

ABSTRAK

Dengan kemajuan teknologi dibuatlah sistem pemadaman kebakaran dengan sistem berbasis gas, menggunakan tabung bertekanan yang akan didistribusikan oleh instalasi pipa saat sistem aktif. Dikembangkanlah pemadaman berbasis gas kimia yang aman terhadap manusia maupun aset yang dilindungi. Tujuan dikembangkan gas berbasis kimia ini guna mengurangi tekanan yang dihasilkan, bahkan jauh lebih rendah sebesar 25 bar pada tabungnya dan 10 hingga 4 bar pada *nozzle*.. Kode dan standar biasanya menetapkan persyaratan untuk desain, material, fabrikasi, ereksi, pengujian, dan inspeksi sistem pemipaan. Pipa yang berisikan fluida dengan tekanan pasti memiliki tegangan tertentu, dimana hasil perhitungan berbanding lurus dengan besar diameter pipa dan besar tekanan. Dari hasil analisis perhitungan dan pengujian, didapati pipa Sch.40 mampu menahan tekanan sebesar 4 bar dengan ketebalan sesuai standar, tetapi bila di tes dengan tekanan 60 bar, secara perhitungan ketebalan dinding tidak cukup.

Kata kunci : Berbasis gas kimia, kode dan standar, pipa Sch.40

With the advancement of technology, a fire suppression system with a gas-based system is made, using pressurized tubes that will be distributed by pipe installations when the system is active. Chemical gas-based blackouts that are safe for humans and protected assets are developed. The purpose of this chemical-based gas was developed to reduce the pressure produced, even lower by 25 bar in the tube and 10 to 4 bars on the nozzle. Codes and standards usually specify requirements for design, material, fabrication, erection, testing and inspection of the system piping. Pipes containing fluid with a certain pressure have certain stresses, where the calculation results are directly proportional to the diameter of the pipe and the amount of pressure. From the results of the calculation and testing analysis, the Sch.40 pipe was found to be able to withstand a pressure of 4 bars with a thickness according to the standard, but when tested with a pressure of 60 bar, the wall thickness was not sufficiently calculated.

Keywords: Chemical based gas, code and standard, Sch.40 pipe