

# Special roller coating for defined damping solution transport

**PATENTS AND REGISTERED DESIGNS (43).** The invention relates to a press roller with a covering of fluorinated elastomer for the transfer of damping solution or ink/coating to a print substrate. The use of this kind of fluorinated elastomer coating, and in particular of a fluorinated rubber, allows a highly defined and at the same very consistent transport of the damping solution or the ink/coating (granted as patent No. DE 20 2005 021 487 U1 to Weros Dienstleistungen GmbH, Melle).

According to the patent specification, the purpose of this invention is to provide a damping solution and/or an ink/coating transfer device in the form of a press roller that allows a consistently good printed result in relation to colour quality in multi-colour printing in particular over long time periods and with varying process conditions such as climate or temperature fluctuations, that displays very good splitting properties, clearly increased lifespan with unaltered properties in relation in particular to hardness and wettability with damping solution and/or ink/coat-

ing, and that can easily be refurbished in the event of operational wear.

**FLUORINATED ELASTOMER.** For this purpose a roller has been produced in which the covering is completely covered by a surface coating that contains a fluorinated elastomer or that is made entirely from it. The fluorinated elastomer may consist of one or several elastomers from the category of fluorinated rubber elastomers or poly fluorosilicon

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**SPECIAL ADAPTATION.** In contrast to teflon coated rollers, for example, the fluorinated elastomer surface coating that is the subject of the invention consists of an elastomer material like that of the covering to which the coating is applied. This makes it possible to specially adapt the roller coating to the jacket in a way that teflon coatings or other coatings made from non-elastomers or plastically deformable polymers were totally unsuitable for.

The result is a roller surface with a high dynamic resilience, which is of fundamental importance for the working of the printing liquids in the nip between two rotating rollers, and also in the case of blankets. The comparatively thin surface coating means that the elastic and/or dynamic properties of the covering are not affected.

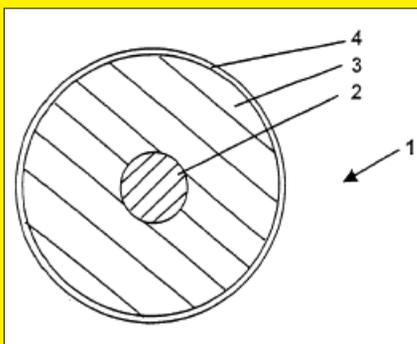
It was further possible to establish that a highly defined and very consistent transport of printing liquid or damping solution could be achieved through the use of the kind of fluorinated elastomer coating as specified in the invention and in particular with a fluorinated rubber, so that over-emulsification of the printing liquid with damping solution leading to a fall in print quality can be avoided under a very wide variety of printing conditions.

Print quality can be improved as a result and the disruptive effect of external influences on the printed result can be avoided.

**Frank Lohmann**

## The new kind of elastomer roller

**Brief description** ■ The diagram provides a schematic cross section through a roller of the kind that is the subject of the invention and that is suitable for use as a damping or ink transfer roller in an offset press. The roller consists of a core 2 made from a material that is stable in format such as a hard plastic or metal. A covering 3 made of an elastomer material surrounds the core 2 and between the core and the covering there is a layer of bonding agent (not shown). The roller covering can be made from a suitable elastomer such as acrylic-nitrile-butadiene-rubber (NBR), butyl rubber or similar material. The covering has a thickness of around 10 mm and a hardness of approximately 30 Shore A. By means of another layer of bonding agent (not shown) a coating of fluorinated rubber elastomer is applied in the form of a latex



to the roller covering 3. The fluorinated rubber coating contains no filler or plasticizer and is approximately 25 µm thick. The outer surface of the fluorinated rubber elastomer coating 4 forms the outer surface of the roller, which is in contact with the damping solution or printing liquid.