



# Structural Design Criteria Philadelphia Building Code

All sections below are required to be completed.

**PROPERTY ADDRESS:** \_\_\_\_\_ **Application #:** \_\_\_\_\_

- 1. Floor Live Loads (1607)**
- |                       | <u>Uniform (psf)</u> | <u>Concentrated (lbs.)</u> |
|-----------------------|----------------------|----------------------------|
| a) Basement           | = _____              | = _____                    |
| b) First floor:       | = _____              | = _____                    |
| c) Second floor:      | = _____              | = _____                    |
| d) Third floor:       | = _____              | = _____                    |
| e) Additional floors: | = _____              | = _____                    |

**Note: Design live loads exceeding 50 psf shall be posted in accordance with the code.**

{Live Load Reduction Factor (if any)  
= \_\_\_\_\_ }

**2. Roof Live Loads (1607.11)** = \_\_\_\_\_ = \_\_\_\_\_

- 3. Snow Loads (1608)**
- |   |          |
|---|----------|
| a) Ground Snow Load, $P_g$ (ASCE 7, 7.2)      | = 25 psf |
| b) Flat-roof snow load, $P_f$ (ASCE 7, 7.3)   | = _____  |
| i) Exposure Factor, $C_e$ (ASCE 7, 7.3.1)     | = _____  |
| ii) Thermal Factor, $C_t$ (ASCE 7, 7.3.2)     | = _____  |
| iii) Importance Factor, $I$ (ASCE 7, 7.3.3)   | = _____  |
| c) Sloped Roof Snow Load, $P_s$ (ASCE 7, 7.4) | = _____  |
| i) Roof Slope Factor, $C_s$ (ASCE 7, 7.4.1)   | = _____  |

- 4. Wind Load (1609)**
- |  |         |  |         |
|--|---------|--|---------|
| a) Basic Wind Speed, $V$ (ASCE 7, 6.5.4)<br>= 90mph, (3 sec. gust) |         | d) Adjustment Coeff., $\lambda$ (ASCE 7, Fig. 6-2) | = _____ |
|  |         | i) Mean Roof Height                                | = _____ |
| b) Importance Factor, $I$ (ASCE 7, 6.5.5)                          | = _____ | e) Roof Angle                                      | = _____ |
| i) Occupancy Cat. (ASCE 7, Table 1-1)                              | = _____ | f) Load Case                                       | = _____ |
| c) Exposure Category (ASCE 7, 6.5.6)                               | = _____ |  |         |

**5. Lateral Soil Load (1610)** Unified Soil Classification = \_\_\_\_\_ Active Pressure = \_\_\_\_\_ psf At-rest Pressure = \_\_\_\_\_ psf

- 6. Earthquake Loads (1613)**
- a) Seismic Importance Factor,  $I$  (ASCE 7, Table 11.5-1) = \_\_\_\_\_
- b) Occupancy Category (*Check one*) (ASCE 7, Table 1-1) =  I  II  III  IV
- c) Mapped Spectral Response Accelerations, (ASCE 7, 11.4.1)  $S_s = .28$  (28% g)  $S_1 = .06$  (6% g)
- d) **Site Class** = \_\_\_\_\_ {Use Site Class "D" when soil properties are not known} (ASCE 7, 11.4.2)
- e) Spectral Response Coeff., (ASCE 7, 11.4.4) Short Period ( $S_{DS}$ ) = \_\_\_\_\_ / 1-Sec. Period ( $S_{D1}$ ) = \_\_\_\_\_  
 For Site Class "D", ( $S_{DS}$ ) = .295 (29.5% g) / ( $S_{D1}$ ) = .096 (9.6% g)
- f) Seismic Design Category (*Check one*) =  A  B  C  D (Based on most severe:  Short Period;  1-Sec.)
- g) Basic Seismic-Force Resisting System(s) (ASCE 7, Table 12.2-1) = \_\_\_\_\_
- h) Seismic Response Coefficient(s),  $C_s$  (ASCE 7, 12.8.1.1) = \_\_\_\_\_
- i) Design Base Shear (ASCE 7, 12.8.1) = \_\_\_\_\_
- j) Response Modification Factor,  $R$  (ASCE 7, Table 12.2-1) = \_\_\_\_\_
- k) Analysis Procedure Used : \_\_\_\_\_

**7. Special Loads** = \_\_\_\_\_

Building, structures and parts thereof shall be designed and constructed in accordance with strength design, load and resistance factor design, allowable stress design, empirical design or conventional construction methods, as permitted by the applicable material chapters.

Buildings and other structures, and parts thereof, shall be designed and constructed to support safely the factored loads in load combinations defined in this code without exceeding the appropriate strength limit states for the materials of construction. Alternatively, buildings and other structures, and parts thereof, shall be designed and constructed to support safely the nominal loads in load combinations defined in this code without exceeding the appropriate specified allowable stresses for the materials of construction.

*I hereby certify that the statements contained herein are true and correct to the best of my knowledge and belief.*

*Submission of this form shall not relieve the design professional from determining the effects of all structural loads applied to the structure, in whole or in part, as specified in the Philadelphia Building Code and its referenced standards, including ASCE 7.*

Seal of PA Lic. Design Professional

Signature of PA Licensed Design Professional

Date