EASTERN MEDITERRANEAN UNIVERSITY

DEPARTMENT OF CIVIL ENGINEERING

MATERIALS OF CONSTRUCTION LABORATORY

CIVL 484 REPAIR & MAINTENANCE OF CONCRETE

GAZIMAGUSA

EXPERIMENT NO : #1

NAME OF THE EXPERIMENT : Crack detection using microscope
ASTM CODE :

CRACK DETECTION WITH MICROSCOPE

I. Objective and Scope :

The Aim of this experiment is to measure and monitoring crack widths in concrete to check if it is due to overload , wrong combination of materials , poor quality materials and so on or it is just a crack which could happen everywhere in concrete.

The experiment is done using high definition microscope connected to an adjustable light source which provides a well-illuminated image under all working conditions.

II. Apparatus

Crack detection microscope, concrete specimen

III. Test Procedure

1. Turn the light of the microscope on,
2. Put it on concrete specimen with correct orientation(in order to measure crack width Microscope's scale should be perpendicular to the crack on the concrete)
3. Image can be focused and cleared by turning the knob on the side of the microscope and eyepiece can be rotated through 360 degree
4. Measure the crack width knowing in this type of microscope every 10 division represents 0.2 mm and it is evident when you look at the eyepiece for every microscope there is a scale guide there.

important note: the device is used to measure the crack width on concrete so in order to measure accurately if there is any plaster on the crack you first need to clean the surface to reach concrete surface then use the microscope to measure the crack width.