City of Vacaville
Community Development
Building Division

Masonry Wall Checklist

This is to be used as a general checklist; it is not inclusive of all code requirements and inspection criteria.

Per California Building Code (CBC) Chapters 1, 17, 18, 21
American Concrete Institute (ACI) 530.1 (masonry) and 318 (concrete)
And applicable ASTM referenced standards

FOOTING INSPECTION

- The building permit of copy shall be kept on the site of the work until the completion of the project CBC 105.7
- Location per approved plans CBC 107
- Slope setback maintained 5' to daylight CBC 1808.7
- Clean of foreign debris ACI 318 7.5.1(d)
- Size per approved plans: depth and width, key way if required. Stepped, if slope exceeds 1/10. CBC 1809.3
- Reinforcing steel per CBC 1907 and ACI 318
  - Minimum grade per plans (mill certification required for foreign rebar)
  - Properly sized and placement per plan ACI 318 7.5.1
  - Minimum clearances to earth maintained. 3" per ACI 318
  - Adequately secure from displacement ACI 318 7.5.1
  - Lap splice requirements maintained. Length, staggered splices, etc.
  - Minimum length of lap splices (30db in concrete, 40/48 db. in masonry)
  - Location, type, and installation of mechanical splices (manufacturer's data required)
  - Location, type of welded splices (certified welder required/deputy inspection and materials identification required per CBC 1704.3.1 and 1708.2)
  - Double dowels at jambs, wall ends and corners as required by plans and ACI 530
- Plumbing piping and electrical conduits Per ACI 318 6.3 and SEOR (structural. Engineer).
- If pipes or conduits run through stem/masonry wall then:
  - Sleeved with schedule 40 steel
  - Protect from concrete
  - ≥ 3 diameter on center
  - Clearances to reinforcement minimum ¾"
- Structural Observation per plan and CBC 1704.6
- Soils engineer approval per plan and CBC 1803.5.11

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

- Rebar and footing clean of over pour and laitance per ACI 530.1 3.2
- 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 1
- Strength testing (prisms) per CBC 1704.5 for Level 2
- Wall height per approved plans
- Head and bed joints solidly mortar filled, except beveled end of open-end units.
- Initial bed joint >¼"< ¾". ACI 530.1 3.3B.1
- Bed and head joints 3/8" thick +/- 1/8" ACI 350.1 3.3.B
  - Max mortar fin projection of ½". ACI 530.1 3.3B.1c
  - Clean of foreign debris and mortar droppings per ACI 530.1
- Clean-outs required for grout pours >5' ACI 530.1 3.2F
  - At all cells with vertical reinforcing bars
  - 3" minimum dimension ACI 530 3.2F.2
  - Max 32" O.C. if solidly grouted
  - Max 48" if partially grouted
- Max grout pour height per ACI 530 3.5 and table 7 (based on cell size/grout space)
- Anchor bolts > ¼" minimum grout surrounding per ACI 530 3.4D
- Plumb and line of masonry layup- within 1/4" in 10' (½" max.) per ACI 530 3.3F

REINFORCING STEEL (in masonry wall) per ACI 530.1

- Minimum grade per plan (mill cert required)
- Properly sized per plans (special requirements for shear walls)
  - Maximum size #11 (36mm)
  - Minimum #4 at 2' o.c. each way in Seismic Design Category D
- Maximum reinforcement 6% of cell area without splice or 12% of cell area with splice
- 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)
- Lentil bars minimum 2' past openings each side ACI 530 1.17.3.2.3.1
- Double jamb bars at openings
- Vertical steel within 16" of wall openings >16" and corners. Within 8" of joints and end of wall ACI 530 1.17.3.2.3.1
- 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 (typical)
- Minimum clearance to masonry maintained. ACI 530.1 3.4B
  - ¼" for fine grout – ½" for course grout.

PRE-GROUT INSPECTION

- All grout per ASTM C476, 8-10" slump, mix design and psi per SEOR (structural engineer of record)
- Grout consolidation and reconsolidation per ACI 530.5E
- Maximum pour height per Approved plans and ACI 530
- Maximum lift height per ACI 530 3.5D
- Periodic deputy inspection of reinforcement (and materials) per CBC1704.5.1
- Special inspection requirements apply to all masonry per CBC 1704.5.1(all grouting requires continuous deputy inspection and periodic inspection of reinforcement)
- Verify permit description reflects actual work being performed.
- 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 21

FINAL INSPECTION

- Wall construction complete, wall capped
- Appropriate curing time for retaining wall prior to backfill (28 days typical) Wall height and length 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
- Smoke alarms per CBC 907
- Carbon Monoxide detectors per CBC 420
- Seismic gas shutoff valve if permit valuation is over $10,000