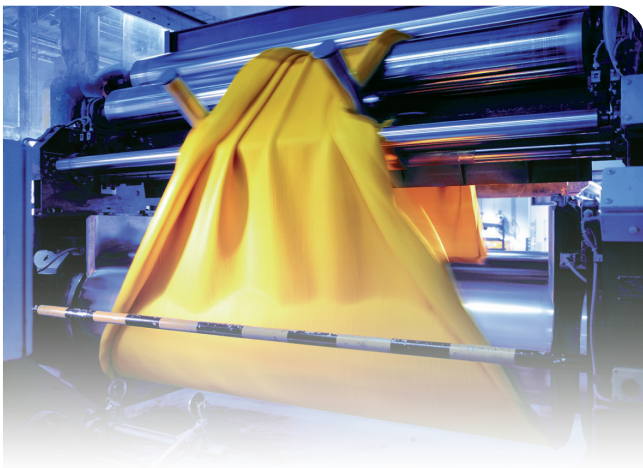


Excellence in Can Decorating

The Böttcher Group, with 20 production plants spread all over the globe, is committed to supporting the canmaking industry with innovative products and global technical support.

As the largest manufacturer of elastomer roller coverings in the world, Böttcher has extensive R & D facilities for the development of dedicated elastomer compounds for canmaking applications. All materials for Böttcher rollers have been developed by our own team of chemists and physicists and are available exclusively from Böttcher.

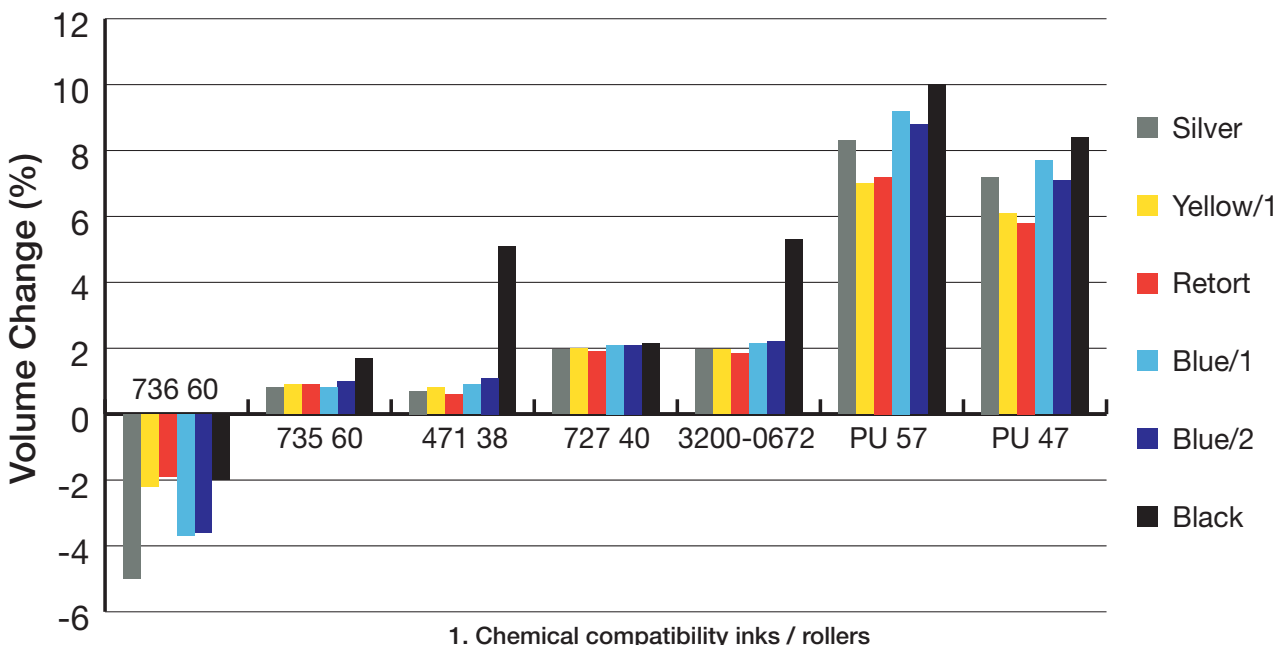


All rubber compounds are mixed in our central mixing plant in Germany, before being sent to our 23 factories around the globe to be applied to our customers' rollers. This guarantees a unique standard of quality and consistency, essential for a standardized and stable canmaking process.

Besides inker rollers for all decorator models, over-vernish applicator rolls, rimcoater and basecoater rollers, Böttcher offers specially developed roller and blanket washes and self-adhesive printing blankets for can decorating. These products have all been designed to work together, removing problems of incompatibility which can lead to expensive downtime, for example, when a solvent aggressively swells the rubber roller, leading to premature roller failure.

Chemical demands on roller coverings

Inker and coating rollers come into contact with a wide range of inks and coating materials. If the roller covering material is not well matched to the nature of the inks, ensuring maximum compatibility and



1. Chemical compatibility inks / rollers



enabling the rollers to perform their function over a long period of time, the result will be not only shorter roller life, but colour variation and other operational problems in the decorating process.

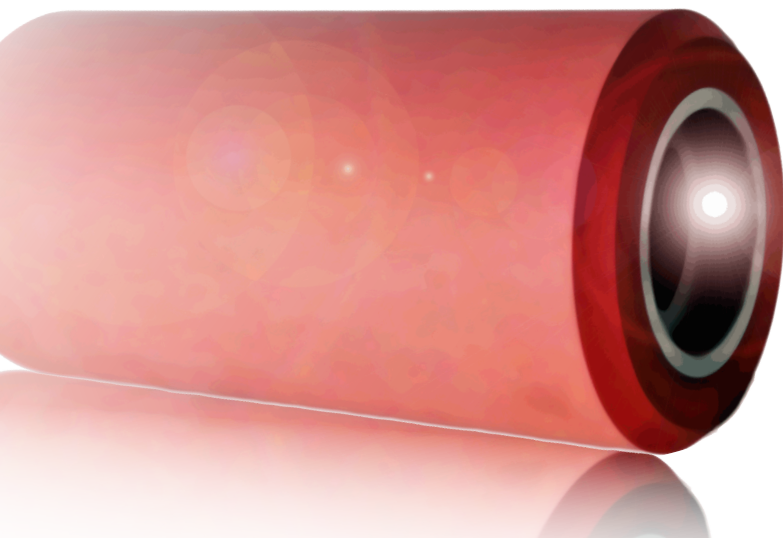
Chart 1 shows swell test results of Böttcher and competitive compounds when immersed in can decorating ink for 7 days at a constant temperature of 50°C (this higher temperature accelerates the chemical reaction between the ink and the elastomer material, thus simulating the longer-term effects of the ink on the roller). With the polyurethane rollers commonly used in European canmaking plants, the inks cause a relatively high degree of swell, directly altering the running and transfer characteristics of the rollers and shortening their active life.

While Böttcher also manufactures polyurethane roller coverings for a wide variety of applications, experience has shown that highly developed rubber (EPDM) coverings display much greater compatibility with canmaking inks. In tests throughout Europe,

Böttcher inker rollers have outlasted all other rollers and almost entirely removed roller problems from the production agenda. For decorating steel cans with Novar inks, Böttcher offers special polyurethane formulations for minimized swelling and heat build-up.

Don't just take our word for it: try them and see!

Physical and dynamic demands on roller coverings
2-piece can decorating is one of the most dynamically challenging processes in the entire graphic industry. On modern decorators, the rollers achieve so-called nip passing frequencies of up to 130 nips/second. This means that – every second – the roller covering is compressed and decompressed at rates of up to 130 Hertz!



With every compression cycle, energy is pumped into the elastomer material. Unless the roller covering is formulated to be extremely elastic, a large portion of this energy will be stored as heat – the roller gets hotter and hotter, thereby increasing the danger of dynamic blow-out.

At the same time, the roller is subject to thermal expansion. Nip pressure increases, particularly on the critical form rollers, leading to image distortion, plate wear and colour variation, due in part to the higher temperatures reducing the viscosity of the ink.

The thinner ink also displays a higher propensity to generate ink misting, contaminating the environment, the machine and potentially also the cans themselves, leading directly to an increase in waste levels and maintenance time for cleaning.

Böttcher inker rollers are formulated to stay significantly cooler at high speeds than most other rollers. This stabilizes ink transfer and print quality, reduces mechanical wear on bearings and bearing seats, and generally maintains a cleaner machine environment.

Even an apparently small rise in ink temperature can cause significant problems: 1 degree celsius more can reduce the viscosity of the ink by anything up to 7%!

Besides the fundamental physical and chemical properties of roller materials described here, the quality of the manufacturing process is key in making rollers a problem-free part of your production set-up. All Böttcher rollers are manufactured to exceptionally fine tolerance levels, particularly with regard to performance-critical features such as run-out and surface roughness.

In order to ensure speedy delivery to all parts of the globe, Böttcher holds stocks of rollers for the main decorator models, making them available within days of the order being placed. To back up the performance of our rollers, we have developed special roller washes offering the following advantages:

- **Optimum compatibility with the roller materials**
- **Water-based washes remove headaches regarding the plant's carbon footprint and protect your rollers, the environment and – last**

but not least – the health of your operators

- **Our washes have been formulated for enhanced cleaning efficiency with metal decorating inks – you will use less and save time and money**

Böttcher also offers 2 high-quality printing blankets for 2-piece decorating:

- **BöttcherTop 9195 for standard applications**
- **BöttcherTop uCAN 3 for highest quality demands**

Both products employ optimized adhesive systems, ensuring the blankets only come off the cylinder when you intend them to!

Upgrade your printing process with Direct Laser Engraving

An increasing number of canmakers are turning to Direct Laser Engraving (DLE) as a means of producing sharper, enhanced images in the decorating process. As a major supplier of DLE plates and sleeves to the flexographic printing industry, Böttcher has developed compounds optimized to make full use of the advantages of laser technology.



Faster, more economical engraving, unrivalled fine screen reproduction and high durability characterize Böttcher's products in this field. For can decorating, we can offer both plates for magnetic cylinders and a full sleeve-based system for quick

registration and faster label changes. Here, as in just about everything Böttcher supplies, every part of the product, from the base sleeve to the covering, is made by Böttcher.



compete with other forms of packaging now and in the future.

Whether you would like to know more or test any of the products described in this brochure, or have a special requirement with which we may be able to help you, your local Böttcher representative will be happy to talk to you and work with you in achieving your objectives.

Böttcher's product range for 2-piece canmaking Rimcoater, basecoater and overvarnish applicator rollers – all these and more are part of Böttcher product offering to the canmaking industry.

As a manufacturer, we are dedicated to working with machine builders, ink and coatings manufactueres and – above all – can makes themselves to understand the needs of the industry as it evolves and translate these into innovative products which will support our canmaking customers in their drive to enhance their product and productivity and sustain ther ability to

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