

Maximum Allowable Restraint Spacing (Table 2)



KINETICS NOISE CONTROL, INC.
6300 IRELAN PLACE
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ph 614 889-0480

Table 2

Maximum Permitted Restraint Spacing for Piping and Conduit

(If pipe size is other than listed, use data for next size larger)

Pipe and Conduit Size (in)	Lateral Restraint Spacing (ft)							
	Horizontal Seismic Force (g) (LRFD)							
	0.21	0.42	0.67	1	1.5*	2*	3*	4*
	SMACNA Designation							
	C	B	A	AA	-	-	-	-
<2.5*	40	40	40	40	40	40	40	40
2.5	40	40	40	40	40	40	40	40
3	40	40	40	40	40	40	40	40
4	40	40	40	40	40	40	20	20
5	40	40	40	40	40	40	20	20
6	40	40	40	40	40	20	20	20
8	40	40	40	40	20	20	20	20
10	40	40	20	20	20	20	20	20
12	40	40	20	20	20	20	20	20
14	40	40	20	20	20	20	20	20
16	40	40	20	20	20	20	20	20
18*	40	40	20	20	20	20	20	20
20*	40	40	20	20	20	20	20	10
24*	40	40	20	20	20	20	10	10

	Axial Restraint Spacing (ft)							
	Horizontal Seismic Force (g) (LRFD)							
	0.21	0.42	0.67	1	1.5*	2*	3*	4*
	SMACNA Designation							
	C	B	A	AA	-	-	-	-
80	80	80	80	80	80	80	80	80
80	80	80	80	80	80	80	80	40
80	80	80	80	80	80	80	40	40
80	80	80	80	80	80	40	40	20
80	80	80	80	40	40	40	20	20
80	80	40	40	40	40	20	20	20
80	80	40	40	20	20	20	20	20
80	80	20	20	20	20	20	20	20
80	40	20	20	20	20	20	20	20
80	40	20	20	20	20	20	20	20
80	40	20	20	20	20	20	20	10
80	40	20	20	20	20	20	10	10

* Indicates that these sizes and forces are not listed by SMACNA and have been computed independently
Max Spacings applicable to Hazardous Materials and Medical Gas Systems are half the above values.

Maximum Permitted Restraint Spacing for Ductwork

(If other than listed, use data for next size larger)

Duct Size (in)	Lateral Restraint Spacing (ft)							
	Horizontal Seismic Force (g) (LRFD)							
	0.21	0.42	0.67	1	1.5*	2*	3*	4*
	SMACNA Designation							
	C	B	A	AA	-	-	-	-
(Round)								
36	50	40	30	30	20	20	20	10
48	50	40	30	30	20	20	20	10
60	50	40	30	30	20	20	20	10
84	50	40	30	30	20	20	20	10
(Rect)								
30 x 30	40	40	30	30	20	20	20	10
42 x 42	40	40	30	30	20	20	20	10
54 x 54	40	40	30	30	20	20	20	10
60 x 60	40	40	30	30	20	20	20	10
84 x 84	40	40	30	30	20	20	20	10
96 x 96	40	40	30	30	20	20	20	10
54 x 28	40	40	30	30	20	20	20	10
60 x 30	40	40	30	30	20	20	20	10
84 x 42	40	40	30	30	20	20	20	10
96 x 48	40	40	30	30	20	20	20	10
108 x 54	40	40	30	30	20	20	20	10
120 x 60	40	40	30	30	20	20	20	10

	Axial Restraint Spacing (ft)							
	Horizontal Seismic Force (g) (LRFD)							
	0.21	0.42	0.67	1	1.5*	2*	3*	4*
	SMACNA Designation							
	C	B	A	AA	-	-	-	-
80	80	80	60	60	40	40	40	20
80	80	80	60	60	40	40	40	20
80	80	80	60	60	40	40	40	20
80	80	80	60	60	40	40	40	20
80	80	60	60	40	40	40	40	20
80	80	60	60	40	40	40	40	20
80	80	60	60	40	40	40	40	20
80	80	60	60	40	40	40	40	20
80	80	60	60	40	40	40	40	20
80	80	60	60	40	40	40	40	20
80	80	60	60	40	40	40	40	20
80	80	60	60	40	40	40	40	20

* Indicates that these sizes and forces are not listed by SMACNA and have been computed independently

Listed G load is LRFD [Strength] Based. Multiply Stress based forces by a factor of 1.4 before comparing to the G values listed above.

KINETICS™ Seismic Design Manual

MAX RESTRAINT SPACING, OFFSET AND DROP LENGTH (TABLES 2 AND 3)



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Maximum Allowable Offset and Drop Length (Table 3)



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Table 3

Maximum Permitted Offset and Drop Length for Piping

(If pipe size is other than listed, use data for next size larger)

Pipe and Conduit Size (in)	Max Centerline Offset in Run (in)								Max Un-Braced Pipe Drop Length (ft)							
	Horizontal Seismic Force (g) (LRFD)								Horizontal Seismic Force (g) (LRFD)							
	0.21	0.42	0.67	1	1.5*	2*	3*	4*	0.21	0.42	0.67	1	1.5*	2*	3*	4*
	SMACNA Designation								SMACNA Designation							
	C	B	A	AA	-	-	-	-	C	B	A	AA	-	-	-	-
<2.5*	30	30	30	30	30	30	30	30	20	20	20	20	20	20	20	20
2.5	30	30	30	30	30	30	30	30	20	20	20	20	20	20	20	20
3	30	30	30	30	30	30	30	30	20	20	20	20	20	20	20	20
4	30	30	30	30	30	30	15	15	20	20	20	20	20	20	10	10
5	30	30	30	30	30	30	15	15	20	20	20	20	20	20	10	10
6	30	30	30	30	30	15	15	15	20	20	20	20	20	10	10	10
8	30	30	30	30	15	15	15	15	20	20	20	20	10	10	10	10
10	30	30	15	15	15	15	15	15	20	20	10	10	10	10	10	10
12	30	30	15	15	15	15	15	15	20	20	10	10	10	10	10	10
14	30	30	15	15	15	15	15	15	20	20	10	10	10	10	10	10
16	30	30	15	15	15	15	15	15	20	20	10	10	10	10	10	10
18*	30	30	15	15	15	15	15	15	20	20	10	10	10	10	10	10
20*	30	30	15	15	15	15	15	8	20	20	10	10	10	10	10	5
24*	30	30	15	15	15	15	8	8	20	20	10	10	10	10	5	5

* Indicates that these sizes and forces are not listed by SMACNA and have been computed independently
Max Spacings applicable to Hazardous Materials and Medical Gas Systems are half the above values.

Maximum Permitted Offset and Un-Braced Drop Length for Ductwork

(If other than listed, use data for next size larger)

Duct Size (in)	Max Centerline Offset in Run (in)								Max Un-Braced Duct Drop Length (ft)							
	Horizontal Seismic Force (g) (LRFD)								Horizontal Seismic Force (g) (LRFD)							
	0.21	0.42	0.67	1	1.5*	2*	3*	4*	0.21	0.42	0.67	1	1.5*	2*	3*	4*
	SMACNA Designation								SMACNA Designation							
	C	B	A	AA	-	-	-	-	C	B	A	AA	-	-	-	-
(Round)																
36	38	30	23	23	15	15	15	8	25	20	15	15	10	10	10	5
48	38	30	23	23	15	15	15	8	25	20	15	15	10	10	10	5
60	38	30	23	23	15	15	15	8	25	20	15	15	10	10	10	5
84	38	30	23	23	15	15	15	8	25	20	15	15	10	10	10	5
(Rect)																
30 x 30	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
42 x 42	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
54 x 54	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
60 x 60	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
84 x 84	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
96 x 96	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
54 x 28	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
60 x 30	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
84 x 42	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
96 x 48	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
108 x 54	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5
120 x 60	30	30	23	23	15	15	15	8	20	20	15	15	10	10	10	5

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