THE EFFECT OF EXTRUDER SCREW AND BARREL WEAR ON OUTPUT IN uPVC MANUFACTURE

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ABSTRACT

The uPVC pipe has replaced the traditional concrete pipes, metal pipes and clay pipes to a greater extent in Sri Lanka and increasingly widespread and become more popular during the recent past. The process of manufacturing uPVC pipes is by extrusion. As the name implies, unplastisized polyvinyl chloride pipes, the processing is quite complicated compared to plastisized PVC manufacture. Therefore more sophisticated machines are being used for this purpose. The screw and barrel wear has become a major problem in extrusion effecting the output and ultimately resulting in no foreward flow at all.

It was decided to study on a conical twin screw extruder where the mechanism of flow is quite complicated compared to single screw extrusion. The numerous processing variables make the evaluation of drop in output with the working hours of the extruder more complicated.

The evaluation could be done only with a very few types of pipes since the examined extruder produced only such pipes. Though constant processing parameters were not used in practice the evaluation was done assuming some parameters to be constant and using narrow bands of some processing parameters.

With the limited time frame of the project and using the equipment within the production process the results will not be the exact values but will be a linear shift from the actual results which can lead to obtaining a theory on evaluation of output on a conical twin screw extruder.

A more accurate result could be obtained if a number of types could be studied and if the screw and barrel wear could be examined at short time intervals.

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