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Nondestructive Determination of Water Content in Concrete Using Am-Be Neutron Source - Experimental Verification -

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A new nondestructive measurement technique has been developed to evaluate the amount of water in concrete. A concrete wall is irradiated with fast neutrons to activate a gold foil set on the concrete. By evaluating in advance the relation of the gold activity and water content by calculations, we can determine the water content in the concrete, the water content of which is not known. In this study, to validate the present technique experiments were performed with concrete samples having different water contents, which were made from only cement and water. It was confirmed from the experiments that water content could be estimated by the present nondestructive measurement technique though the system is still simple with cement and water. Now we are examining the validity for concretes made from cement, water and sand.

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