

# NATIONAL

ES TESTING SERVICE, INC.

presents

## ANSI/SPRI ES-1 STANDARD



### 5 Key Factors:

The formulation for calculating a building's design pressure is found in "ANSI/SPRI ES-1 and the Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems." This calculation involves 5 key elements and should be calculated as follows:

#### **CGp x qz x I x kzt**

CGp = Gust Factor Product

qz = Velocity Pressure from Table 4

I = Importance Factor

kzt = Topographical Factor

#### **1 – Building Height**

The building height should be the height at which the roof edge is to be installed. If there are multiple roof levels, each level is considered a different building height.

#### **2 – Wind Speed**

Use the ANSI/ASCE 7-02 document, "Minimum Design Loads for Buildings and Other Structures." This document provides wind maps of the United States and its territories, which are to be used to determine the wind speed for a particular region.

#### **3 – Building Location (exposure level)**

Exposure A: Now classified as Exposure B

Exposure B: Urban & suburban areas, single family dwelling.

Exposure C: Open terrain with scattered obstructions.

Exposure D: Flat, unobstructed areas; open water for 1 mile or greater.

#### **4 – Building Occupancy Factor (important factor)**

- **Category 1:** Buildings & other structures that represent a low hazard to human life in the event of failure (i.e. agricultural facilities, certain temporary facilities and minor storage facilities)
- **Category 2:** All buildings & other structures except those listed in Categories 1, 3 & 4
- **Category 3:** Buildings & other structures that requested a substantial hazard to human life in the event of a failure (i.e. buildings where more than 300 people congregate, elementary, secondary schools & daycare facilities with a capacity greater than 250 people, health care facilities with a capacity of 50 or more resident patients, but not having surgery or emergency treatment facilities and jails or detention facilities.)
- **Category 4:** Buildings & other structures designed as essential facilities (i.e. hospitals & other health care facilities having surgery or emergency treatment facilities, fire, rescue & police stations & emergency vehicle garages and communications centers & other facilities required for emergency response)

#### **5 – Special Terrain Characteristics**

Obstructions or special terrain characteristics such as hills, escarpments, etc. will influence the wind patterns on your buildings.

ANSI / SPRI  
ES-1  
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