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|  | BUILDING DEVELOPMENT POLICIES AND PROCEDURES RESIDENTIAL PLAN REVIEW GENERAL | Effective Date: December 20, 2020 |
| | | Supersedes Policy Dated: July 1, 2009 |
| | 3.1.1 Climatic and Geographic Design Criteria | Issued by:  Eric M. Mays, P.E. Building Official |

The International Residential Code requires the locality to fill out Table R301.2(1) for Climatic and Geographic Design Criteria. Following is the completed table for Prince William County.

| Ground Snow Load (psf) | Wind Design | | | | Seismic Design Category | Subject to Damage From | | | Winter Design Temp. | Ice Barrier Underlayment Required | Flood Hazards | Air Freezing Index | Mean Annual Temp. |
|------------------------|-------------|---------------------|---------------------|------------------------|-------------------------|------------------------|------------------|-------------------|---------------------|-----------------------------------|---------------|--------------------|-------------------|
| | Speed (mph) | Topographic effects | Special wind region | Wind-borne debris zone | | Weathering | Frost line depth | Termite | | | | | |
| 30 | 115 | No | No | No | B ¹ | Severe | 24" | Moderate to Heavy | 17°F | Yes | 12/01/81 | ≤ 1500°F | 55°F |

¹(Seismic Design Category A may be used and supported with geotechnical report.)

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

| GROUND SNOW LOAD ^o | WIND DESIGN | | | | SEISMIC DESIGN CATEGORY ^t | SUBJECT TO DAMAGE FROM | | | WINTER DESIGN TEMP ^e | ICE BARRIER UNDERLAYMENT REQUIRED ^h | FLOOD HAZARDS ^g | AIR FREEZING INDEX ⁱ | MEAN ANNUAL TEMP ^j |
|-------------------------------|--------------------------|----------------------------------|----------------------------------|------------------------------------|--------------------------------------|-------------------------|-------------------------------|----------------------|---------------------------------|--|----------------------------|---------------------------------|-------------------------------|
| | Speed ^d (mph) | Topographic effects ^k | Special wind region ^l | Windborne debris zone ^m | | Weathering ^a | Frost line depth ^b | Termite ^c | | | | | |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| MANUAL J DESIGN CRITERIA ⁿ | | | | | | | |
|---------------------------------------|-----------------------|-----------------------|---------------------|----------------------------|---------------------------|----------------------------|--------------------------------|
| Elevation | Latitude | Winter heating | Summer cooling | Altitude correction factor | Indoor design temperature | Design temperature cooling | Heating temperature difference |
| — | — | — | — | — | — | — | — |
| Cooling temperature difference | Wind velocity heating | Wind velocity cooling | Coincident wet bulb | Daily range | Winter humidity | Summer humidity | — |
| — | — | — | — | — | — | — | — |

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

- a. Where weathering requires a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code, the frost line depth strength required for weathering shall govern. The weathering column shall be filled in with the weathering index, "negligible," "moderate" or "severe" for concrete as determined from Figure R301.2(4). The grade of masonry units shall be determined from ASTM C34, C55, C62, C73, C90, C129, C145, C216 or C652.
- b. Where the frost line depth requires deeper footings than indicated in Figure R403.1(1), the frost line depth strength required for weathering shall govern. 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 to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.
- d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(5)A]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.
- e. The outdoor design dry-bulb temperature shall be selected from the columns of 97¹/₂-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. [Also see Figure R301.2(1).]
- f. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.
- g. 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 Flood Insurance Study and (c) the panel numbers and dates of the currently effective FIRMs and FBFMs or other flood hazard map adopted by the authority having jurisdiction, as amended.
- h. In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, 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."
- i. 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 percent) value on the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)."
- j. 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°F)."
- k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall indicate "NO" in this part of the table.
- l. In accordance with Figure R301.2(5)A, where there is local historical data documenting unusual wind conditions, the jurisdiction shall fill in this part of the table with "YES" and identify any specific requirements. Otherwise, the jurisdiction shall indicate "NO" in this part of the table.
- m. In accordance with Section R301.2.1.2 the jurisdiction shall indicate the wind-borne debris wind zone(s). Otherwise, the jurisdiction shall indicate "NO" in this part of the table.
- n. The jurisdiction shall fill in these sections of the table to establish the design criteria using Table 1a or 1b from ACCA Manual J or established criteria determined by the jurisdiction.
- o. The jurisdiction shall fill in this section of the table using the Ground Snow Loads in Figure R301.2(6).