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This Test Method may include safety precautions which are believed to be appropriate at the time of publication of the method. The intent of these is to alert the user of the method to safety issues related to such use. The user is responsible for determining that the safety precautions are complete and are appropriate to their use of the method, and for ensuring that suitable safety practices have not changed since publication of the method. This method may require the use, disposal, or both, of chemicals which may present serious health hazards to humans. Procedures for the handling of such substances are set forth on Material Safety Data Sheets which must be developed by all manufacturers and importers of potentially hazardous chemicals and maintained by all distributors of potentially hazardous chemicals. Prior to the use of this method, the user must determine whether any of the chemicals to be used or disposed of are potentially hazardous and, if so, must follow strictly the procedures specified by both the manufacturer, as well as local, state, and federal authorities for safe use and disposal of these chemicals.

Screening of pulp (Somerville-type equipment)

1. Scope

1.1 The purpose of this method is to separate contaminants such as shives in mechanical pulp, and macro stickies, plastics, sand, metal pieces, and flakes in recycled fiber from pulp fibers for subsequent examination and/or quantification. This method employs a screening device and the separation is based on size difference between fibers and contaminants. However, depending on their flexibility and/or geometry, not all of the contaminants that are larger in size than fiber can be captured by the screen.

1.2 The dimensional limits that separate contaminants from fibers, as well as the time length of screening are arbitrary.

1.3 Screen plates of various slit widths such as 0.10 mm, 0.15 mm, 0.20 mm, and 0.25 mm have been used in separating contaminants. Only the use of 0.15 mm slit is covered in detail in this method.

2. Significance

2.1 The adaptation of TAPPI UM 242 “Shive Content of Mechanical Pulp (Somerville Fractionator),” to the screening of other pulps such as recycled pulp is common. In the adaptation process, screening procedure variations were introduced. It is imperative that a common practice is defined so that the outcomes of the separation are comparable.

2.2 Contaminants such as shives, stickies, and plastics adversely affect paper machine operation and down grade final product. Qualitative and/or quantitative measurements of these contaminants are thus critical in evaluating the effectiveness of a process or a piece of equipment, as well as final product quality. This method provides a way to isolate the contaminants for the purposes of qualification and quantification.

3. Apparatus

3.1 *Somerville-type of screen* (see Figs. 1 and 2)

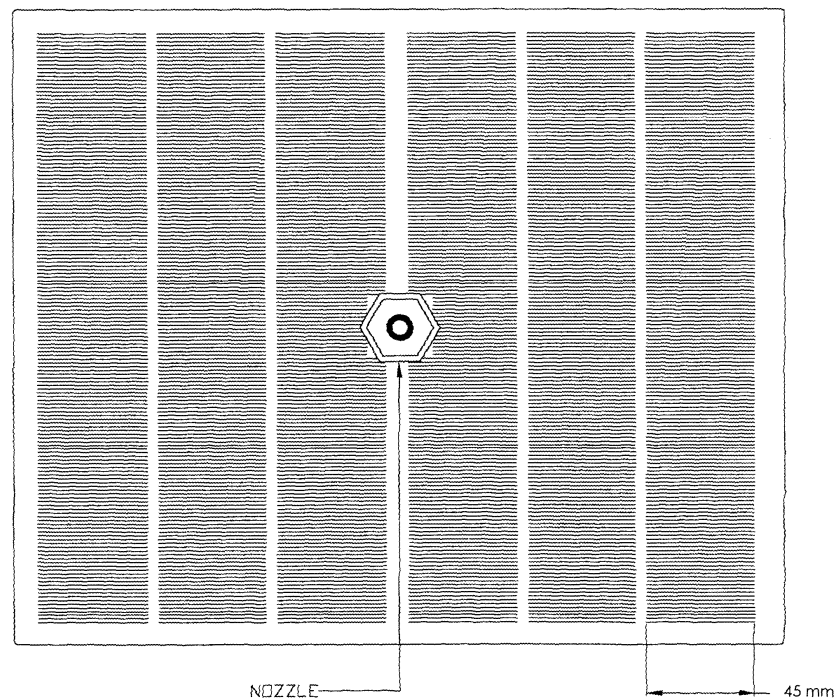


Fig. 1. Screen plate slit pattern.

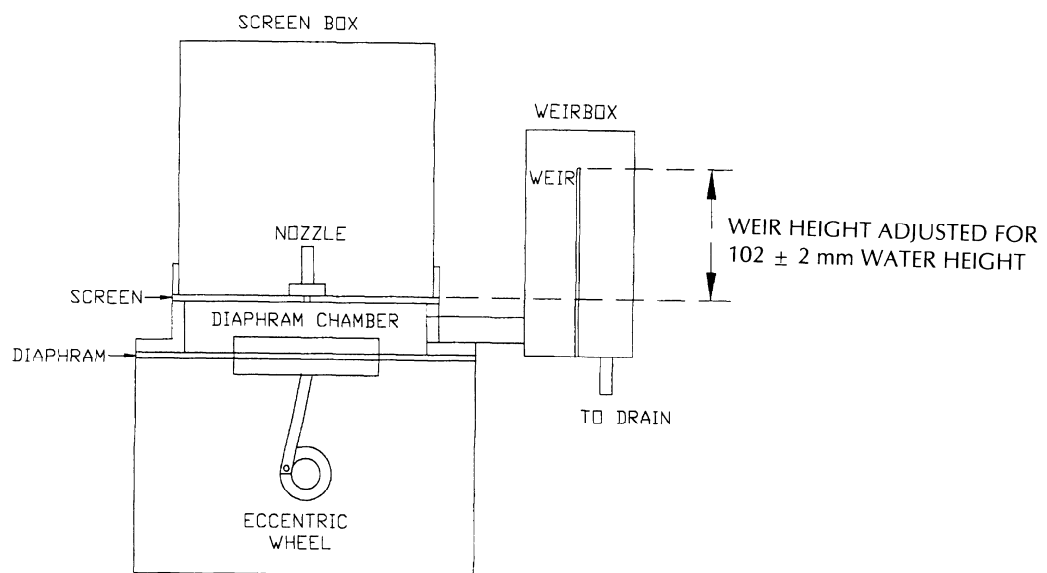


Fig. 2 Illustration of screen set up.