Large Area Seamless Roller Mold
For the R2R Imprinted/Printed products

Large-area Seamless Roller Mold (SRM) with minimum line width under 100nm

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3. Imprinted and printed samples

Photo of seamless imprinted patterns on PET film

Example of line and Space patterns

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1. Introduction

A lot of companies and institutes have been developing flexible electronics devices and optical devices. One of the important features of flexible devices is low cost, which is enabled by roll-to-roll (R2R) manufacturing process. However, this R2R processes require large-area seamless roller mold (SRM) which has not been easy to achieve. We have succeeded in the development to enable the achievement of such a SRM. This SRM’s diameter is 100 mm, and roller width is 50 mm. On its surface, we made several kind and resolution patterns in 50 mm width. We also made some imprinted or printed films by using this SRM.

2. Fabrication process for SRM

Fabricating a Super Smooth Surface Roller (S3R)
Coating
Pre-baking
Exposure
Development
Post-Process

4. Asahi Kasei’s roadmap

Asahi Kasei has been producing optical films and various kind of electric devices. We are going to produce a further variety of products with R2R processes. SRM fabrication technology for more larger, finer will be needed to realize future products, so we are now developing these technologies.