

GOING GREEN: EFFECTIVE SOLUTIONS TO MITIGATE ENVIRONMENTAL IMPACTS IN THE HEAT-SET WEB OFFSET PRINTING TECHNOLOGY

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ABSTRACT

To drive sustainable development in printed media and strengthen their market positions, it is becoming a crucial issue how the society and consumers can be convinced that the applied technologies have no negative impacts on the environment, but are rather in line with the general endeavours of societies to preserve and conserve the natural environment. Relying on scientific methods, the authors analyze the environmental implications of heat-set web offset printing, and propose effective solutions for the mitigation of negative impacts. In view of air cleanliness, they recommend innovative and energy-efficient solutions for the reduction of VOC emissions, and demonstrate them in practical example.

Keywords: heat-set printing, VOC emission, thermal oxidizing, energy -saving

1. INTRODUCTION

To drive sustainable development in printed media and strengthen their market positions, it is becoming a crucial issue how the society and consumers can be convinced that the applied technologies have no negative impacts on the environment, but are rather in line with the general endeavours of societies to preserve and conserve the natural environment.

In Alföldi Printing House, large-capacity web offset machines use “heat-set” technology for printing. The incorporated print dryers are powered with natural gas for hot-air drying. Coming from the print dryers and containing certain exhaust products, the air carries primarily VOC contaminants (2–4 g/nm³). Alföldi Printing House has deployed recuperative thermal oxidizer equipment for the cleaning and treatment of final gases.

The scientific work outlined the smart and complex solution and controlled the efficiency of the operation.

2. AIR QUALITY PROTECTION SOLUTION IN THE HEAT-SET OFFSET PRINTING

The company has implemented the project within the framework of a complex program with the fundamental purpose to cut back air and noise pollution caused to the environmental with its operations considerably so that the printing house could sustain its 443-year-old activities in compliance with the relevant environmental requirements,