INFLUENCE OF PLEAT GEOMETRY ON THE FILTRATION AND CLEANING CHARACTERISTICS OF FILTER MEDIA

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The aim of this study is to analyze the influence of pleat geometry on the filtration and cleaning characteristics of the filter media through experiment. Six kinds of test chambers were designed to study the conventional filter media and the coated filter media with varying pleat ratio (the ratio of pleat height to pleat pitch). The experimental results showed that pleat geometry significantly influenced the pressure drop and the cleaning adhesive force in the two kinds of filter media. The effect of pleat geometry on the parameters of the dust cake was also studied in this work. The regeneration efficiency of conventional and coated filter media all gradually decreased with increasing pleat ratio, and the latter was higher than the former. The analysis of the experimental data and the theoretical equations revealed that the effective filtration area was mainly influenced by the pleat ratio. The relationship between the effective filtration area and the pleat ratio for the conventional and coated filter media can be described by mathematical models.