

As referenced in Pecora Technical Bulletin #81 Silicone Pavement Sealant for Airfield Use, Pecora has evaluated the jet fuel resistance of the silicone pavement sealants recommended for use in airfield applications.

Being that no ASTM test method exists for jet fuel resistance for silicone based materials, Pecora has adopted a standard commonly used and accepted. The standard consists of laboratory testing which reproduces conditions created when a jet fuel spill occurs. Specifically, the test method was based on Fed. Specification SS-S-200E Sec. 3.4.7 Bond to Concrete test procedures. Internal test results have shown Pecora 300SL, 301NS and 322FC silicone pavement sealants to perform within acceptable limits. Some swelling of sealant initially occurs with the swelling dissipating upon the drying of the jet fuel with no associated bond loss.

SS-S-200E Sec. 3.4.7 Bond to Concrete (Modified)¹

Test samples were produced according to ASTM C1135 H-block sample configurations. Three samples of each sealant per condition were evaluated. Applicable sealant primer was applied to the specification concrete. Samples were cured for 21 days at 77°F/50%rh. Samples were then continually immersed in jet fuel for periods up to 24hrs. Samples were removed from jet fuel and immediately measured for swell. Samples were allowed to dry for 24hrs at 77°F/50%rh then cycled to 50% extension for three cycles at -20°F. The following test results were obtained:

Silicone Pavement Sealant	Jet Fuel Immersion Period, time	Primer Required	Movement Class, %	# of Cycles	Cohesive Failure, %	Test Results, Pass / Fail
Pecora 300SL	30 min	P225	+/-50	3	0	PASS
	60 min	P225	+/-50	3	0	
	2 hrs	P225	+/-50	3	0	
	4 hrs	P225	+/-50	3	0	
	24 hrs	P225	+/-50	3	0	
Pecora 301NS	30 min	P225	+/-50	3	0	PASS
	60 min	P225	+/-50	3	0	
	2 hrs	P225	+/-50	3	0	
	4 hrs	P225	+/-50	3	0	
	24 hrs	P225	+/-50	3	0	
Pecora 322FC	30 min	P200	+/-50	3	0	PASS
	60 min	P200	+/-50	3	0	
	2 hrs	P200	+/-50	3	0	
	4 hrs	P200	+/-50	3	0	
	24 hrs	P200	+/-50	3	0	

Conclusion: After jet fuel immersion and subsequent drying the sealant/primer combinations tested maintained adequate adhesion and returned to acceptable dimensions. All silicone pavement sealants tested comply with SS-S-200E section 3.4.7 Bond to Concrete test requirements.

¹ An alternate sample configuration was utilized for all testing. Sealant depth was reduced to 1/2" which is considered representative of actual jobsite conditions.

