

旋转式射流喷头设计与性能正交试验

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摘要: 提出了一种旋转式射流喷头。选用五因素四水平表, 通过正交试验得出影响喷头工作性能的结构参数依次为盖板出口直径、直线段长度、导流段长度、位差、作用区长度、导管长度。分析了各结构参数值对雨量分布、射程和旋转速度的影响, 得出10型喷头结构参数最佳组合为: 盖板出口直径6.2 mm, 直线段长度6 mm, 导流段长度31 mm, 位差2.6 mm, 作用区长度22 mm, 导管长度20 mm。利用部分追加法追加盖板出口直径试验点, 得出5.2 mm是出口直径的下限, 7.2 mm是出口直径的上限, 最佳出口直径为6.2 mm。A whirling jet fluid sprinkler was put forward. The working principle of the sprinkler was introduced. An orthogonal array of five factors and four levels was selected to carry out the experiment. The graduations of geometrical parameters which affected working conditions were achieved after the orthogonal experiment, which were diameter of cover plate for outlet, length of beeline sect, length of lead flow, offset length, length of working area, and pipe length in sequence. Their affects on water distribution, jet range and whiling speed were analyzed respectively. The best geographical parameters of sprinkler typed 10 were summarized. Diameter factors of cover plate for outlet were added to review its actions. The minimum diameter is 5.2 mm, the maximum diameter is 7.2 mm and the best geometrical parameter is 6.2 mm.

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