

CARBORUNDUM UNIVERSAL LTD

INDUSTRIAL CERAMICS DIVISION

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CERAMIC SOLUTIONS THAT
MAKE A DIFFERENCE

PAPER INDUSTRIES

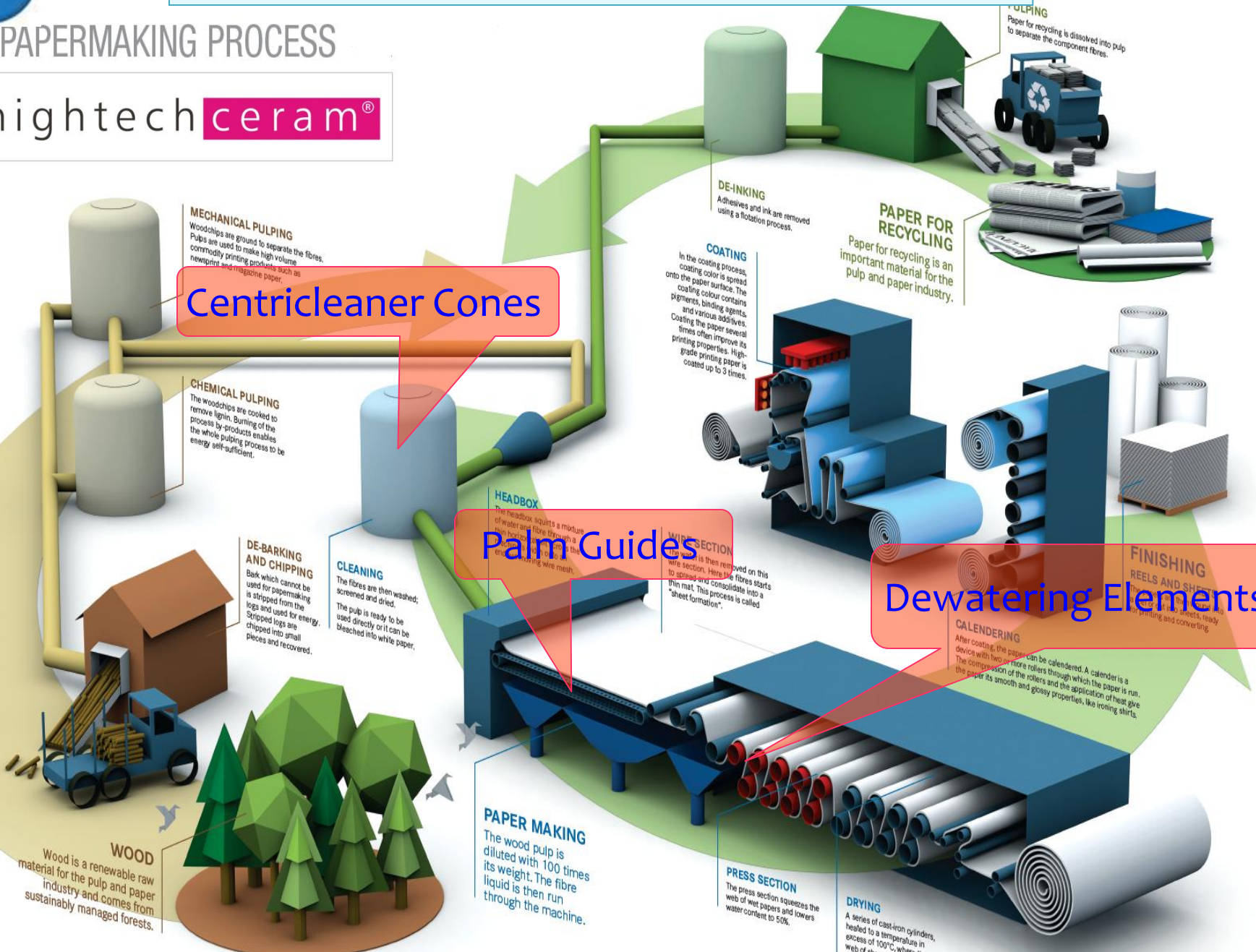
August 5, 2014



PAPER MAKING – OUTLINE

PAPERMAKING PROCESS

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Centricleaner Cones

Palm Guides

Dewatering Elements

MECHANICAL PULPING
Woodchips are ground to separate the fibres. Pulp is used to make high volume commodity printing products such as newspaper and magazine paper.

CHEMICAL PULPING
The woodchips are cooked to remove lignin. Burning of the process by-products enables the whole pulping process to be energy self-sufficient.

DE-BARKING AND CHIPPING
Bark which cannot be used for papermaking is stripped from the logs and used for energy. Stripped logs are chipped into small pieces and recovered.

CLEANING
The fibres are then washed, screened and dried. The pulp is ready to be used directly or it can be bleached into white paper.

HEADBOX
The headbox squirts a mixture of water and fibre through a thin horizontal slot, creating a fibre mat. The mat passes through a fine screen and wire mesh.

WIRE SECTION
The mat is then removed on this wire section. Here the fibres start to spread and consolidate into a "sheet formation".

PAPER MAKING
The wood pulp is diluted with 100 times its weight. The fibre liquid is then run through the machine.

PRESS SECTION
The press section squeezes the web of wet papers and lowers water content to 50%.

DRYING
A series of cast-iron cylinders, heated to a temperature in excess of 100°C, where the web of sheets passes and dries.

CALENDERING
After coating, the paper can be calendered. A calender is a device with two or more rollers through which the paper is run. The compression of the rollers and the application of heat give the paper its smooth and glossy properties, like ironing shirts.

FINISHING REELS AND SHEETS
The finished paper is wound into reels or cut into sheets, ready for printing and converting.

DE-INKING
Adhesives and ink are removed using a flotation process.

COATING
In the coating process, coating color is spread onto the paper surface. The coating colour contains pigments, binding agents, and various additives. Coating the paper several times often improve its printing properties. High-grade printing paper is coated up to 3 times.

PAPER FOR RECYCLING
Paper for recycling is an important material for the pulp and paper industry.

PULPING
Paper for recycling is dissolved into pulp to separate the component fibres.

WOOD
Wood is a renewable raw material for the pulp and paper industry and comes from sustainably managed forests.



PULP SECTION

CENTRICLEANER CONES

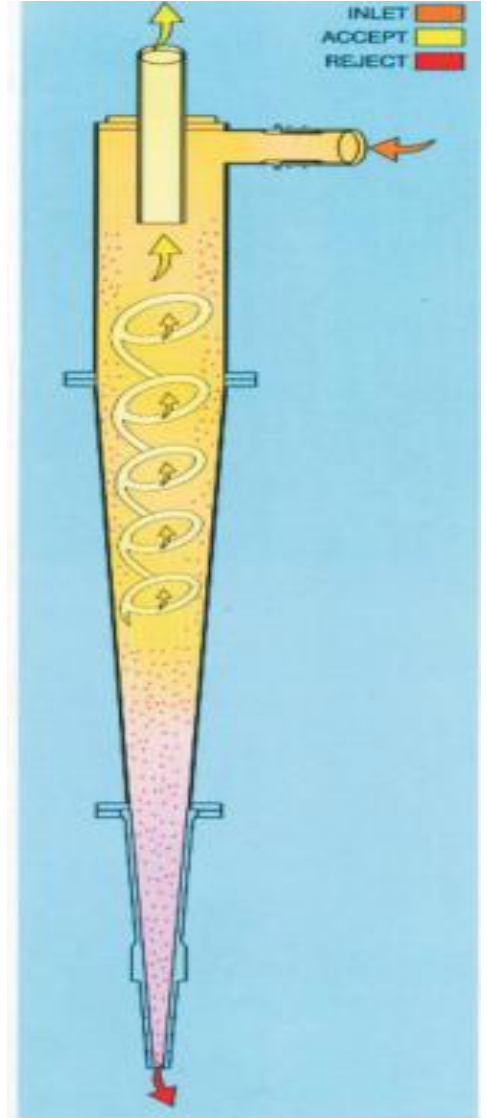
PROCESS:

Centricleaners are used to remove Dirt, Sand, and specks from Pulp.

Pulp enters in tangential inlet which accelerates the stock to downward Centrifugal motion. Contaminants with High Specific Gravity are forced to outer wall of cone and downward through reject outlet orifice.

Rejects are collected in a tank and which again fed to the 2nd stage of cleaning.

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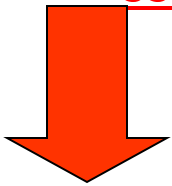
PULP SECTION

CENTRICLEANER CONES

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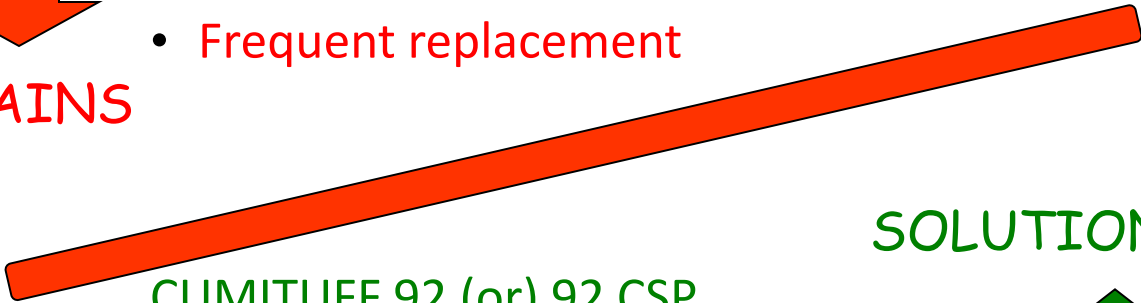
APPLICATION OF CERAMICS:

SS 304 / 306



- Very High Wear & Abrasion
- Corrosion
- Frequent replacement

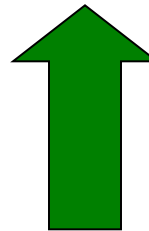
PAINS



SOLUTION

CUMITUFF 92 (or) 92 CSP

- High wear and Abrasion Resistance
- Very high corrosion resistance
- Life 3 times higher than SS Material





PAPER MAKING MACHINE

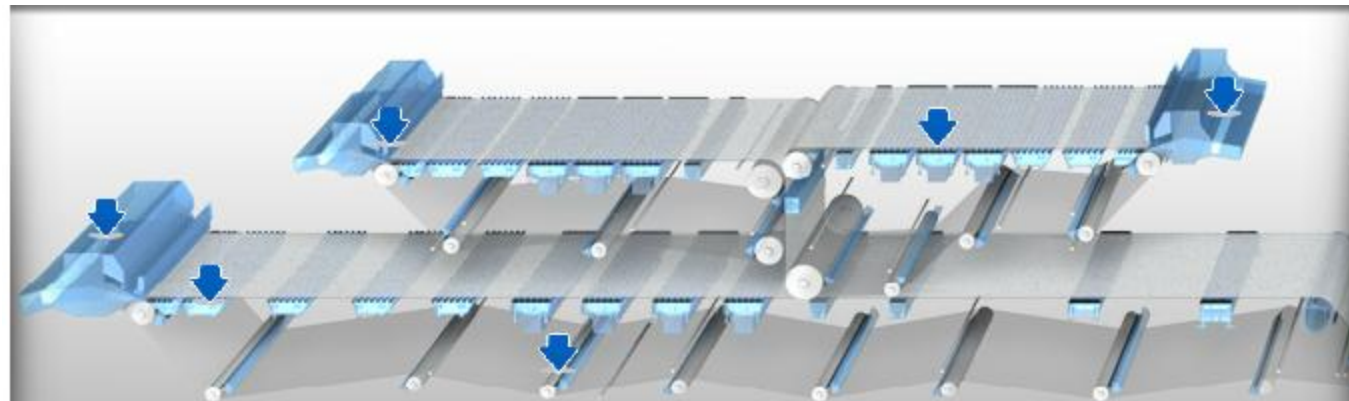
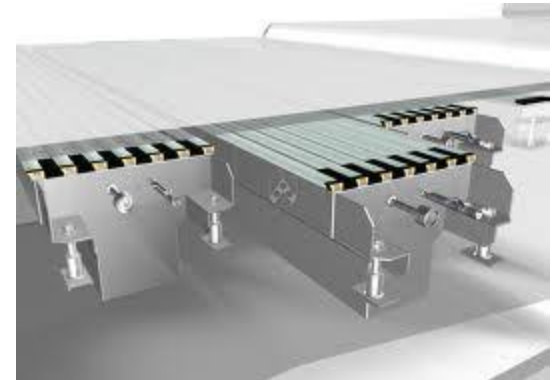
DEWATERING ELEMENTS

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PROCESS:

De-watering is the process of removal of water from the pulp.

Wet pulp is conveyed over the surface of De-watering element for removal of moisture in the pulp





PAPER MAKING MACHINE

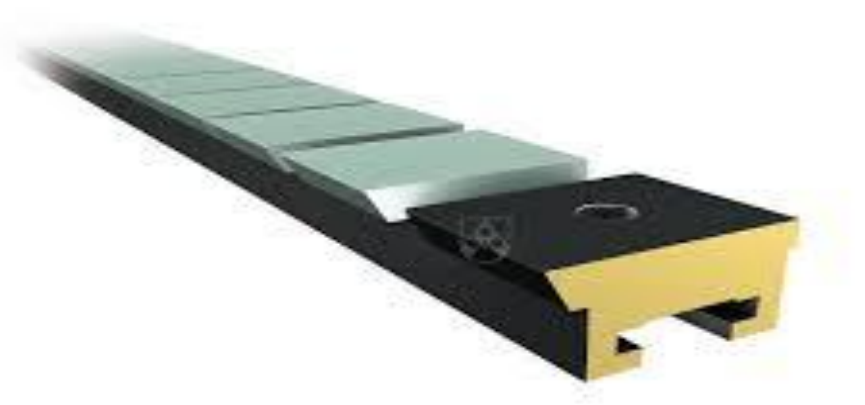
DEWATERING ELEMENTS

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MATERIALS:

CUMI can offer the high wear & corrosion resistant materials for Dewatering application

- CUMITUFF 92
- CUMITUFF 92 CSP
- CUMITUFF 995



PAPER INDUSTRY

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CUMITUFF 92 & CUMITUFF 995
are Certified and Approved by
Rochling Leripa GmbH,
Austria

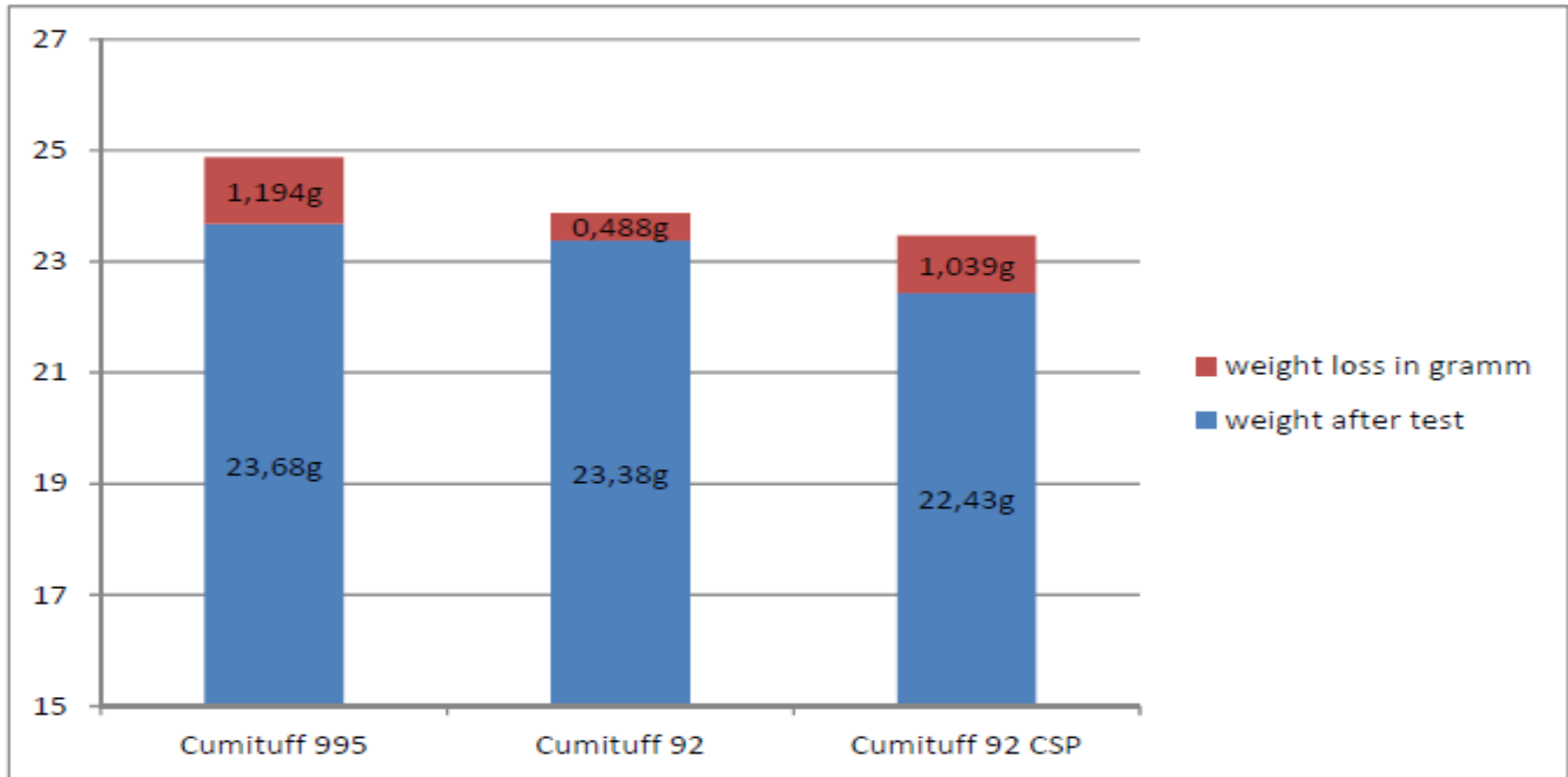


PAPER INDUSTRY

CERTIFIED FOR PERFORMANCE
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Sand blasting test:





PAPER INDUSTRY

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Thermal shock test:

We heated up the ceramic parts to a temperature of 180°C and after that we put them into 20°C water. All segments got damaged at the same good temperature level.





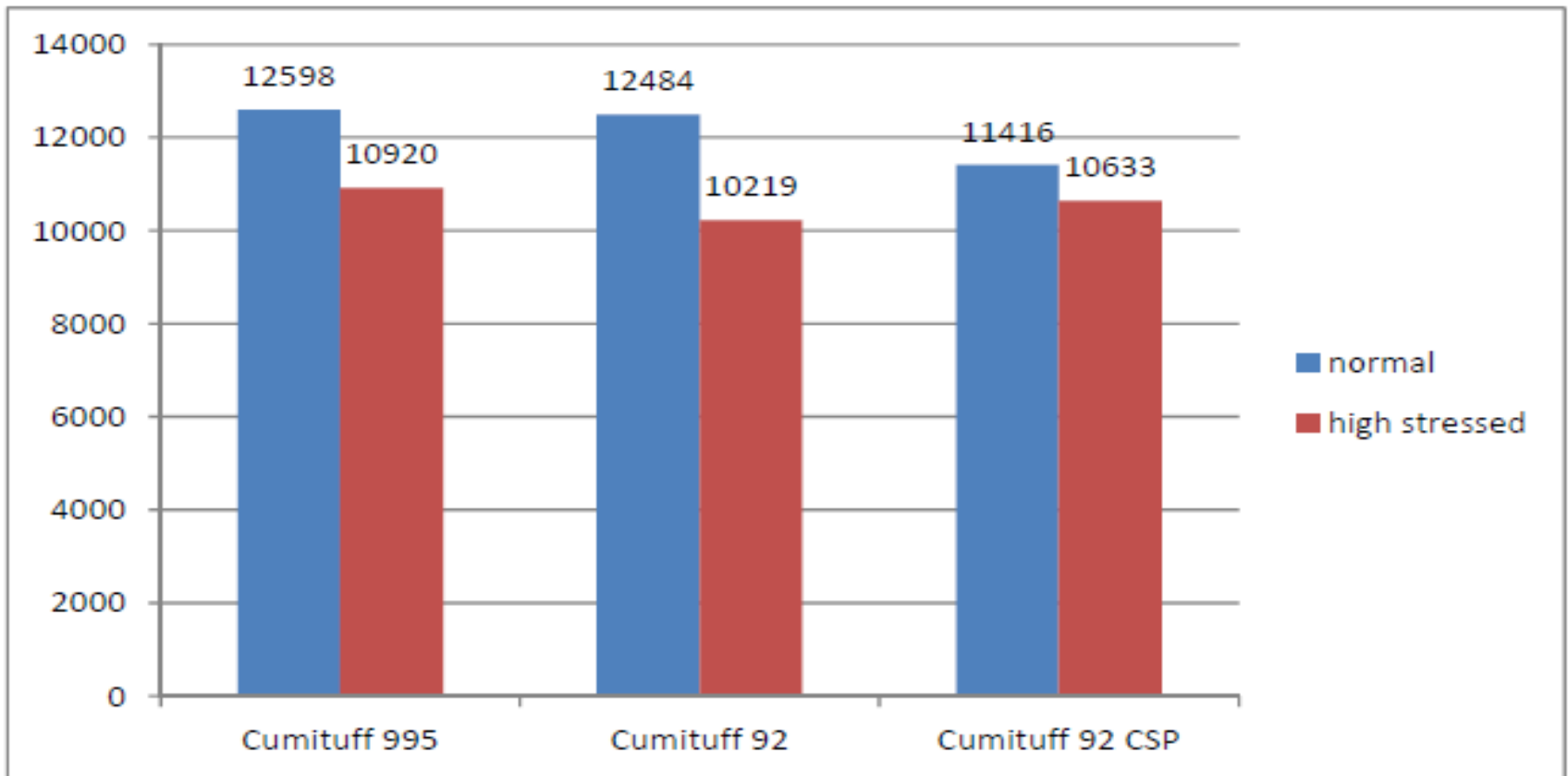
PAPER INDUSTRY

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Glueability test

We measured the force which is needed to break the bonding under two different conditions.





Applications yet to Explore

PALM GUIDES

PROCESS:

Palm Guide is the key component for ensuring the safe and reliable operation of Paper making machine

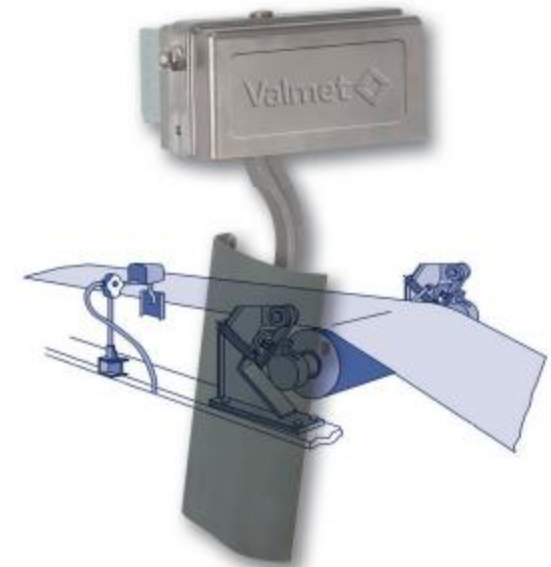
AVAILABLE MATERIALS:

- Stainless Steel
- Stellite
- Alumina Ceramics

ADVANTAGE OF ALUMINA CERAMICS:

- High Wear resistance
- More hardness

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Thank you

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