

TECHNICAL NEWSLETTER

PAPCEL Informational Bulletin / 2012



since 1950

Dear ladies and gentlemen,



Allow me to introduce hereby our successes we have achieved recently. First of all I wish to thank you for the confidence you put in our professional competence. In cooperation with you we have signed contracts with **record contractual volumes** in our company's history. At the end of the year 2011 our job orders reached historical maximum exceeding 60 mio. Euro.

Concurrently **we are realizing the highest number of the projects** in our history for our

The time period of financing ranges usually from 3 to 10 years. Newly we can **offer a chance to participate also in the registered capital financing, for example through our partnership**. We are ready to response promptly to **permanently growing demands for second-hand machinery**. In witness whereof, we delivered two complete paper machines to our customers in Russia. Besides delivery of the s/h machinery we carry out further modernisation and completion of these machines according to particular customer requirements. **Intensity of our development is currently on its peak level**. Our technical departments are considerably customer-orientated. Concurrently we work on the highest number of development projects. We have just reduced energy intensiveness of our stock preparation lines; we are ready to deliver the first film presses. We keep on extending our capacities, penetrating new markets, seeking key account managers and project managers with experiences from pulp and paper technologies. More detailed information you can find on the next pages of our Newsletter.

- David Dostál, Company Board Chairman -

regular and new customers. As you ask more and more for complex solutions, we have extended our manufacturing assortment through **acquisition of the company IFM**. Newly we can offer systems for storage, handling, preparation and dosing of chemicals, starches and other additives. Another successful acquisition is **our purchase of a majority interest in the engineering company Erma Elan Engineering s.r.o.** Through this company we can offer and provide our customers with more detailed engineering services. Our customers increasingly take advantage of our offer of **export financing** through the Czech Export Bank with support of the EGAP insurance. Utilisation of this export financing reduces needs of own resources and also reduces financing costs essentially.

"We are your favourite supplier of solutions in the paper industry"

"Your growth is our responsibility"

Join our team of specialists

We are hereby seeking specialists for positions as follows:

- » Head of Sales and Technical Services
- » Project Manager
- » Project Manager - Electro Branches
- » M&R Specialist
- » Paper Production Technologist
- » Sales Manager experienced in pulp and paper technologies

More details for particular positions you find on our websites www.papcel.cz.

If you are interested in working for our company, please contact our staff department via e-mail: jobs@papcel.cz



Parameters:

Suspension concentration: 54-75 %
Tank capacity: 100 m³, stainless steel

Dosing pumps: NM 045 2S

Tank filling perion: 1 hour
Range of dosing: 200 - 3.000 dm³/h
Product dilution: 1:10

PAPCEL current news

Shoe press

This press is provided with its extended pressing zone. It is in fact a single NIP press in which one roll is replaced by a concave shoe being pressed down hydraulically to the stationary roll. Around the shoe there is a polyurethane belt running around...



more see www.papcel.cz

Film press

It is located directly in the PM line behind the pre-drying section. It is supplied as a two-roll press with an inclined axis of rolls. Loading forces in the press are controlled through a linkage mechanism with hydraulic or pneumatic down pressure...



Tank filling, storekeeping and dosing of kaolin at PM 5 Mondi, Štětí

On 26th September 2011 we signed a contract with the Czech company Mondi, Štětí on delivery of complex technology intended for **tank filling, storekeeping and dosing of kaolin at the paper machine No. 5**.

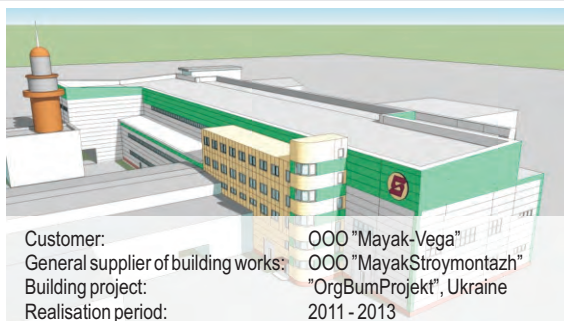
Generally, it concerns a storage tank with capacity of 100 m³ provided with a vertical low-speed agitator of our original technical solution designed particularly for dispersing agents. This contract had to be performed as a key-ready order. The entire equipment was put into trial operation on 21st December 2011 and its final takeover commenced and finished on 22nd January 2012. The company IFM-PAPCEL was established in October 2011 and hereby it became a new member of the PAPCEL group...

Building of the new joint-venture in Russia

Modernisation in the paper mill "AO Mayak" goes on - the paper mill Mayak in Penza is a multi-profile firm engaged, besides its primary specialisation in fancy papers, also in production of wall, decor and brown papers. After successful project realisation of a new paper machine for production of fancy papers the company's top management decided to modernise and to extend its assortment of brown papers.

A primary goal of this project is based on completion of a modern and environmentally friendly paper mill for production of flutings, liners and papers with a white top layer for packing purposes (corrugated boards) with a perspective view to commence production of plasterboards within the next two years. The main project investor is a joint-venture "OOO Mayak-Vega", Penza, Russia.

In June 2011 we signed a contract with this investor on reconstruction of a "second-hand" paper machine from Italy which is to be completed with a new top wire; its drying section shall be separated through installation of a film press for production of surface-sized papers. The company PAPCEL is both a coordinator and also a general supplier of all works related to supplies of



Customer: OOO "Mayak-Vega"
General supplier of building works: OOO "MayakStroyMontazh"
Building project: "OrgBumProjekt", Ukraine
Realisation period: 2011 - 2013

machinery, complete engineering and project management services. It shall also provide complete disassembly and transport of the s/h paper machine from Italy to Russian Penza. PAPCEL is also a supplier of the complete machinery project. Building works are managed accordingly in coordination with the customer, who undertakes to provide the concerned on-site jobs performance: the PM and the stock preparation line are to be installed in new factory build-

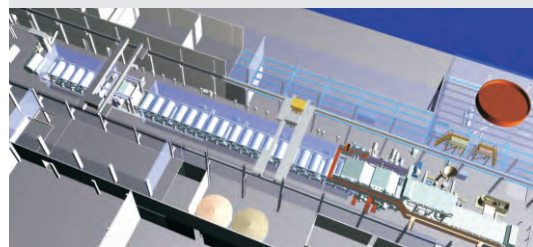
ings, see fig. The company PAPCEL shall provide complete services incl. engineering, on-site assembly, commissioning and guarantee tests. The contract financial volume exceeds 1 bil. Rbl.

It is the first project where the company PAPCEL, through its owner, participates in the registered capital and where it is involved in the project as a partner with its minority interest. For this project it provides also complex services connected with export financing.

Two-wire PM, longitudinal wires, new stock preparation line

Primary PM parameters after modernisation:

Expected capacity:	76.000 tpy
Paper assortment:	80 - 175 g/m ²
Fluting, liner, top-liner with white top layer, perspective production of plasterboards	
PM operating speed:	700 m/min
Web width on reel:	2.600 mm



- Martina Pavlíková, Marketing Manager -

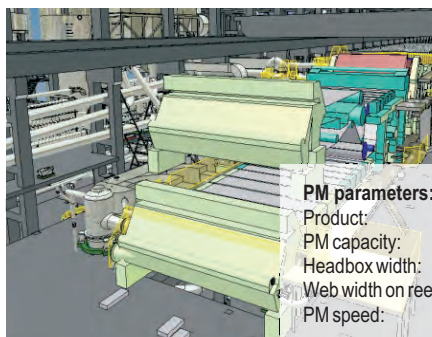
OOO Suchonskiy CBK - modernisation of the Canadian paper machine

The assembly works, related to one of the greatest PAPCEL's investment projects ever, started at the end of the year 2011.

Early in November 2011 the paper mill in Sokol commenced works related to installation of equipment in a new stock preparation line.

The company PAPCEL signed the contract with the OOO Suchonskiy company already in September 2009. The Suchonskiy CBK in Sokol started works on dislocation and reconstruction of a paper machine from Canada which, before reconstruction, produced printing papers. This contract concludes also delivery of a new stock preparation line with its capacity according to the given PM output with expected capacity of 162.000 tpy after reconstruction and production of flutings and liners with substance as from 90 to 200 g/m². It is a two-wire paper machine with its bottom wire width 5.065 mm and operating speed 650 m/min. The given project is financed through an export credit by the bank ČEB with its total financial volume exceeding 40 mio. EUR.

The company PAPCEL is a general supplier of machinery and engineering, including com-

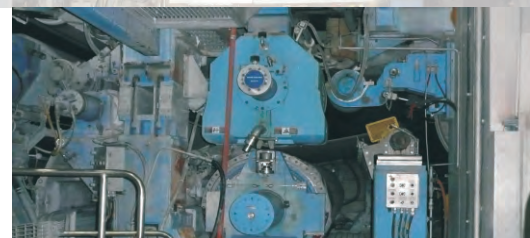
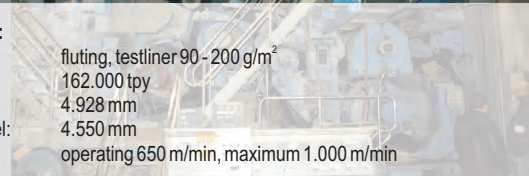


PM parameters:

Product:	fluting, testliner 90 - 200 g/m ²
PM capacity:	162.000 tpy
Headbox width:	4.928 mm
Web width on reel:	4.550 mm
PM speed:	operating 650 m/min, maximum 1.000 m/min

missioning and guarantee tests. In December 2011 the company finished works related to its disassembly in Canada. All the concerned items were shipped in 125 containers. In the PM shop all the preparatory demolition works were finished in the second half-year 2011 and followed by works related to the PM basement and preparatory works for PM erection.

The final PM concept is to be realised in three general phases. The first phase includes the bottom wire table and a new top wire with its hydraulic headbox. For the second phase there are installation of a new film press and PM completion with the third wire table scheduled.



Currently, we provide works as scheduled for the first phase respecting further project phases. It concerns particularly documentation for works related to the project building part. The handover of a new line and its putting into trial operation is scheduled for 2013.

- Martina Pavlíková, Marketing Manager -



Nikol-Pack Uchaly

The company PAPCEL has just finished reconstruction of the processing line in Nikol-Pack Uchaly, Russia, intended for production of simplex and duplex boards with an optional white top layer - capacity 120.000 tpy.

1st phase - in 2005 - reconstruction of press section: Jumbo press and reconstruction of pulping stage for stock preparation.

2nd phase - processing line overhaul intended for increased capacity up to 120.000 tpy.

Stock preparation line:

Extension of pulping stage with pulper cleaning; completion of coarse screening stage; newly installed line for pulping and wood pulp refining; completely new line for fine sorting inclusive fractionation and equalizing for two layers; completely new approach system for two layers; two-stage agitation.

Paper machine:

New headbox for bottom layer, bottom wire part extended; new cantilever structure; completion of operating elements; headbox reconstruction (to pressure one) for top layer; new top wire; new pick-up roll with central press roll, completely new vacuum system. Complex reconstruction of drying section - new steam condenser with completion of rolls; new steam hood and heat recovery incl. blowers; new tighteners, regulators, tensometers, rope threading. New size press; new reel incl. magazine and loader of empty reels; new rewinder; new packing and handling line; completely new electric part and control system.

Contract signed in 2007.

Most of deliveries in 2009.

On-site assembly and commissioning postponed due to global crisis approximately by 18 months.

Putting into service for primary assortment in 12/2010.

Putting into full service early in 2011.

Successful guarantee tests finished in 11/2011.



Product:	simplex and duplex board including top white layer + plasterboard
Substance:	90 - 200 g/m ²
Capacity:	16.500 kg/h
Feed material:	100 % waste paper
Web width on reel:	4.080 mm
PM speed:	operating 500 m/min, max. 550 m/min

In November 2011 all the guaranteed parameters were verified through guarantee tests after the line reconstruction. All the pre-specified performance and quality parameters were met with reserves and without limits. These tests took place pursuant to the contract and all the particular customer's requirements, laid on product assortment with substance of 125 and 140 g/m², were satisfied. Not only the performance and quality parameters of the own paper machine and stock preparation machinery but also steam and industrial water consumption as well as geometric properties of the web wound on the rewinder were verified. A few days before and for the given purposes the company PAPCEL sent a team of technicians whose primary goal was to prepare the paper machine, stock preparation machinery, auxiliaries and attendants for seamless test procedures. The own guarantee tests were organized so that first of all we agreed the assortment, schedules and working teams (representatives of the customer and of the company PAPCEL) for each parameter to be verified. All the working teams monitored the whole process and assessed the reached parameters. The on-site control system was continuously registering all operating setups and parameters. These guarantee tests clearly proved competence of this line to produce flutings and liners in the top quality in accordance with the GOST standards, quality grade B0 and K1.

With these successful guarantee tests the 2nd phase of the entire PM line reconstruction (PM performance increased from original capacity of 30 ths. tpy to 120 ths. tpy) in the paper mill Uchaly has been completely finished. However, our long-lasting cooperation with this very important customer is not yet over. Currently, we are mutually improving technical standard of partial technological stages orientated especially on further facilitation and comfort of the line attendants.

- Eduard Mikulka, Project Manager -

Air threading conveyer

Early in 2012 we put an air threading conveyer prototype into operation in the paper mill Uchaly.

Paper web threading is a very complicated process and its technical mastery can save strain of attendants and time after a web break or at the shut-down. The air threading conveyer was installed on site between the drying part end and the reel. Here, by that time, web handing over between two rope circuits was very complicated. For web passing it was necessary to draw the paper web between two running ropes which was not quite safe. Currently, the air threading conveyer eliminates this dangerous web

threading. The attendant controls the guide chute motion, cutting blades and directional air blowers by means of press buttons. This equipment cuts off the threading band which falls into the pulper and takes the web by air between the ropes of the next rope circuit. Its threading onto the reel is now quite seamless.

Thanks to good experiences the company PAPCEL shall supply another air threading conveyer to be installed before the size press. This new conveyer shall be improved and completed with some interesting innovations: its control can be either manual or automatic. The pneumatic cylinder is completed with small air accumulators that can speed up threading, band cutting and, last but not least, the cutting blades enable more exact setting due to their displacement.

- Petr Vařeka, PM design office -

Technical parameters:

Machine speed:	550 m/min
Drying matter in place:	approx. 95 %
Substance tested:	115 - 140 g/m ²
Product:	testliner
Air pressure at distribution:	4 - 6 bar
Air consumption:	500 l/min (peak value)
Electric power connection:	230 V



The greatest project of PM modernisation in Turkey

In 2011 we successfully finished the guarantee tests in the paper mill Akasan Adana Kagit Sanayi in Turkey.

The concerned contract with the customer was signed in 2010 as a result of intensive cooperation with the trade agency of the firm in Turkey, i.e. with the firm OM Grup. The proposed reconstruction of the paper machine respected the customer's requirement to produce papers, type fluting and liner, with substances from 80 to 180 g/m² and with PM capacity up to 150 tpd at max. operating speed of 350 m/min.

The concerned reconstruction included completion of the wire part with a driving wire roll, completion of the press part, completion and modification of the pre-drying and final drying part, delivery of a new size press, a station for starch preparation, a size press working unit, completion of the PM drive, completion of vacuum and control systems and delivery of spare parts, particularly PM rolls. This project was financed through a bank credit by the UniCreditBank, Czech Republic.



PM parameters after the reconstruction:

Product:	fluting, liner, substance 80 - 180 g/m ²
Working machine speed:	up to 150 t/day
Headbox wide:	3.000 mm
Web width on reel:	2.850 mm

A contract signed with the firm Dentas, Turkey

At the end of the year 2011 the company PAPCEL signed another contract on PM reconstruction in Turkey concerning paper machine completion for the firm DENTAS in Turkey with a new film press and delivery of a complex final drying part. This reconstruction is orientated on installations of equipment for sizing and additional equipment in order to increase the PM capacity.

The company PAPCEL shall deliver a new stock preparation line with capacity of 270 tpd. This delivery is scheduled for July 2012 and on-site commissioning for October 2012. The paper machine is intended for production of testliner and fluting, web width on reel 2.550 mm, PM design speed 750 m/min.

- Martina Pavlíková, Marketing Manager -

Lines for Tetrapak processing

Multi-layer walls (sandwich) of used beverage packages comprise a carrying board layer, several protective PE layers and also one aluminium layer protecting the package against penetration of fungi and bacteria. The ratio fibres/PE/aluminium foils is very unstable; it is usually about 75:20:5. Beverage packages are waterproof and hardly pulpable and it is really a technical challenge for each firm being engaged in waste paper recycling.

The PAPCEL technology for beverage packages processing is orientated on qualitative separation of fibres from foils. Weight content of fibres in washed foils outgoing from the line is lower than 1,5 %. It means that the foils mixture can be used as feed material for direct recycling. The line concept is based on a standard concept of the PAPCEL stock preparation lines and its capacity corresponds with the pulping stage capacity.

Pulping of beverage packages is a key part of the process; its speed, quality and reliability are essential characteristics for the overall capacity of the given processing line. The company PAPCEL has just introduced a new middle-consistency pulper, type MCV which is ready to pulp a charge of beverage packages at consistency of 10 - 12 %. Higher consistency during pulping brings a significant impact on quality and speed of the pulping procedure. Due to varying charge composition the pulping stage runs in the manual control mode. Volume of approx. 75 % of all foils contained in the Tetrapak packages leaves the pulper; foils are well washed and appropriate to further industrial processing. Small foil residues that came through the pulper screen, can be separated from the stock in the stage of coarse screening by means of a proven VSV separator with its extended washing cycle. Also the foils separated in the VSV separator are not waste but pure feed material. The only waste here is sand separated by the SVS cleaner and rejects leaving the slotted STU screen. Anyway, the content of this waste amounts usually to less than 1 % of the overall line production.

This line consists of following technological stages:

- » **pulping stage** (sorting on bored screen Ø 12 mm)
- » **coarse screening stage** (separation of sand and specifically heavier impurities in hydrocyclone and sorting on bored screen Ø 1,8 mm)
- » **fine sorting stage** (sorting on slotted screen Ø 0,2 mm and contingent thickening, pressing and fibres pelleting)

Following products leave the line:

- » high-grade fibres that can be thickened, pressed and pelleted on a belt press and finally sold to a paper mill (65 - 70 %)
- » pure coarse foils composition from pulping stage intended for further processing (20 - 25 %)
- » fine foils composition from coarse screening stage intended for further processing (approx. 10 %), sand and other specifically heavier impurities such as rejects from coarse screening stage (minimum)
- » composition of fibres and foils in form of rejects from fine sorting stage (approx. 1 %)



- Ivo Válka, SPL Technologist -

Energy intensiveness of stock preparation machinery reduced by 15 %

At the end of the last year and in the 1st quarter of this year we carried out measurements of energy consumption of the PAPCEL processing lines installed in Russia aimed at verification of on-site operating conditions in the given territory as to feed materials, process losses of fibres plus additional technological data and energy intensiveness of our lines.

All the taken measurements serve for further improvement and optimal concepts of our lines installed in the territory of the Russian Federation in term of correct dimensioning of the given line as to its sorting capacity, fibres processing in order to reach the best mechanical properties of the paper web and to minimize process losses of feed materials in rejects. These measurements were carried out in various paper mills in the Russian Federation, more specifically in the paper mill Nikol-Pack Uchaly (Bashkortostan region), with capacity of 400 tpd, Mariyskiy CBK (Mariel region) with capacity of 350 tpd and Kamenskaya BF (Tverskaya region) with capacity of 200 tpd. Always before the own line test we carried out a line technical audit, inspection of functional

elements in particular line stages, setup of technological parameters (flow rates, consistency, times of particular sequences in amatures, M&R instrumentation etc.). During the test we monitored weight of feed materials on the loading conveyer before the pulper, PM production on the reel, took samples (feed, accept, reject) behind particular machines in the stock preparation line and assessed these samples in the customer's lab as to performance of individual line stages. Laboratory assessment included level of consistency, freeness in °SR, volumes of impurities and losses of fibres in rejects. Through particular balances of rejects in the stages of pulping, coarse and fine screening and approach system we calculated pollution of the ingoing waste that

might differ in dependence on the given region and that was ranging from 4 to 8% content of non-fibrous fractions, which was more than twice over the given limit. Even with such impure feed material with low freeness about 20°SR our technology showed loss of fibres up to 1% only relating to the line capacity and loss of fibres behind the fine screening stage up to 0,8 %. In addition to that we measured input power values of some pre-specified electric motors to be aimed at further optimization of energy intensiveness of the given line. These measurements should be involved also in further new stock preparation concepts. Based on the input power values taken and our experiences from other paper mills we could reduce the installed energy consumption of the SPL even by 15%.

- Ondřej Vlk, SPL Head Designer -

Pulping stage <u>Samples taken from:</u> PSN-30, PSN-40, rejects dewatered through OBN (rotary dewatering drum), thickened and pressed by OLV (rejects dewatering press)	 PSN installation at LCV	 PSN rejects by OBN	 samples taken to be analyzed
<u>Rejects from:</u> PSN-30 and PSN-40 combination of rejects taken from OBN dry matter: 30 % fibre content in rejects: <u>max. 8 %</u>	 PSN-30	 PSN-40	 PSN-30,40
Coarse screening stage <u>Samples taken from:</u> VSV-30 <u>Balance of rejects from VSV:</u> dry matter: 17 - 23 % fibre content in rejects: 12 - 18 %	 VSV-30	 VSV-30 installation at coarse screening stage	 samples taken to be analyzed
Fine screening stage <u>Sampling:</u> Vanex - rejects from fine screening dewatered by belt thickener Vanex VX	 reject from VX-10	 Balance of rejects behind fine screening (rejects from VX-15): dry matter: 22 - 30 %, fibre content in rejects: 70 - 75%	 samples taken to be analyzed

Waste paper processing of waste papers containing a high quantity water proof papers.

 papers with wet strength	 washed rejects from PSN-30,-40	 rejects thickened by vibrating screen	 VSV-30	 papers with wet strength	 foils
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Reduction of energy intensiveness of STU pressure screens

One of the most important factors with impact on energy intensiveness of the STU equipment is its rotor. That is why we concentrated on optimization of its shape and design of vanes.

The first prototype for testing it was the STU-081 rotor with plastic vanes where their profile height was reduced by 20 % as compared with the standard ones. The rotor was tested for coarse screening and then for fine screening technology. The initial tests included also assessment of vanes energy intensiveness and proved lower level of energy intensiveness (power saving by 7 to 9 %) arising from the reduced vane profile. Another step in development of a new vane shape for fine screening technology consisted in changed geometry of the vane leading edge. Besides other power savings expected on level of about 10 to 12 %, this change of geometry should bring reduced pressure surges that stress the screen (risk of damage), however, at keeping of performance and technological parameters.

For further testing we shall use plastic materials with lower costs as compared with classical cast-steel vanes. These tests are to be carried out in the company's testing room at an early date.

Should the tests prove good operating parameters, then the test results shall be applied in design of new fractionator and knoter rotors optimized accordingly.

- Martin Drlik, SPL Designer -



Prototype of STU-081 rotor with plastic vanes

TECHNICAL DEVELOPMENT

Services in the area of "second-hand" equipment sales and repurchase

Besides services in the sphere of deliveries of new machinery and technologies the company PAPCEL, as an independent firm, offers also services connected with sales of "second-hand" equipment.

To our customers we can offer key-ready services as follows:

- » searching for appropriate "second-hand" equipment or, on the other hand, a customer for repurchase,
- » outlook for investment return, feasibility study, arrangement of financing,
- » technical assistance and consultancy,
- » communication with previous owners - preparatory processes, negotiations and signing a purchase contract,
- » management of disassembly,
- » transport, packing and customs services,
- » overhauling or delivery of new machine parts necessary for line completion or reconstruction,
- » on-site assembly, commissioning and assistance at putting the equipment into service.

Within the frame of repurchase of s/h machinery we can offer storage on the PAPCEL's premises.

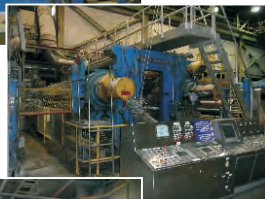
A list of all s/h machines and equipment currently available you can find on our web-

Currently available machines
...for more details see www.papcel.cz...



Rewinder Beloît,
double-rolls,
rewinding of
papers with
substance of
30 - 150 g/m²

Soft calender,
width of
4.600 mm



Chemicals
preparation line
(GAW kitchen)



Complete stock
preparation,
line for
waste paper
processing

New double-disc refiner 2DR34

The double-disc refiner, size 3, with floating rotor that can be completed with working sets dia. 663 mm (26") - type 2DR31, or 750 mm (30") - type 2DR32, with capacity up to 180 tpd; we have now developed a bigger type size 2DR34.



The refiner is generally used for grinding of primary and secondary fibres from the paper stock. Primary parts of this equipment are a machine body with bearing housings and a shaft bedded in roller bearings. A working box attached to the body is provided with a fixed stator. Another stator, axially displaceable, serves for refining pressure. The stator displacement is controlled by means of an electric gearbox with a brake electric motor whose speed can be continuously changed by means of a frequency converter. The rotor, installed between both stators, is centred on the shaft by hydraulic forces from the flowing stock to be processed and thanks to free axial motion in the shaft grooves. The stock to be processed goes through the central stator part into the working box to be divided here into two streams. One goes through a refining zone of the front discs, the other one goes through holes in the rotor and a refining zone of the rear discs. After passing through both streams join together and leave the box through its output branch. All parts coming in contact with the stock are made from stainless materials. Other parts are made of standard structural steel protected (coated) against corrosion. This equipment can be equipped also with segments dia. 860 mm (34") and with an electric motor up to 800 kW. The refiner provides capacity of 90 to 250 tpd at throughput 1.000 - 4.100 l/min.

- Josef Nemerád, SPL Designer -

Fusion PAPCEL and erma elan engineering

...interconnection manufacturer + project office...
= complex solution of your key-ready reconstruction

- preparation of project **feasibility study** - business plans, assessment of profitability and project return, financing;
- **engineering services** - proposals of crucial equipment with technical description, M&R instrumentation, description of technologies incl. process layouts, balances of water and energy consumption, location and layout of equipment and related piping, foundation plans etc.;
- **project management services** - project documentation, supplies of technologies and related equipment, coordination of on-site works with building subcontractors etc.

References at: OOO MAYAK - Technocell; Bellmer GmbH & Co KG; Over Meccanica S.p.A.; ALLIMAND S.A. PACKAGES LIMITED; PAMA Papiermaschinen GmbH; Krkonošské papírny; VOITH GmbH.

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IFM-PAPCEL - a new member of the PAPCEL group

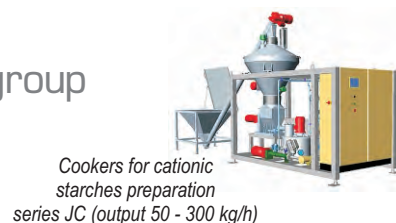
The company IFM-Papcel was established in October 2011 through a fusion of the firm IFM, Olšany and the company PAPCEL, Litovel. Its product portfolio remained to full extent as before.

The company is predominantly engaged in projecting, designing and production of special equipment for the pulp and paper industry. It concerns particularly highly specialized devices for **dosing of additional agents and chemicals**. In addition to that the company manufactures also single-purpose specialized equipment intended for **preparation of sizing agents at production of corrugated boards and for paper processing**. The company is also ready to prepare concepts, studies and proposals, to work out technical solutions, to execute production documents and drawings, to manufacture the given equipment and to put it into operation and also to provide customer services, consultancy for the sphere of paper technology and chemicalization of related processes. Besides its prevailing production the company is engaged also in servicing and overhauling of the second-hand machinery intended for paper technology, preparation of sizing agents and chemicalization of processes related to production of corrugated boards. In this way the company PAPCEL has strategically completed its product portfolio, **newly offered with digesters for preparation of cationic starches for paper stock, continuous and discontinuous digesters for preparation of starches, both for paper stock and surface applications**, with capacities ranging from 50 to 2.000 kg/h starch and also lines for preparation of **ASA sizing agents**, retentive agents, fillers, pigments, additional chemicals etc.

Generally, complex technological stages are not limited by PM capacity, i.e. it is possible to manufacture related technological blocks for paper machines with capacity up to 50 tph. With a permanently growing number of so-called key-ready orders it is necessary to offer such equipment that brings to customers as low as reasonably achievable troubles connected with its installation and putting into operation. Respecting this fact we can offer deliveries of complete blocks-units that are only to be unloaded and anchored on site, connected to mains and to signal and control systems. This solution is preferable due to its minimum labour intensity on site at the customer and also with regard to the fact that the given equipment leaves the factory as fully activated and tested for its functionality of all regulation and communication systems. Chemicalization of a modern paper machine is a key question since it solves not only direct cost effectiveness (feed materials, energy) but also environmental protection (reduction of limits for water and air pollution). Nowadays it is not possible to introduce a machine, e.g. for production of testliners, without a quite precisely preset retention system, not connected to a perfect process and circulation water treatment or without dewatering of the PM wire part by means of special polymers which brings essential savings of energies and improved cost effectiveness.

- Zdeněk Horáček,

Chemical additives application specialist -



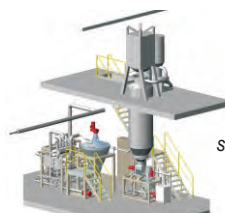
Cookers for cationic starches preparation series JC (output 50 - 300 kg/h)



Cookers for oxidized starches preparation for size presses and film presses series JC (output 50 - 1.500 kg/h)



Cookers for thermochemical conversion of native starch for size presses and film presses series TCC (output 300 - 1.500 kg/h)



Cookers for native starch enzymatic conversion for size presses and film presses series EKK (output 300 - 1.500 kg/h)



Emulsifying station for sizing ASA, equipment for preparation and dosing of sizing ASA

Size press and film press workstations

Film Press - two new orders in 2011

Continuously growing speed of paper machines and requirements of paper surface treatment forced the company PAPCEL to develop and to produce a new spreading device, a film press. At speeds over 700 m/min and under use of a size press the medium to be applied on the paper web surface is not sufficiently absorbed and the paper surface cannot reach the required characteristics.

The film press is used for production of papers that are to be surface-treated somehow. (sizing, special agents for grease-proof papers, dust fastness, higher structural characteristics, dyeing etc.). One of the main advantages of the film press, as compared with a size press, is higher dry matter of the medium to be applied bringing direct impact on reduced steam consumption and size of PM final drying part. Lower quantity of water with starch on the paper surface can essentially reduce a number of web breaks and thereby higher reliability in service of the paper machine. The layer thickness to be applied can be controlled by means of a spreading doctor and its thrust to be induced on the roll surface.

Any film press installation enables utilisation of various coating compositions on each paper side. The first two film press installations ever shall be carried out in the paper mill Dentas, Turkey and Mayak-Vega, Russia. These both machines are intended for the top layer and the corrugated layer on corrugated boards to be produced from waste paper. The medium to be applied is enzymatic starch which improves stress characteristics of boards. This sort of starch for the top layer can be also dosed with a sizing agent and a dyestuff to reach a required surface barrier and optical properties.

- Lenka Strelcová, PM Technologist -



General parameters:
Products:

Substance:
Operating speed:
Design speed:
Web width:
Dia. of rolls: stationary / floating:
Linear pressure operating / structural:
Coating applied:
At dry matter:

Dentas
fluting, testliner, imitation of kraftliner
90 - 200 g/m²
650 m/min
750 m/min
2.550 mm
1.000 / 1.005 mm
40 kN/m / 60 kN/m
1,5 - 3,5 g/m²
10 - 15 %

Mayak-Vega
fluting, liner, topliner with white or cover layer
80 - 190 g/m²
700 m/min
900 m/min
2.600 mm
1.000 / 1.005 mm
40 kN/m / 60 kN/m
1,5 - 2,5 g/m²
10 - 15 %

Current machinery deliveries for PM end part

In November 2011 we carried out successful guarantee tests with the paper machine on the customer's premises in Uchaly where we installed a fully automatic reel with web width of 4.080 mm.

This reel is equipped with a magazine for three empty jumbo rolls and an automatic loader for loading in the primary reel arms. After web winding to the required diameter the jumbo rolls are automatically changed including web threading in the next jumbo roll. The reel is equipped also with hydraulic dampers of fully wound rolls in the end position, drum brakes with very short braking times and hydraulically controlled secondary arms with special framing for ejection of rolls even at zero web winding.

The driven stretching roll in its position before the carrying roll provides excellent flatness of the web to be wound. Exact setup of winding and tension control enable fine setting of the paper web run. The reel control system runs automatically or manually. Particular functions and processes can be controlled through a touch display or by means of ergonomically arranged keys. The control system of the reel is newly completed also with additional software for prevention of paper web folding which essentially reduces losses of paper at threading. Hardness of the wound roll and its symmetry against the machine axis are proportionally controlled by hydraulic valves that can adapt the downforce of the secondary arms. The attendant can define the best conditions according to the produced assortment in order to reach optimal web winding.

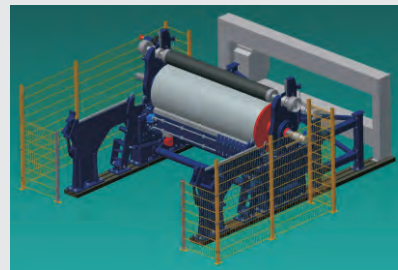


Reel parameters:

Operating speed:	550 m/min
Dia. of roll to be wound:	2.250 mm
Width of web to be wound:	4.080 mm
Capacity:	16,5 tph

First reels for Belorussia

We are ready to deliver the first two hydraulic reels for the Belorussian customers. This equipment is to be installed and put into operation in 2012 as the first reference on this market. These reels are of standard design as to the required parameters. Both reels are newly equipped with exact sensing of the secondary arms position.



This way of sensing enables visualisation of the roll diameter being currently wound. This diameter can be displayed on the reel control board and also on a displaying board. Through this visualisation the attendant has a general view of actual situation during winding without necessary visual inspection in close proximity to the reel.

All hydraulic cylinders are newly completed with direct sensing of piston end positions which is necessary for checkout of end positions for fully automatic duty of the equipment.

Rewinder - the best selling machine

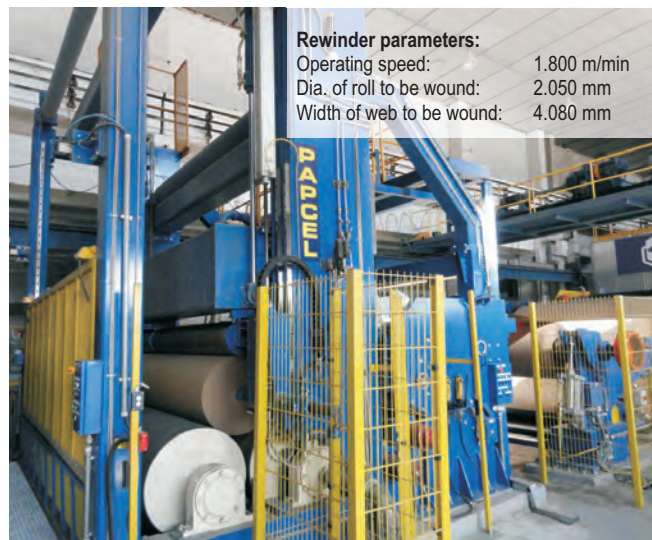
We have just introduced a rewinder for paper width of 4.080 mm based on previous and very successful installations of rewinders with web width up to 3 m, fully automatic (semi-automatic web threading, automatic loading of cores, automatic break of web run after winding, automatic ejection of wound reels).

This rewinder is designed for its installation as the first equipment in a packing line respectively a transport line of wound reels. This location can eliminate losses of technological times and make transport of final products from the paper machine more effective. Its design introduces some innovative solutions. One of these new solutions is a mechanism for motion of a pressure roll which significantly improves the rewinding process, eliminates vibrations at rewinding and improves final geometry of wound reels. It all meets the strictest criteria for uniform hardness of winding, uprightness of faces and exact cutting. A new solution of the tilting table serves not only as a protective barrier but also as a primary element of the transport path of wound reels. In order to link up this path accordingly the table must swing away at rewinding.

The electromechanically controlled barrier, installed between the carrying rolls and the tilting table, serves hereby as a protective shield bringing maximum work safety for attendants. It eliminates also any risks due to a theoretical run-out of the roll. Suction and with-drawal of trimmings is completed with speed control of its under-pressure fan. This speed control enables to adapt the fan suction performance to actual rewinding speed which brings higher operating efficiency of the equipment, eliminates energy losses and slows down fouling of the air filtering unit.

Other references:

MODEL, Weinfelden, Switzerland
 Mayak-Technocell, Penza, Russia
 Maltadecor, Poznań and Rudawa, Poland
 KAPPA Smurfit, Žimrovice, Czech Republic
 Sonoco S.A., France



Rewinder parameters:

Operating speed:	1.800 m/min
Dia. of roll to be wound:	2.050 mm
Width of web to be wound:	4.080 mm