

# Chapter 30

## WIND LOADS – COMPONENTS AND CLADDING (C&C)

### 30.1 SCOPE

#### 30.1.1 Building Types

This chapter applies to the determination of wind pressures on components and cladding (C&C) on buildings.

- 1) Part 1 is applicable to an enclosed or partially enclosed:
  - Low-rise building (see definition in Section 26.2)
  - Building with  $h \leq 60$  ft (18.3 m)

The building has a flat roof, gable roof, multispans gable roof, hip roof, monoslope roof, stepped roof, or sawtooth roof and the wind pressures are calculated from a wind pressure equation.

- 2) Part 2 is a simplified approach and is applicable to an enclosed:
  - Low-rise building (see definition in Section 26.2)
  - Building with  $h \leq 60$  ft (18.3 m)

The building has a flat roof, gable roof, or hip roof and the wind pressures are determined directly from a table.

- 3) Part 3 is applicable to an enclosed or partially enclosed:
  - Building with  $h > 60$  ft (18.3 m)

The building has a flat roof, pitched roof, gable roof, hip roof, mansard roof, arched roof, or domed roof and the wind pressures are calculated from a wind pressure equation.

- 4) Part 4 is a simplified approach and is applicable to an enclosed:
  - Building with  $h \leq 160$  ft (48.8 m)

The building has a flat roof, gable roof, hip roof, monoslope roof, or mansard roof and the wind pressures are determined directly from a table.

- 5) Part 5 is applicable to an open building of all heights having a pitched free roof, monoslope free roof, or trough free roof.
- 6) Part 6 is applicable to building appurtenances such as roof overhangs and parapets and rooftop equipment.

#### 30.1.2 Conditions

A building whose design wind loads are determined in accordance with this chapter shall comply with all of the following conditions:

1. The building is a regular-shaped building as defined in Section 26.2.
2. The building does not have response characteristics making it subject to across wind loading, vortex shedding, or instability due to galloping or flutter; or it does not have a site location for which channeling effects or buffeting in the wake of upwind obstructions warrant special consideration.

#### 30.1.3 Limitations

The provisions of this chapter take into consideration the load magnification effect caused by gusts in resonance with along-wind vibrations of flexible buildings. The loads on buildings not meeting the requirements of Section 30.1.2, or having unusual shapes or response characteristics, shall be determined using recognized literature documenting such wind load effects or shall use the wind tunnel procedure specified in Chapter 31.

#### 30.1.4 Shielding

There shall be no reductions in velocity pressure due to apparent shielding afforded by buildings and other structures or terrain features.

#### 30.1.5 Air-Permeable Cladding

Design wind loads determined from Chapter 30 shall be used for air-permeable cladding unless approved test data or recognized literature demonstrates lower loads for the type of air-permeable cladding being considered.

### 30.2 GENERAL REQUIREMENTS

#### 30.2.1 Wind Load Parameters Specified in Chapter 26

The following wind load parameters are specified in Chapter 26:

- Basic Wind Speed  $V$  (Section 26.5)
- Wind directionality factor  $K_d$  (Section 26.6)
- Exposure category (Section 26.7)
- Topographic factor  $K_{zr}$  (Section 26.8)