



## **GLASS STRENGTH CALCULATIONS**

Syracuse Glass can provide glass strength and center-of-glass deflection calculations for glass in vertical applications without charge upon request for projects that include our products. We do not provide design services and we do not employ licensed design professionals. We provide this limited assistance to the design and glazing community under these terms:

We use the Window Glass Design 2004 Software by Standards Design Group. This software will make glass strength calculations using any of three versions of ASTM E 1300 Standard Practice for Determining Load Resistance of Glass in Buildings.

If we are supplied with the following inputs:

- version of the standard
- glass dimensions
- glass shape
- edge support (i.e. 2 sided, 4 sided)
- glass makeup (i.e. monolithic, insulating, annealed, tempered, laminated, thicknesses)
- specified project design load

We can produce these outputs:

- a statement that the glass meets the design load or does not meet the design load
- the calculated load resistance of the glass make-up
- deflection at the center of glass.

We do not determine project design loads with Section 1609 of the Building Code or with ASCE 7, the American Society of Civil Engineers Minimum Design Loads for Buildings. If we receive wind speeds in miles per hour, exposure categories, or importance factors, be aware that these are normal inputs for ASCE 7 or Building Code section 1609, which we do not perform. Also, if we are supplied with a design load of "20 pounds, or more if required by Code", that we do not determine the Code required project design load.

Our ASTM E 1300 software is designed to receive a project design load determined by a design professional as a 3 second load in pounds/sq.ft. We can convert from a 60 second load to a 3 second load within the software. The Building Code of NY State 2010 references the 2004 version of ASTM E 1300, which we use unless instructed otherwise.

In the absence of a project design load in pounds/sq.ft. determined by a design professional, we can provide an analysis of the load that the submitted size, thickness, and glass type will withstand and center-of-glass deflection. But we do not represent that the glass is suitable for a particular project.

Additionally, we recommend, in accordance with industry practice, that center of glass deflection in excess of 3/4" be avoided, by selecting thicker glass or reducing glass sizes. Tempering will increase glass strength, but it does not reduce deflection.

In summary, we can supply information concerning the performance of specific glass products under load, but decisions about the suitability of our products for particular applications are best made by others with design expertise and familiarity with specific project circumstances.