

# **Determining a specification parameter for asphalt mixtures using unified frequency sweep at constant height data from the Superpave shear tester**

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## **ABSTRACT**

*The data generated from the Superpave shear tester (SST) frequency sweep at constant height (FSCH) test is available in terms of the complex shear modulus  $G^*$  versus frequency at the temperature of measurement. An attempt is made to unify the sets of curves generated at different temperatures on various mixtures. The samples included for data generation were cores from existing pavements as well as mixtures prepared in the laboratory. It was found that irrespective of whether the tested samples were field cores or made from mixtures prepared in the laboratory, following a simple normalizing procedure could unify their frequency sweep data. The procedure involved the use of a normalizing frequency parameter. The temperature at which the normalizing parameter becomes equal to one is suggested as a specification parameter for assessing mixture performance. This specification parameter was determined for various mixtures of known performance and found to follow performance ranking in all the studied cases. It was also found that the specification parameter was sensitive to certain design parameters like air voids and SST testing shear strain level, and gave expected performance trends.*

**KEYWORDS:** *Superpave shear tester, frequency sweep, unified curve, specification parameter, performance indicator*

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