

August 27, 2021

Plaskolite

Subject: August vibration report

Most of the machines surveyed were found to be in good condition, with exception of the following:

QualiTest® uses a four-step rating system for defects.

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

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

<u>Class III</u>: 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.

<u>Class IV</u>; 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

Hi-Speed Industrial Service tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

This completes our assessment of your equipment for this survey. Thank you for your business and don't hesitate to call if you have any comments or questions.

Sincerely,

David W. Shook Senior Reliability Specialist *Hi-Speed* Industrial Service dshook@gohispeed.com

> 7030 Ryburn Drive Millington, TN 38053 P. 901-873-5300 F. 901-873-5301

Data

West Cooling Tower

Vibration data is taken at the base of the unit. The vibrations are well below the given threshold of 0.25"/second velocity peak, however we wanted to bring a sudden change in the data to your attention. There is now a dominant peak at 127.27 Hz (25.085 orders of shaft speed, or close to 25) at 0.06"/second. We have no fault sets for this unit to help us diagnose this change, other than guessing it is a possible gear mesh vibration. We recommend inspecting the unit as time allows. **Rated a Class I Defect.**

Blower Slow Cooling (Lower)

The acceleration is down in the drive end bearing. Speed affects vibrations. It appears fluting is still the issue. We believe the bearing damage needs to be addressed in the future. Replace the bearings or complete motor as time allows. Take steps to reduce bearing fluting going forward. **Rated a Class II Defect.**

Blower Slow Cooling (Upper), and Both Rapid Cooling Blowers

The acceleration is down in the drive end bearing. Speed affects vibrations. Fluting is suspected. No Immediate action required. **Rated a Class I Defect.**

West Syrup Pump

Unit was not operating during this service.

Hot Water Pump 4

Overall vibration is 0.47"/second velocity peak. The vibration is dominated by a shaft speed. Check all fasteners. The pumps could also be slightly worn. Water levels can also affect the vibrations. Trim balancing might help. **Rated a Class I Defect.**

Hot Water Pump 5

Overall vibration is 0.32"/second velocity peak. The vibration is dominated by a shaft speed. Check all fasteners. The pumps could also be slightly worn. Water levels can also affect the vibrations. Trim balancing might help. **Rated a Class I Defect.**

Abbreviated Last Measurement Summary

Database: mmaold.rbm Station: PLASKOLITE MEMPHIS Route No. 3: PLASKOLITE NEW

Report	Date:	27-Aug-21	10:20
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MEASUREMEN	NT POINT	OVERALL LEVEL	HFD / VHFD	MACHINE SPEED
5285-09	- FAN, COO	LING TWR WEST	(27-Aug-21)	
	,	OVERALL LEVEL	1-20 KHz	
W1		.084 In/Sec	.042 G-s	430.0 RPM
W2		027 Tn/Sec	044 G-s	10010 1411
12		.027 117560	.011 G 5	
5285-11	- FAN, COO	DLING TWR MIDDLE	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
M1		.021 In/Sec	.022 G-s	430.0 RPM
M2		.014 In/Sec	.039 G-s	
5285-12	- FAN, COO	LING TWR EAST	(22-Jul-21)	
	,	OVERALL LEVEL	1-20 KHz	
E1		.321 In/Sec	.431 G-s	430.0 RPM
		OVERALL LEVEL	HFD (>5 kHz)	
* E2		.015 In/Sec	.0008 G-s	
		1010 111,000		
5285-21	- RETURN	AIR FAN 100 AREA	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
11		.051 In/Sec	.056 G-s	1745.0 FPM
21		.059 In/Sec	.021 G-s	
23		.070 In/Sec	.021 G-s	
71		.056 In/Sec	.015 G-s	
81		.079 In/Sec	.011 G-s	
S1100	- FLARE H	BLOWER	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
11		.017 In/Sec	.020 G-s	3450.0 FPM
12		.014 In/Sec	.022 G-s	
* 13		.021 In/Sec	.017 G-s	
* 21		.014 In/Sec	.016 G-s	
* 22		.016 In/Sec	.017 G-s	
* 23		.015 In/Sec	.017 G-s	
5214-04	- FACT CI		$(27 - \lambda_{11} - 21)$	
5214 04	EAST 5.	OVERALL LEVEL	1_20 KH#	
11			120 KHZ	1190 0 DDM
21			.129 G-S	1160.0 KPM
21			.100 G-S	
23		.022 III/Sec	.088 G-S	
31		.034 IN/Sec		
61		.055 In/Sec	000 0 0	
/1		.050 In/Sec	.038 G-s	
81		.039 In/Sec	.0070 G-s	
5214-03	- MIDDLE	SYRUP COOL PUMP	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
11		.056 In/Sec	.085 G-s	1180.0 RPM
21		.041 In/Sec	.059 G-s	
23		.046 In/Sec	.070 G-s	
31		.233 In/Sec		
61		.183 In/Sec		
71		.117 In/Sec	.047 G-s	
81		.112 In/Sec	.0080 G-s	
		,		

5214-01	-	WEST SYRUP COOL PUMP	(22-Jul-21)	
1	1	614 Jp/Soc	1-20 KHZ	1190 0 PDM
2.	1	734 TR/Sec	.404 G-S	1100.0 KFM
2	3	365 Jp/Sec	.052 G-S	
2.	5 1	1 071 Tr/Sec	.090 G-S	
3. 6'	1	1.0/1 IN/Sec		
0.	1	1.413 IN/Sec	2 010 0 -	
7.	1	1./8/ In/Sec	3.219 G-s	
8.	1	1.382 In/Sec	.609 G-s	
5282-02	-	PUMP #1 HOT WATER 5282-02	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
1:	1	.147 In/Sec	1.409 G-s	1800.0 RPM
1:	2	.168 In/Sec	.598 G-s	
5282-03	_	PUMP #2 HOT WATER 5282-03	(28-Mav-21)	
		OVERALL LEVEL	1-20 KHz	
1	1	065 In/Sec	261 G-s	1800 0 RPM
	2	096 In/Sec	388 G-s	1000.0 1011
1.	2	.090 117 860	.500 9 5	
5282-04	-	PUMP #3 HOT WATER 5282-04	(22-Jul-21)	
		OVERALL LEVEL	1-20 KHz	
1	1	.248 In/Sec	.369 G-s	1800.0 RPM
1:	2	.330 In/Sec	.388 G-s	
5282-05	_	PUMP #4 HOT WATER 5282-05	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
1	1	466 In/Sec	.412 G-s	1800.0 RPM
1:	2	.192 In/Sec	.253 G-s	
5282-06	-	PUMP #5 HOT WATER 5282-06	(27-Aug-21)	
	_	OVERALL LEVEL	1-20 KHz	
1:	1	.317 In/Sec	.655 G-s	1800.0 RPM
1:	2	.183 In/Sec	.652 G-s	
5283-01	-	BLOWER, EDGE WATER REMOVAL	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
1:	1	.106 In/Sec	.142 G-s	3600.0 RPM
2	1	.099 In/Sec	.068 G-s	
2	3	.095 In/Sec	.121 G-s	
7:	1	.063 In/Sec	1.724 G-s	
8	1	.108 In/Sec	.416 G-s	
5281-12	-	BLOWER SLOW COOLING (HDDEP)	(27-Aug-21)	
5201-12		OVEDALL IEVEL	(2, AUY-21) 1-20 KH7	
1.	1			1770 0 000
1.	T	.000 IN/Sec	.303 G-S	I//U.U RPM
0	1	OVERALL LEVEL	1-20 KHZ	
2.	т 2	.054 IN/Sec	2./JI G-S	
2.	د ۱	.053 IN/Sec	./93 G-S	
7	- -	.044 In/Sec	.1/1 G-S	
8:	T	.068 In/Sec	.350 G-s	
5281-13	-	BLOWER, SLOW COOLING (LOWER)	(27-Aug-21)	
		OVERALL LEVEL	1-20 KHz	
1	1	.067 In/Sec	1.158 G-s	1770.0 RPM
2	1	.104 In/Sec	2.691 G-s	

		OVERA	LL LEVEL	1-20	KHZ		
21H		.143	In/Sec	2.644	G-s		
		OVERA	LL LEVEL	1-20	KHz		
23		.094	In/Sec	. 908	G-s		
71		.030	In/Sec	.141	G-s		
81		.026	In/Sec	.104	G-s		
5281-14	- BLOWE	R,RAPID CO	OLING (UPPEF	R) (27	-Aug-21)		
		OVERA	LL LEVEL	1-20	KHz		
11		.065	In/Sec	.502	G-s	1770.0	RPM
21		.221	In/Sec	1.525	G-s		
23		.157	In/Sec	.098	G-s		
71		. 023	In/Sec	.077	G-s	900.0	RPM
81		.028	In/Sec	.079	G-s		
5281-08	- BLOWE	R,RAPID CO	OLING (LOWEF	R) (27	-Aug-21)		
		OVERA	LL LEVEL	1-20	KHz		
11		.051	In/Sec	.524	G-s	1770.0	RPM
21		.126	In/Sec	.610	G-s		
23		.098	In/Sec	.591	G-s		
71		.021	In/Sec	.066	G-s	900.0	RPM
81		.021	In/Sec	.100	G-s		
5281-10	- 200 B	ELT DRIVE,	POLYMERIZEF	27	-Aug-21)		
		OVERA	LL LEVEL	1-20	KHz		
11		.026	In/Sec	.827	G-s	1800.0	FPM
21		.028	In/Sec	.201	G-s		
33		.0070	In/Sec	.017	G-s		
31		.011	In/Sec	.068	G-s		
61		.0038	In/Sec	.028	G-s		
71		.0032	In/Sec	.0015	G-s		
81		.0027	In/Sec	.0014	G-s		
Clarification Of Wibration Units.							
Acc	>	G-s	DK				
Vel	>	Tn/Sec	DK				
	>	G-s	PK				
* - Indicates Data Has Date/Time Different From Machine Date/Time							