

# Building Settlement When Using Wood Frame Construction

- Most of the apartment type buildings being built today are using wood-frame construction that are also Complex Multi-Story Structures. Shrinkage of the wood during and after construction is causing structure settlement to the entire building. This affects the DWV Plumbing system as well as other electrical equipment attached to the structure.

The attached photos show the damage to the DWV Plumbing system caused by this known problem of structural settlement within wood frame construction

The photos shown here are from the effects of the settlement has on the plumbing drainage pipe and fittings. The only known method of relieving this type stress on the DWV piping is to use expansion coupling joints at every or every other floor level. Photo 2 is from a recent Hampton Inn project in Iowa. Shrinkage was 3-1/2" in this 6 story combination concrete and wood project.

The IBC Code Section 2303.3.3 states: Shrinkage Wood walls and bearing partitions shall not support more than two floors and a roof unless an analysis satisfactory to the building official shows that shrinkage of the wood framing will not have adverse effects from the structure to the plumbing or other trades. This problem has still not been addressed in most wood buildings. Now the new EZ Mechanical Flex Coupling is specially made for PVC stacks, is inexpensive and used to provide stress relief needed at each of the branch levels. Photos 1 & 3 are from the Wood Products Council



Photo 1.



Photo 2.



Photo 3.

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