

Construction Industry Communication #09

From: Amit Ghosh, Chief Building Official
Re: Climatic and Geographic Design Criteria per Section R301.2 of the Residential Code of Ohio
Date: July 13, 2006

Background: The Residential Code of Ohio (RCO) establishes the climatic and geographic design criteria per Section R301.2. Additional criteria is also established by the local jurisdiction and set forth in **Table R301.2(1)** of the RCO. This communication is to provide all construction industry representatives within the City of Columbus’ jurisdiction the additional criteria as established by the Department of Building & Zoning Services.

Requirements: The established additional criteria is listed in **Table R301.2(1)** (see below).

Memorandum:

Table R301.2 (1)
 CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

Ground Snow Load	Wind Speed (mph) (e)	Seismic Design Category (g)	Subject to Damage From				Winter Design Temp (f)	Ice Shield Under-Layment Required (i)	Flood Hazards (h)	Air Freezing Index (j)	Mean Annual Temp (k)
			Weathering (a)	Frost Line Depth (b)	Termite (c)	Decay (d)					
20	90	B	Severe	32"	Moderate to Heavy	Slight to Moderate	0 – 10 Degrees	Yes	See Flood Insurance Rate Maps	1048	52.6

For SI:
 1 pound per square foot = 0.0479kN/m², 1 mile per hour = 1.609 km/h.

- a.) Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., “negligible”, “moderate” or “severe”) for concrete as determined from the

Weathering Probability Map [Figure R301.2(3).] The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652.

- b.) The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.
- c.) The jurisdiction shall fill in this part of the table with “very heavy”, “moderate to heavy”, “slight to moderate”, or “none to slight” in accordance with Figure R301.2(6) depending on whether there has been a history of local damage.
- d.) The jurisdiction shall fill in this part of the table with “moderate to severe”, “slight to moderate”, or “none to slight” in accordance with Figure R301.2(7) depending on whether there has been a history of local damage.
- e.) The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(4)]. Wind exposure category shall be determined on the site-specific basis in accordance with Section R301.2.1.4.
- f.) The outdoor design dry-bulb temperature shall be selected from the columns of 97 ½ percent values for winter from Appendix D of the *International Plumbing Code*. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official.
- g.) The jurisdiction shall fill in this part of the table with the Seismic Design Category determined from Section R301.2.2.1.
- h.) The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction’s entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the currently effective FIRM and FBFM, or other flood hazard map adopted by the community, as may be amended.
- i.) In accordance with Sections R905.2.7.1, R905.4.3, R905.5.3, R905.6.3, R905.7.3 and R905.8.3, for areas where the average daily temperature in January is 25 degrees F (-4C) or less, or where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with “YES”. Otherwise, the jurisdiction shall fill in this part of the table with “NO”.
- j.) The jurisdiction shall fill in this part of the table with the 100-year return period air-freezing index (BF-days) from Figure R403.3 (2) or from the 100-year (99%) value on the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32 degrees F)” at www.ncdc.noaa.gov/fpsf.html.

k.) The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32 degrees F)” at www.ncdc.noaa.gov/fpsf/html.

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