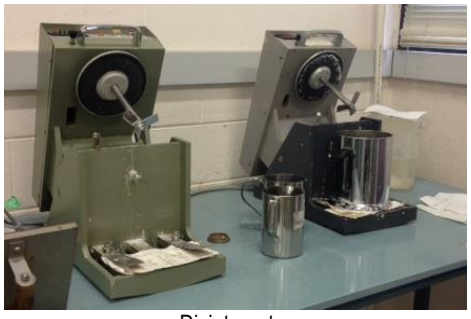
# PULP AND REPULPABILITY TESTING

- **Conventional hand sheets preparation** – TAPPI 205, AS/NZS 1301.203, ISO 5269-1

  The manual and automatic British hand sheet former produces 159mm (diameter) laboratory hand sheets for physical testing. It is used in combination with the standard disintegrator and sheet press. The wet sheets are dried in the SEMMAR Auto Dryer Type MR-3

British hand sheet former



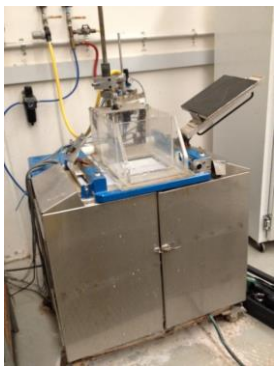
Disintegrator

Manual hand sheet former

L&W Sheet Press

- **Disintegration chemical pulp** – TAPPI 205, AS/NZS 1301.203, ISO 5263-1
- **Disintegration mechanical pulp > 85°C (latency removal)** – TAPPI 262, ISO 5263-3
- **Disintegration mechanical pulp 20°C** – ISO 5263-2
- **Moving belt sheet former/drainage tester**

  The MBSF/DT simulates the drainage on the wire section of a paper machine, in order to form hand sheets with a z-directional structure close to commercial papers. The system consists of a cogged belt that moves between a stationary forming wire and vacuum box. The moving cogs provide scraping action and upwards pulses to the wire above, while the gaps between pairs of cogs act as suction slits. The MBSF/DT imitates the conditions on a Fourdrinier wire. Three sizes of hand sheet are possible to produce in this instrument: 220*220mm, 160*160mm and 150*150mm.



Moving Belt Sheet Former/Drainage Tester

- **Kappa number** – TAPPI 236, AS/NZS 1301.201, ISO 302

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- **Stock concentration (consistency of pulp suspensions)** – TAPPI 240, AS/NZS 1301.207, ISO 4119
- **Laboratory refiner: PFI mill** – TAPPI 248, AS/NZS 1301.209, ISO 5264-2 and **Valley beater** – TAPPI 200, ISO 5264-1

  The **PFI mill method** achieves the beating action by having the inner roll and outer casing rotate under constant load in the same direction, but at different peripheral speeds. This method can be used to all types of pulp however in practice it may not be suitable for certain long fibered pulps like cotton. Mass of pulp required in PFI mill beating method is 24 gram oven dried pulp.

  The **valley beater method** defines the quality of pulp by subjecting it to a controlled mechanical treatment in a laboratory beater. During the treatment, a measured amount of pulp of specified stock concentration is beated between the roll bars and bedplate of a beater. Samples are then removed at regular intervals to determine their beating degree and to be made into laboratory hand sheets. Mass of pulp required in valley beating method is 360 gram oven dried pulp.

PFI mill

Valley beater

***Stored/set up and configuration required***

- **Freeness: Canadian Standard** - TAPPI 227, AS/NZS 1301.206, ISO 5267-2
- **Fines content** (Britt Dynamic Drainage Jar) – ISO 10376
- **Dirt & shives in pulp** (visual identification of mill sheets) – TAPPI 213, AS/NZS 1301.204, ISO 5350-2
- **Dirt & shives in pulp** (image analysis) – TAPPI 563, ISO 5350-4
- **Shives & fines** (Brecht & Holl Fibre Classifier)
- **Lamort pulper & deinking unit**
- **Infrared moisture determination balance AD 4712**

***Other chemical tests***

- **Klason lignin in pulp** – AS/NZS 1301.11
- **Alkali solubility of pulp** – AS/NZS 1301.210, ISO 692
- **pH of cold aqueous extracts of pulp & paper** – AS/NZS 1301.421, ISO 6588-1
- **pH of hot aqueous extracts of pulp & paper** – TAPPI 252, AS/NZS 1301.422, ISO 6588-2
- **pH of salted water extracts of pulp & paper** – ISO 29681
- **Titanium Dioxide in paper** – AS/NZS 1301.424, ISO 5647
- **Conductivity of aqueous extracts** – TAPPI 252, AS/NZS 1301.456, ISO 6587
- **Organic solvent extractives – pulp & paper** – TAPPI 204, AS/NZS 1301.12

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