near the members centers, jacking the members straight, and weld the notch closed. These also may come apart for the same reasons and in the manner as described above.

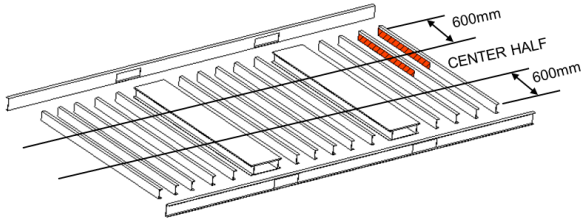


With the objective of eliminating these shortcomings, the IICL Technical Committee has revised member repair standards so as to eliminate sub-standard inserting and other welded repairs in the highly stressed center portions of members.

EXAMPLES

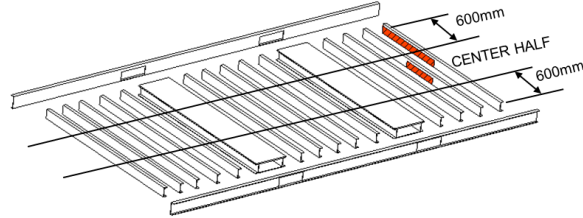
In addition to above real life photographs, please also find related examples and explanations below, for a clearer understanding of this technical bulletin.

NOT ACCEPTABLE



NOT ACCEPTABLE

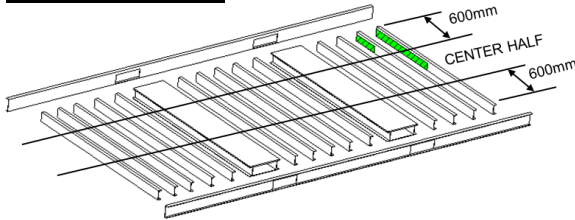
The insert on the right side is acceptable because it is the 1st crossmember with an insert. But the 2nd insert on the left is not acceptable because the weld seam terminates in the center half of the container.



NOT ACCEPTABLE

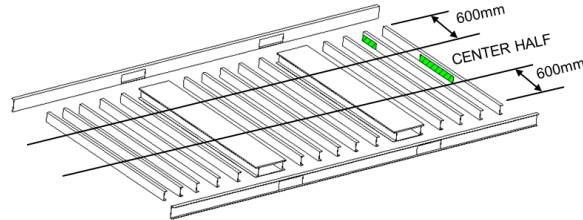
The insert on the right side is acceptable because it is the 1st crossmember with an insert. The 2nd insert on the left is not acceptable because the weld seams terminate in the center half of the container.

ACCEPTABLE



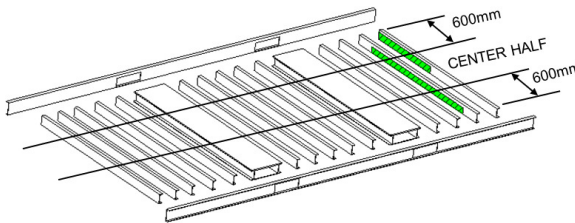
ACCEPTABLE

The insert on the right side is acceptable because it is the 1st crossmember with an insert. The 2nd insert on the left is also acceptable because the weld seams terminate within 600mm from the bottom side rail.



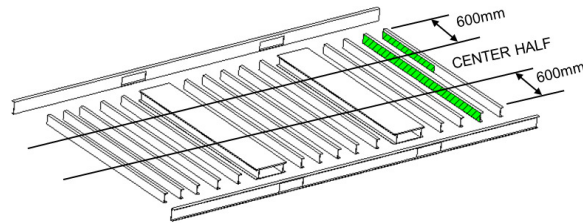
ACCEPTABLE

The insert on the right side is acceptable because it is the 1st crossmember with an insert. The 2nd insert on the left is also acceptable because the weld seams terminate within 600mm from the bottom side rail.



ACCEPTABLE

The insert on the right side is acceptable because it is the 1st crossmember with an insert. The 2nd insert on the left is also acceptable because the weld seams terminate within 600mm from the bottom side rails.

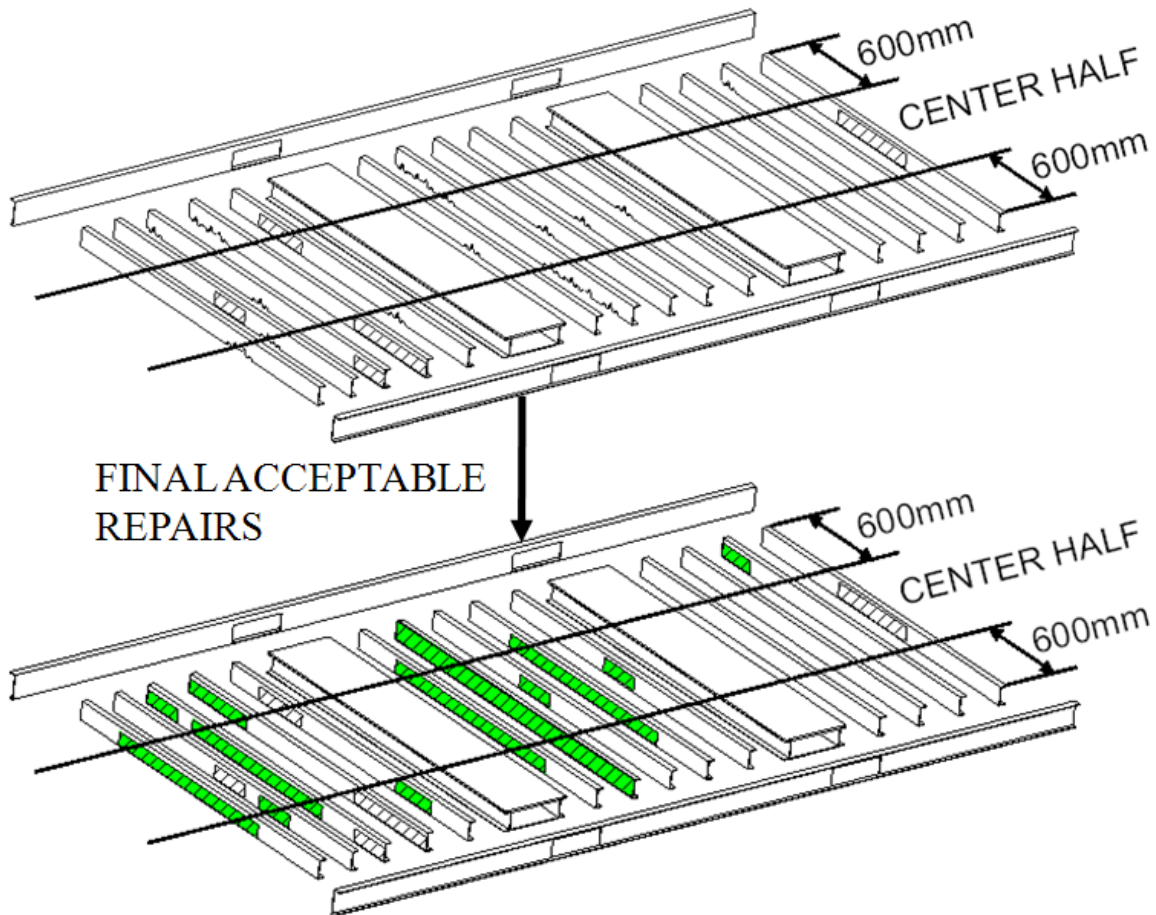


ACCEPTABLE

The insert on the right side is acceptable because it is the 1st crossmember with an insert. The 2nd cross member is also acceptable because it is actually a full replacement.

FULL CONTAINER EXAMPLE

AN EXAMPLE of new damage locations and pre-existing inserts.



Acceptable inserts based on new damage locations and pre-existing inserts, as shown above. It is important to note that this is one EXAMPLE of a possible combination of damage and acceptable repair inserts. There may be many different possibilities. This drawing should only be used as a guide to determine the safest and most economical type of repair on a case by case basis.

In addition to the above limitation requirements and illustrations for weld repairs to ADJACENT members, crossmember and forklift pocket inserting to also continue to follow other insert repair instructions per paragraph 8.2.3 and 8.4.3, IICL Repair Manual for Steel Freight Containers, 5th edition.

IICL TB 007 was prepared under the supervision of the IICL Technology Committee.