

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



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.

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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	10342	14.0 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	lb/in ²	1.79E+11	Pa
Density of t-well material	ρ_m =	0.290	lb/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.