General Fabricated windload information provided below. More job specific calculations and certifications available upon request.

**Fabricated Stainless Steel 60” Letter - Stud Mounted**

The following calculations were conducted in October 2014. Calculations are for construction of a Fabricated Stainless Steel letter, 60" high, using a continuous solder joint with Harris Stay-Brite 325 (lead-free silver solder), 95%Sn, 5%Ag, with a shear strength of 10,600 psi.

Wind Force \( F = A \times c \times V \times V \times N \) where:

- **A** = Area Square Feet
- **C** = constant (.00256)
- **V** = Velocity in MPH
- **N** = 2.0 for a flat plate

Therefore, for a typical 60 inch letter, the projected area will be 12.2 square feet.

\[ F = 12.2 \times 0.00256 \times 90 \times 90 \times 2.0 = 505 \text{ lbf.} \]

The point of failure is known to be the silver solder joint, between the back braces and sides of the letters. Normally, there are a minimum of 4 to 6 of these braces with a weld length of 2 inches per side, and a filet of .032 inches. Therefore, the solder area is calculated as:

\[ A = 2 \times 4 \times 2 \times 0.032 = 0.512 \text{ square inches, at worst case.} \]

With a shear strength of 10,600 psi, the calculated solder strength will be:

\[ P = 10,600 \times 0.512 = 5,427 \text{ lbf.} \]

The safety factor in this case will be \( SF = 5,427 / 505 = 10.75 \)

With a desired safety factor of 3 to 5, and an actual factor of 10.75, the structure should be satisfactory, as constructed.

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