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DAMPER SELECTION FOR 774M-T53 46/37 ACCR

OBJECTIVE	•	To characterize 1706 and 1707 damper performance on 774M-T53 46/37 ACCR conductor.
	•	To select most appropriate damper for minimizing vibration on 774M-T53 ACCR.

COMPONENTS TESTED	ALCOA 1706-11 damper ALCOA 1707-11 damper
PROCEDURE	 Damping efficiency was determined according to IEEE STD 664-1994 using the standing wave ratio method and the following conditions: conductor tension of 25% RBS damper spaced 74.3" from fixed suspension shoe damper spaced at 70% of the calculated loop length for 15 mph wind peak-to-peak amplitude equal to 3/F, where "F" is the span vibration frequency in hertz efficiency measurements at all undampened conductor harmonics between 5.2 and 39.0 hertz (equivalent of 2 to 15 mph wind speed)

REQUIREMENT	Minimum overall damper efficiency of 26% based on the 26% acceptance curve.

TEST RESULTS	WIND	DAMPER	WIND	DAMPER	WIND	DAMPER
1706-11	SPEED	EFFICIENCY	SPEED	EFFICIENCY	SPEED	EFFICIENCY
	(mph)	(%)	(mph)	(%)	(mph)	(%)
OVERALL EFFICIENCY BASED ON 26% CURVE – 42.4%	2.50	9.54	10.18	53.08		
	3.35	21.20	11.01	56.06		
	4.19	18.64	12.03	56.80		
	5.02	25.51	12.90	57.17		
	5.87	64.01	13.86	54.22		
	6.72	74.37	14.85	49.99		
	7.57	63.67				
	8.43	56.10				
	9.29	52.69				

TEST RESULTS	WIND	DAMPER	WIND	DAMPER	WIND	DAMPER
1707-11	SPEED	EFFICIENCY	SPEED	EFFICIENCY	SPEED	EFFICIENCY
	(mph)	(%)	(mph)	(%)	(mph)	(%)
OVERALL	2.50	19.31	10.18	35.29		
EFFICIENCY BASED ON 26% CURVE - 35.4%	3.35	26.36	11.01	37.38		
	4.19	28.00	12.03	42.16		
	5.02	43.48	12.90	44.76		
	5.87	66.79	13.86	49.40		
	6.72	55.25	14.85	55.84		
	7.57	44.30				
	8.43	39.52				
	9.29	35.12				

CALCULATION	The overall efficiency is determined by dividing the measured efficiency at each frequency
OF OVERALL	by the acceptance curve value for that frequency and multiplying by the acceptance curve
EFFICIENCY	basis (26%).

CONCLUSIONS	The 1706-11 damper provides the best damping performance over the range of frequencies equivalent to wind speeds between 2 and 15 mph based on its overall efficiency of 42.4%.
	The chart below provides a graphical presentation of the 1706-11 and 1707-11 damping performance relative to the 26% curve.



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