

Processing high grade paper for recycling

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International Association of the Deinking Industry
(INGEDE)

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SCA Hygiene Products site Kostheim – since 1885



Paper manufacturing: 3 PM, 2 DIP
converting plant: 17 lines – 145.000 t/a



PfR – high grade paper

Kostheim paper production based on utilisation of PfR grade group 2 + 3:

- 95.000 t/a (>75 %)
- Highest share – 2.05.00 (> 40 %)

3 Group classification

Paper and board for recycling is classified as follows:

- Group 1: Ordinary grades;
- Group 2: Medium grades;
- Group 3: High grades;
- Group 4: Kraft grades;
- Group 5: Special grades.

2.01.00	3.01.00
2.01.01	3.01.01
2.02.00	3.02.00
2.02.01	3.03.00
2.03.00	3.03.01
2.03.01	3.04.00
2.04.00	3.04.01
2.04.01	3.05.00
2.05.00	3.05.01
2.05.01	3.06.00
2.06.00	3.08.00
2.06.01	3.09.00
2.07.00	3.10.00
2.07.01	3.10.01
2.08.00	3.11.00
2.10.00	3.11.01
2.11.00	3.12.00
2.12.00	3.13.00
2.13.00	3.14.00
2.14.00	3.14.01
2.14.01	3.15.00
	3.15.01
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	3.16.01
	3.17.00
	3.18.00
	3.18.01
	3.18.02
	3.19.00
	3.19.01

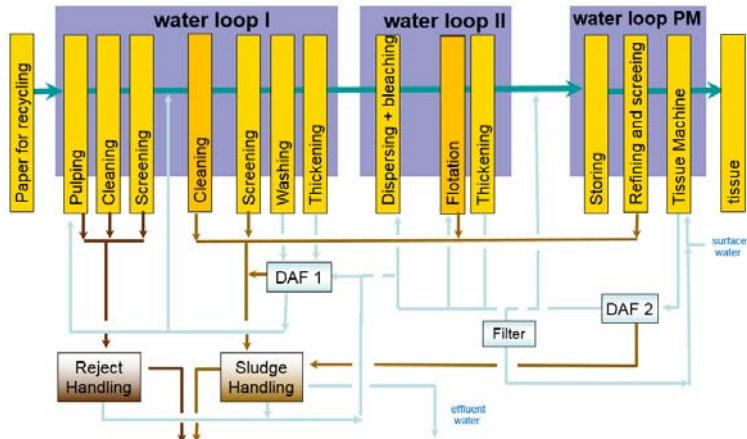


2.05.00

- ordinary sorted office paper
- Paper, as typically generated by offices
 - shredded or unshredded
 - printed
 - may contain coloured papers
 - with a minimum 60 % wood-free paper
 - free of carbon and principally free of carbonless copy paper
 - less than 10 % unbleached fibres including
 - less than 5 % newspapers and packaging.
- Non-paper components: 1 %
- Total unwanted material: 2 %



Standard process for office grades Tissue



Challenges in processing higher grades



<p>Availability: Effects on composition and appearance</p>	<p>Total loss, Fibre loss: Ash Sludge and coarse reject</p>
<p>Chemistry and chemistry control brightness</p>	<p>Performance and efficiency DIP-Line and PM Stickies Hickeys Specific energy consumption Operator interaction Maintenance Safety</p>



Availability



Possible assumptions

- “traditional” graphic paper grades dropping
 - Special grades rising
- Shredding of non confidential paper products
 - Volume
 - No sorting
 - Facility services (full service contracts)
 - Business continuation and new business areas data destruction companies
 - Digital media (archives)



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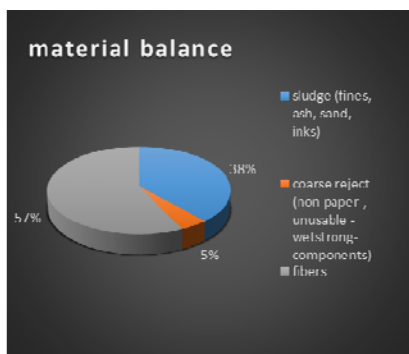
Losses – definition



- Total loss
= PfR (bd) – DIP (bd)
- Fibre loss
Ash and fines removed by washing
Fibres lost by screening
Inks removed by flotation and washing



Total loss

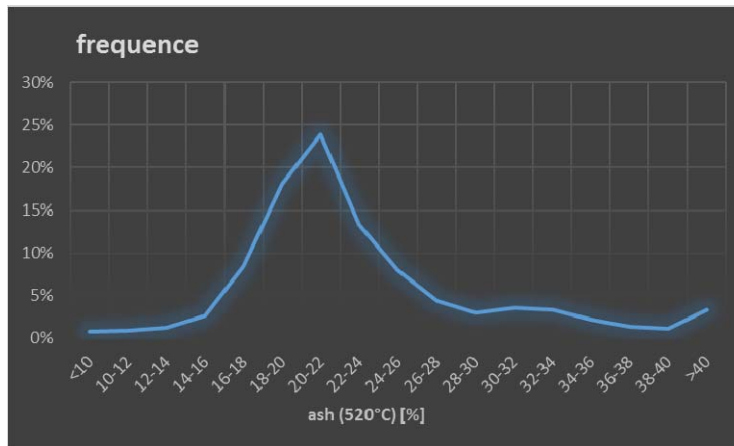


- Main loss in ash and fines, determined by DIP and final tissue quality needs. Direct affected by incoming ash level.
- Coarse rejects (plastics, wet strength or coated/covered paper, metals, textiles)



Ash (2.05.00)

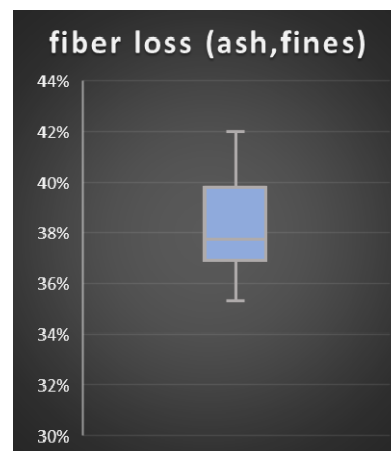
results incoming control 2014–2016 (lab)



Fibre loss



- Due to high variation within the 2.05.00 grade, fibre loss of DIP varies in a similar range
- Usable fibres (>100 mesh, BauerMcNett) in sludge ca. 1%



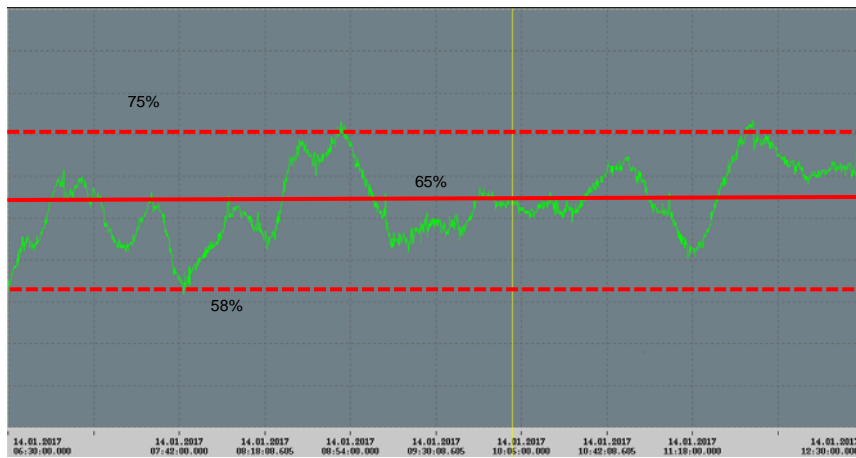
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Brightness constant PfR recipe

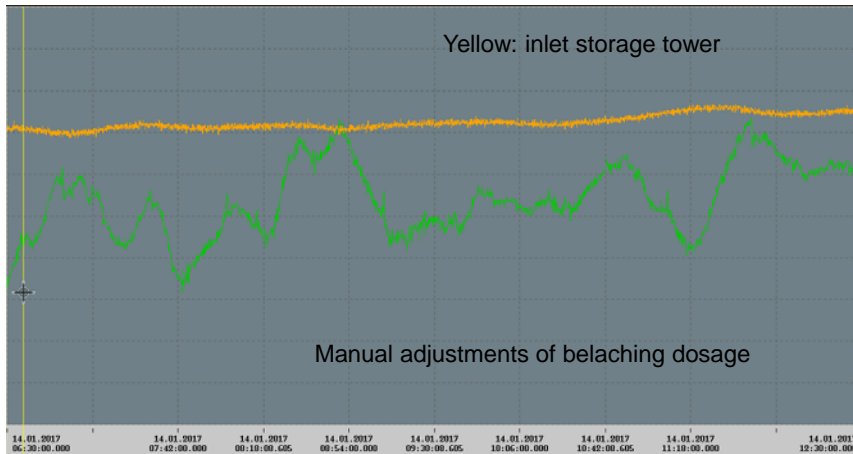


Inlet coarse screening



Brightness

controlled by bleaching (reductive)



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Stickies and sticky control

INGEDE member activity

Focus issue of Working Group Deinking Process



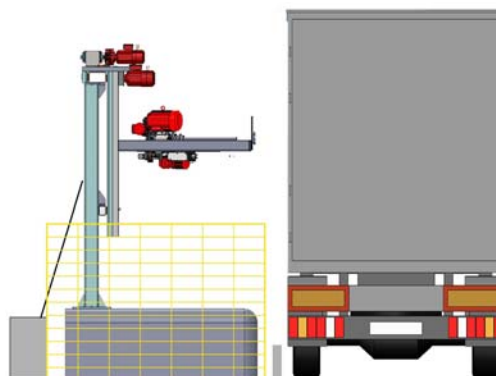

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Outlook

SCA Mainz-Kostheim



- Introduction automatised entry inspection by NIR
 - Ash
 - Wood content
 - Plastics
 - Moisture




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... isn't a Sunday afternoon walk



- “Fine screen” fraction from a PfR sorting plant traded as 2.05.00
- Passing entry inspection
- Starts to smoke and stinking pushy at bale opening

Cause: biological activity due to the food stuff inside



Thanks

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