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گواهی ثبت مقاله در سیویلیکا
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عنوان مقاله:

EFFECT OF REBAR ON COMPRESSIVE STRENGTH OF CONCRETE CORES

محل انتشار:

سومین کنفرانس بین المللی بتن و توسعه (سال: 1388)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Concrete coring is used for determining compressive strength of hardened concrete of elements to evaluate low-strength-test-result concrete or to understand concrete placing quality of existing structure. In safety evaluation of existing structures that need rehabilitation and retrofitting, it's necessary to have some information about existing concrete. The best and most accurate method to determine compressive strength of existing concrete is coring. Rebars always make difficulty in coring of reinforced concrete structures. Sometimes it is not possible to core from plain concrete areas. There are serious considerations for effects of rebar on compressive strength of concrete cores in some countries. There is no strength correction for the effect of rebars in ACI and also in Iranian related codes and specifications. There is only an Concrete Society equation in publication no.207 of BHRC based on result corrections of cores contained rebars perpendicular to cores longitudinal axes. This correction does not exceed 10%. Dealing with such problems in a project and because there was sureness about strength of placed concrete, but strength of coreswas highly lower and it was not possible to obtain plain core as there was heavy rebar concentration, it was necessary to study rebar effects on core strength. In this research, strength of cores of an element contained rebars and plain ones were compared to evaluate above mentioned equations. Also some cylindrical samples were made and tested with placed rebars. In addition if the core has uncut rebars, there will be no significant reduction in its strength. It seems that cutting of rebars in coring process has little effects on concrete quality. It is due to cracks .formation between concrete and rebars that reduce the concrete strength

کلمات کلیدی:

compressive strength, core, rebar, reinforced concrete, structure

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