

A Case of Utilizing Results

Formulation of Technical Standards concerning Measures to Prevent the Fall of Ceilings in Buildings

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1. Backgrounds

Technical standards concerning measures to prevent the fall of ceilings in buildings issued in August 2013 based on the Building Standards Law (Notification No. 771 and others the Ministry of Land, Infrastructure, Transport and Tourism in 2013), following the human/physical damage by the fall of ceilings of gymnasiums, large scale halls or the like by earthquakes in the past, in particular the Great East Japan Earthquake.

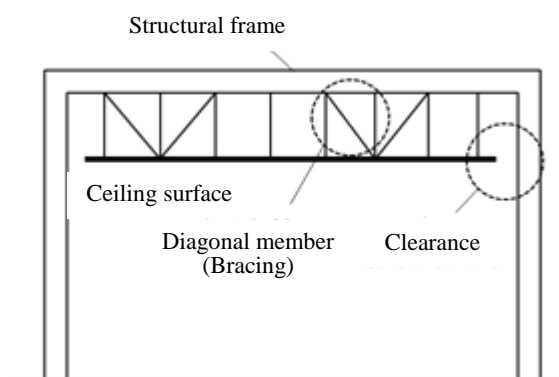
The National Institute of Land and Infrastructure Management proposed an original draft on the occasion of formulating the technical standards, obtaining support from the Building Research Institute.

2. Outline of technical standards

The technical standards prescribe safe ceiling structural methods in regard to structural bearing force to be adapted for ceilings feared possible to generate critical harm by fall (specific ceilings). As a specific ceiling, it is a suspended ceiling with the height of over 6m, horizontal projected area of over 200m² and unit area mass of over 2kg/m² and is stipulated to be installed in the site usually utilized by people.

Furthermore, inasmuch as the feature of ceilings in a huge earthquake is difficult to clarify according to current knowledge, the technical standards of this time are formulated with the aim of reducing possibility of the fall of ceilings in a certain earthquake surpassing the medium scale by preventing damage to ceiling materials in medium earthquakes.

In addition, the ceilings of existing buildings correspond to specific ceilings, and when implementing certain improvement construction, it is required to conform to this



technical standard or the measures to temporarily prevent the collapse of ceiling with nets, wires or the like (fall preventing measure)

3. Interpretation of technical standards

The National Institute for Land and Infrastructure Management has prepared and publicized an introductory manual for the technical standards in collaboration with the Building Research Institute to make it a reference for actual operations of design and examinations for the enforcement of technical standards from April 2016.

The introductory manual has posted the corroboration of closely connected conditions of reciprocal ceiling members and standard experimental methods of the evaluation for allowable bearing force of ceiling (bearing forces of ceiling and its members/bearing forces of connected parts/configuration method of rigidity), as well as interpretations of each provision and clause by clause explications which compiled important matters.

[Reference]

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<http://www.nilim.go.jp/lab/bcg/siryoutnn/tnn0751.htm>