

# Beyond Blocks and Bricks

Number 031

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## Designing a masonry veneer is easier!

Changes to TMS 402, the *Building Code Requirements for Masonry Structures* (known to many as the 530-Code), make it easier to detail anchored masonry veneers to accommodate more insulation and wider air spaces.\*

In past codes, the distance between the back of a masonry veneer and its vertical support could not exceed 4 1/2 inches. In most circumstances, TMS 402-2016 increases this distance to 6 5/8 inches, making incorporation of more (thicker) insulation and wider air spaces possible. This change was made to accommodate designing with exterior sheathing that is 5/8 inch thick, four inches of insulation, and an air space that is two inches wide. Summarizing the BCRMS:

	<b>Wire anchors</b>	<b>Adjustable anchors</b>	<b>Joint reinforcement</b>	<b>Corrugated anchors</b>
<b>Wood studs</b>	4 5/8" <sup>†</sup>	6 5/8" <sup>†</sup>	4 5/8" <sup>†</sup>	1" <sup>#</sup>
<b>Steel studs</b>	N.A.	6 5/8" <sup>†</sup>	N.A.	N.A.
<b>Concrete backing</b>	N.A.	6 5/8"	N.A.	N.A.
<b>Masonry backing</b>	4 5/8"	6 5/8"	6 5/8"	N.A.

N.A.—anchor type is not allowed with this backing

<sup>†</sup>Distance from the back of an anchored veneer to the faces of studs (not sheathing)

<sup>#</sup>Distance from the back of an anchored veneer to the face of the sheathing

For all anchored veneer construction, TMS 402 requires that the air space be no less than 1 inch wide.

**This change is particularly helpful when the designer is using prescriptive energy design methods.**

Increases in the distance between a masonry veneer and its backing are forced as the prescriptive energy design methods require more and more insulation.

Generally, the energy cost budget method allows the use of less insulation than the prescriptive energy design methods. Less insulation often translates to a less expensive, but not poorer quality or less energy efficient, building because there is less wall insulation and thus foundation walls can be thinner, shelf angles can be shorter and thinner, wall ties can be shorter, the area of through wall flashings can be less, window and door jambs can be shorter, and, usually, less energy is used to heat and cool the building compared to the prescriptive methods.

*\*TMS 402 recognizes two types of masonry veneers: anchored and adhered. Anchored veneers are thick veneers (> 2 5/8" thick) that are attached to a backing by masonry anchors (wall ties and similar devices). Adhered veneers are thin veneers (≤ 2 5/8" thick) that are usually attached to a backing with adhesives, but may be retained by a mechanical system. This "Beyond Blocks and Bricks" addresses anchored veneers.*

*TMS 402 allows designers of masonry veneers to choose to take a prescriptive design path (the cookbook path) or a rational design path (the engineered path). Most designers choose the prescriptive path unless very wide air spaces, high winds, earthquakes, or a combination require the rational design of masonry veneers. This "Beyond Blocks and Bricks" discusses the prescriptive design path.*

*When designing a masonry veneer always use Chapter 12, "Veneer," of TMS 402-16.*

*TMS 402-16 is available for purchase at <https://masonrysociety.org/product/tms-402-602-2016/>*