

Effects of Temperature on the Properties of Concrete

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Assuming the future use of concrete for super conductivity-related facilities, Prof. Miura made experiments using a special laboratory dedicated to studies of very low temperature concrete, and clarified the mechanical properties and deterioration mechanism of reinforcing bars and reinforced concrete members under very low temperatures down to -196°C . He succeeded in finding out the problems of reinforced concrete when it is used for the construction of super conductivity-related facilities. Some results of the studies can be applied also to general structures in low temperature environments. Prof. Miura is the one who has taken up this subject matter, the properties of reinforced concrete under very low temperatures, most extensively and deeply in the world. A part of his studies is referred to in the widely-recognized textbook of concrete, *Properties of Concrete*, used in 35 countries of the world.

Prof. Miura was also quick to address various types of deterioration in concrete structures in low temperature environments where deicing salt has to be used. He is the leading expert in this field, highly esteemed both at home and abroad.

Furthermore, he committed himself to clarifying the effect of curing on the properties of reinforced concrete. His efforts included finding out how it affects the

strength development of various types of concrete and making proposals on practical curing methods for concrete structures to be constructed in cold regions.

Thus, Prof. Miura's scholarly attainment is highly appreciated and recognized as deserving to receive the award of the research accomplishment sector of the Yoshida Prize, not only because of its significant contribution to the academic development of the concrete engineering but also because of Prof. Miura's dedication to applying the study results to practical aspects of the field.