

Karakteristik fenomena intervensi semprotan kabut air terhadap distribusi asap pada kebakaran kompartemen = Characteristic of watermist nozzle intervention phenomena towards smoke distribution on compartment fire

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Abstrak

Penelitian mengenai pengaruh aliran asap akibat intervensi semburan kabut air dilakukan untuk mengetahui bagaimana fenomena penurunan asap berlangsung. penelitian ini membahas pengaruh tirai kabut air tersebut dengan distribusi temperatur serta kerapatan optis asap pada ketinggian dan jarak yang berbeda untuk mengukur hasil asap pembakaran bahan bakar dalam suatu model kompartemen berukuran 2.5 m x 1.25 m x 4.25 m. Kolam Api yang berdiameter 10 cm berlangsung hidup namun tidak mencapai titik padam. Cara eksperimen adalah dengan mendapatkan data proses produksi asap tanpa adanya gangguan tirai kabut. setelah itu barulah eksperimen yang sama diulang dan diberikan intervensi kabut air dengan variasi waktu aktivasi nosel berbeda dan tekanan operasi nosel yang berbeda pula. Simulasi piranti lunak FDS dilakukan dengan mengkondisikan seperti kondisi alat eksperimen hingga hasil simulasi nanti akan dikomparasikan pada hasil eksperimen. Tren grafik yang keluar diharapkan dapat menjadi hasil utama penarik kesimpulan bahwa ada percepatan smoke downward akibat momentum dorongan nosel semburan. Dengan data kuantitatif yang ada, dapat disimpulkan bahwa penggunaan kabut air sebagai pemadaman.

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Research on the influence of haze caused by bursts of fog water interventions performed to determine how the phenomenon of smoke reduction takes place. this study discusses the effect of the water mist curtains the temperature distribution and the optical density of smoke at different heights and distances to measure the smoke of burning fuel results in a compartment model 2 m x 1.5 m x 4.25 m. fire doesn't extinguished within pool fire 100 mm of diameter although its position is under the nozzle activity on 3.5 meter height. experimentation is the way to get the data production process without any interruption curtain of smoke haze. and then, the experiment going to be repeated as same as last experiment bit the situation are given within water mist intervention with time start activation and nozzle operating pressure variation. FDS simulation software has been ran as same as experimental conditions and the result of simulation will be compared among the experimental data results. trend chart that comes out is expected to be the main result of towing the conclusion that there was smoke downward acceleration due to momentum thrust nozzle bursts. with the existing quantitative data, it can be concluded that the use of water mist fire suppression is not effective because of the damage of smoke distribution as well as its height downward.