



## City of Santa Monica Building and Safety Division

# Masonry Wall Guide

**This list is to be used as a general guide.**

**It is not inclusive of all code requirements and inspection criteria.**

**Per California Building Code (CBC), American Concrete Institute (ACI) 530.1 (masonry) and 318 (concrete) and applicable ASTM referenced standards**

California Codes available at [www.bsc.ca.gov](http://www.bsc.ca.gov)

### **FOOTING INSPECTION**

- Approved plans on site CBC 2101.3.
- Location and size per approved plans: depth and width, keyway if required
- Clean of foreign debris ACI 318 7.5.1(d)
- Reinforcing steel per ACI 318 and ACI 530
  - Properly sized and placement per plan ACI 318 7.5.1
  - Minimum clearance to earth 3" ACI 318
  - Adequately secured from displacement ACI 318 7.5.1
  - Minimum length of lap splices (30db in concrete, 40/48 db. in masonry)
  - Double dowels at jambs, wall ends and corners as required by plans and ACI 530
- Plumbing pipes and electric conduits must be shown on plan. CBC 2101.3 #8
- Deputy Inspection or Structural Observation (per plan and CBC 1705.4)
- Soils approval per plan and CBC table 1705.6

### **MASONRY (LAYUP) Materials per ACI 530 and ASTM standards Execution per ACI 530.1**

- Rebar and footing clean of overpour and laitance per ACI 530.1 3.2B
- Type of masonry per approved plans (density). No blemished, cracked or broken units per ASTM standard C 90.
- Deputy inspection requirements of materials and layup-periodic for Level B
- Continuous deputy inspection required for level C layup, reinforcement, anchors, and strength testing. Table 1.19.3 ACI 530
- Wall height per approved plans
- Head and bed joints solidly mortar filled, except beveled end of open-end units.
- Initial bed joint  $> \frac{1}{4}'' < \frac{3}{4}''$ . ACI 530.1 3.3B.1
- Bed and head joints  $\frac{3}{8}''$  thick ACI 350.1 3.3.B
- Maximum mortar fin projection of  $\frac{1}{2}''$ . ACI 530.1 3.3B.1c
- Cells clean of foreign debris and mortar droppings per ACI 530.1
- Clean-outs required for grout pours over 5'4" ACI 530.1 3.2F
- Max. grout pour height per ACI 530.1 3.5C and table 7 (based on cell size/grout space)
- Anchor bolts minimum  $\frac{1}{4}''$  fine grout ( $\frac{1}{2}''$  coarse grout) surrounding per ACI 530 3.4D
- Plumb and line of masonry layup- within  $\frac{1}{4}''$  in 10' ( $\frac{1}{2}''$  max.) per ACI 530 3.3F



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### **REINFORCING STEEL (in masonry wall) per ACI 530.1**

- Properly sized per plans (special requirements for shear walls)
  - Minimum #4 at 2' o.c. each way in Seismic Design Category D
- Placed per plans and within tolerances (vertical rebar within ½" sideways, 2" long way)
- Adequately secured from displacement ACI 530.1 3.4B.1 and 3.2E (no drop in bars)
- Lintel bars minimum 2' past openings each side ACI 530 1.18.3.2.3.1
- Double jamb bars at openings, double dowels at wall ends and corners. ACI 530 1.18.3.2.3.1
- Vertical steel within 16" of wall openings >16" and corners. Within 8" of joints and end of wall ACI 530 1.18.3.2.3.1
- Dowels embedded in concrete not bent more than 1 in 6. ACI 530.1 3.4B.8.6
- Minimum 40 db (40 bar diameters) lap slice, 48db for grade 60 rebar.
- Minimum clearance to masonry shell maintained. ACI 530.1 3.4B
  - ¼" for fine grout – ½" for course grout.

### **PRE-GROUT INSPECTION**

- All grout per ASTM C476, 8-11" slump, mix design and psi (minimum 2000psi) per SEOR (structural engineer of record)
- Grout consolidation **and reconsolidation** per ACI 530.1 3.5E
- Maximum pour height per Approved plans and ACI 530.1 3.5C
- Maximum lift height per ACI 530.1 3.5D
- Periodic deputy inspection of reinforcement (and materials) per CBC1704.5.1
- Special inspection requirements apply to all structural masonry per CBC 1704.5. (all grouting requires continuous deputy inspection and periodic inspection of reinforcement)***
- Deputy registered with the City of Santa Monica (S.M.M.C.)
- Minimum grout key of 1 ½" per ACI 530 3.5F
- Bed and head joints 3/8"+/- 1/8" and initial bed joints ¼"min.and 3/4" max. per ACI
- Hot/cold weather precaution requirements in place per CBC Chapter 21



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### **FINAL INSPECTION**

- Wall construction complete, wall capped
- Appropriate curing time for retaining wall prior to backfill (28 days typical)
- Wall per approved plans, all grout lifts signed off, all city agencies approved
- Final deputy inspector's report per CBC 1704
- Wall passes the visual acceptance criteria of ACI 530.1 3.3F
- Seismic gas shutoff valve if permit valuation is over \$10,000 (separate permit required)