
Estimation of bond strength of reinforced concrete using neutron beam

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Stress distribution for steel bars in reinforced concrete was estimated by the neutron diffraction method. Three types of concrete, including ordinary strength concrete and high strength concrete, were estimated using the engineering materials diffractometer BL19 in the J-PARC MLF.

The result revealed that the neutron diffraction method can be used to continuously measure the stress in steel bars with high accuracy, regardless of the concrete strength. In addition, it was confirmed that the bond performance of high-strength concrete was higher than that of low-strength concrete also by the neutron diffraction method.
