

# SAN MIGUEL COUNTY BUILDING DEPARTMENT

## 2009 International Residential Code requirements and San Miguel County Amendments to the IRC.

**THIS SUMMARY SHALL REMAIN ATTACHED AS PART OF THE APPROVED SET OF PLANS. THE APPROVAL OF THE PLANS AND SPECIFICATIONS DOES NOT PERMIT THE VIOLATION OF ANY SECTION OF THE CURRENT ADOPTED CODES, COUNTY REGULATIONS OR STATE LAWS.**

### TABLE R301.2 (1) DESIGN CRITERIA

Roof Snow Load: Site specific; Consult Bldg. Dept.

Wind Speed: 90 mph/3 sec gust

Seismic Category: C

Weathering: Severe

Frost Depth: Refer to #15

Termite: Consult Bldg. Dept.

Decay: Slight

Winter Design: Telluride = -6, Norwood = -2

Ice Shield Required: Yes (24" inside wall line)

### FOUNDATION DRAINAGE AND GRADING

1. Drainage - Provide drainage lines of rigid, high impact material at least equal to SDR-35 or equivalent. Sec. R405
2. Backfill - All foundation / retaining walls shall be backfilled with free draining granular material other than sand, up to 2/3 the height of the wall. A special inspection is required prior to covering drains. On down slope walls and walls less than 32" high, on other than steep slope lots, gravel backfill may be terminated at 12" minimum depth.
3. Filter Fabric - A filter cloth barrier shall be provided between soils and gravel backfill to mitigate siltation at drainage lines.
4. Provide damp proofing on the exterior of walls enclosing habitable areas. Sec. R406
5. The final grade shall slope away from the foundation walls a minimum of 6 inches within the first 10 feet. Sec. R401.3

### POURED CONCRETE FOOTINGS AND WALLS

6. Foam foundation systems may be used which have been pre-engineered by the manufacturer and approved by the

Building Department. Installation shall conform to the manufacturer's instructions.

7. Insulated Concrete Forms for basements shall be covered by a thermal barrier. Sec. R316
8. Retaining walls retaining greater than 24 inches of unbalanced backfill, not having lateral support at the top shall be designed by an engineer. Sec. R404.4
9. 1 story - 6" wall, 12" x 6" footing.  
2 story - 8" wall, 15" x 7" footing.  
3 story - 10" wall, 23" x 8" footing.  
Sec. R403.1 & R403.1.1; Increases may be required due to snow loads and soil conditions.
10. Minimum Reinforcing Steel:  
Footings: 2 - #4 continuous horizontal rebar  
Walls: ≤ 8ft - 1 - #4 continuous rebar within 12" of top and near mid-height of wall horizontally  
≥ 8ft - 1 - #4 continuous rebar within 12" of top and near third points in height of wall horizontally  
R404.1.2.2  
Vertical rebar:  
Masonry foundation walls Tables R404.1.1(1) - R404.1.1(4) Flat Concrete Tables R404.1.2(2) - R404.1.2(4)
11. Rebar clearances:
  - 3" to soil
  - Concrete exposed to earth or weather - 1 1/2" for #5 rebar and smaller, 2" for #6 rebar and larger.
  - Concrete not exposed to weather or in contact with ground - 1 1/2" for #11 rebar and smaller. ACI 318
12. Minimum lap splice - #4 Grade 60 - 30"; #5 Grade 60 - 38 inches; Refer to Table R611.5.4(1)
13. Reinforcement around doors and windows for foundations shall be provided with trim bars placed within 12 inches of the opening. Sec. R404.1.2.3.7.3
14. Concrete & masonry construction in cold weather shall be protected pursuant to ACI standards.
15. Frost depth requirements:
  - ≤ 7000 feet elevation - 24" below grade
  - > 7000 - ≤ 7500 feet elevation - 36" below grade
  - > 7500 feet elevation - 48" below grade
16. Ventilation- Provide screened openings at 1/1500th of under-floor area for cross ventilation. Sec. R408.2 or design a vent-free crawl space per Bldg. Dept. handout.
17. The exposed earth in all crawl spaces shall be covered with a continuous vapor retarder attached to the foundation. Lap joints at least 12" and seal. Sec. N1102.2.9
18. Crawl space - Minimum 18" under joist, 12" minimum under beams unless wood complies with Sec. R317.1

19. Access to crawl space to be unobstructed 18" x 24" minimum. Sec. R408.4
20. Independent footings, piers or thickened slab area shall be provided under concentrated loads.
21. Concrete and masonry foundation walls shall extend a minimum of 6" above grade; foundations with masonry veneer, 4" above grade minimum. Sec. R404.1.6
33. Trimmer and header joists shall be doubled when span exceeds 4 feet. Provide framing anchors for header joists over 6 feet long and for each tail joist more than 12' long. Sec. R502.10
34. Floor joists - maximum spans per Tables R502.3.1(1), R502.3.1(2) and Sec. R502.3
35. Joists shall be supported laterally at the ends and at each support by solid 2" blocking. Sec. R502.7

### **FRAMING**

22. All wood in direct contact with concrete must be pressure treated or decay-resistant. Sec. R317.1
23. Provide 1/2" dia. bolts with nuts and washers at 6' o.c.; at least 2 bolts per piece within 12" of each end. Bolts must be embedded at least 7" in concrete. Sec. R 403.1.6
24. Concrete or masonry piers supporting untreated wood must project at least 6" above exposed ground and be capped by an impervious moisture barrier. Sec. R317.1.4
25. Untreated columns and posts on concrete floors in garages, basements and exterior locations shall be supported at least 6" above exposed earth and 1" above such floor and be separated by an impervious moisture barrier. Sec. R317.1.4
26. Post-beam connections shall provide a positive connection to ensure against uplift and lateral displacement.
36. Bearing partitions perpendicular to joists shall not be offset from supporting girder, walls or partitions more than the depth of the joists, unless designed to support the additional load. Sec. R502.4
37. Double joists minimum required under parallel bearing partitions. Sec. R502.4
38. Headers or lintels shall have a minimum end bearing of 1-1/2". Sec. R502.6
39. Glu-lams, if exposed to weather shall be pressure treated or if wood, of natural resistance to decay. Sec. R317.1.5
40. Subfloor underlayment & wood structural panels. Plywood combination subfloor-underlayment to have tongue and groove joints or to be supported between joists with blocking. Sec.R503 & Tables R503.2.1.1(1), R503.2.1.1(2)
41. 1-1/2" tongue and groove decking may be used in accordance with Tables R503.1 and Sec. R503.1

### **Wood design and construction shall conform to Chapter 5, 6 and 8. The following items are commonly encountered requirements:**

27. Ceiling heights of habitable rooms, hallways, bathrooms, toilet compartments, laundry rooms and basements shall have a ceiling height of not less than 7'0" measured to the lowest projection from the ceiling. Sec. R305 (see exceptions)
28. Notching of joists, beams, rafters and studs is allowed per Sec. R502.8, R602.6 and R802.7
29. Bearing beams and girders shall have a minimum end bearing of 3" when supported by masonry or concrete. Sec. R502.6
30. Wood members entering masonry or concrete walls shall be provided with a 1/2" air space at top, sides and ends. Sec. R317
31. Fabricated girders, if built up, shall be nailed with 10 penny nails and/or bolted per approved design. Table R602.3(1)
32. Framing anchors or ledger strips shall be used to support joists framed into the side of wood girder. Sec. R502.6.2
42. Wall studs allowable length and spacing per Table R602.3(5) & R602.3.1
43. Foundation cripple walls shall be framed of studs not less in size than the studding above. Cripple walls with a stud height of less than 14" shall be solid sheathed on one side. Sec. R602.9
44. Wall bracing required per Table R602.10.1.2(1) & R602.10.1.2(2); bracing based on wind not seismic
45. Framed walls must accommodate plumbing, piping, ducts and wiring without over-notching & over-boring of plates and studs. Sec. R602.6
46. Firestopping is required to seal off concealed openings at wall/ceiling intersections and in horizontal wall cavities at 10 foot intervals; fill openings around vents, pipes, ducts, chimneys and fireplaces. Sec. 602.8
47. Draftstopping shall be installed so that a concealed space in a floor/ceiling assembly does not exceed 1,000 square feet. Sec. R502.12
48. Timber connections shall be in accordance with the "National Design Specification for Wood Construction" latest edition.

## **EXTERIOR WALLS**

49. 15 lb. felt or other approved weather-resistant material shall be applied over studs or sheathing of all exterior walls. Lap joints not less than 2" at horizontal joints and 6" at vertical joints. Sec. R703.2 and Table R703.4

## **ROOF**

50. Trusses shall be designed by a Colorado registered Structural Engineer. Design drawings must be on site prior to requesting a framing inspection. Sec. R802.10
51. Snow load requirements are site specific. Check with Bldg. Dept.
52. Purlins must be at least equal to the size of supported rafters and to be braced by struts at not less than 45° at a bearing wall. Unbraced struts shall not exceed 8' in length. Sec. R802.5.1 & Figure 802.5.1
53. Rafters shall be tied to one another at the wall plate or a ridge beam must be designed to support the appropriate roof loads. Sec. R802.3.1
54. Attic access is to be readily accessible with a minimum size of 22" x 30" and provided to areas that exceed 30 sq.ft. and having a vertical height of at least 30 inches. A 30" minimum unobstructed headroom height shall be provided above the access opening. Sec. R807
55. Attic ventilation to be 1/150th of attic area, or 1/300th provided one half is at soffit and one half is 3' above the plate line. Sec. R806
56. All roofs must be provided with ventilation unless approved by the Building Official.
57. Slope less than 3" vertical in 12" horizontal shall have ridge boards, hips and valleys designed as beams. Sec. R802.3
58. Rafters shall be framed to ridge boards of at least 1" in thickness or to each other with a gusset plate as a tie. Valleys and hips must be at least 2" nominal thickness. Ridges, valleys and hips must provide a depth at least equal to the depth of the end cut of rafter. Sec. R802.3
59. Rafters, ceiling joists and trusses having a depth-to-thickness ratio exceeding 5 to 1 shall be supported by solid blocking at all bearing points to prevent rotation. Sec. R802.8 and R802.10.3
60. Rafters and/or trusses shall be connected to top plates of braced wall panels according to Sec R602.10.6.2
61. Plywood sheathing, if exposed to outdoor applications shall be of exterior exposure durability. Sec. R803.2.1.1

62. Roof sheathing shall be in accordance with Table R803.1 for lumber. For wood structural panels, see Table R602.3(1) & R503.2.1.1(1).
63. Spaced sheathing for shakes to be minimum 1 x 4, spaced per Sec. R905.8
64. A self-adhering polymer modified bitumen sheet shall be installed as underlayment and extend from the eave's edge to a point at least 24" inside the exterior wall line of the building. Sec. R905.2.7.1
65. Wood shake roofs shall be installed per Sec. R905.8.
66. Asphalt roofing requires valley flashing per Sec. R905.2.8.2. Metal shingles requires valley flashing with a splash diverter rib per Sec. R905.4.6.
67. Roofs shall be sloped to prevent ponding of water or provided with drains and scuppers per Sec. R903.4.1.

## **MEANS OF EGRESS**

68. At least one side-hinged door not less than 3 feet in width and 6'8" in height shall be provided from each dwelling unit for exiting purposes. The exit door shall lead directly outside without travel through a garage. A floor or landing is required on each side of this door. The landing shall not be more than 1.5" lower than the top of the threshold except in cases where the door swings away from the landing then the landing may be a maximum 8" lower than the threshold. Sec. R311.2 & R311.3
69. The landing at an exterior doorway shall not be more than 7.75" below the top of the threshold, provided the door does not swing over the landing. Sec. R311.3
70. Exterior exit doors shall be protected from the effects of snow and/or ice falling from the building roof above. Sec. R311.2 (Amended)

## **STAIRWAYS**

71. Stairs shall have a minimum clear width of 36" at all points above the handrail and below the required headroom height. The minimum clear width at and below the handrail shall not be less than 31½" where a handrail is on one side and 27 inches where the handrails are on both sides, including treads and landings. Sec. R311.7.1
72. Maximum stair rise is 7.75"; minimum clear run measured from the leading edge of adjacent treads shall be 10". The greatest riser height, or tread depth, shall not exceed the smallest riser height or smallest tread depth by more than 3/8" in any flight. Sec. R311.7.4
73. The minimum headroom at all areas of the stairway shall not be less than 6 feet 8 inches. Sec. R311.7.2

74. Open sides of stairs with a total rise of more than 30 inches above the floor or grade below shall have guards at least 34 inches in height. A six inch sphere shall not pass through the triangular opening formed by the riser, tread and bottom rail of a guard. Guard openings shall not allow a 4 3/8 inch sphere to pass through at any point. Sec. R312
75. Stairways with 4 or more risers shall have a handrail on at least one side placed at 34" to 38" above nose of tread. Sec. R311.7.7
76. All required handrails shall be continuous the full length of the flight, from a point directly above the top riser of the flight to a point anywhere on the lowest tread. Sec. R311.7.7.2 (Amended)
77. Winder stairs shall have the minimum tread depth measured at 12" out from the narrow side and in no case shall the width of run be less than 6" at any point. Sec. R311.7.3
78. Spiral stairs shall have a minimum tread width of 26"; minimum run of 7 1/2", maximum riser of 9 1/2", and a minimum of headroom of 6'6". Sec. R311.7.9.1
79. Fireblocking shall be provided in concealed spaces between stair stringers at the top and bottom of the run. Sec. R302.11
80. Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 1/2" gypsum board. Sec. R302.7
81. All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. Sec. R303.6

### **LIGHT AND VENTILATION**

82. Window area of rooms must be 8% of the floor area. Openable sections of windows to be 4% of floor area. Sec. R303.1
83. EXCEPTION: The glazed areas may be omitted in rooms where an approved mechanical ventilation system is provided and where permanently installed artificial light is provided capable of producing an average illumination of 6 foot-candles over the area of the room at a height of 30 inches above the floor level and where an emergency escape opening is not required. Sec. R303.1
84. Every basement, habitable attic, and sleeping room must be provided with an opening for emergency egress. The opening shall provide a minimum of 5.7 sq.ft. minimum net clear openable width shall be 20"; minimum clear openable height shall be 24". Grade level openings may have 5 sq.ft. minimum opening. Sill height maximum is 44" off floor. Sec. R310.1

85. Operable windows located more than 72 inches above grade & having the opening within 24 inches of the floor must have the opening restricted to prevent the passage of a 4 inch diameter sphere from passing.
86. Bathrooms shall be provided with 3 sq. ft. of window with an openable area not less than 1 1/2 sq.ft. or provide a mechanical fan connected to the outside capable of 50 cfm. Sec. R303.3
87. Dryer, Kitchen and Bath fan - To be separately vented to outside. Sec. R303.3, M1501, M1502; Install ductwork prior to framing or insulation inspection. Dryer exhaust shall terminate not less than 3 ft from building openings.
88. Skylights must be laminated glass or approved rigid plastics. Sec. R308.6
89. Safety glazing required at areas within a 24" arc of a door in a closed position; glazing adjacent to stairways within 60" horizontally of the bottom tread of a stairway in any direction ; glazing adjacent to stairways, landings and ramps within 36" of a walking surface and other areas pursuant to Sec. R308.4

### **THERMAL INSULATION**

90. All buildings shall be designed and insulated to comply with the San Miguel County Prescriptive Energy Code.
91. A minimum of 1 inch air space shall be provided between the insulation and the roof sheathing. Sec. R806.3
92. Openings in plates and sills and floor/ceiling assemblies shall be firestopped. Sec. R602.8
93. Stud and rafter cavity insulation shall be installed to minimize edge gaps, compaction, and slumping.
94. Insulation around electrical fixtures must be installed according to the listing of the fixture.
95. Foam plastic insulation must be provided with an approved thermal barrier. Sec. R316
96. All exposed insulation materials on attic floors shall have a critical radiant flux not less than 0.12 watt per square centimeter. Sec. R302.10.4

### **GYPSUM WALLBOARD**

97. Fastening per Table R702.3.5
98. Fire resistive construction for area under stairs and for separation between the garage and dwelling shall be 1/2" gypsum board; garages beneath habitable rooms shall have 5/8" Type X attached to garage ceiling with 6 inch o.c. fasteners. Sec. R302.6 & R302.7

99. Wallboard used in shower/bath enclosures or used as a base for ceramic tile shall be water-resistant gypsum. Sec. R702.3.8

### **MASONRY AND STONE VENEER**

100. Masonry and stone veneer shall be installed per Sec. R703.7
101. Foundation wall and/or footing shall be increased in width over standard footing to support dead load of veneer. Sec. R403.1

### **DECKS AND BALCONIES**

102. Framing to be designed for localized snow load and dead load. Piers to be poured in place. Provide post base anchors to concrete. Concrete piers to be 6" above grade. Provide sway bracing as required. Nails are prohibited for deck attachment to existing wall. Sec. R502.2.2 & R317.1.4
103. When decks are greater than 30" above grade guardrails are required. Guardrails must be a minimum 36" high with balusters less than 4" apart and to withstand horizontal force of 50 lb. at any point. Sec. R312 & Table R301.5. WIRE CABLE GUARDRAILS ARE PROHIBITED.
104. Guards are required at open-sided walking surfaces, including stairs, porches, balconies or landings; the guards shall not be less than 36 inches high measured from the adjacent walking surface, adjacent fixed seating or the line connecting the leading edge of the treads.
105. Exterior deck framing, supports and deck surface are required to be decay resistive or pressure treated material. Sec. R317  
Exception: Decks built on property less than 9,500 elevation and framing materials (excluding posts) are greater than 36" above grade, or decks constructed on property at or above 9,500 elevation with framing materials (excluding posts) are greater than 48" above grade.

### **MECHANICAL**

106. Appliances installed in a garage shall be located out of the normal path of vehicles, or a means of protection shall be provided. Units generating a spark or flame shall have pilot lights and burners 18" above the floor. Sec. M1307.3
107. Appliances supported from the ground shall rest on a concrete slab projecting above the adjoining grade. Sec. M1305.1.4.1
108. No gas appliance shall be installed in any confined space with access only through a bedroom, bathroom or closet unless a direct-vented appliance. Sec. G2406.2

109. Provide 30" of working space for service of appliances. Provide additional clearances per manufacturer and Sec. M1305
110. Combustion air required per IRC Chapter 17
111. Metal ducts shall be separated from the ground by at least 4" of clear space. Sec. M1601.4.7
112. Appliances located in the crawlspace or attic shall have service lighting and power. Access openings shall be 30" x 22" minimum and located not more than 20 feet from the appliance. Sec. M1305.1.3 & M1305.1.4.
113. Gas fireplaces and/or fireplaces with gas burning appliances shall not be provided with manual dampers. Sec. M1802.2.1
114. Dryer exhaust ducts shall be rigid metal having smooth interior surfaces. Dryer ducts shall not be connected with screws or fastening means which extend into the duct. Approved metal flex transition ducts shall not be concealed within the construction and shall not exceed 8' in length.  
25 ft maximum duct length; 45-degree bends = 2.5 ft, 90-degree bends = 5 ft. Sec. M1502.4

### **FIREPLACE**

115. Fireplace footing shall be 12" thick and extend a minimum of 6" beyond masonry walls on all sides. Sec. R1001.2
116. Fireplace walls to be a minimum 8" thick including firebrick. Firebox must be a minimum of 20" deep from face of opening. Sec. R1001.5, 1001.6
117. Load bearing fireplaces/chimneys to be designed by an Engineer.
118. Smoke chamber shall be a minimum 8" thick. Sec. R1001.8
119. Joints in firebrick shall not exceed ¼". Sec. R1001.5
120. Hearth extension: 8" each side of opening, 16" in front; if opening exceeds 6 sq. ft. then 12" each side and 20" in front. Hearths and hearth extensions must be supported by noncombustible materials. Sec. R1001.10
121. Combustion air shall be a minimum of two 4" diameter ducts to exterior from firebox. The air intake openings shall not be located at an elevation higher than the firebox. The outlet shall be closable. Sec. R1006
122. Masonry chimneys must be lined. The lining material shall be appropriate for the type of appliance. Sec. R1003.11

123. More than two flues in a chimney shall be separated by not less than 4" thick masonry bonded into the masonry wall. Sec. R1003.13
124. No combustible material allowed within 6" of the fireplace opening. Within 12" of fireplace opening combustibles shall not project more than 1/8" for each 1" lateral clearance from fireplace opening. Sec. R1001.11
125. All combustible materials shall have a clearance of not less than 2" from the front faces and sides of masonry fireplaces and not less than 4" from the back face. The air space shall not be filled except to provide fire blocking requirements. Sec. R1001.11
126. Fire-blocking of spaces between chimneys and wood framing shall be with non-combustible materials. Sec. R1001.12
127. Chimney - Shall extend 2' above any portion of the roof within 10' but not less than 3' above the highest point where the chimney passes through the roof. Sec. R1003.9
128. Spark arrestor required on wood burning chimneys; screen shall be 19 gage galv. steel or 24 gage stainless with 1/2" openings.
129. Design flue area per Sec. R1003.15
138. Ducts penetrating the garage fire separations must be a minimum #26 gage sheet metal with no openings into the garage. Sec. R309.5.2
139. A permanent certificate shall be posted on or in the electrical distribution panel providing R-values of insulation for all areas, duct insulation, glazing U-factor with solar heat gain coefficient.
140. Floor surface in garage/carport to be non-combustible or asphaltic. Sec. R309.1
141. Wood paneling less than 1/4" to be backed with 3/8" GWB. R702.5
142. Concrete porch, walkway, steps and landings shall not be poured against wood framing. Sec. R317
143. Every dwelling is to have a smoke alarm located in each bedroom, outside each sleeping area and on every level. Smoke detectors are to be wired to the electrical system and have a battery back up. Sec. R314.
144. An approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the access to the bedroom where fuel-fired appliances and/or attached garages are serving the dwelling unit. Sec. R315
145. Every building is to have its address plainly legible and visible from the street or road fronting property. Sec. R319; Refer to County addressing standards

#### **FABRICATED WOOD BURNING APPLIANCES**

130. Solid fuel appliances shall be installed in accordance with terms of the manufacturer or the NFPA Standards.
131. Single wall metal chimneys shall be installed per Sec. R1005

#### **FINAL**

132. Nonabsorbent materials shall extend 72" above the floor of a shower or bathtub with a shower head. Sec. R307.2
133. Water closet compartment to be minimum 30" wide with 21" clear space in front of toilet. P2705
134. Hot tubs / spas and swimming pools must comply with Appendix Chapter G.
135. Hot water heater - Provide pressure relief valve. Drain out, no trapping; end of pipe not more than 2' or less than 6" above ground, pointing down. P2803.6.1
136. Heating system efficiency and insulation shall conform to the San Miguel County Prescriptive Energy Code.
137. Doors between garage and residence must be minimum 1 3/8" solid core or 20 minute rated. There shall be no openings in wall between garage and any room used for sleeping. Sec. R302.5.1

#### **ADDITIONAL COMPLIANCE ITEMS**

146. Ranges and cooktops shall meet clearances in accordance with the manufacturer's listing. Sec. M1306
147. Electric Fixtures must be installed per listing.
148. Condensate from heating appliances shall be routed to a drain. Sec. G2427.9
149. Water Meter w/ readout in San Bernardo Sub.
150. Aldasoro and Lawson Hill Subdivisions require Homeowners Association final approvals.
151. Aldasoro and Lawson Hill Subdivisions require Town of Telluride acceptance for sewer and water taps.
152. Certifications that may be required:
  - Appliances
  - Roofing
  - Insulation
  - Log grading
  - Elevator
  - Special Inspections
153. Final septic approval