

## MASONRY INSPECTION CHECKLIST

### Non-Structural, Commercial

#### General Notes

1. Masonry exterior walls shall be designed and constructed in accordance with International Building Code (IBC) Chapter 14 and 21. IBC also refers to "Building Code Requirements for Masonry Structures" (TMS 402/ACI 530/ASCE 5) and "Specification for Masonry Structures" (TMS 602/ACI 530.1/ASCE 6) for additional masonry requirements per IBC 2101.2.6 and 2104.1.
2. This checklist is a supplemental aid for building inspectors and should not be considered to include all items to be observed. Be aware of additional local codes, modifications or interpretation.
3. Citations below with designation "**Code**" are justifiable with the 2012 International Building Code "IBC" and/or the referenced 2011 national model masonry building code "TMS 402" or specification "TMS 602". Lines designated "**Recommended**" reflect masonry industry recommendations that are not officially code.

#### WATER-RESISTIVE BARRIER

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|--------|--|
| (Code) | Is there a water-resistive barrier behind the exterior veneer? (IBC: 1403.2, 1404.2, 1404.4, TMS 402: 6.1.6.1)   |
| (Code) | Does the water-resistive barrier cover the entire support wall - even the part of the wall enclosing non-occupied space? (IBC: 1403.2, 1404.2, TMS 402: 6.1.6.1) |
| (Code) | Is the water-resistive barrier continuous and not damaged? (IBC: 1403.2, 1404.2)   |
| (Code) | Is the water-resistive barrier integrated with the masonry thru-wall flashing to make a waterproof interface? (IBC: 1404.2, 1405.4, TMS 402: 6.1.6.2)            |
| (Code) | Is there a double layer water-resistive barrier behind adhered veneer, or single layer plus drainage mat? (IBC: 1405.10.1.1, 2510.6)                             |

#### AIR SPACE

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|---------------|--|
| (Code)        | Is the distance between the inside face of the masonry veneer and support wall 1-inch minimum? (IBC: 1405.3.3, 2101.2.6, TMS 402: 6.2.2.6.3, 6.2.2.7.4, 6.2.2.8)   |
| (Code)        | If the air space exceeds 4 1/2-inches (stud support wall) or 4 3/4-inches (masonry support wall) have the veneer ties or anchors been engineered to withstand lateral loads? (IBC: 2101.2.6, TMS 402: 6.2.2.7.4, 6.2.2.8, 6.2.2.5.5.5) |
| (Recommended) | Is the distance between the inside face of the masonry veneer and support wall 2-inches?   |

#### FLASHING

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|---------------|--|
| (Code)        | Is there thru-wall flashing? (IBC: 1403.2, 1405.4, TMS 402: 6.1.6.1, 6.1.6.2)  |
| (Code)        | Does the flashing extend at least flush with the exterior masonry veneer? (IBC: 1405.4)  |
| (Recommended) | Does the flashing extend out of the wall with a durable drip edge?   |
| (Recommended) | Are the outside corners of the drip edge not sharp?  |
| (Code)        | Is the flashing properly lapped and sealed so as to be waterproof? (IBC: 1405.4)   |
| (Recommended) | Is there a termination bar or other means to secure the vertical flashing leg top edge so it does not fall down?   |
| (Recommended) | Does the concealed vertical leg of flashing extend up the wall at least 8-inches?  |
| (Code)        | Are there end dams at the discontinuous ends of flashing - such as over windows and doors and another place the flashing is discontinuous? (IBC: 1405.4)                           |
| (Code)        | Are the flashing and weep holes/vents located in the first course of masonry above finished ground level and above the shelf angles and lintels? (IBC: 1405.4.2, TMS 402: 6.1.6.2) |
| (Code)        | Is there flashing above doors, windows and other openings in veneer? (IBC: 1405.4, 1405.4.2, 6.1.6.2)  |
| (Code)        | Is there flashing under masonry, wood, metal copings and sills? (IBC: 1405.4, 6.1.6.2)   |
| (Code)        | Is there flashing at the intersection of masonry and chimneys, walls, roof intersections, porches, decks, balconies, etc.? (IBC: 1405.4, 6.1.6.2)                                  |
| (Recommended) | Is the flashing material durable: <u>not</u> light-gauged PVC, clear plastic film, building wrap, or building paper?   |
| (Recommended) | If poured-in-place concrete is being used to divert water out of the wall at the base of the wall - in lieu of a flashing membrane - is the concrete dampproofed?                  |

<b>WEEP VENTS</b>	
	(Code) Are the weep holes/vents spaced less than or equal to 33-inches apart? (TMS 402: 6.1.6.2)
	(Recommended) Are weep holes/vents spaced less than or equal to 24-inches apart? 16-inches apart for rope wicks?
	(Recommended) Are the weep vents installed at top of the wall to ventilate the masonry wall system?
	(Recommended) Are weep vents made of durable material?
<b>MORTAR JOINTS</b>	
	(Code) Are horizontal mortar joints between masonry units in the range of: 1/4-inch to 1/2-inch (IBC: 2104.1.1, TMS 602: page S-56, Section 3.3F)
	(Code) Are vertical mortar joints between masonry units in the range of: 1/8-inch to 3/4" (IBC: 2104.1.1, TMS 602: page S-56, Section 3.3F)
	(Recommended) Are mortar joints aligned within acceptable tolerance?
	(Recommended) Are mortar joints tooled at a consistent depth and shape?
	(Recommended) Are mortar joints similar color?
	(Recommended) Are the masons filling the vertical joint (head joint) between two masonry veneer units full?
<b>ANCHORS &amp; WALL TIES</b>	
	(Code) Are the masonry veneer anchors embedded at least 1 ½" into the mortar joint? (TMS 402: 6.2.2.5.1.2, 6.2.2.5.2, 6.2.2.5.2.2, 6.2.2.5.3.2)
	(Code) Is there at least 5/8" mortar cover at veneer anchors to the outside face? (TMS 402: 6.2.2.5.1.2, 6.2.2.5.2, 6.2.2.5.2.2, 6.2.2.5.3.2, 6.2.2.5.4.2)
	(Code) If there are adjustable two-piece anchors or corrugated sheet metal anchors, do they support no more than 2.67 SF of wall area? (TMS 402: 6.2.2.5.6.1) For example: anchor/tie spacing of 16" x 24" = 2.66 SF.
	(Code) Anchors/ties should be spaced a maximum of 32" horizontally and 25" vertically. (TMS 402: 6.2.2.5.6.3)
	(Code) Are the additional anchors/ties around openings placed within 12" of the opening and no more than 36" apart? (TMS 402: 6.2.2.5.6.4)
	(Code) If the support wall for masonry veneer is concrete masonry units (CMU), are the masonry anchors/ties something other than corrugated steel metal brick ties? (TMS 402: 6.2.2.8.1)
<b>REINFORCEMENT &amp; OTHER EMBEDDED STEEL</b>	
	(Code) Is horizontal joint reinforcement in the CMU support wall spaced a maximum of 16" vertically with? (TMS 402: 6.2.2.5.4.1)
	(Code) Does "veneer not laid in running bond" have horizontal joint reinforcement maximum 18" apart? (TMS 402: 6.2.2.9)
	(Recommended) Are steel lintels corrosion protected: Stainless steel, hot-dipped galvanized, or protected with thru-wall flashing and end dams?
	(Code) Are the CMU reinforcement bars and grout being installed properly?
<b>MOVEMENT JOINTS</b>	
	(Code) Are there adequate vertical and horizontal movement joints? (TMS 402: 6.1.6.3)
	(Code) Is there a vertical movement joint between veneer supported by the wood construction (such as a roof) and veneer supported by the foundation? (TMS 402: 6.2.2.3.1.5)
	(Code) If the masonry veneer is backed up with either metal or wood studs, is the height of the veneer from foundation less than 30-feet? 38-feet to the gable? Note: There is no height limitation for masonry veneer attached to CMU back-up walls. (TMS 402: 6.2.2.3.1.2, 6.2.2.3.1.3)
<b>AIR BARRIER</b>	
	(Code) Is there an air barrier as part of the exterior wall? (IBC: 1301.1.1, 2012 IECC: C402.4.1)
	(Code) Is the air barrier in the proper location so it stays warm during the winter so as not to contribute to condensation in the wall? (IBC: 1403.2)
<b>OTHER</b>	
	(Code) Are the masons implementing proper cold weather practices when the air temperature is below 40-degrees? (IBC: 2104.3)
	(Code – prescriptive) Is the wall cavity insulation continuous? (IBC: 1301.1.1)
	(Recommended) Is the wall cavity insulation secured in place?
	(Code) For an adhered veneer, are the units less than 2 5/8" thick, less than 36" in any dimension, no more than 5 SF in total face area, and not weigh more than 15 lb/ft <sup>2</sup> ? (TMS 402: 6.3)
	(Code) Is the exterior adhered veneer installed in accordance with IBC <u>and</u> MSCJ <u>and</u> manufacturer's instructions (IBC: 1405.10.1, TMS 402: 6.3)
	(Recommended) Are masons covering unfinished walls at night?