

• The failure mode for both beams was flexural mode. That occurred as expected since all samples were designed to fail in flexural. The first crack appeared on the control beam (PBC0) was at a load of 56KN, and it gradually increased with the increase in PBC content reaching 66KN at 20 % PBC replacement. This is a good indication of delaying crack appearance when using PBC in concrete.

• As for strain distribution, it was found that for the same load the tensile strain in the control beam was higher than those with PBC. This can be justified by the larger central deflection for the control beam. The depth of the neutral axis decreased as the load increased for all beams. The presence of PBC increased the depth of the neutral axis at similar loads.

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