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FIRST ATTEMPTS FOR A CLOSE-LOOP CONTROLLED THICKNESS PRODUCTION OF CORE FOAMED PVC PIPES

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Since over 30 years it is state of the art to use a close-loop control in film extrusion. In contrast pipes are still produced with a purely manual adjustment of the thickness over the circumference. Although since over 10 years flex ring dies are existing which give rise to a sensitive adjustment of the flow channel gap this is still state of the art. A control algorithm was developed which takes into account the special situation of the annular flow channel geometry and the special deforming behaviour of flex ring dies. This was implemented into an controller and combined with a new online thickness measuring system which is suited to measure even core foamed pipes. Additionally a flex ring die was equipped with an automatic adjustment system to change the local flow channel gap at specific locations over the circumference of the die. The whole system will be described in detail and first result achieved on a line on which core foamed PVC-pipes are produced will be presented.