



Faulty of Engineering and Technology

Civil Engineering Department

Construction Materials Laboratory

ENCE215

Experiment :

" Asphalt Tests : Flash Point and Fire Point test of Bitumen "

Instructors :

Dr. Khalil Qatu

Eng. Nasser

Done by : Mohammad Al-Swaity " 1181136 "

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Introduction :


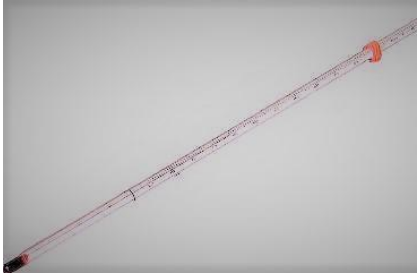
Flash point :The flash point of a material is the lowest temperature at which the application of test flame causes the vapors from the material to momentarily catch fire in the form of a flash under specified conditions of the test and never sustain fire .

Fire Point: The fire point is the lowest temperature at which the application of test flame causes the material to ignite and burn at least for 5 seconds under specified conditions of the test.

Purpose :

To determine the consistency of a bituminous material. and to know the tendency of the sample to form a flammable mixture with air under controlled laboratory conditions .

Materials and Equipment's :

Equipment	The name of it :	Equipment	The name of it :
 Figure 1	Heat plate	 Figure 2	Thermometer

" Table 1 "

Procedure :

A) Flash Point :

1. Bitumen was softened between 75 and 100 ° C. To remove air bubbles and water.
2. The cup is filled with the material to be tested until the packing mark. Put on the bathroom. The open section was repaired. Then the thermometer was inserted and moved by the instigator.
3. The flame test was lit and adjusted. And provided with heat bearing not to exceed 5 ° C or more than 6 ° C per minute. By a thermometer about 5 ° C or more than 6 ° C per minute.
4. The open flash point is taken as the temperature when the flash first appears at any point on the surface of the material in the cup. Be aware that the bluish halo that sometimes surrounds the test torch is not confused with the real flash. Stop stirring while applying the test flame .
5. The flash point should be taken as the read temperature on the thermometer at the time the flash occurs.

B) Fire Point :

1. After the flash point, the heating shall continue at such a rate that the temperature recorded by the thermometer shall not be less than 5 ° C and not more than 6 ° C per minute.
2. The torch must be lit test and adjusted so that the bead size is 4mm in Dia.

Data and Calculations :

Temperature of bitumen at the flash point (C°) = 349° C

Temperature of bitumen at the fire point (C°) = 375° C

Results and Conclusion :

This indicates the temperatures at which the bitumen is no longer usable and dangerous in order to avoid ever reaching such temperatures.

Errors in this test might have happened due to slow or fast reading of the temperature of the thermometer .