

ABSTRAK

Dalam menentukan suatu mutu beton terpasang pada bangunan eksisting perlu dilakukan pemeriksaan dengan suatu pengujian *non-destructive test* (NDT) dan *destructive test*. Pengujian mutu beton terpasang dilakukan melalui pengambilan sampel beton inti (*core drill*) dan uji nondestruktif *hammer test*. Penentuan lokasi sampel juga harus diperhatikan yang diatur dalam ASCE 41-17 dalam pasal 10.2.2.4 memberikan penjelasan mengenai jumlah minimum sampel untuk berbagai situasi dan ACI 214.4R-10 Pasal 4.2. Data pengujian hasil *non-destructive test* (NDT) dan *destructive test* perlu dilakukan observasi terhadap keberadaan adanya deviasi yang signifikan dari suatu sampel ke sampel yang lain.

Hasil *hammer test* dikorelasikan secara metode statistik dengan nilai kuat tekan beton inti dalam jumlah sampel yang lebih banyak untuk menambah tingkat kepercayaan terhadap hasil uji mutu beton terpasang. Pengujian dan interpretasi hasil *hammer test* dilakukan sesuai metoda yang terdapat dalam ACI 228.1R-19 dan ACI 214.4R-10. Dalam menentukan nilai kuat tekan beton 10-persentil ($Y_{0.10}$) yang dihitung dengan *Tolerance Factor Method* (ACI 228.1R-19), kemudian untuk mendapatkan nilai kekuatan tekan beton ekivalen desain ($f'_{c,eq}$) menggunakan *Tolerance Factor Method* (ACI 228.1R-19) dan *Alternate Method* (ACI 214.4R-10).

Kata kunci : *nondestructive test*, *destructive test*, *hammer test*, *core drill*, kuat tekan beton ekivalen

ABSTRACT

In determining the quality of concrete installed in existing buildings, it is necessary to carry out inspections with a non-destructive test (NDT) and a destructive test. Testing the quality of the installed concrete is carried out through core drill sampling and a non-destructive hammer test. Determination of the location of the sample must also be considered as regulated in ASCE 41-17 in article 10.2.2.4 provides an explanation of the minimum number of samples for various situations and ACI 214.4R-10 Article 4.2. Data from non-destructive tests (NDT) and destructive tests need to be observed for the presence of significant deviation from one sample to another sample.

The results of the hammer test were correlated statistically with the value of the core concrete compressive strength in a larger number of samples to increase the level of confidence in the results of the installed concrete quality test. The testing and interpretation of the hammer test results was carried out according to the methods contained in ACI 228.1R-19 and ACI 214.4R-10. In determining the value of the 10-percentile concrete compressive strength ($Y_{0.10}$) which is calculated by the Tolerance Factor Method (ACI 228.1R-19), then to obtain the design equivalent concrete compressive strength value ($f'_{c,eq}$) using Tolerance Factor Method (ACI 228.1R-19) and Alternate Method (ACI 214.4R-10).

Keywords : *nondestructive test, destructive test, hammer test, core drill, equivalent compressive strength of concrete*