

# Main Street Memo

## The “Fire Cut Beam”

In the construction of masonry buildings, a fire cut, or fireman's cut is a diagonal cut along the end of a joist or beam where it enters a masonry wall. If the joist burns through somewhere along its length, damage to the wall is prevented as the fire cut allows the joist to fail and leave the masonry wall standing.

Without fire cut joists, the burnt joists would fail and the ends of the joists would rotate as the joist deflected downwards.

Fire cut joists are commonly found in Type III buildings built prior to the mid-1930's.



Example of walls remaining after a fire in Nelsonville, Ohio 4-12-15 Courtesy of: Jason Gadrin via YouTube.

Fire Cut Beam



Rafters that are fire cut may cause rafters to fall inward

Non Fire Cut Beam



Rafters that are non fire cut may push walls out

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**Fire Engineering**

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