



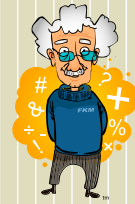
PLANT ADDITIONS
Awaiting new machines in Frankfort, IL.



ROTARY CASTING
We officially launch our rotary casting systems.



NEW PRODUCTS
Product tracking like you've never seen before.



ASK DOC
We answer industry questions in our new Ask Doc segment.

Roll Call

FKM USA Technology News

2ND ED. | SPRING | 2008

ASK YOUR FKM USA SALES REPRESENTATIVE ABOUT OUR LATEST INNOVATION IN ROLL FINISHING.



Roll Call is a quarterly publication of FKM USA. To be added to our mailing list or to suggest a story idea, please contact us at info@fkmusa.com or by phoning (815) 469-2473.



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Solid Foundation

The foundation is laid for our ongoing expansions thanks to the support of our valued customers.

As mentioned in previous editions, this past summer, we ordered a new CNC controlled grinder/lathe and in September we ordered an additional, larger machine. The foundations have been prepared and the machines will arrive over the next few

months. The smaller of the two foundations is pictured below. This machine will handle 67"ø at 500" between centers, while the other will turn up to 87"ø.

Each machines is custom-built and adapted to FKM specifications for a variety of operations, such as turning, grinding, super finishing and milling, all at extremely tight tolerances.



Steps to Success

Whether casting over an existing core or a new core, the process starts by finishing the surface of the base material to ensure permanent adhesion. This involves several steps to create a non-uniform topography so that the short chain molecules of the primer can 'grab' onto the substrate.

After core prep is complete, the polyurethane primer is applied and allowed time to cure.

The outer cover is a blend of several highly-reactive materials that cure as they are transversely deposited onto symmetrical, rotating body. Once cast, the surface is ready for finishing within a day.

Rotary versus Mold Casting

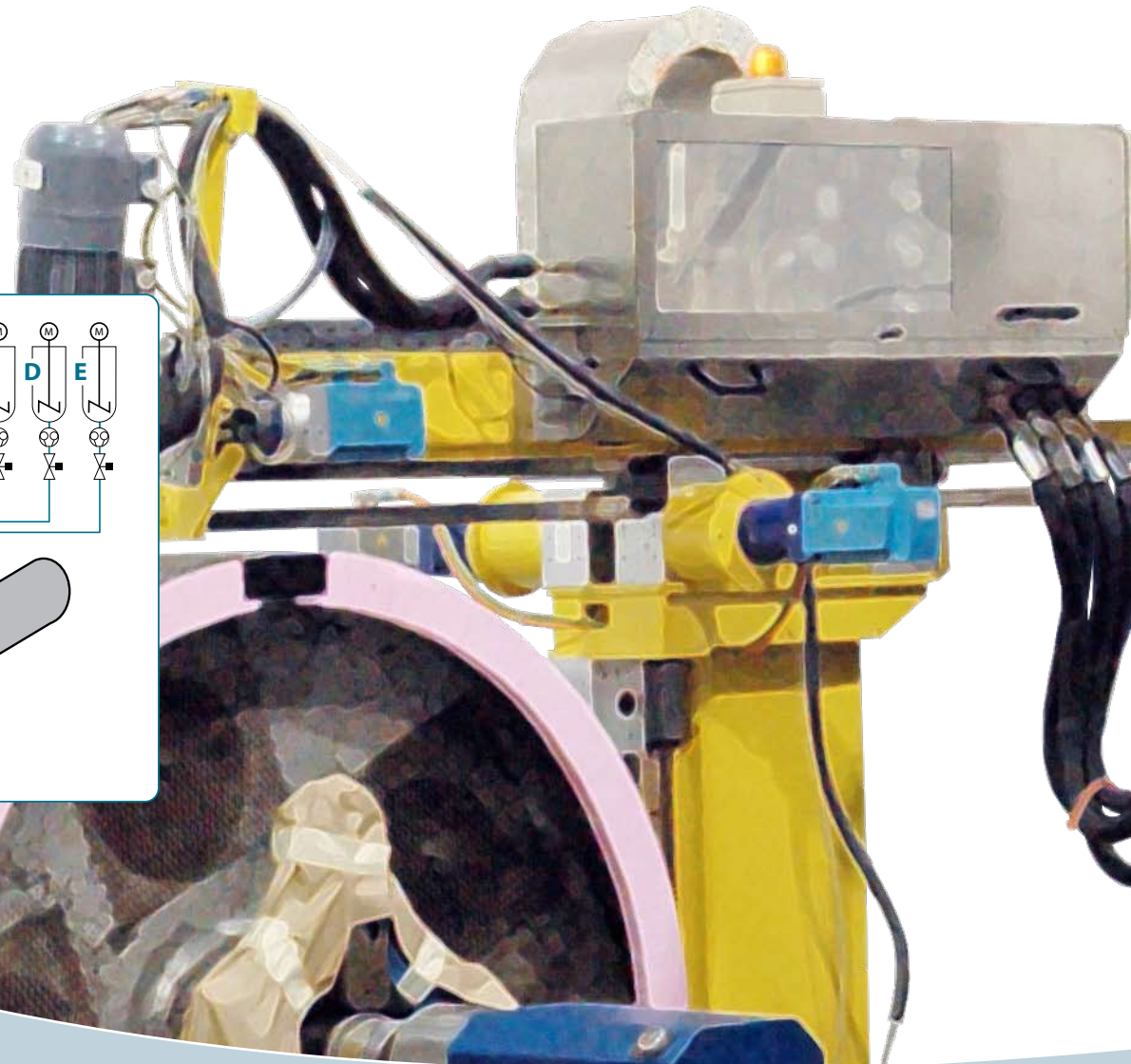
*The next **BIG** thing to boost the productivity and cost-effectiveness of the North American industry is the introduction of FKM's new rotary casting process, which dramatically cuts roll production times using advanced chemistry and state-of-the-art production techniques.*

Polyurethane roll covers do not require molds as the covers are cast directly onto the roll core surface using a CNC precision-coordinated spindle and robotic deposition system.

FKM's rotary process relies on the cross-linking capabilities of the polyester and polyether polyols. This translates into a homogeneous surface, rapid production and superior mechanical properties.

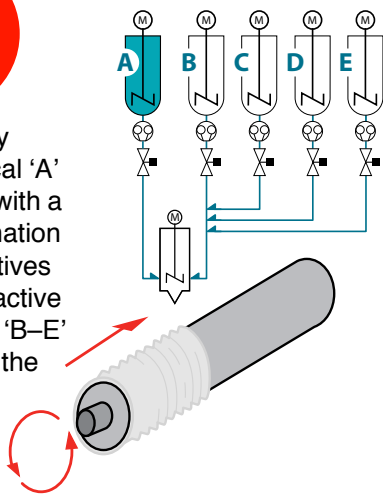
Process Advantages

- Absolute CNC-grade, reproducible quality
- No need for molds for each thickness, shaft, etc.
- Roll cores are not subjected to an autoclave
- No cover flaws such as air bubbles
- Variable hardness of layer structures are possible
- Coating of journals, end plates in one operation
- Casting can be done with bearings on the journals
- Extremely short manufacturing times
- Lining thickness can be as thin as 3mm
- Cores can be steel, aluminum, carbon fiber, etc.



NEW!
Rotary casting of
polyurethane rolls

Primary chemical 'A' mixes with a combination of additives and reactive agents 'B-E' to cast the cover.



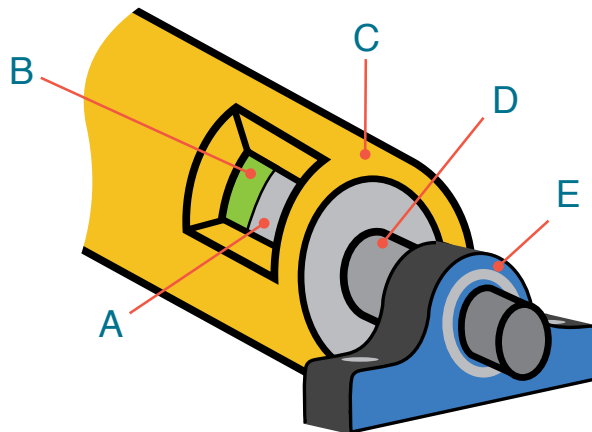
Anatomy of a Rotary Cast Roller Cover

21st century chemistry and state-of-the-art machine processes brings the rapid casting of rollers to serve numerous industries, such as metals, automotive, food, packaging, aerospace, paper, textiles, roofing and others.

The two basic types of polyurethanes available today from FKM include EU Polyether and AU polyester. EU polyether which at higher temperatures, in water applications, remains hydrolysis stable, maintaining its mechanical strength and fluid resistance. AU Polyester exhibits excellent performance characteristics in solvent applications or at elevated temperatures in dry applications. The basic construction of either in a roll is depicted at right.

Basic Roller Anatomy

- A** Irregular patterned core preparation
- B** Short chain polymer primer applied to substrate
- C** Homogeneous, rapid curing polyurethane cover
- D** End plates/journals can be coated in one step
- E** Bearings can remain on journals during process



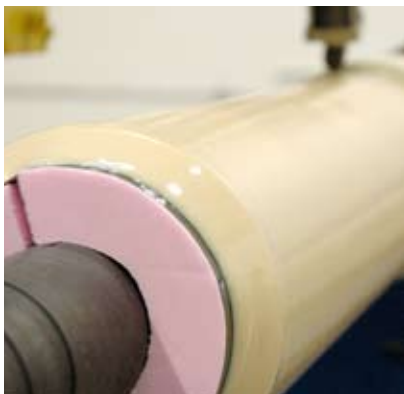
Web 2.0-Friendly Roll Tracking



All of the non-woven and polyurethane rolls that FKM produces are imbedded with a tiny RFID chip. We upload data to this chip that upon return inspection gives us a baseline to compare against. This helps us keep track of the condition of our customer's rolls.

In our next newsletter, we'll introduce our new RollTracker™ application that upgrades this process to include secure, web access for customers who want to keep track of their in-transit and in-production rolls.

Rotary Casting of Rollers brings Real Value



Rolls like this can be cast in under 30 minutes and be fully cured and ready for finishing within 24-hours.

At FKM, we manufacture roller and roll linings with polyurethane coatings on our state-of-the-art, CNC rotary casting system. This approach constitutes a significant innovation over the conventional mold casting process that results in real time savings for our customers. In addition to our rapid turn-around, rotary cast rolls also offer, but are not limited to the following advantages:

- Perfect for large diameter bridle rolls and tough pickle line applications
- Homogeneous cover
- Excellent wear and tear resistance
- Permanent bond to all common base core materials
- Good resistance to hydrolytic effects and chemicals
- Considerable noise reduction and damping
- Line load greater than 100 N/mm possible
- Resilience on both ends of the pH scale
- High elasticity
- Long service life

○ 2ND ED. | ○ SPRING | ○ 2008

FKM USA, Serving all of your industrial roll needs.

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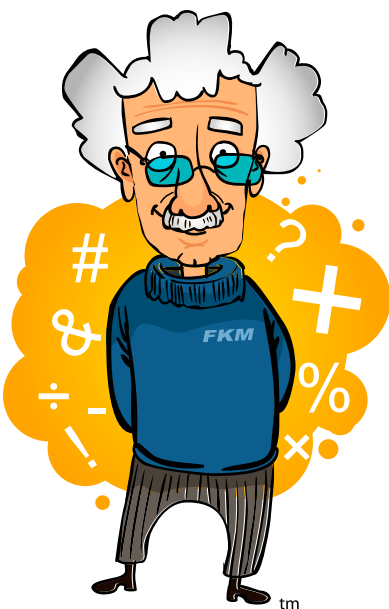
ASK Doc™

ASK Doc covers questions posed by you. Write us at, AskDoc@fkmusa.com.

Q How do different polyurethane materials behave in different fluids?

A The service life of a polyurethane roll in industry can be very demanding; the automotive, steel or the paper industries are environments where a polyurethane roll can face a wide variety of different fluid media and harsh conditions. For example, straight mineral oils, various emulsions – pH neutral or not, solvents or water-based solvents and or formulations thereof; thus, it is easy to understand that there is not an universal polyurethane material that can withstand all these chemically different media. It becomes even more arduous if elevated temperatures come into play.

Versatile and popular are polyurethanes that are based on polyester or polyether polyols, which can successfully tackle many tough applications. Ester-systems are used mainly in oily applications or with solvents, but should not be used in water applications. While Ether-systems are suitable for water-based applications. For some very special applications, new more sophisticated materials are available which can withstand elevated temperatures up to 250°F and are effective at the same time in mild caustic or acidic solutions. Therefore for success, every application environment should be individually addressed to assure the correct polyurethane is selected.



NORTH AMERICA FKM USA, LLC.



EUROPE FKM WALZENTECHNIK



ASIA FKM CHINA



FKM Profile

FKM USA, founded in 2000 by Dr. Ulrich Freudenberg with strong ties to the Freudenberg Nonwovens division of the Freudenberg Group. Dr. Freudenberg pioneered the formulation of purposefully developed fabrics designed for cleaning, deoiling and tensioning of steel strip and blanks. This level of product control and consistency has proven to be a substantial advantage for FKM customers and had led to the development of materials used in a variety of other, diverse industries.

FKM is active in the development and the manufacture of new coatings, finishing

techniques and production process improvements for rolls used in a variety of diverse applications. Dedication to innovation is evident in the recent introduction of FKM's rotary casting process for polyurethane roll products.

Knowledge shared between FKM facilities in the USA, Germany and China aids to strengthen and unify product production and delivers FKM customers a high level of global service. Personal service, attention to detail and a customer-centric business attitude make FKM a reliable business partner.



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