

## Printing and conversion recommendations for Robuskin® in offset litho

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Robuskin® is produced using different film substrates as a base, e.g. polyethylene, polypropylene, PVC, polyester). The surface on both sides is coated semimatt white. Therefore, Robuskin® can be printed and converted in a similar fashion to coated paper. It combines the printability of paper with the physical properties of modern synthetic material.

Depending on the chosen base film, Robuskin® is highly tear- and tensile-resistant, and can withstand variable weather conditions, as it is temperature-resistant in the range of -30°C to +60°C. It resists chemicals like petrol and oil, and liquids like fresh water and salt water.

### Press Room

Robuskin® can be printed with the normal ink-water mixture. Operating personnel should adjust rubber blanket packing and press printing pressure to account for the thickness of the material to be printed. Pressure should not be too high.

### Plates / Rubber Blankets

Experience has shown that all plates that allow minimum water flow are suitable for use. In general, all types of rubber blankets are considered suitable for use.

### Inks

Inks that are normally used to print paper and board are recommended for use with Robuskin®. These are physically absorbed and dry by evaporation.

Oxidative fast-drying inks generally contain mineral oils. For Robuskin®, we recommend using inks with minimal quantities (max. 2-3 %) of mineral oil. Inks containing vegetable oils are also suitable for use. All printing rollers should be thoroughly cleaned before printing on Robuskin®. Any residual inks or fount solution should be removed. Roller sprays designed to avoid build-up of ink layers can increase the drying time of the inks, as these sprays usually contain anti-oxidants.

The normal criteria of wet-in-wet printing processes should be respected when selecting the print colour sequence. In the case of minimal ink applications or the use of special inks - especially metallic inks - the quantity of damping water should be kept to a minimum. Especially in these cases, the use of a waste ink absorption strip is advisable. Excess use of damping water with inks increases drying time and reduces the brilliance of the final images.

Additives should only be used in accordance with the manufacturer's recommendations, especially to avoid the phenomenon of "yellowing" or "gas ghosting", which is aggravated by the use of additives or drying catalysts. Good airing and frequent change of the stack position allow volatiles or by-products of the inks to escape, thereby reducing the risk of this effect. The higher the content of the oxidative drying components of the ink, the greater the risk of gas ghosting.

By keeping the interval between the printing of each face of Robuskin® as long as possible, the risk of gas ghosting can be minimised, i.e. allow the first side to dry fully first. Inks containing strong solvents, as well as usage of too much ink, can lead to deformation of the Robuskin® sheet. Pre-testing the suitability of such applications is recommended.

UV-polymerising inks have the advantage of instant polymerisation; however, care must be taken to control the temperature to account for the film's temperature sensitivity. Prior testing to obtain the correct settings is strongly recommended.

### Fount solution

To obtain fast-drying results, minimising the amount of water in the solution is desirable. The solution should have a pH value of 4.8 - 5.5. Alcohol content should be kept to approximately 10%. Drying additives should always be added to the fount solution, and not to the inks, unless the ink manufacturer specifies otherwise.

### **Powder**

The amount of powder to be used is based on individual experience and is dependent on the print motif, as well as the inks and fountain solution. Insoluble powders in particle sizes from 20 to 45 micron tend to fare well. In addition, spray powders, e.g. as used for printing coated papers, may also be used in quantities similar to those used for coated papers.

### **Drying**

The stack heights of printed sheets should be chosen in accordance with the ink type and thickness. Experience has shown that a four-colour print using normal inks and drying systems can be turned over in a relatively short time. The drying time depends upon the ink and water lay down, as well as climatic conditions.

### **Static Charge**

In a warm and dry environment, the material can acquire a higher static charge. Print room conditions of 55 - 60 % relative humidity with a temperature of 18 – 23°C are therefore important. Furthermore, the printing machine should be supported by adding static eliminators (for example, copper cables in contact with the sheet surface and earthed through the machine at various points along the machine length), as well as by adding humidifiers, if necessary.

### **VIP (Variable Information Printing)**

Robuskin® can be printed on with most commercially available thermal transfer and thermal sublimation printers. With thinner qualities, there is danger of deformation when printing with dot matrix printers. Prior testing for suitability of use is recommended. Certain Robuskin® qualities are suitable to be printed on industrial toner-based laser printing systems. Please refer to MDV for details, tel. +49 (0) 6188 952 269.

### **Storage and Handling**

Robuskin® may be stored and handled like paper. Sheets should be stored flat and in airtight packaging. Although synthetic materials are less sensitive to temperature and humidity variations than paper, extremes should be avoided. Unpacked sheets should not be stored in direct sunlight for long periods. Naturally, mechanical damage to the product should be avoided. Under these conditions, Robuskin® may be stored without problems for up to two years. Sheets should be brought to the print room at least 24 hours prior to use for acclimatisation. The time required for acclimatisation of Robuskin® is longer than paper, as the sheets in the middle of a stack require more time to reach print room conditions.

### **Technical Data Sheets**

Technical data sheets containing additional information and parameters for successful processing can be provided upon request.

### **Disclaimer**

All the above information is based on practical experience and is provided in good faith. No guarantee or warranty is given or implied by its use.

We recommend that the material is tested by the purchaser for his application prior to ordering. Contact and discussion with suitable ink manufacturers is also recommended.

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