



MASONRY INSIGHTS

written in conjunction with International Masonry Institute

What are the options for supporting veneers?

Veneer Support

Per TMS code, section 12.2, there are several options to consider for supporting masonry veneers for vertical (for gravity) and for lateral (wind/seismic) loads:

Option 1- based on TMS 402, section 12.2.1 – Alternative analysis can be used, and shelf angles could be eliminated, This requires an analysis of the differential movement between the veneer and the backup, and generally flexible veneer connectors would have to be used for the upper floors.

Option 2- based on TMS 402, section 12.2.1 – Alternative analysis can be used, and shelf angles reduced to every other or every third floor – in this case standard veneer connectors could be used, but a heavier connection for the veneer to the back-up system (masonry wall) would be necessary.

Option 3- a structural brick veneer could be used, and no shelf angles would be needed, and the structural brick veneer would only need a horizontal support at floors.

Option 4- based on TMS 402, section 12.2.2 – Prescriptive requirements can be used, and then shelf angles are only necessary with wood or metal stud backup systems after 30ft and then every floor. So still not required with a rigid structural backup, but is often used – probably the most costly initial cost and long term cost, but simplest to design.

There are other options as well for brick veneer support/design, but this is a good short list for a building with multiple floors.

to eliminate horizontal joint:
calculate differential movement

To estimate the differential deflections, compare:

- brick movement
 - add Δ brick moisture
 - add Δ brick temperature
 - minus Δ brick compression
- structure
 - Δ structure shortening
- brick vs structure $\rightarrow \Delta$ differential
 - anchor needs to accommodate movement

