

## A Series of Studies on the Electromagnetic Characteristics of Building Materials

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The electronic devices such as the digital broadcasting, the cellular phone and the wireless local area networks using the electromagnetic waves are spreading rapidly. In an architectural space, troubles brought about the electromagnetic waves are frequently arising regardless of the electro-magnetic compatibility (EMC). For the improvement of an architectural space, the study of the electromagnetic characteristics of building materials is very important.

In this series of studies, the electromagnetic characteristic of building materials is measured in the VHF band, the UHF band and the semi-microwave band generally used for an architectural space.

The main subjects are not only the proposal of the evaluation method for the electromagnetic characteristic by the parallel wire line but also the development of microwave absorbers. The return loss of the concrete mixed with the ferrite, carbon and steel manufacture slag is able to be measured by the parallel wire line. The return loss, the reflection coefficient in the diagonal electromagnetic wave, the amount of penetration, reflection and absorption are able to be measured by the parallel wire line, also. The result of this study is applied to the development of the microwave heating mortar block to melt snow and to the development of the recycling board equipped electromagnetic wave absorptions tuned for the micro wave band.

This study has developed a new composite area that unites the areas of the building materials study and the areas of the electromagnetism engineering study.