7030 Ryburn Dr. Millington, TN Phone: (901) 873-5300 Fax: (901) 873-5301 www.gohispeed.com

October 13, 2023

Josh Cavitt
Sonoco
Memphis, TN

The following is a summary of findings from the quarterly vibration survey performed at your facility. Please let us know if there are any questions or comments.

QualiTest® uses a four step rating system for defects.

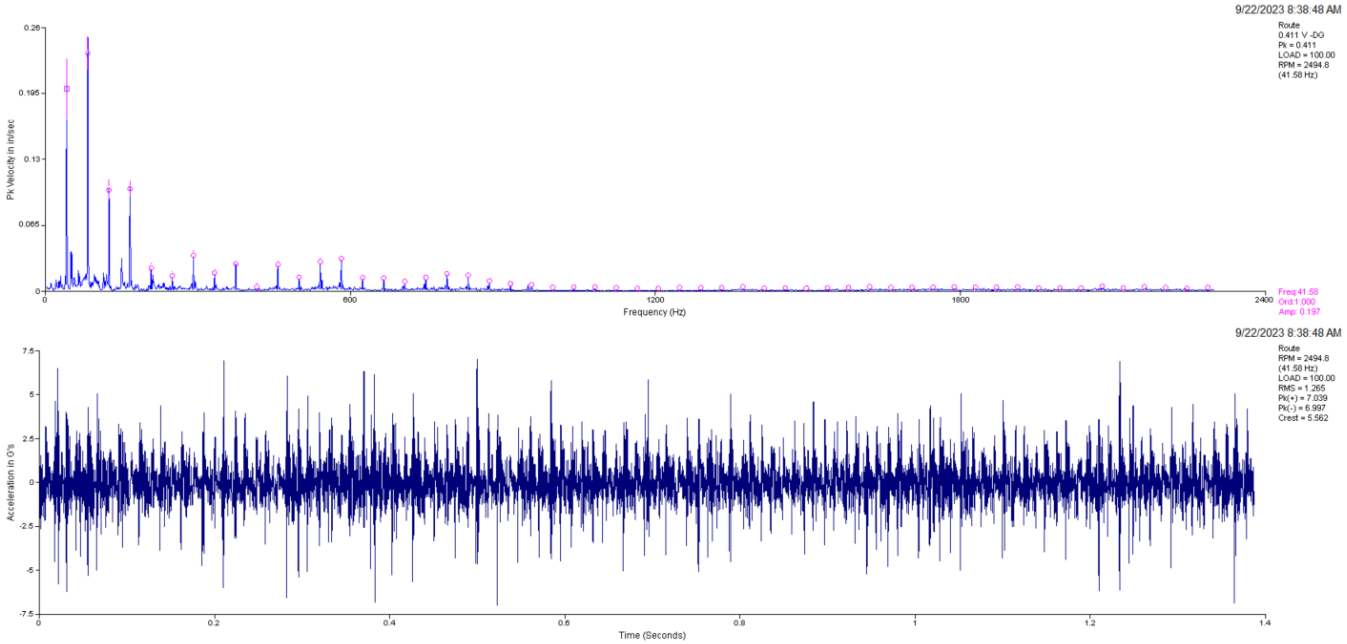
Class I: Defect is present, but effect on reliability is not clear; no immediate action is required. Continue to normally monitor.

Class II: Defect (s) present that may cause problem in long term (2-6 months). Repair during normal maintenance scheduling. Continue to monitor.

Class III; Defect (s) present that may cause failure in short term (less than 2 months). This should be addressed as soon as practical, with a high maintenance priority. Increase monitoring frequency.

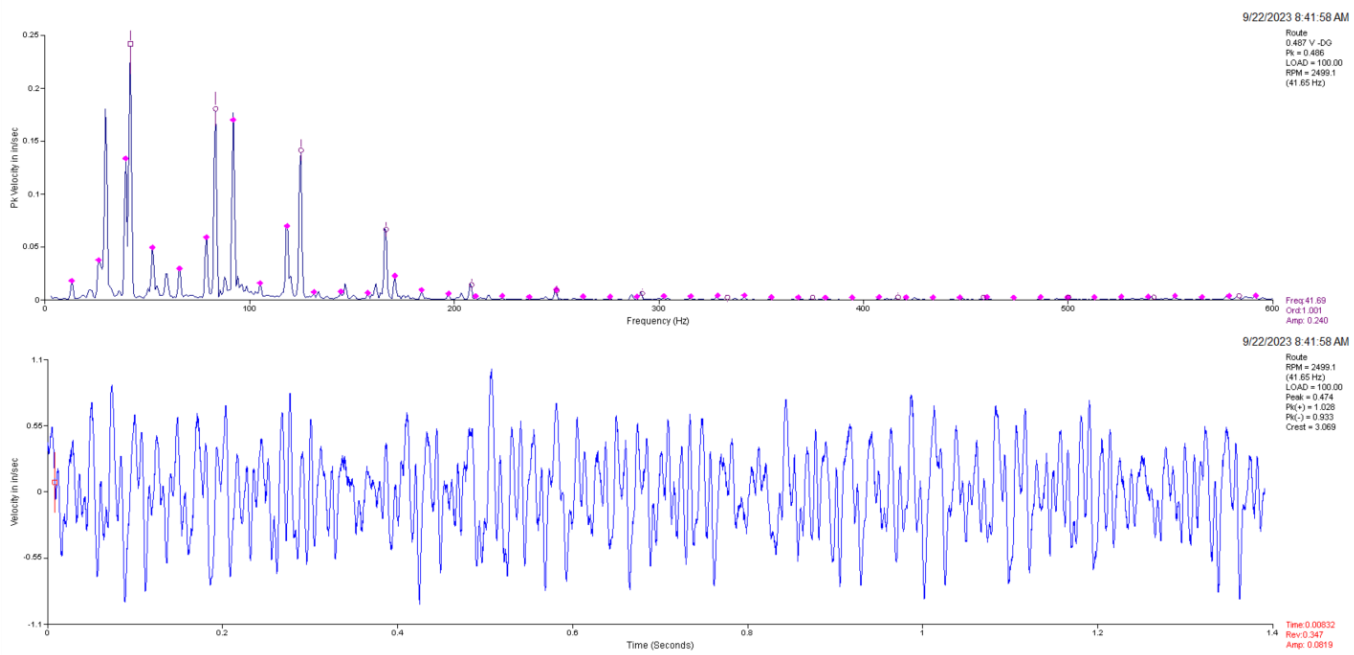
Class IV; Defect (s) present that makes continued reliability unpredictable, and possibility of secondary damage is high. Repairs should be made ASAP. An unscheduled shutdown should be considered for repairs

Defects



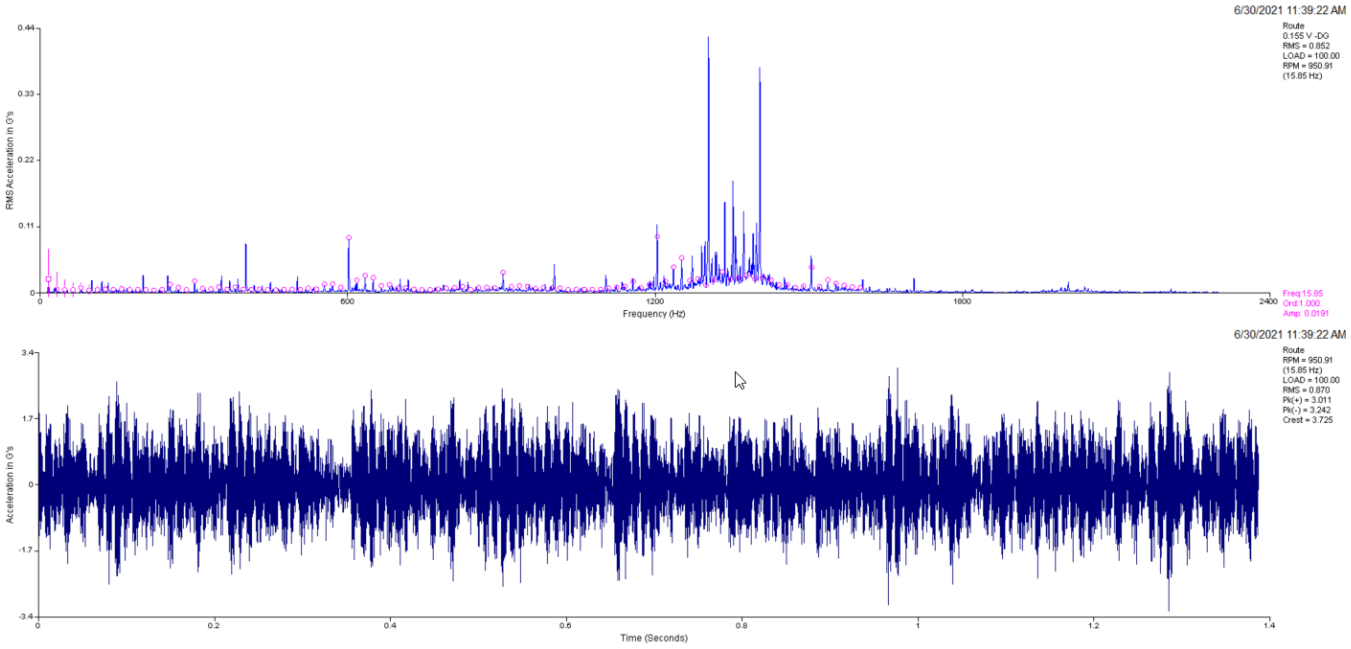
CLASS II P8 Oven Fan

Fan inboard bearing data shows several fan rpm harmonics present in the fan bearing data. This is an indication of mechanical fit looseness. Inspect fan bearings for looseness as time allows. Ensure fan shaft does not have excessive run out.



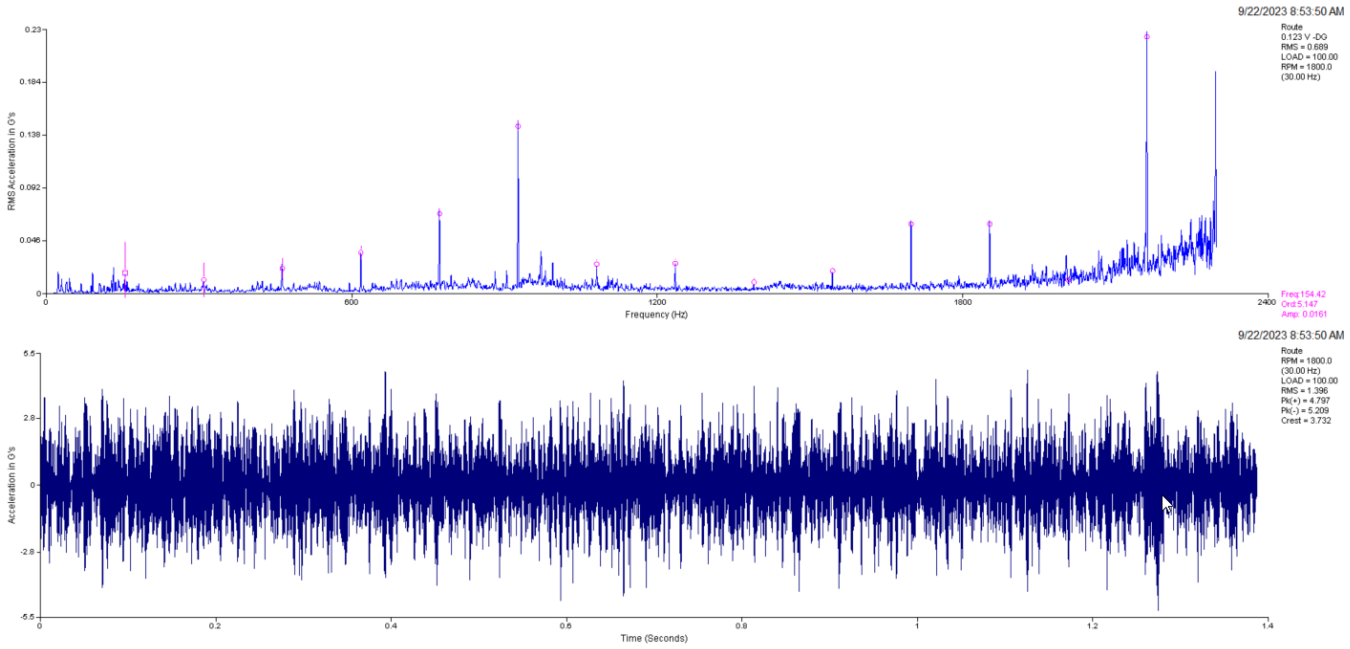
CLASS II P10 Oven Fan

Fan inboard vertical bearing data shows several fan rpm harmonics present in the fan bearing data. There are also sub-synchronous peaks present which may be belt frequencies. This is an indication of mechanical fit looseness and belt/sheaves issues. Inspect fan bearings for looseness as time allows. Ensure fan shaft does not have excessive run out and ensure belts and sheaves are in good shape.



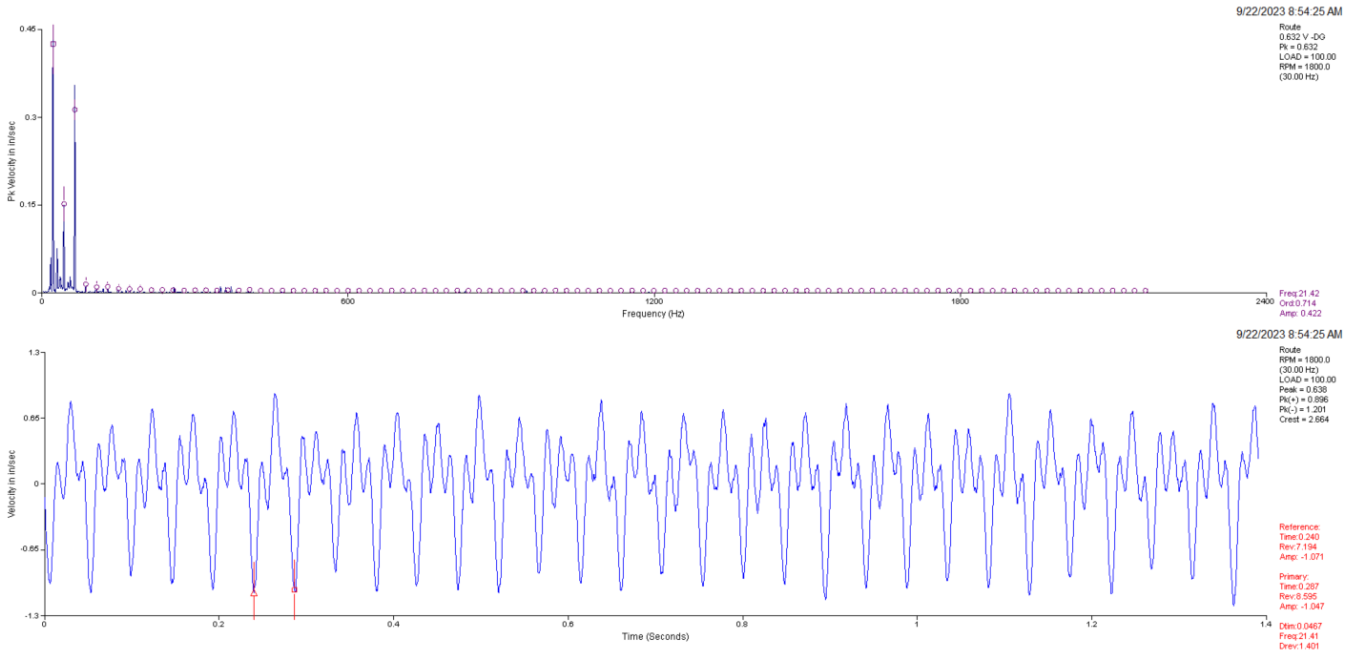
CLASS II Zone 2 Supply Fan

Fan outboard (ODE) bearing data shows some high frequency non-synchronous vibration. This type of vibration indicates bearing defects. Check fan bearings for defects/wear as time allows.



CLASS II Zone 5 Supply Fan

Fan inboard (DE) bearing data shows non-synchronous harmonics in the spectrum. This is an indication of bearing defects. Inspect fan bearings for defects and wear as scheduling allows.



CLASS III Zone 6 Supply Fan

Sub-synchronous vibrations are present in the motor. These peaks are likely harmonics of either fan speed or belts. For now, inspect sheaves for wear, face run-out, and misalignment. Ensure belts are in good order and properly tightened. Inspect motor base/structure for looseness also.

Abbreviated Last Measurement Summary

****

Database: sonoco.rbm
Station: COATER
Route No. 1: SONOCO

MEASUREMENT POINT	OVERALL LEVEL	HFD / VHFD
VACPUMP1 - VACUUM PUMP 1	(22-Sep-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.130 In/Sec	.523 G-s
MOV	.163 In/Sec	.474 G-s
MIH	.121 In/Sec	.692 G-s
MIV	.179 In/Sec	.775 G-s
MIA	.255 In/Sec	.064 G-s
EIH	.084 In/Sec	.330 G-s
EIV	.073 In/Sec	.280 G-s
EIA	.047 In/Sec	.141 G-s
EOH	.093 In/Sec	.149 G-s
EOV	.082 In/Sec	.286 G-s
VACPUMP2 - VACUUM PUMP 2	(22-Sep-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.270 In/Sec	1.083 G-s
MOV	.178 In/Sec	1.386 G-s
MIH	.253 In/Sec	1.276 G-s
MIV	.151 In/Sec	1.567 G-s
MIA	.354 In/Sec	.701 G-s
EIH	.162 In/Sec	.180 G-s
EIV	.121 In/Sec	.385 G-s
EIA	.067 In/Sec	.343 G-s
EOH	.095 In/Sec	.288 G-s
EOV	.127 In/Sec	.209 G-s
CTPUMP1 - COOLING TOWER PUMP 1	(22-Sep-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.027 In/Sec	.307 G-s
MOV	.071 In/Sec	.248 G-s
MIH	.044 In/Sec	.197 G-s
MIV	.040 In/Sec	.185 G-s
MIA	.066 In/Sec	.062 G-s
EIH	.057 In/Sec	.266 G-s
EIV	.039 In/Sec	.248 G-s
EIA	.055 In/Sec	.382 G-s
CTPUMP2 - COOLING TOWER PUMP 2	(22-Sep-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.025 In/Sec	.203 G-s
MOV	.105 In/Sec	.494 G-s
MIH	.035 In/Sec	.211 G-s
MIV	.090 In/Sec	.402 G-s
MIA	.046 In/Sec	.225 G-s
EIH	.044 In/Sec	.211 G-s
EIV	.072 In/Sec	.323 G-s
EIA	.048 In/Sec	.954 G-s
P8OVENFAN - P8 OVEN FAN	(22-Sep-23)	
	OVERALL LEVEL	1 - 20 KHz
MOH	.171 In/Sec	.058 G-s
MOV	.169 In/Sec	.084 G-s
MIH	.189 In/Sec	.049 G-s
MIV	.210 In/Sec	.100 G-s
EIH	.411 In/Sec	1.236 G-s
EIV	.491 In/Sec	1.265 G-s

EIA	.267 In/Sec	.610 G-s
EOH	.244 In/Sec	1.119 G-s
EOV	.246 In/Sec	1.145 G-s
EOA	.334 In/Sec	.577 G-s

P10OVENFAN - P10 OVEN FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.151 In/Sec	.038 G-s
MOV	.250 In/Sec	.034 G-s
MIH	.203 In/Sec	.020 G-s
MIV	.319 In/Sec	.067 G-s
EIH	.176 In/Sec	.261 G-s
EIV	.487 In/Sec	.229 G-s
EIA	.358 In/Sec	.152 G-s
EOH	.389 In/Sec	.458 G-s
EOV	.414 In/Sec	.192 G-s
EOA	.476 In/Sec	.330 G-s

MAINXHAUST - MAIN EXHAUST FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.239 In/Sec	.397 G-s
MOV	.352 In/Sec	.400 G-s
MIH	.233 In/Sec	.126 G-s
MIV	.247 In/Sec	.225 G-s
MIA	.146 In/Sec	.034 G-s
EIH	.192 In/Sec	.466 G-s
EIV	.297 In/Sec	.813 G-s
EOH	.184 In/Sec	.327 G-s
EOV	.130 In/Sec	.686 G-s

ZONE1FAN - ZONE 1 SUPPLY FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.207 In/Sec	.471 G-s
MOV	.423 In/Sec	.614 G-s
MIH	.225 In/Sec	.746 G-s
MIV	.216 In/Sec	.867 G-s

ZONE2FAN - ZONE 2 SUPPLY FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.226 In/Sec	.230 G-s
MOV	.251 In/Sec	.265 G-s
MIH	.256 In/Sec	.324 G-s
MIV	.157 In/Sec	.346 G-s
MIA	.315 In/Sec	.170 G-s
EIH	.233 In/Sec	.187 G-s
EIV	.169 In/Sec	.194 G-s
EIA	.223 In/Sec	.038 G-s

ZONE3FAN - ZONE 3 SUPPLY FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.235 In/Sec	.345 G-s
MOV	.929 In/Sec	.203 G-s
MIH	.383 In/Sec	.495 G-s
MIV	.181 In/Sec	.358 G-s
MIA	.889 In/Sec	.279 G-s
EIH	.157 In/Sec	.577 G-s
EIV	.242 In/Sec	.127 G-s
EOH	.246 In/Sec	.927 G-s
EOV	.159 In/Sec	.334 G-s

ZONE4FAN - ZONE 4 SUPPLY FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.242 In/Sec	.197 G-s
MOV	.288 In/Sec	.146 G-s
MIH	.355 In/Sec	.155 G-s
MIV	.271 In/Sec	.158 G-s
EIH	.299 In/Sec	.268 G-s
EIV	.088 In/Sec	.164 G-s
EOH	.139 In/Sec	.148 G-s
EOV	.181 In/Sec	.088 G-s

ZONE5FAN - ZONE 5 SUPPLY FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.091 In/Sec	.214 G-s
MOV	.110 In/Sec	.226 G-s
MIH	.103 In/Sec	.270 G-s
MIV	.119 In/Sec	.260 G-s
EIH	.123 In/Sec	1.980 G-s
EIV	.062 In/Sec	1.591 G-s

ZONE6FAN - ZONE 6 SUPPLY FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.632 In/Sec	.092 G-s
MOV	.222 In/Sec	.065 G-s
MIH	.474 In/Sec	.073 G-s
MIV	.245 In/Sec	.080 G-s
MIA	.460 In/Sec	.063 G-s
EIH	.141 In/Sec	.307 G-s
EIV	.331 In/Sec	.745 G-s
EOH	.219 In/Sec	.368 G-s
EOV	.356 In/Sec	.282 G-s

EXHAUSTFAN - EXHAUST FAN (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.218 In/Sec	.168 G-s
MOV	.214 In/Sec	.122 G-s
MIH	.237 In/Sec	.144 G-s
MIV	.226 In/Sec	.209 G-s
MIA	.278 In/Sec	.023 G-s

COOLFAN A - COOLING FAN A (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.366 In/Sec	.257 G-s
MOV	.104 In/Sec	.245 G-s
MIH	.358 In/Sec	.340 G-s
MIV	.119 In/Sec	.407 G-s
MIA	.191 In/Sec	.297 G-s
EIH	.126 In/Sec	.234 G-s
EIV	.109 In/Sec	.187 G-s
EIA	.108 In/Sec	.119 G-s
EOH	.120 In/Sec	.274 G-s
EOV	.160 In/Sec	.383 G-s
EOA	.107 In/Sec	.097 G-s

502SPNBLWR - 502 SPENCER BLOWER (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.198 In/Sec	.036 G-s
MOV	.087 In/Sec	.154 G-s
MIV	.132 In/Sec	.116 G-s

ALNESNCBLW - A LINE SPENCER BLOWER (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.128 In/Sec	.154 G-s
MOV	.254 In/Sec	.089 G-s
MIH	.234 In/Sec	.121 G-s

DLNESNCBLW - D LINE SPENCER BLOWER (22-Sep-23)

	OVERALL LEVEL	1 - 20 KHz
MOH	.210 In/Sec	.026 G-s
MOV	.209 In/Sec	.067 G-s
MIH	.209 In/Sec	.076 G-s
MIV	.197 In/Sec	.154 G-s

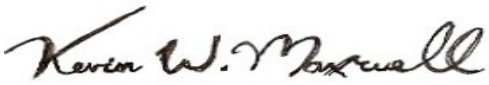
Clarification Of Vibration Units:

Acc --> G-s RMS

Vel --> In/Sec PK

As always, it has been a pleasure to serve Sonoco. If there are any comments or questions, do not hesitate to contact us.

Sincerely,



ISO Certified Vibration Analyst, Category III

HI-SPEED INDUSTRIAL SERVICE

QualiTest® Diagnostics

Cell: 901-486-4565
Email: kwilliam@gohispeed.com