ABSTRACT

Detector, alarm and sprinkler system design are focused in direktorat building which has four levels with the area of 513.8 m² on the first level, 563.8 m² on second level, 563.8 m² on third level and 234 m² on the fourth and plaza building which has two levels with the area of 678.5 m² on the first and 854 m² on the second, both of them are located in Surabaya shipbuilding state polytechnic- sepuluh nopember institute of technology, it has low level of fire risk classification.

Both of them need those system designs in accordance to SNI 03-3985-2000 about design, attachment, and fire alarm and detection system testing for fire hazard preventing in the building and SNI 03-3989-2000 about design and automatic sprinkler system attachment method for fire hazard preventing in the building. Based on both standards the author will use smoke and heat detector for detector system and water based sprinkler for sprinkler system in this project.

From the calculation step of detector is resulting the number of detector demand of direktorat building is 62 smoke detectors and 49 smoke detectors and a heat detector for detector demand of plaza building. In other hand, the demand of sprinkler in both of them is 160 for direktorat building and 129 for plaza building. The water demand is about 57.6 m³ with the capacity of reservoir is 75 m³. The power capacity of the pump is 10,48 hp or 7,8 kW and 14,4 hp or 12,976 kW.

Key words: smoke detector, sprinkler, water demand, pump power