



# **TECHNICAL BULLETIN**

## **PERMIT AND RESOURCE MANAGEMENT DEPARTMENT**

B-29

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### ***Wind Design Criteria***

#### **INTRODUCTION**

For residential buildings of conventional light-frame construction conforming with the California Building Code (CBC) Chapter 23 Section 2308 or the Wood Frame Construction Manual (WFCM) the wind load design criteria shall be considered to be met. For all other buildings the wind load design criteria of CBC Chapter 16 Section 1609 must be met.

The minimum basic wind speed at any site in Sonoma County shall be 85 miles per hour.

#### **TECHNICAL DETAILS**

Most sites within County jurisdiction are exposure C, unless determined to be B or D during site review. A letter from the licensed design professional stating that they have personally been on the site and determined it to be exposure B will generally be accepted. Another option is for the design professional to provide a topographic map and aerial photographs that demonstrate that the site and surrounding terrain conform to the criteria for exposure B.

#### **GLOSSARY**

**Basic Wind Speed:** is the nominal design 3-second gust wind speed in miles per hour at 33 feet above the ground for Exposure C category.

**Exposure B:** shall apply where the ground surface roughness condition, as defined by Surface Roughness B, prevails in the upwind direction for a distance of at least 2,600 feet or 20 times the height of the building, whichever is greater.

**Exposure C:** shall apply for all cases where Exposures B or D do not apply.

**Exposure D:** shall apply where the ground surface roughness, as defined by Surface Roughness D, prevails in the upwind direction for a distance of at least 5,000 feet or 20 times the height of the building, whichever is greater. Exp D shall extend inland from the shoreline for a distance of 600 feet or 20 times the height of the building, whichever is greater.

**Surface Roughness B:** Urban and suburban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.

**Surface Roughness C:** Open terrain with scattered obstructions having heights generally less than 30 feet. This category includes flat open country, and grasslands.

**Surface Roughness D:** Flat, unobstructed areas and water surfaces. This category includes smooth mud and salt flats.

## REFERENCES

2007 California Building Code, Chapter 16 Section 1609

2007 California Building Code, Chapter 23 Section 2308

Sonoma County Residential Construction Handbook Section 1, Appendix 2

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