

LOUVERED FENCE ENGINEERING SUMMARY

PalmSHIELD recognizes that free standing louvered screening requires a great deal of structural engineering to assure this large surface area structure can withstand the latest wind load codes. This level of investment should be met with professional analysis. Responsible designers should be provided this information in a usable format demonstrating full compliance. PalmSHIELD has provided this analysis herein.

PART 1 – PREPARATION

Structural calculations were prepared by the following structural engineering firm:

- A. Rise Structural Associates
- B. 101 Railroad Avenue
- C. Harrisburg, South Dakota
- D. Professional Engineer
- E. South Dakota License # 11152
- F. January 10, 2019
- G. Post design chart

PART 2. – DESIGN CRITERIA

- A. Risk category: III
- B. Wind speed: 120 mph
- C. Exposure: C
- D. Importance factor: Open Sign Structure, Case A
- E. $K_{zt} = 1$
- F. $G = .85$
- G. $K_z = .85$
- H. $K_d = .85$
- I. Longest span: 40'
- J. $P_w = 33$ psf

PART 3 – MATERIALS. The above performance criteria is based on the following material types.

- A. Posts: 4" x 4" x 3/8" 6063-T6 Aluminum.
- B. Posts: 4" x 4" x 1/4" ASTM A 500
- C. Posts: 5" x 5" x 1/4" ASTM A 500
- D. Panel framework: 3" x 3" x 1/4" 6063-T6 Aluminum
- E. Panel louvers 1/8" x 5" overall 6061 – T6 Aluminum
- F. Panel intermediate supports 2" x 1/4" bar 6063-T6 Aluminum
- G. Post base plates 10" x 10" x 3/4" bar 6061-T6 Aluminum
- H. Post base plates 10" x 10" x 3/4" ASTM A-36
- I. Post base plate gussets 2" x 1/4" bar 6061-T6 Aluminum
- J. Gate frames 4" x 2" x 1/8" rectangular tube 6063-T52 Aluminum

PART 4. – DESIGN CRITERIA

The above performance criteria is based on the following critical design characteristics.

- A. Panel intermediate supports not to exceed 24” o.c.
- B. Louvers to allow a 64% open area based on 3 ½” spacing and 2 ¼” opening.
- C. Each post to receive 2 ea. gussets placed perpendicular to panel runs.

PART 5. – ENGINEERING

Below is the span data stating the specific post required relative to panel height and standard panel width. 4” x 4” x 3/8” aluminum posts may be substituted in lieu of 4” x 4” x 1/4” steel posts as stated herein.

Panel Height	Panel Span & Related Post Size	
	48"	60"
6'-0"	HSS 4x4x1/4"	HSS 4x4x1/4
8'-0"	HSS 4x4x1/4	HSS 4x4x1/4
10'-0"	HSS 4x4x1/4	HSS 5x5x1/4
12'-0"	HSS 5x5x1/4	HSS 5x5x1/4

PART 6. – ENGINEERING DISCLAIMER

PalmSHIELD recognizes that every site has unique site conditions. The above engineering summary is not intended to represent form or fitness for any particular installation. The above engineering is for reference purposes only to demonstrate basic design criteria and performance characteristics. PalmSHIELD strongly recommends that every customer employ engineering within their jurisdiction specific to the installation and site conditions.

PART 7. – ENGINEER STAMP

