

ABSTRACT

This report is a translation of a document by Hans Schmalfeldt dated March 29, 1947, describing work done in the plant of Klocknerwerke, A. G., Castrop-Rauxel, Germany, on the production of synthesis gas from methane containing gases by non catalytic reaction with steam and oxygen. In a pilot plant built in 1931, coke oven gas was converted under a pressure of 23-24 atm. abs. with air enriched to 33 per cent oxygen. Methane in the exit gas was less than 1 per cent and no soot formation was observed. The maintenance of the refractory lining proved quite difficult.

A larger plant, started in 1938, could not be operated until 1941, because of difficulties in getting materials, particularly refractory brick. Results were not entirely satisfactory because of inadequate heat recovery and the lack of facilities for purging unreacted gas between cycles. Fischer-Tropsch residue gas and coke oven gas were converted at a pressure of 8-9 atm. abs. with an oxygen consumption 30-40 per cent above theoretical and with only slight formation of soot.