

Experimental Squeeze Flow of Bitumen: Rheological Properties

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Abstract : The squeeze flow tests were studied by many authors to measure the rheological properties of fluid. Experimental squeezing flow test with constant area between two parallel disks of bitumen is investigated in the present work. The effect of the temperature, the process of preparing the sample and the gap between the discs were discussed. The obtained results were compared with the theoretical models. The behavior of bitumen depends on the viscosity and the yield stress. Thus, the bitumen was presented as a power law for a small power law exponent and as a biviscous fluid when the viscosity ratio was smaller than one. Also, the influence of the ambient temperature is required for the compression test. Therefore, for a high temperature the yield stress decrease.

Keywords : bitumen, biviscous fluid, squeeze flow, viscosity, yield stress

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