

Session Summary

by

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In the field covering Earthquake Resistant Design, Constructions and Regulations, 32 papers were presented to the Conference. Due to time limitation, 21 of them were presented orally at the session, while the rest were reported in summarized form.

As to the Earthquake Resistant Regulations, there were 7 presentations from the countries located in seismic zones in the world. Mr. M. Numata reported on the present Japanese regulations concerning civil engineering structures, including dams, bridges and harbor structures, Messrs. W. Binder and W.T. Wheeler on the Proposed Building Code Provisions (1959) of Structural Engineers Association of California, U.S.A., Mr. E. Rosenblueth on the Aseismic Provisions (1960) of the Federal District in Mexico, Messrs. V.A. Bikhovsky, J.I. Goldenblat and J.L. Korchynski on the Aseismic Standards and Code (1957) of U.S.S.R., Mr. J.F. Borges on the Portuguese Code (1958), Messrs. Em. Titaru and Al. Cismigiu on the Rumanian General Design Specifications for Civil and Industrial Buildings in seismic area and Mr. A. Brenier on French Regulations for Civil Engineering Structures in Seismic Regions.

Among those presentations, the regulations of U.S.A., U.S.S.R., Mexico and Rumania adopt the dynamic methods, considering the acceleration spectra in connection with the natural periods of buildings and civil structures, and the Portuguese Code employs the method of limit analysis. These are considered to reflect the latest trends in the earthquake resistant design.

There were 10 reports embodying personal proposals or opinions on the earthquake resistant designing. Those include the papers by Mr. S.V. Medvedev on dynamic analysis based on the earthquake records in U.S.S.R., Mr. Y. Otsuki on the dynamic design method of reinforced concrete structures, Mr. E. Rinne on the overturning moment of tall buildings in connection with the SEAOC Code, Mr. S. Tani on the arrangement of earthquake resistant members in the buildings, Messrs. J. Krishna and S. Menayas on dynamic design and Mr. R.W. Joshi on the seismo-free construction. In regard to earthquake resistant designing of dams, Mr. N.N. Ambraseys, of Great Britain, and Messrs. M. Hatanaka and I. Minami presented their respective original views.

As regards the earthquake resistant design of various constructions, there were presented 8 papers which included the following: Messrs. Y. Tsuboi and M. Kawaguchi on flat slab and shell constructions, Mr. N. Korchinsky on reinforced concrete construction, especially on shell structure, Mr. S. Sachanski on reinforced concrete frames having infilling masonry walls, Mr. K.S. Zabriev on precast construction employing large concrete blocks or panels now in use in U.S.S.R., Messrs. T. Naka, M. Wakabayashi and S. Takada on steel-reinforced

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concrete construction which is commonly used for high-story buildings in Japan, and Messrs. K. Takeyama, T. Hisada and Y. Ohsaki on wooden construction in Japan. Mr. H.J. Degenkolb reported the earthquake resistant design of small buildings in U.S.A., while Messrs. J.G. Bouwkamp and J.F. Meehan presented the results of their experiments on the drift limitation imposed by glass in window sash.

Four papers introducing examples of earthquake resistant design included the following reports on actual designs: Mr. A. Zeevaert on the 43 storied Tower Latino Americana in Mexico City which became famous by escaping any damage by the earthquake of 1957, Messrs. D. Vergun and D.V. Whitmore on two long-span multistory buildings in U.S.A., Messrs. R. Hicks and I.A.B. Gaunt on the nuclear power station which is now under construction at Tokai Village in Japan, and Messrs. Em. Titaru and Al. Cismigiu on an oil refinery in the State of Assam in India.

Two pairs of Japanese researchers, Messrs. S. Ban and H. Muguruma and Messrs. T. Hatano and H. Tsutsumi, submitted their respective reports on the dynamical strength and rigidity of concrete when subjected to rapid loading such as the shock of an earthquake. As a general report, Messrs. A.A. Beles and M. Ifrim presented a paper on the recent development of earthquake engineering in Rumania.

A remarkable trend reflected in many reports submitted in Session IV is that dynamic design method based on the elastic response spectra obtained by actual seismographic records in gradually coming to be adopted in many seismic countries in the world.

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