

SONO-CON SOUND WALL SYSTEM

OPTIMUM BARRIER ATTENUATION LONG SPAN CAPABILITY -- RAPID INSTALLATION



FREE STANDING BARRIER

This cogeneration facility generates electrical power while drying lumber. The freestanding 25' - 0" high Sono-Con sound wall shields the nearby community from plant and equipment noise. Engineered to safely withstand winds of 95 M.P.H. The sound barrier easily withstood a series of unexpected severe winter storms with wind speeds in excess of 85 M.P.H. during the final phases of installation. The Class Two Panel System used at this site can be furnished in lengths up to 40' - 0" without the use of connectors, special supports, or joining hardware.

Sono-Con Class Two Acoustical Panels are used to construct free standing noise control barriers. Specifically, these have application where low frequency attenuation is critical such as to reduce transportation noise, transformer hum, and power generation rumble.

The Sono-Con Class Two Panels provide **sound transmission loss** values -- including those at the demanding and important low frequencies -- which match the theoretical as well as practical limits of free standing barrier attenuation.

Because of their intrinsically **high strength**, they are recommended **for use under the most adverse conditions**: Severe wind and seismic criteria are easily accommodated with less structural support than generally required by other types of acoustical panel assemblies.

Sono-Con Class Two Sound Barriers as high as 40' - 0" (12 meters) can be installed as one piece panels. Sono-Con Class Two Panels can also be oriented horizontally to continuously span 20' - 0" (6 meters). Costly footings, structural steel framework, and installation times are minimized.

PHOENIX-E Sono-Con Class Two Panel components are noncombustible, non-hygroscopic, and non-toxic. The panels are corrosion resistant, moisture resistant, and can be furnished with impermeable acoustical fill protection to guard against oil and vapor contamination.

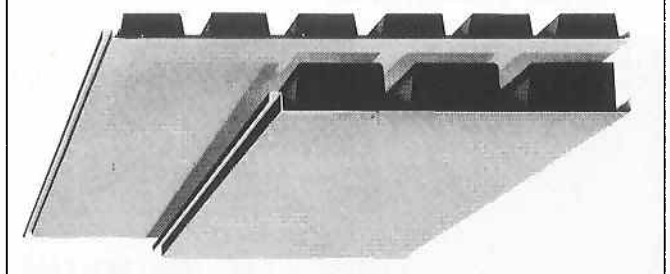
As a **standard options** panels which are 1-1/2" (38 mm) thick can be furnished for applications such as equipment enclosures where available space is limited. Panels can also be furnished of stainless steel and aluminum in a variety of thicknesses to closely match a variety of structural, corrosion, and acoustical requirements.

SONO-CON CLASS TWO PANEL

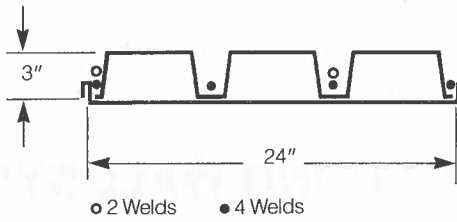
OCTAVE BAND (Hz)	125	250	500	1000	2000	4000	STC NRC
TRANSMISSION LOSS	24	24	32	29	34	35	32
ABSORPTION COEFFICIENT	0.80	0.78	1.16	0.88	0.69	0.47	0.90

Sound transmission loss data for the Sono-Con Class Two Panel is determined by ASTM E-90 (Standard Recommended Practice for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions). Sound absorption data is obtained per ANSI/ASTM C-423 Standard Method of Test for Sound Absorption of Acoustical Materials in Reverberation Rooms). Both tests were conducted at an independent laboratory accredited by the United States Department of Commerce National Voluntary Laboratory Accreditation Program (NVLAP).

Standard Sono-Con Class Two Panels are 3" (75 mm) thick constructed of 16 gauge galvanized steel outer skin with 18 gauge galvanized perforated face sheet. Fibrous acoustical insulation (mineral wool or glass fiber) is installed in the continuous acoustical cells. Panels are joined with an interlocking connection and mechanically fastened utilizing self-drilling screws.



SONO-CON CLASS TWO PANELS • STRUCTURAL PROPERTIES



Section Properties					
Gauge	Weight (psf) Galv	I+ IN ⁴	S+ IN ³	I- IN ⁴	S- IN ³
20/20	3.96	1.676	.568	1.701	.782
20/18	4.50	1.830	.582	1.933	.999
18/18	5.27	2.345	.859	2.340	1.169
18/16	5.82	2.517	.876	2.560	1.347
16/16	6.37	2.993	1.098	3.065	1.720

Gauge	Allowable Reactions						
	Bearing Length						
	1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
20/20	511	568	623	701	785	868	952
	1130	1223	1314	1432	1577	1721	1866
20/18	511	568	623	701	785	868	952
	1130	1223	1314	1432	1577	1721	1866
18/18	1086	1180	1273	1367	1482	1621	1762
	2112	2247	2381	2516	2651	2861	3073
18/16	1086	1180	1273	1367	1482	1621	1762
	2112	2247	2381	2516	2651	2861	3073
16/16	1855	1988	2120	2253	2386	2518	2719
	3392	3569	3746	3923	4101	4278	4505

1. The top value reflects the allowable reaction at the panel end supports.
2. The bottom value reflects the allowable reaction at the interior supports.
3. Values are in pounds per lineal foot.

Span Condition		Gauge		Allowable Total (DL + LL) Uniform Load (psf)																
				Span																
				8'0"	8'6"	9'0"	9'6"	10'0"	10'6"	11'0"	11'6"	12'0"	12'6"	13'0"	13'6"	14'0"	14'6"	15'0"	15'6"	16'0"
Single Span	20/20	stress	142	126	112	101	91	82	75	69	63	58	54	50	46	43	40	38	36	36
		defl	142	126	112	101	91	82	75	67	60	53	47	42	38	34	31	28	25	25
	20/18	stress	146	129	115	103	93	85	77	70	65	60	55	51	48	44	41	39	36	36
		defl	146	129	115	103	93	85	77	70	65	57	51	46	41	37	33	30	27	27
	18/18	stress	215	190	170	152	137	125	114	104	95	88	81	75	70	65	61	57	54	54
		defl	215	190	170	152	137	125	110	96	85	75	67	59	53	48	43	39	36	36
	18/16	stress	219	194	173	155	140	127	116	106	97	90	83	77	72	67	62	58	55	55
		defl	219	194	173	155	140	127	116	103	91	81	72	64	57	52	47	42	38	38
	16/16	stress	275	243	217	195	176	159	145	133	122	112	104	96	90	84	78	73	69	69
		defl	275	243	217	195	176	159	145	133	118	105	93	83	74	67	61	55	50	50
Double Span	20/20	stress	196	173	154	139	125	114	103	95	87	80	74	69	64	60	56	52	49	49
		defl	196	173	154	139	125	114	103	95	87	80	74	69	64	60	56	52	49	49
	20/18	stress	250	221	197	177	160	145	132	121	111	102	95	88	82	76	71	66	62	62
		defl	250	221	197	177	160	145	132	121	111	102	95	88	82	76	71	66	62	62
	18/18	stress	292	259	231	207	187	170	155	142	130	120	111	103	95	89	83	78	73	73
		defl	292	259	231	207	187	170	155	142	130	120	111	103	95	89	83	78	73	73
	18/16	stress	337	299	266	239	216	195	178	163	150	138	128	118	110	102	96	90	84	84
		defl	337	299	266	239	216	195	178	163	150	138	128	118	110	102	96	90	84	84
	16/16	stress	430	381	340	305	275	250	228	208	191	176	163	151	140	131	122	115	108	108
		defl	430	381	340	305	275	250	228	208	191	176	163	151	140	131	122	115	108	108
Three or More Spans	20/20	stress	244	216	193	173	156	142	129	118	109	100	93	86	80	74	70	65	61	61
		defl	244	216	193	173	156	142	129	118	109	100	89	79	71	64	58	52	47	47
	20/18	stress	312	277	247	221	200	181	165	151	139	128	118	110	101	95	89	83	78	78
		defl	312	277	247	221	200	181	159	139	123	108	96	86	77	70	63	57	52	52
	18/18	stress	365	324	289	259	234	212	193	177	162	150	138	128	119	111	104	97	91	91
		defl	365	324	289	259	234	212	193	177	160	141	126	112	101	91	82	74	67	67
	18/16	stress	421	373	333	299	270	244	223	204	187	172	160	148	137	128	120	112	105	105
		defl	421	373	333	299	270	244	223	195	172	152	135	121	108	97	88	80	72	72
	16/16	stress	444	394	351	315	284	258	235	215	198	182	168	156	145	135	126	118	111	111
		defl	444	394	351	315	284	258	235	215	198	182	168	156	145	134	121	110	100	100

1. Stress based on allowable flexural stress of 24 ksi.
2. Deflection based on maximum deflection of L/240.
3. Adequate bearing must be provided.



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