



**Faulty of Engineering and Technology**

**Civil Engineering Department**

**Construction Materials Laboratory**

**ENCE215**

**Experiment :**

**" Asphalt Tests : Ductility Test of Bitumen"**

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## Introduction :

Ductility is one of the important properties of bitumen, which controls the workability of bitumen and its suitability with the place it will be used in, such as in cold areas the ductility will be higher than the hot areas .

Ductility is the property of bitumen that allows it to undergo great deformation or elongation .

## Purpose :

## Materials and Equipment's :

Equipment	The name of it :	Equipment	The name of it :
 Figure 1	<b>Ductility machine</b>	 Figure 2	<b>Bitumen samples</b>
 Figure 3	<b>Ruler</b>		

" Table 1 "

## Procedure :

- 1) The bitumen sample was heated and poured in the mould assembly placed on a plate. These samples with moulds were cooled in the air and then in water bath at 27o C temperature.
- 2) The excess bitumen was cut and the surface was leveled using a hot knife.
- 3) The mould with assembly containing sample was kept in water bath of the ductility machine for about 90 minutes .
- 4) The sides of the moulds were removed, the clips were hooked on the machine and the machine was operated .
- 5) The distance up to the point of breaking of thread was the ductility value which was reported in cm.

## Data and Calculations :

Sample No.	Distance (mm)
1	Over 1000 mm

Table (2): Data of Ductility test

## Result and Conclusion :

The previous samples are consistent and show an accepted ductile behavior of the bituminous sample, which indicates that the samples have passed because none of them have exceeded the maximum of 1000mm over ductile bituminous samples tend to make the asphaltic mix flexible, more vulnerable to deformations and thus unstable for pavement structures or any other application of asphalt which requires stability. Misreading the length of the elongated bitumen sample may be a source of error