


# ANALYSIS OF BASE ANCHORED HARD CONNECTED PIPE SYSTEM (CONCENTRATED HYD LOAD AT BASE)

SUITABLE FOR EXPANSIVE AND CONTRACTIVE SYSTEMS

										KINETICS NOISE CONTROL, INC. 6300 IRELAN PLACE DUBLIN, OHIO 43017 614-889-0480								
Project: <b>BASE ANCHORED HARD CONNECTED (TYPE 1)</b> Riser: <b>TYPICAL RISER</b>										3/12/2006								
Note: Supports are assumed to be at floor level, if at ceiling level, identify as being on floor above																		
Expansion Coef <b>7.60E-05</b> in/ft/degF Installed Temp <b>70</b> Oper Temp <b>91</b> Anchor Elevation <b>0</b> (If Anchored System) Anchor Type <b>FX</b> (Fixed-FX or Floating FL) Static Head <b>0</b> (Ft at top of pipe) Water Supported <b>Y</b> (Y or N) Is water column weight supported by Riser? Hyd Lift @ Top <b>Y</b> If an Intermediate Riser section with telescoping Coupling at top, Enter "N" otherwise enter "Y" Liq or Gas Piping <b>L</b> (L or G) Is the pipe filled with water or gas? Steam Pressure <b>0</b> (Enter a value only if steam pressure is present (psi))										Indicate Support locations with a "Y" and guide locations with a "G" in the Support Location Column. Restrained Spring Isolators such as FRS are indicated with an "R" under "Support/Res" + Force loads are Tension, - Force loads are Compression (in pipe) "*" indicates no supports above this point								
Floor (Ref)	Support Loc	Support Res	Floor Ht Ft	Floor Elev Ft	Pipe Size in	Local Pipe Wt (lb)	Local Liquid Wt (lb)	Init Support Pt Load From Pipe Wt (Lb)	Hyd Thrust Pipe Lift is + (lb)	Spring Rate Lb/in	Init Defl In	Init SuptPt Force Lbs	Oper Sprng Defl or Disp + is Down in	Oper SuptPt Load Lbs	Init Tens Pipe Force Lbs	Oper Tens Pipe Force Lbs	Initial Pipe Stress PSI	Combined Burst + Tens Oper Stress PSI
Roof				82				0	0			0		0	0	0		
10	-			82				0	217			0	-0.13	0	0	0		
9	Y		10.00	72	8			571	0	600	1.00	600	0.89	531	315	462	37	72
8			10.00	62	8			0	0			0		0	29	177	3	95
7	Y		10.00	52	8			571	0	600	1.00	600	0.92	550	344	442	41	149
6			10.00	42	8			0	0			0		0	58	156	7	187
5	Y		10.00	32	8			690	621	750	1.00	750	0.95	712	523	1203	62	273
4			10.00	22	10			0	0			0		0	118	798	10	363
3	Y		10.00	12	10			810	0	1000	0.75	750	0.73	731	463	1124	39	427
2			10.00	2	10			0	0			0		0	58	719	5	479
1	A		2.00	0	10			81	-2796			23	0.00	2158	0	0	0	487
0				0				0	0			0		0	0	0		

Critical Buckling Load for piping -23254 lb

SAMPLE 8 STORY RISER WITH ANCHOR AT BASE AND NON-VERTICALLY RESTRAINED ISOLATORS ON 3, 5, 7 AND 9<sup>TH</sup> FLOORS

NOTE LOW STRESSES IN PIPE AND CONCENTRATED HYDRAULIC LOAD (2158 LB) AT BOTTOM ANCHOR LOCATION

KINETICS™ Riser Design Manual

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PAGE 1 OF 1



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