


ANALYSIS OF A FLOATING (NO ANCHOR) HARD CONNECTED PIPE RISER

SUITABLE FOR EXPANSIVE SYSTEMS AND CONTRACTIVE SYSTEMS

		KINETICS NOISE CONTROL, INC. 6300 IRELAN PLACE DUBLIN, OHIO 43017 614-889-0480																
		Project: DISTRIBUTED LOAD NO ANCHOR (TYPE 1) 3/12/2006 Riser: TYPICAL RISER																
Note: Supports are assumed to be at floor level, if at ceiling level, identify as being on floor above																		
Expansion Coef 7.60E-05 in/ft/degF Installed Temp 70 Oper Temp 91 Anchor Elevation - (If Anchored System) Anchor Type FL (Fixed-FX or Floating FL) Static Head 0 (Ft at top of pipe) Bottom Condition Y (Y or N) Is water column weight or steam pressure resisted by base of Riser? Hyd Lift @ Top Y (Y or N) Is water or steam pressure resisted by top of riser? Liq or Gas Piping L (L or G) Is the pipe filled with water or gas? Steam Pressure 0 (Enter a value only if steam pressure is present (psi). For Water Pressure Use Static Head)																		
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	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 Reaction 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				82.01				0	0			0		0	0	0		
10	-			82.01				0	217			0	-0.06	0	0	0		
9	Y		10.00	72.01	8			571	0	750	0.81	608	0.94	707	322	-639	38	89
8			10.00	62.01	8			0	0			0		0	37	639	4	120
7	Y		10.00	52.01	8			571	0	750	0.75	563	0.85	638	314	353	37	146
6			10.00	42.01	8			0	0			0		0	28	706	3	204
5	Y		10.00	32.01	8			690	621	750	0.85	638	0.92	689	380	421	45	238
4			10.00	22.01	10			0	0			0		0	-25	1445	2	377
3	Y		10.00	12.01	10			810	0	750	0.82	615	0.86	643	185	1040	16	425
2			10.00	2.01	10			0	0			0		0	-219	1278	18	487
1	Y	R	2.00	0.01	10			81	0	3000	0.65	301	0.67	2004	0	874	0	493
0			0.01	0	10			0	-2797			0	0.07	0	0	2797	0	541

This is a fully floated system - When filled it will drop an average of **0.09** in.

in. Provisions must be allowed for this at all horizontal connections.

Critical Buckling Load for piping -23254 lb

SAMPLE 8 STORY RISER WITH NO ANCHORS AND VERTICALLY RESTRAINED ISOLATORS AT BOTTOM

AS SHOWN, THIS CONCENTRATES THE HYD LOAD AT THE BOTTOM OF THE RISER. CONTRACTIVE SYSTEMS CAN BE MADE THAT DISTRIBUTE THE LOADS UP THE RISER. THE COMBINATION OF DISTRIBUTED THE LOAD AND EXPANSIVE SYSTEMS IS NOT RECOMMENDED.

THESE SYSTEMS MUST DROP SLIGHTLY IN SERVICE TO OPERATE PROPERLY.

KINETICS™ Riser Design Manual

ANALYSIS OF TYPE 1 FLOATING HARD CONNECTED RISER

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