

**APPLICABLE CODES AND STANDARDS:**  
 IRC 2009  
 NFPA 101 2009, NFPA 101 2009  
 MSHA DESIGN AND CONSTRUCTION MANUAL  
 ICC/ANSI A17.1 2009

**IBC USE & CONSTRUCTION TYPES**  
 GROUP S-2 PARKING GARAGE CONSTRUCTION TYPE: IB  
 GROUP R-2 RESIDENTIAL CONSTRUCTION TYPE: VA

**NFPA OCCUPANCY & CONSTRUCTION TYPES**  
 STORAGE - PARKING STRUCTURE, OPEN CONSTRUCTION TYPE: II (222)  
 RESIDENTIAL - APARTMENT BUILDING, NEW CONSTRUCTION TYPE: VI11

**SUMMARY OF REQUIRED SEPARATIONS:**  
 2 HR HORIZONTAL ASSEMBLY BETWEEN STORAGE AND RESIDENTIAL OCCUPANCIES

2 HR FIRE BARRIER SEPARATING THE MEANS OF EGRESS FOR THE UPPER OCCUPANCY AND THE PARKING OCCUPANCY

90 MIN. SELF-CLOSING AND SELF-LATCHING DOORS TO EXIT ENCLOSURE FOR THE RESIDENTIAL OCCUPANCY FROM THE PARKING OCCUPANCY

1 HR FIRE RESISTANCE RATING OF EXIT ENCLOSURES WITHIN RESIDENTIAL OCCUPANCY

60 MIN. SELF-CLOSING AND SELF-LATCHING DOORS TO THE EXIT ENCLOSURE FROM THE RESIDENTIAL OCCUPANCY

1 HR FIRE PARTITION BETWEEN DWELLING UNITS OR SLEEPING UNITS

1 HR HORIZONTAL ASSEMBLY BETWEEN DWELLING UNITS OR SLEEPING UNITS IN THE SAME BUILDING

1/2 HR CORRIDOR FIRE-RESISTANCE RATING

20 MIN. SELF-CLOSING AND SELF-LATCHING DOORS TO EXIT ACCESS CORRIDOR

1 HR FIRE RESISTANCE RATING SEPARATION AND AUTOMATIC SPRINKLERS AT BOILER ROOMS

1 HR FIRE RESISTANCE RATING SEPARATION AND AUTOMATIC SPRINKLERS AT LAUNDRY ROOMS GREATER THAN 100 s.f. OUTSIDE OF DWELLING UNITS

1 HR FIRE RESISTANCE RATING SEPARATION AND AUTOMATIC SPRINKLERS AT TRASH COLLECTION ROOMS

1 HR FIRE RESISTANCE RATING PROTECTION OR AUTOMATIC SPRINKLERS AT STORAGE ROOMS OUTSIDE OF DWELLING UNITS

1 HR SHAFT ENCLOSURES CONNECTING LESS THAN FOUR STORIES

2 HR SHAFT ENCLOSURES CONNECTING FOUR OR MORE STORIES

1 HR BEARING WALLS - INTERIOR AND EXTERIOR

1 HR NON-BEARING EXTERIOR WALLS FOR WHICH THE FIRE SEPARATION DISTANCE IS GREATER THAN OR EQUAL TO 10 FEET AND LESS THAN 30 FEET.

1 HR ROOF CONSTRUCTION AND SECONDARY MEMBERS

1 HR FLOOR CONSTRUCTION AND SECONDARY MEMBERS

**FIRE SEPARATIONS:**  
 - - - - - 1/2 HOUR FIRE-RESISTANCE RATING AT CORRIDORS  
 - - - - - 1 HOUR FIRE-RESISTANCE RATING, STC 50 MIN.  
 - - - - - 2 HOUR FIRE-RESISTANCE RATING

**SPRINKLER SYSTEM:**  
 THE BUILDING SHALL BE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM THAT COMPLIES WITH NFPA 13.

**ALLOWABLE BUILDING HEIGHT:**  
 PER IBC 2009 TABLE 503 AND SECTIONS 504.2, 504.3, & 509.4

**GRADE PLANE CALCULATION**  
 NORTH: (11.4+10.9+10.5+12.3) / 4 = 11.26  
 SOUTH: (13.5+17.5+17.3+13.3) / 4 = 15.40  
 EAST: (13.3+12.24) / 2 = 12.77  
 WEST: (11.4+13.5+16.6+17.3) / 4 = 14.20  
 54.13 / 4 = +13.53 AVERAGE GRADE PLANE

**MAXIMUM BUILDING HEIGHT = 60'**  
 MAXIMUM ALLOWABLE BUILDING ELEVATION ABOVE AVERAGE GRADE PLANE = +73.53'  
 HEIGHT OF ROOF STRUCTURES ABOVE STAIRWELLS NOT TO EXCEED 20' ABOVE ALLOWABLE BUILDING HEIGHT (SECTION 504.3)

**MAXIMUM NUMBER OF STORIES ABOVE ONE LEVEL OPEN PARKING = 4 (SECTION 509.4)**

**PARKING STRUCTURE**  
 NFPA 3.3.240.6  
 DEFINITION OF OPEN PARKING STRUCTURE:  
 1.4 S.F. WALL OPENING FOR EACH LINEAR FOOT OF EXTERIOR PERIMETER  
 OPENINGS DISTRIBUTED UNIFORMLY OVER TWO OPPOSING SIDES  
 CALCULATIONS:  
 EXTERIOR PERIMETER PARKING AREA = 223' - 10" (427' TOTAL PERIMETER)  
 MULTIPLY BY 1.4 FOR REQUIRED OPEN AREA = 313.67 S.F. ( 597.8 S.F.)  
 OPEN AREA PROVIDED = 944.53 S.F.

**NFPA 101 EGRESS REQUIREMENTS**  
 42.8.2.5.1 MAXIMUM COMMON PATH OF TRAVEL 50 FT  
 42.8.2.5.2 MAXIMUM DEAD END TRAVEL DISTANCE 50 FT  
 42.8.2.5.3 MAXIMUM TRAVEL DISTANCE TO EXIT 400 FT

**ALLOWABLE BUILDING AREA:**  
 PER IBC 2009 TABLE 503 AND SECTION 506.3  
 24,000 s.f. PER STORY

**SOUND TRANSMISSION:**  
 SEPARATIONS FOR DWELLING UNITS SHALL HAVE A MINIMUM STC OF 50.

FIRST FLOOR AREA: 14,252 SQ. FT.  
 OCCUPANT LOAD 104

APARTMENT BUILDING @ 1:200 GROSS	35
ASSEMBLY @ 1:15 NET	66
OFFICE @ 1:100 NET	2
KITCHEN @ 1:100 NET	1

