



ALUMINUM STUDS, SET AND SEALED IN HOLES WITH SILICONE ADHESIVE

STUD-MOUNTING DETAIL
HALF-SCALE

Wind Load Calculations on Letters with 5:1 ht/depth ratio			
Size	Wind Face Load lbs. Force	Wind Side Load lbs. Force	Screw Shear Strength lbs. Force
6	13	5	720
10	35	15	960
12	50	20	960
14	68	25	960
18	112	40	960
24	199	70	1440
36	447	150	1920

Letter Data					
Height in.	Face Area sq.in.	Side Area sq.in.	Screws each	Screw Area psi	Total Screw sq. in.
6	21.6	7.2	3	0.015	0.045
10	60	20	4	0.015	0.06
12	86.4	28.8	4	0.015	0.06
14	117.6	39.2	4	0.015	0.06
18	194.4	64.8	4	0.015	0.06
24	345.6	115.2	6	0.015	0.09
36	777.6	259.2	8	0.015	0.12

Assumptions and Facts

The point of failure will be the aluminum screws in shear at the minor thread diameter.

144 mph wind speed is equal to 82.7 lbs./sq. ft. (0.574 lbs./sq.in.)

Tensile strength at break for 3003 Aluminum is 16,000 psi.

Minor thread area in shear of a 10-24 aluminum screw is .015 sq. in. at 2 threads depth.

Therefore, each screw has a holding force in shear of 240 lbs..

Average face area of a sign letter is 0.6 x height squared.

Maximum depth of letters is 1.0" at 6", 1.5" at 12". 2.0" at 18", 2.5" at 24" and 3.0" at 36".

PERMIT DRAWING

CAMDEN NATIONAL WEALTH MANAGEMENT
2722.1

LOCATION: 5 MILK STREET

PORTLAND, MAINE

DRAWING NO.: 2 OF 2

DRAWN BY: PFAT REP.: PB

DATE: 12.22.2016

QUOTE: @2172

GEN REF.:



NEOKRAFT SIGNS INC. NEOKRAFT.COM
686 MAIN STREET T:207.782.9654 F:782.0009
LEWISTON, MAINE 04240 1.800.339.2258

© COPYRIGHT 2016, BY NEOKRAFT SIGNS, INC.