THIS IS A RESPONSE EXAMPLE ONLY - DO NOT USE DATA FOR ANY OTHER PURPOSE

pyromation inc.
beyond measure

5211 Industrial Road, Fort Wayne, IN 46825

Straight or Tapered Thermowell
Wake Frequency Evaluation Results

per PTC 19.3 TW-2016

Date: 4/27/2017

Customer Name: Dave Myers

Company/Org. Name: Pyromation, Inc.

E-mail Address: dmyers@pyromation.com

Tag Number: TW-100

OUTPUTS

Frequency Condition	**PASS**
Frequency Ratio	**0.071**
Steady State Stress Limit	**PASS**
Dynamic Stress Limit	**PASS**
Pressure Limit	**PASS**

INPUTS

Mounting Type: Threaded
Material type: 316SS

Dimensions:

Length	L=	6.000	in	0.152	m
Root diameter	A=	1.063	in	0.027	m
Tip diameter	B=	0.625	in	0.016	m
Bore diameter	d=	0.260	in	0.007	m
Tip thickness	*t*=	0.188	in	0.005	m
Fillet radius at base	*b*=	0.125	in	0.003	m
Damping Factor	ζ=	0.0005			
Shielded length	L_0=	0.000	in	0.000	m
Sensor density	ρ_s=	2700	kg/m^3		

Fluid Properties:

Fluid velocity	*V*=	15.50	ft/s	4.72	m/s
Fluid density	ρ=	0.319	lb/ft^3	5.1	kg/m^3
Fluid temperature	*T*=	450.0	°F	232.2	°C
Gauge pressure	*P*=	150.0	psig	1034214.0	Pa
Viscosity	μ=	0.017	cp		

T-Well Material Properties

Allowable stress	*S*=	18650	psi	1.29E+08	Pa
Fatigue limit	S_f=	5400	psi	3.72E+07	Pa
Modulus at temperature	*E*=	25900000	lbf/in^2	1.79E+11	Pa
Density of t-well material	ρ_m=	0.290	lbf/in^3	8026.9	kg/m^3

Summary/ Suggestions:

*Pyromation makes no claims regarding performance or safety based on the calculations provided. The results communicated are based on the ASME PTC 19.3 TW-2016 design standard for reliable service of tapered, straight and stepped-shank thermowells in a broad range of applications. The user assumes full responsibility for installation, application and operation of the product.