Abstract

Intermediate Moment Frame System (SRPMM) is one of structure-planning method which is used for planning a structure that allow to hold up an earthquake load. This is an earthquake resistance planning method which is used in third and fourth earthquake – zone. But it doesn’t close possibility if this system is applied in second earthquake – zone, such as Surabaya. At this final project, author takes the object at Religion Department building in Surabaya.

First thing to do in structure – planning is to determine planning data and mass loading. Loading is determined by observing every storey’s-groundplan, and also observing the usage - purpose of building. Every loading calculation is due to Peraturan Pembebanan Untuk Gedung 1983 (PPIUG 1983). Meanwhile, the earthquake-loading is due to (SNI 03-1726-2000) Tata Cara Perencanaan Ketahanan Gempa untuk Bangunan Gedung. In calculation of earthquake-loading planning is using Static Equivalent Analysis and the structure analyze is using 3-dimension frame-analysis. Roof-Structure calculation is using AISC-ASD analyze which is appropriate to elastic-steel planning due to Peraturan Perencanaan Bangunan Baja 1984 (PPBBI 1984). The calculation of top structure and bottom structure are
using Tata Cara Perhitungan Struktur Beton untuk Bangunan Gedung (SNI 03-2847-2002) and other relevant regulation.

From the analysis and calculation which is done, the conclusion is that the roof structure are consists of Gording C Lips 150.50.20.3.2; Ikatan Angin D16; Kuda-Kuda WF 250.125.6.9; Pedestal WF 250.125.6.9 The top structure consists of thick floorplate 12 cm and plate of roof 10 cm; column dimension 45x45 cm; dimension of main beam 35x70 cm and 30x40 cm; dimension of divided beam 25x35 cm; stair with 17 cm of uptrade height and 29 cm of ontrade width; meanwhile, on bottom structure got Ø 35 cm of piling dimension with 18,4 m of depth.

Keyword : IMRF, static equivalent