

### Preliminary remarks

The following general tips are given for application of ORAFOL® Printing Materials.

If you want to apply printing material on a car, please also see our practical information for self-adhesive films for application on cars ([www.orafol.com](http://www.orafol.com)).

### Storage

ORACAL® printing films should at all times be stored in a cool dry place protected from sunlight. Material delivered in rolls must be either suspended or stand on-end on the roll blocks provided. Products delivered in sheet form must be stored flat on shelves or on pallets in their original packing. Prior to processing, the self-adhesive films should be accommodated to the humidity and temperature conditions prevailing in the processing area. Relative humidity of between 40% and 50% and temperatures in the range of +18° C to +22° C are considered ideal. The table below provides guidelines for the time required for accommodation depending on the stacking height of the sheets and the temperature difference between the sheets and the processing area.

Number of sheets per stack	Temperature difference between sheets and processing area		
	± 5° C	± 10° C	± 15° C
250	3 h	6 h	10 h
1500	4 h	9 h	15 h

### Cutting

It is important to use a clean, sharp knife when cutting ORACAL® printing films. A clean knife prevents any build-up of adhesive residue which could be deposited on the edge of the sheet. The clamping balls should apply as little pressure as possible during cutting.

### Printing

Use only printing ink systems recommended by the ink manufacturer for the self-adhesive material being processed. During multicolour printing, always ensure that each layer of ink has thoroughly dried before the next is applied.

There is a direct relationship between dimensional stability and register accuracy during printing. Tunnel drying alters the moisture content of the cover paper and the dimensional stability of the film itself may be affected. To ensure register accuracy in multicolour prints, we recommend passing the self-adhesive material once through the printing machine and the tunnel dryer prior to printing. Undulation of the edges or plating of the self-adhesive material can always be traced to excessively dry or moist conditions within the processing areas. Constant ambient conditions should be maintained both day and night. A large reduction in temperature promotes undulation of the edges. If you wish to protect the print with a finishing coat of clear enamel, please be aware that solvents may cause brittleness of the material and that shrinkage may occur during drying causing the film edges to detach from the carrier paper or from the surface to which the film is applied. Compatibility should therefore be tested prior to printing.

### Application

ORACAL® printing grades can be applied to many surfaces but all have to be clean, dry and free of oil, grease, solvents, silicone or other contamination. Residues of solvent left after incomplete cleaning can cause gas bubbles between the film and the surface. Similarly, fresh finishes including oven-dried and baked paints can cause bubbles and should be allowed to stand for at least three weeks. To avoid undesirable temporary whitening in wet application on transparent surfaces, we recommend the use of printing films equipped with solvent polyacrylate adhesive.

For the application on cars please see additionally the practical information on how to apply self-adhesive films on cars. For the application on car windows the remarks in the practical information for application on cars are to be followed.

### Caution!

Certain high thermal insulation double glazing systems may be damaged by self-adhesive stickers due to stresses caused by extreme temperature fluctuations.

### Removability

Please see the practical information for plotter films.

This information is based on our knowledge and experience. We have not explain all considering aspects of application. Specialized or occupational knowledge and competence of an professional sign maker are presupposed. Due to the diversity of potential influencing factors during application and use, we recommend to make own tests of our products by customers who wish to use the films for special applications. No legally binding warranty of certain qualities can be derived from our information.

Oranienburg, 12 October, 2010

ORAFOL Europe GmbH  
Orafolstrasse 2, D-16515 Oranienburg, Germany

Tel. : +49 (0) 3301 864 0, Fax : +49 (0) 3301 864 100  
graphic.products@orafol.de

