AMERICAN DECORATIVE CEILINGS

P.O.B. 605605 • Cleveland, Ohio 44105 • Telephone: (216) 341-2222 • Fax: (216) 341-8501 • Web:www.am-dec.com

WIND FACTORING PROCEEDURES FOR EXTERIOR APPLICATIONOF LINEAR METAL CEILINGS

Technical Data:

Since exterior linear metal soffits are subjected to varying wind loads determined by geographical area and height above ground, the soffit system must be rigidly supported rather than suspended. Therefore, the type and spacing of the support structure requires special design. The step by step formulas found in Table 3 will aid in determining correct support design for each installation. Figure 2 provided general wind speeds for much of the United States. It is imperative that all wind speed be verified with codes having jurisdiction. Table 1A converts wind speed and feet above ground to corresponding wind load in pounds per square foot. This information is used in Table 2 to determine the carrier and strut spacing required. The dimensions A and B, from Table 2, when multiplied together, result in the area supported by each strut and the wind load. From the axial load and unbraced length, the type of strut can be determined from Figure 4.

General Notes:

1. Ceiling must be braced in both directions against lateral movement. Otherwise a bracing system must be designed.
2. Cold rolled channels must be at least 20 gage and equivalent to ASA A42.1 and 42.4.1955. They are known familiarly as 1-1/2 Runner Channels and 3/ 4" Furring Channels used in suspended plaster ceilings. Channels may be black or galvanized.
3. 12 Gage Hanger Wires shall be used to level the ceiling. Using a minimum of 2-1/2" twists to anchor each end.
4. Where anchors are indicated to fasten struts at top, use #10 S.M.S. into steel or 1/4" diameter expansion bolts into concrete, or any accepted commercial fastener with safe tension and shear capacity of 200#.
5. Check Local Building Codes as requirements may vary in your area.

Table 3: Wind Factoring Proceedure:

A. Area wind speed from U.S. Map (Fig.2)……___in M.P.H.
B. Your ceiling height from ground level……___in ft.
C. Upward wind load from Table 1……___in #'s per sq. ft
D. Area supported by each strut (Table 2A * Table 2B)……..___in sq. ft.
E. Axial load on each strut, C * D……..___in #'s
F. Type of strut required on Table 4……..___in type

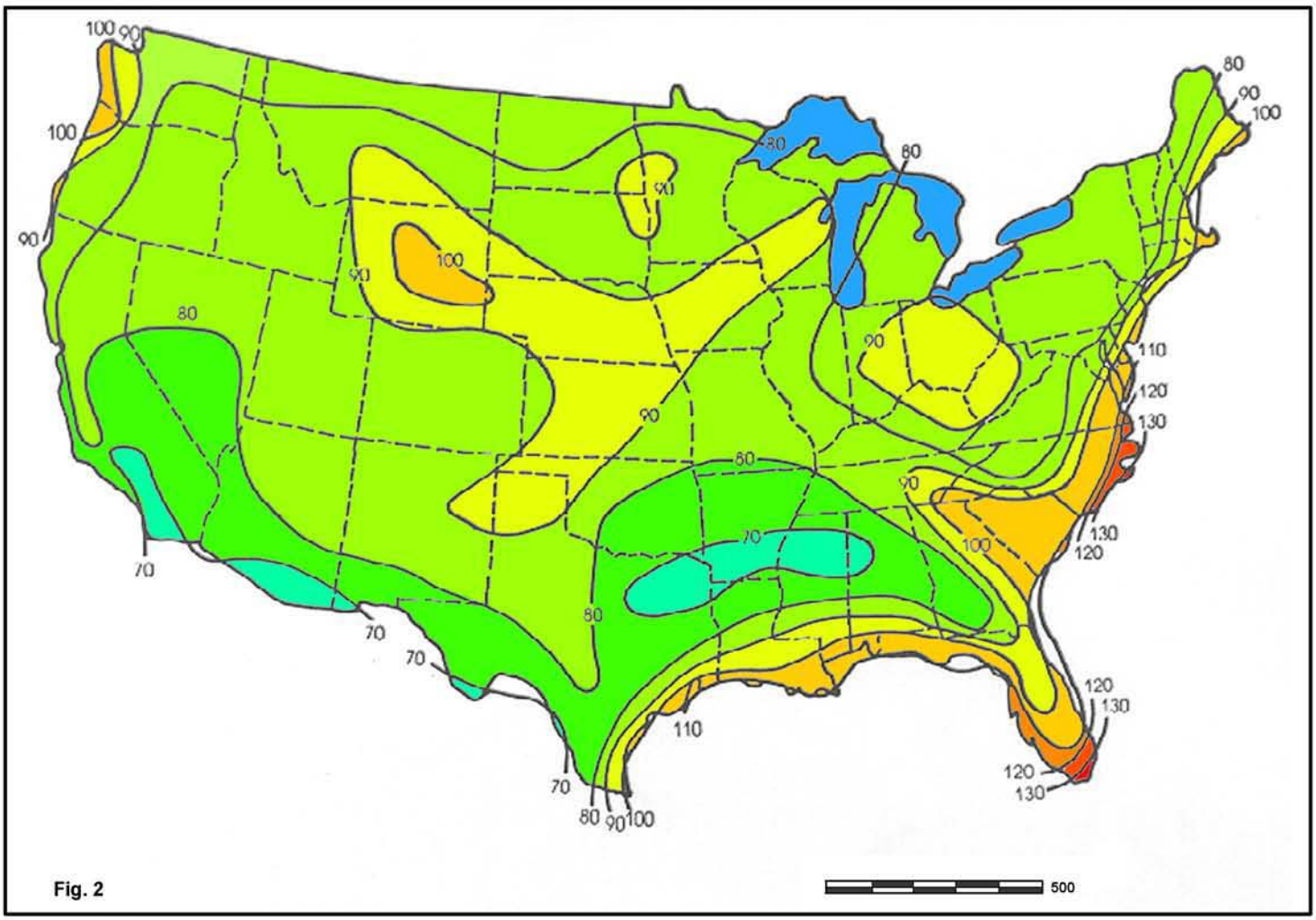

Fig. 2

Basic Wind Speed in Miles per Hour - 100 year Mean Recurrence Interval
Annual Extreme Fastes Mile Speed 30 feet above ground

Table 1A

Height Above Ground	WIND LOAD CHART 1A (In Pounds per Squre Foot [Upward on the Ceiling]) Wind Speed in M.P.H.														
Feet	**10**	**20**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**105**	**110**	**120**	**130**	**M.P.H.**
0 - 5	2	2	3	4	5	7	9	11	14	17	19	21	25	29	#/ S.F.
6 - 15	3	4	4	5	7	8	10	14	17	21	23	26	30	36	#/ S.F.
16 - 25	4	5	6	7	8	10	13	16	21	26	28	31	37	43	#/ S.F.
26 - 30	5	6	7	8	9	11	14	18	23	28	31	34	40	47	#/ S.F.
31 - 35	6	7	8	9	10	12	14	19	24	29	32	36	42	50	#/ S.F.
36 - 50	7	9	10	11	12	14	16	20	26	32	35	39	46	54	#/ S.F.
51 - 55	9	11	12	13	14	16	17	22	27	34	37	41	49	57	#/ S.F.
56 - 75	11	13	14	15	16	17	18	23	29	36	40	43	52	61	#/ S.F.
76 - 100	12	14	15	16	17	18	19	25	32	39	43	47	56	66	#/ S.F.

Magenta colored columns represent extrapolated values from currently existing Table 1
Red colored columns represent values taken from currently existing Table 1.

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Table 4

STRUT TYPE	STRUT LOAD (LBS)	MAX. STRUT LENGTH
A	0 - 1000	29"
B	500 - 1500	38"
C	1000 - 2500	58"
D	1000 - 3300	100"

Carrier Support Details

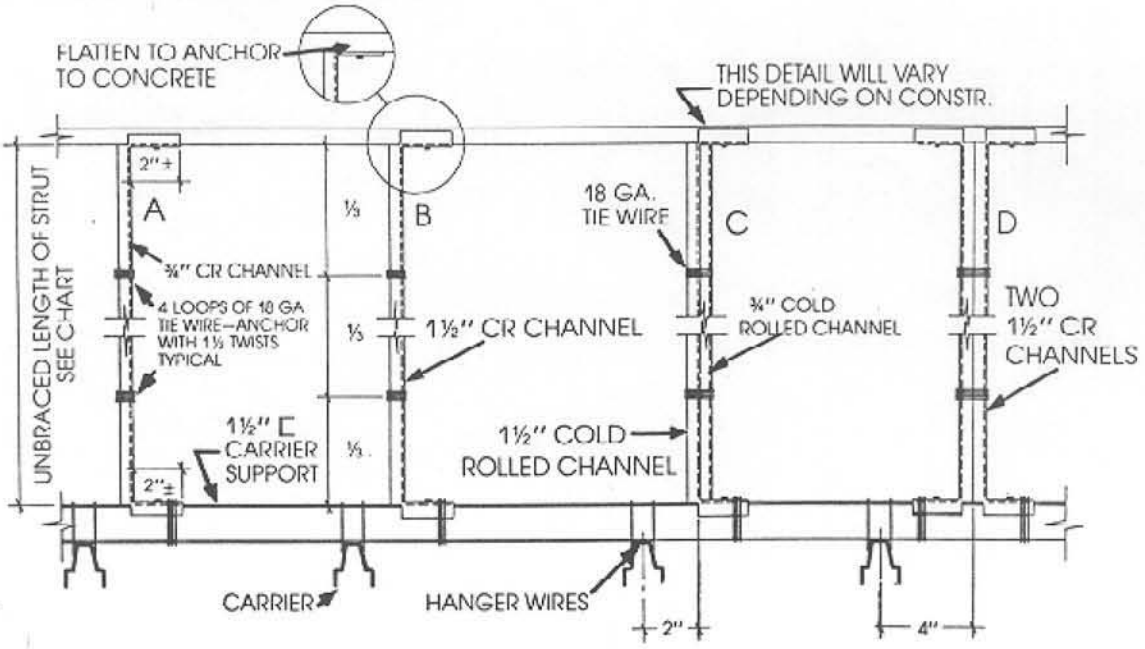
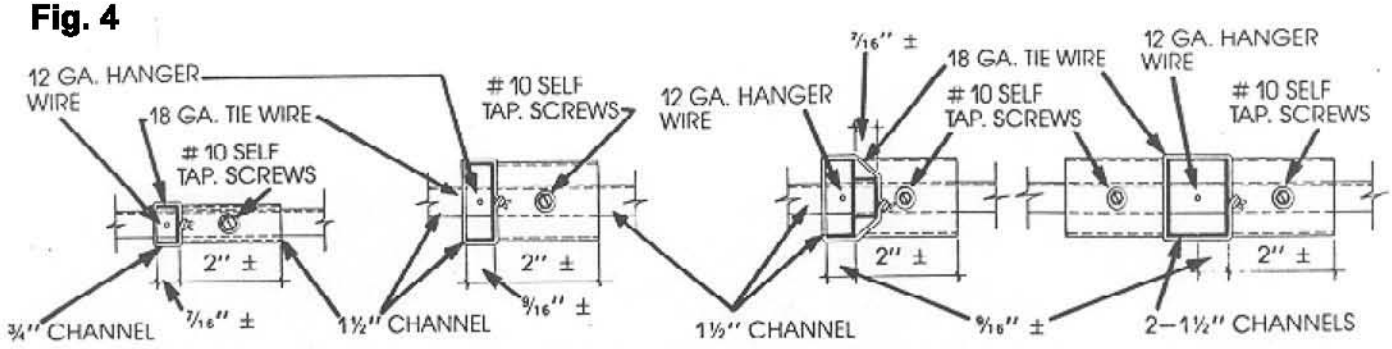


Fig. 4



Strut- A **Strut- B** **Strut- C** **Strut- D**

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SPAN TABLES

CARRIER SPACING (Allowale Panel Spans)

Table 2A

PANEL PROFILE	DESIGN LOAD (PSF)		
	20	30	40
Linear Pan Round	3' - 0"	3' - 0"	3' - 0"
Linear Pan Square	3' - 0"	3' - 0"	3' - 0"
Linear Plank	3' - 0"	3' - 0"	3' - 0"

STRUT SPACING

Table 2B

PANEL PROFILE	DESIGN LOAD (PSF)		
	20	30	40
Linear Pan Round	2' - 7"	2' - 2"	2' - 1"
Linear Pan Square	2' - 8"	2' - 4"	2' - 3"
Linear Plank	2' - 7"	2' - 2"	1' - 11"

Tie Wire Detail