

More New Inkjet Systems – Only Some Prints are Deinkable

Alarming Results from Newspapers at Hunkeler Innovation Days 2015



Source: Hunkeler AG

A small fair in Switzerland has become the leading event for printers in Europe with some innovations being presented for the first time: Last month, Lucerne was the global center for "high performance digital printing". Almost 6'000 visitors from over 50 nations traveled to Hunkeler Innovationdays 2015. Compared to Innovationdays 2013, this year's event was bigger and included many more international visitors. Hunkeler AG, a family-run company offering equipment for the finishing of all kinds of print products, succeeds in attracting all major printer manufacturers to present around their modules that wind and unwind, perforate, pinch, cut, stack and fold.

Also paper suppliers presented their tailor-made solutions, mainly for inkjet, that has the highest demand for specifically designed papers: As an example, UPM presented a new, extended paper range for digital print-

ing, including a woodfree uncoated grade for high-speed inkjet printing and two WFU grades with high brightness from 100% recycled fibres, coming from a Greenfield mill in France.

After marketing the Jetscript DL 9084 coated inkjet paper for its deinkability (the silica layer absorbs and contains not only pigmented but also dye based inks and keeps it from access to the fibres), Mitsubishi HiTec Paper introduced another new double-sided coated inkjet paper "with offset look and feel".

Aiming at the offset market – this is also the target of a new inkjet printer by Xerox ("Rialto 900"), with 250 mm reels claiming to print "duplex jobs, one-up on the smallest, narrow web on the market", delivering cut-sheet prints with an already integrated cutter.

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A barely deinkable sample (Canon Océ Colorstream 3000Z, left) and one not suitable for deinking (Colorstream 3900).

CALENDAR OF EVENTS

14–15 Apr 2015

PTS Seminar
Altpapier im Fokus – Sicherung des Recyclings durch innovative Technologien und Nutzungskonzepte
Dresden, Germany

21–22 Apr 2015

INGEDE Working Group Paper for Recycling
Renkum, Netherlands

22–23 Apr 2015

INGEDE Working Group Deinking Process
Renkum, Netherlands

23 Apr 2015

bvse 18. Internationaler Altpapiertag
Berlin, Germany

7 May 2015

INGEDE Project 145 14
FT-IR Spectroscopy
Darmstadt, Germany

20–21 May 2015

Österreichische Papiertage
Austrian Paper Conference
Graz, Austria

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INGEDE has collected and tested samples distributed at Hunkeler Innovationdays from this and other printers, finding both familiar and unexpected results. Probably due to the optimised image quality also good deinkable, almost in the range of dry toners, were prints from the Ricoh VC60000. Probably due to the optimised image quality also good deinkable, almost in the range of dry toners, were prints from the Ricoh VC60000.



Source: Hunkeler AG

The Xerox Rialto inkjet press, though using drop-on-demand piezoelectric inkjet technology provided by Xerox' latest acquisition Impika, delivered prints that deink "fair" according to the ERPC Deinkability Scores - which

is not "good" and still far away from being as good as dry toners, but at least a lot better than many other inkjet prints, e. g. with Xerox Impika's Evolution Production Inkjet System. While the Rialto prints scored low, lacking mainly sufficient brightness, but still passed the test, the Impika Evolution prints failed in all relevant test categories, such as brightness, ink elimination and filtrate darkening.

Another result coming from specially coated inkjet paper is the often observed low flotation yield, being below 50% for the Impika Evolution as well as for the Canon Océ Colorstream 3000Z, another printer aiming at smaller printers by compact design to occupy smaller area for installation. Just barely passing the thresholds for luminosity and ink elimination with 1 point in each of these categories, these prints with a total of 55 out of 100 possible points formally pass the



Source: Xerox

Cut-sheet prints from a reel: The new Xerox Rialto 900 inkjet printer - "fair" deinkable, still not good.

deinking test. But they are still far from being satisfactory: The thresholds have been set very low, meaning that a product failing these targets is undoubtedly inappropriate as a raw material for deinking, but not necessarily confirming that prints that barely pass them would not mean a serious challenge for the process in the paper mill.

Undeinkable: Church Publishes Inkjet Newspaper in Belgium

Unless trapped by special papers, dye-based inkjet inks are well known to cause problems in the deinking process as they cannot be removed like new pigments developed with a tendency to agglomerate. It has frequently been observed that foreign newspapers for tourists or expatriates, especially around the Mediterranean Sea, are printed using dye-based inks on uncoated papers.

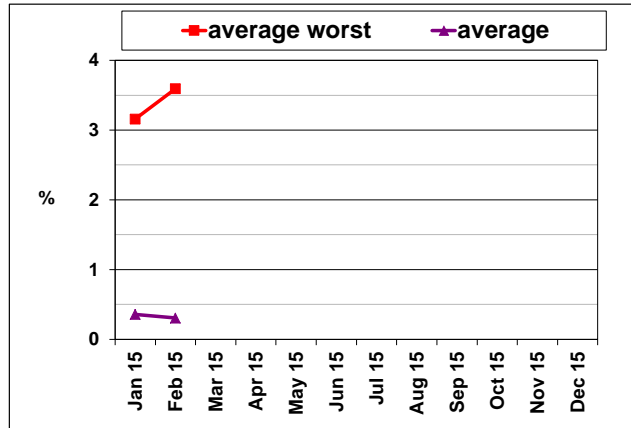
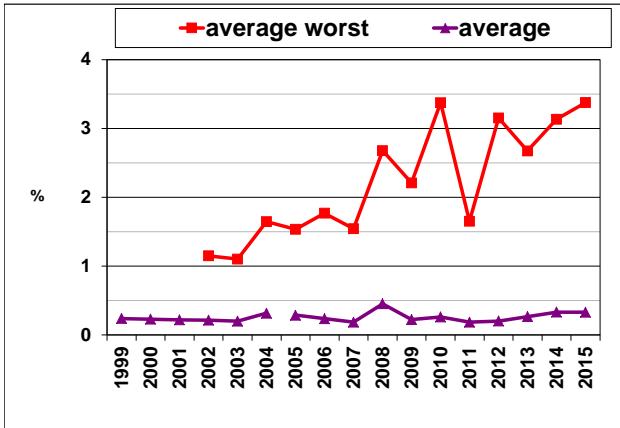
This alarming trend can now also be seen for small volume, regional papers: Kerk & Leven is a weekly published by the Flemish Catholic Church in Belgium and issued in the form of a newspaper. Its total print run is 300.000 copies, in about 500 different editions, containing a large section on national news together with varying pages that provide regional or local news. The paper is printed in Antwerp on a Canon Océ Colorstream 3900 inkjet press - and not deinkable, on the contrary, they even in small amounts have the potential to make the paper collected in the respective region less suitable for recycling.

Axel Fischer

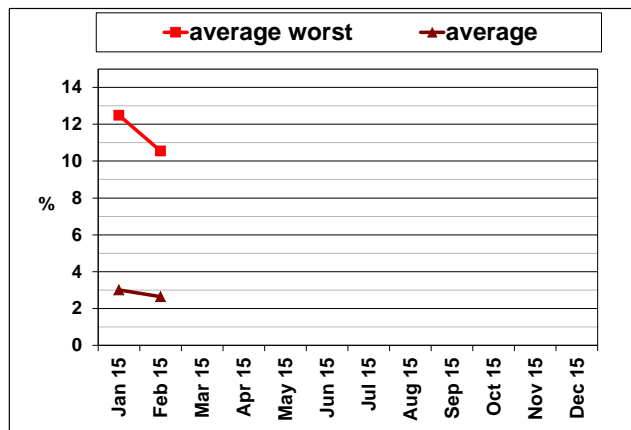
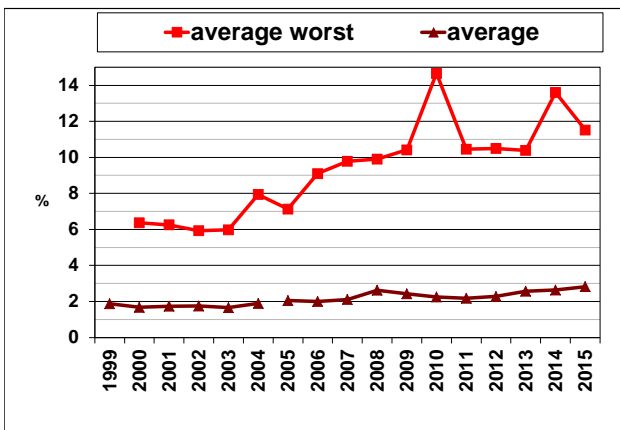


Not ready for the future: Prints from the Impika Evolution inkjet printer are not suitable for deinking, the dissolved pulp stays dark even after seven minutes of flotation in the lab.

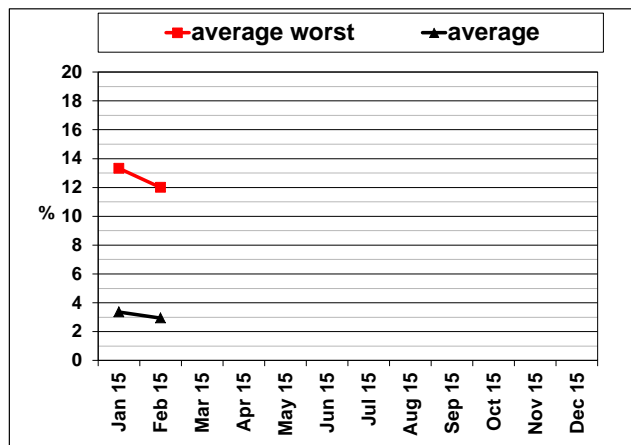
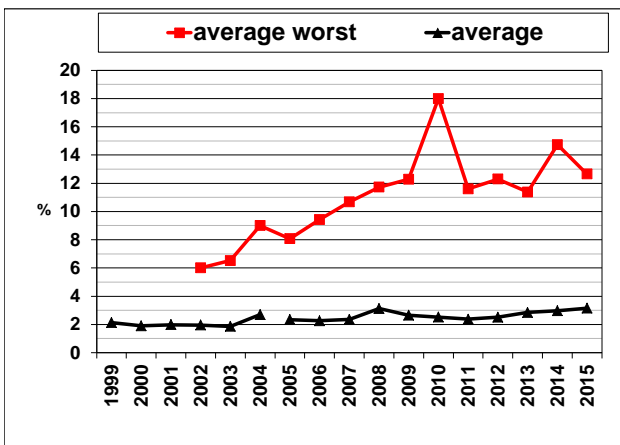
Non Paper Components [%]



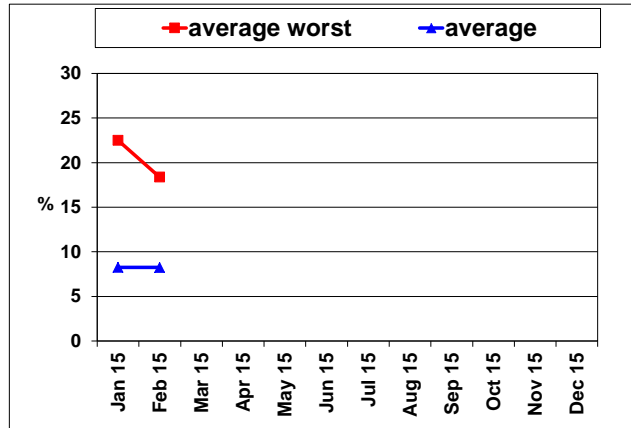
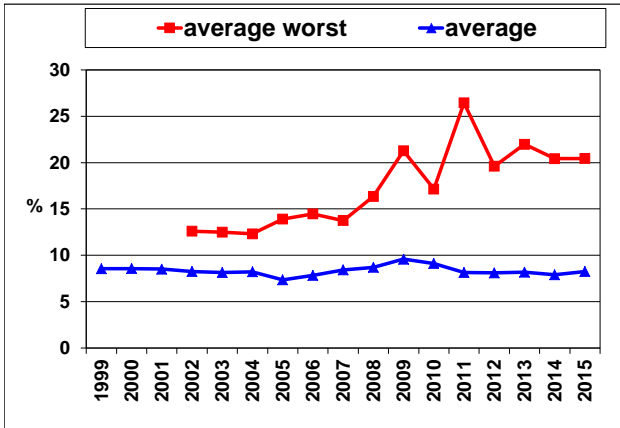
Unusable Papers and Board [%]



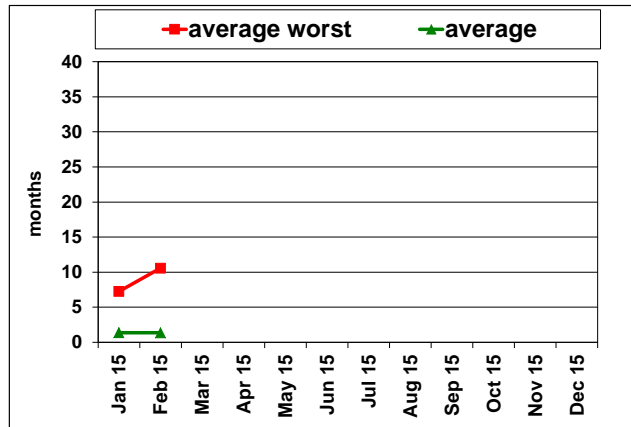
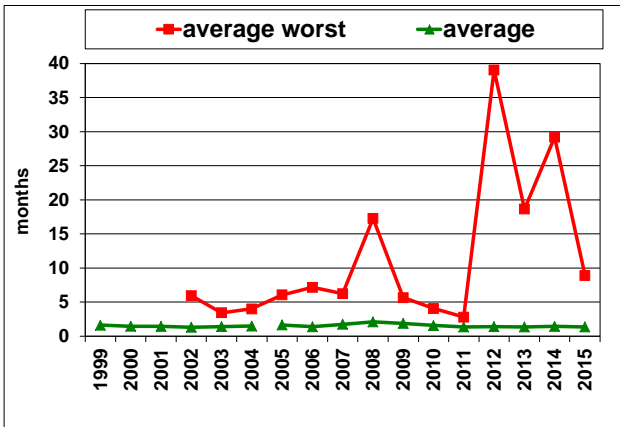
Total Unusable Materials [%]



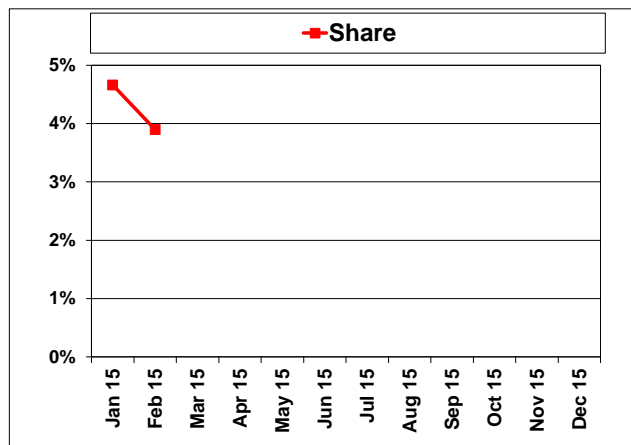
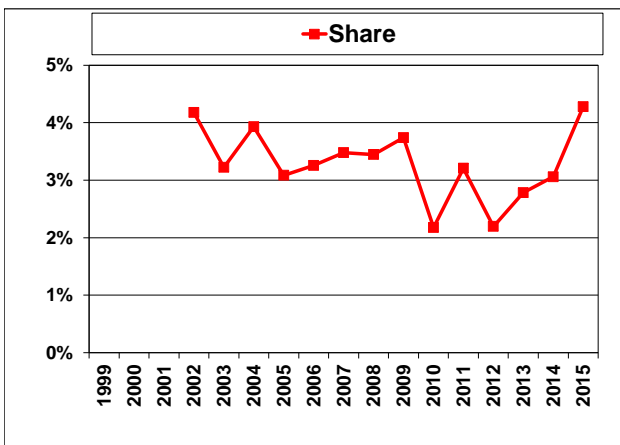
Moisture [%]



Age [months]



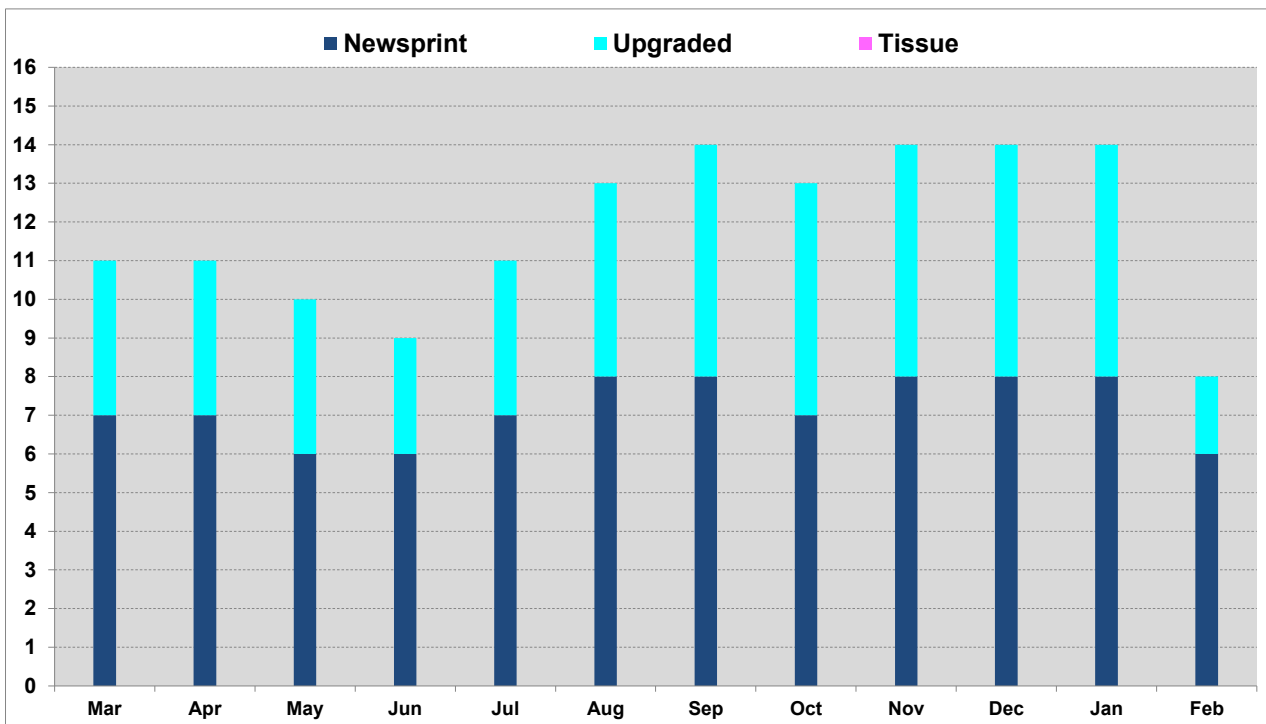
Refusals [%]



Statistics Deinking Process

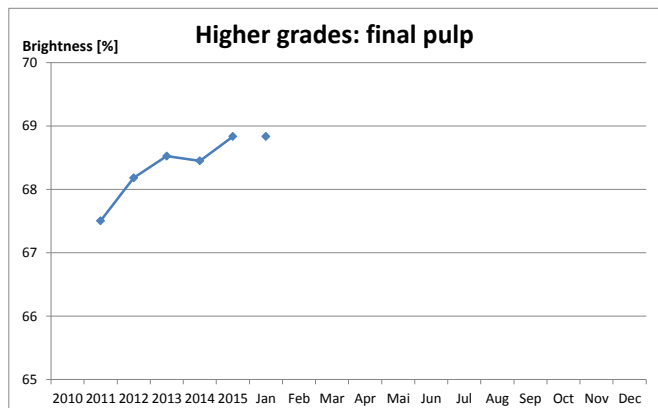
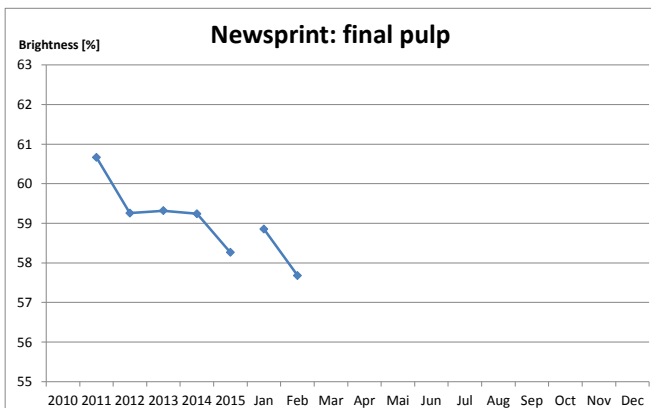
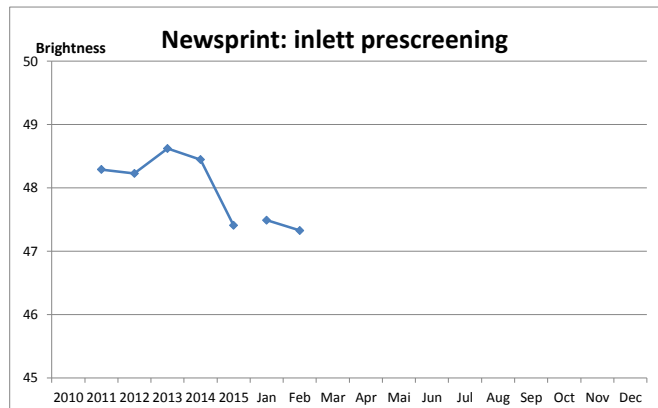
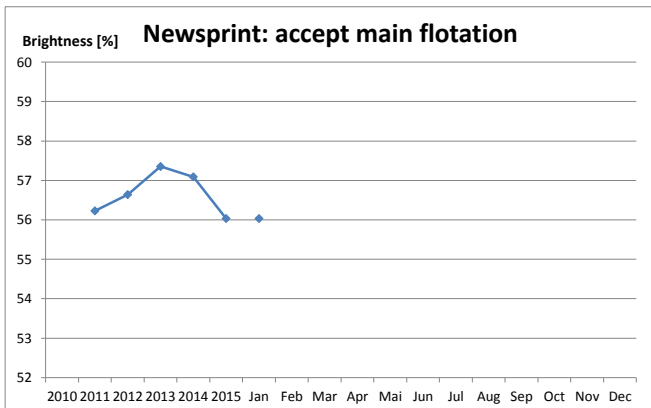
Participation of the last 12 months

DIP lines grouped into product category

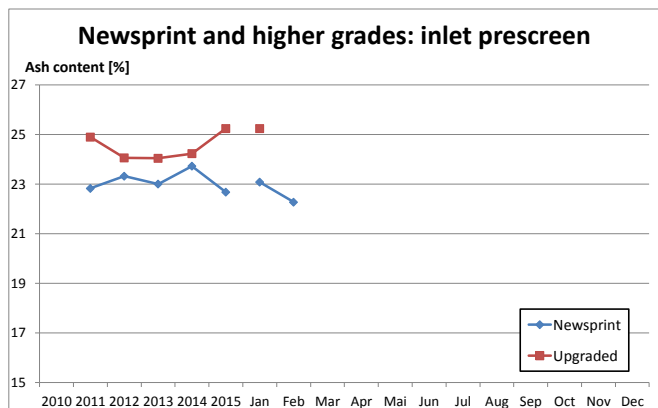
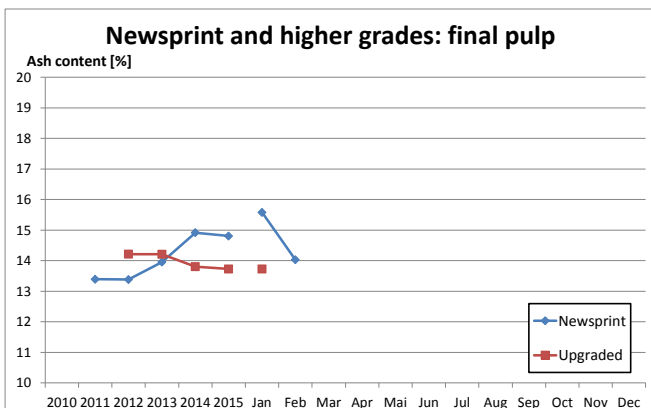


At least 3 values per parameter are requested for publishing the average of the parameter. In case of not gaining enough participants the data is recorded but not published. For published averages, the standard deviation indicates the spreading between DIP lines' values.

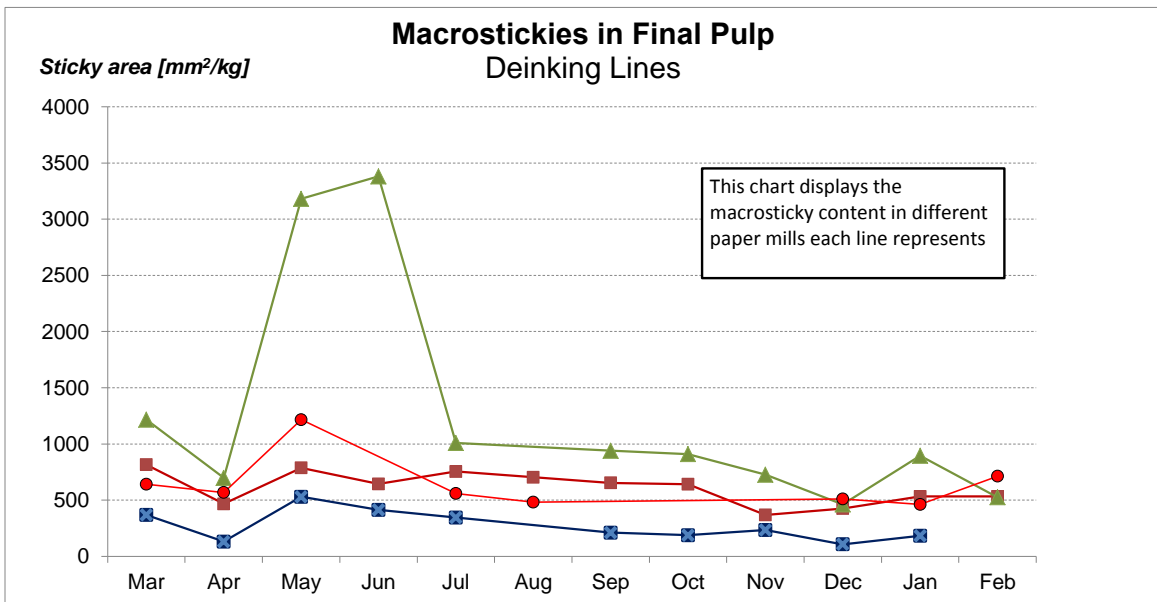
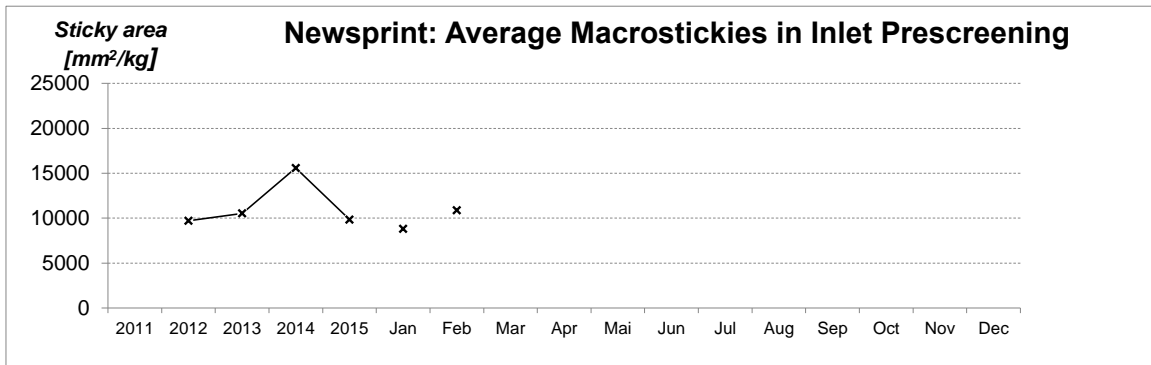
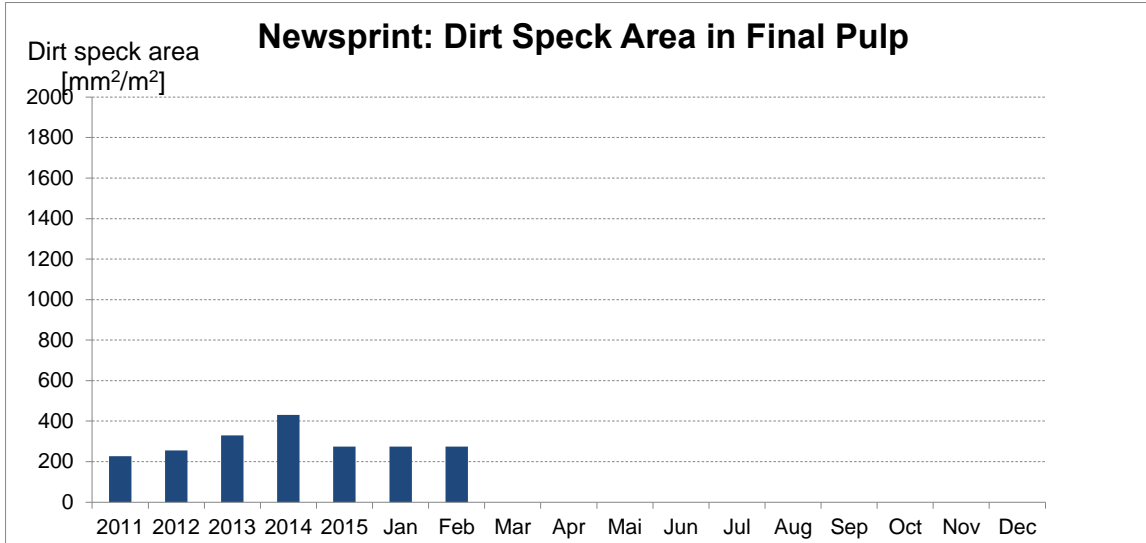
Brightness



Ash Content



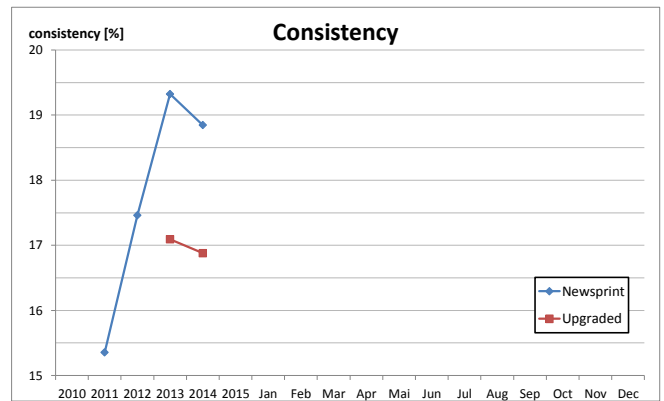
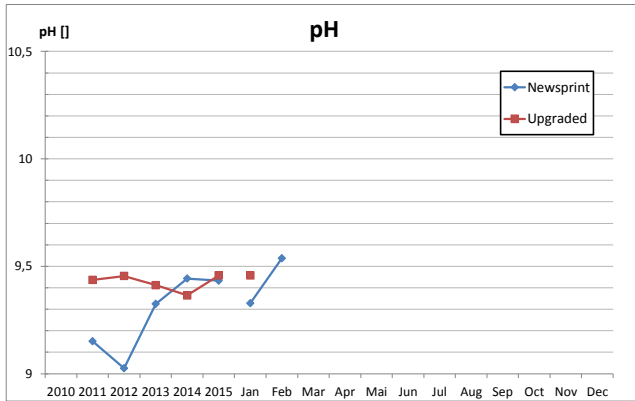
Pulp Quality



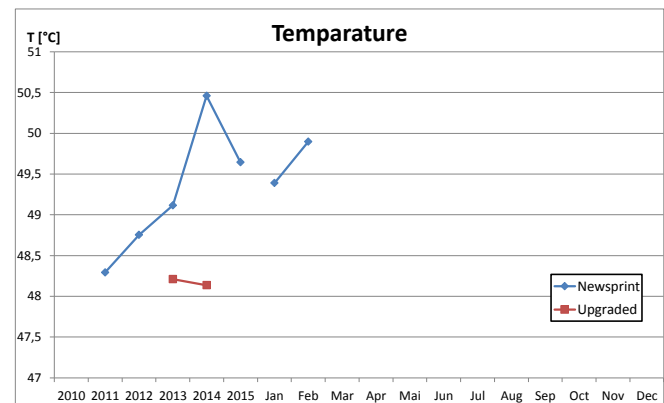
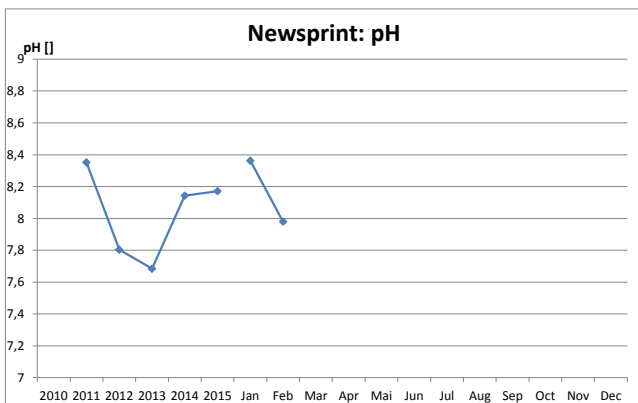
Process Parameters

Presented data are mainly from newsprint production.

Pulping Outlet



Inlet Main Flotation



Disperser

