

Calculation Equation for Deformation Performance of RC Members with High-Strength Rebar

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A positive and negative alternating loading experiment for full-scale reinforced concrete (RC) column specimen with SD490 as longitudinal bar or SD1275 equivalent as ties was conducted to verify the damage properties and deformation capacity. All specimens showed flexural failure with buckling of the longitudinal bars. When SD490 was used for the longitudinal bars, the increased compressive strength of the concrete tended to suppress the damage to the core concrete and improve the deformation capacity. When SD1275 equivalent was used for the ties, the ties did not yield and did not exhibit the deformation performance equivalent to the yield strength. The results of these experiments clarify the conditions under which calculation equation for deformation capacity can be applied.