Because of the Indonesian archipelago is a region prone to earthquakes, then the infrastructure development should be qualifies in earthquake requirement. For that resistant design and special supervision is needed to reduce the risk caused by the earthquake. One of the structural system that can be used for resistant building by strong earthquake is the dual system.

Dual System (dual system) is one of the structural system which is the gravitation load is entirely borne by the space frame (frame), while the lateral load is shared by the space frame and shear wall (Wall Scroll / wall structure). According SNI 03-1726-2002 Article 5.2.3 space frame is carrying at least 25% of lateral load and the rest is borne by the shear wall. Because the shear wall and the space frame in the dual system is a single unitary structure, the same lateral deflection is needed, or at least the space frame able to follow the lateral deflection occurs. Shear wall is made of reinforced concrete in which reinforcement will receive a lateral force of an earthquake, as the load that has been planned.

In this final submission, the author will modify the KPKNL Sidoarjo Building that the previous structural design was
using a system of Ordinary moment resisting frame structures (SRPMB). In this final, the building is planned to re-built by using the Dual System which consists of 10 floors and it’s designed as an office building in strong earthquake areas.

In the structure analysis will use the new calculation method and the new regulations.

In the cost analysis, can be seen that construct buildings in Padang area have higher prices than in Sidoarjo, which has increased by 200%, this is because of differences in wage standards in Padang and Surabaya. Besides the additional cost such as transportation cost of procurement of heavy equipment to the project site to make the project more expensive.

Keywords: Dual System, a strong quake zone