

Nikkalite®

Retroreflective Products

PB NO.PA100

Nikkalite® PA100 SERIES OVERLAY FILM



1. INTRODUCTION

Nikkalite® PA100 Series self-colored transparent overlay films are designed to offer a simplified system of sign manufacture for various types of Road Traffic Signs. The product has excellent handling characteristics and is specifically designed for processing on computerized plotting equipment. Using PA100 Series Overlay Film on reflectorized backgrounds offer the following significant benefits in most applications:

A. Reduced reflectorized material costs.

B. Reduced sign making layup times; no need to cut and layup borders, radii etc., no need to mark out positions

for text and symbols, thereby reducing labor costs.

C. Allows exact reproduction of computer generated sign face designs.

D. Improved quality and aesthetic appearance of the finished sign face; in relation to Nikkalite® Ultralite encapsulated lens material, and Crystal Grade (CRG) of micro-prism retroreflective sheeting, cutting of the film results in an unavoidable small area of the cut capsule becoming exposed. Although this is not detrimental to the durability of the sign it does allow the ingress of dirt through weathering.

2. DESCRIPTION

A. Nikkalite® PA100 Series Overlay Films are self-colored transparent flexible sheeting, which has excellent dimensional stability and resistance to mechanical impact. It is extremely resistant to inclement weather conditions and its smooth surface prevents any rapid build up of dirt on the sign facing.

B. Nikkalite® PA100 Series Overlay Films are coated with a totally clear pressure sensitive adhesive that is protected with an easily removable liner film.

C. PA100 Series Overlay Films are designed for application over:

- . Crystal Grade (CRG)
- . Ultralite Special Grade (ULS)
- . Ultralite Grade (ULG)
- . Super Engineering Grade (SEG)
- . Engineering Grade (EG)

and other Nikkalite® retroreflective sheeting's. When properly applied, it will show more than 70% of coefficients of reflection of each classes of all worldwide retroreflective sheeting standards.

Roll Sizes and Color Availability

Nikkalite® PA100 Series materials are available in the following standard roll sizes:

Item No.	Color	Standard Roll Width		Standard Roll Length 45.7m (50 Yards)
		920mm (36")	1220mm (48")	
PA104	Yellow	YES	YES	YES
PA105	Red	YES	YES	YES
PA106	Blue	YES	YES	YES
PA107	Orange	YES	YES	YES
PA108	Green	YES	YES	YES
PA128	Brunswick Green	YES	YES	YES
PA109	Brown	YES	YES	YES

Please check color / width / length availability with our sales office listed on the last page.

3. STORAGE

A. Nikkalite® PA100 Series Overlay Films should be stored in a clean dry area with a temperature of 20°C to 35°C (68°F to 95°F) and ideally with a relative humidity of 30% to 80% and out of direct sunlight. Storage area temperatures should not at any time exceed 38°C (100°F). PA100 Series Overlay Films should be used within one year after purchased.

B. New rolls of Nikkalite® PA100 Series Overlay Film should always be stored horizontally in their box with the

roll supports in place. Partially used rolls of PA100 Series Overlay Film should be rewound tightly on their original cores with a strong adhesive tape securing the entire width of the roll to prevent unwinding and loosening of the roll, these rolls should then be supported through the core with the original roll supports, or suspended on a suitable bar. Do not leave roll of material resting on flat surfaces for long periods.

Cut sheets can be stacked to a maximum height of 10cm, to ensure flatness, a weighted plate can be placed on top.

4. PERFORMANCE LIFE

Expected period for traffic signs manufactured with Nikkalite® Retroreflective Sheeting Base Film and

Nikkalite® PA100 Series Overlay Film will be equivalent to that of the base film grade.

Crystal Grade (CRG)	10 years	except PA107 Orange
Ultralite Special (Ultrilite) Grade (ULS & ULG)	10 years	except PA107 Orange
Super Engineering Grade (SEG)	10 years	except PA107 Orange
Engineering Grade (EG)	7 years	except PA107 Orange

orange : 3years life

4. PERFORMANCE LIFE

5-1. Cutting and Preparation

Nikkalite® PA100 Series Overlay Film can be cut by the following methods:

- Friction or sprocket fed rotary plotter cutters
- Friction fed flat bed plotter cutters
- Various Sharp knives

A. Check the plotter blade to ensure that it is clean and sharp. Best results are achieved with a 30 degrees blade.

B. The cutting knife pressure must be adjusted to cut the film cleanly without cutting into the release liner. The pressure will vary depending on the equipment used and reference should always be made to the cutting

equipment manufacturer's operating manual.

C. Plotting devices with tangential (mechanically) rotated knife blades are preferred than plotters with a drag-knife.

D. If using a drag-knife plotter, adjust the equipment to cut at low speed and increase the blade pressure so that a finer cutting edge can be achieved.

E. When handling Nikkalite® PA100 Series Overlay Film, avoid stretching or folding the film sharply otherwise the film may delaminate from the release liner.

5-2. Weeding and Trimming

Use tweezers or scalpel with a blunt edge to weed the film. When weeding is complete, lay the PA100 Series Overlay Film flat or coil loosely and support vertically until application tape has been applied.

The material may collapse under its own weight if laid horizontally on a bench top and coiled around a core.

5-2. Weeding and Trimming

A. We recommended the use of medium tack transparent or translucent "plastic type" application tape as opposed to the "paper type" due to the better handling characteristics.

These tapes can be applied by:

- Squeegee
- Hand roller
- Squeeze roller applicator

1. With a squeegee, it is necessary to apply overlapping strokes from the center to the outside in both directions.
2. When applying the application tape with a hand roller, overlapping strokes should be follow straight through to the edge of the Overlay Film.
3. When applying application tape with either a squeeze roller, we recommend an upper roller with shore hardness of 65 to 75.
4. The leading edge of the application tape should be cut square correctly aligned with the leading edge of the sign plate. This is to prevent wrinkling of the Overlay Film.

B. When applying the Overlay Film through a squeeze roller, it is recommended that the operator uses the 50/50 or split liner method of application. This should ensure correct alignment and prevent wrinkling of the Overlay Film.

C. Following application, remove the tape at an angle of 180 degrees to that of the substrate. It is important that a low angle is maintained during removal.

D. After removal of the application tape, submit the plate to a further pass through the laminator. In removing the application tape the Overlay Film is being pulled from the base material, therefore this secondary pass through the laminator is important.

E. For small signs (approx. 1.0m²), the same application results can be achieved using a hand roller with firm overlapping strokes. Following removal of the application tape re-roll the panel.

6. JOINING OVERLAY FILM

Wherever possible, avoid joints in a sign face panel. Nikkalite® PA100 Overlay Film is available in all colors, in widths up to and including 1220mm, and this should minimize the need for any joints on a single sign panel. An overlapping joint will give a

darker shade of color in the overlap area unless a strip of appropriate white background material is first applied along the overlap edge, before the top piece of material is applied.

Equipment:

It is necessary to have an adequate clean working area and bench for applications. A table size of approx. 3000mm X 1500mm (10' X 5') is recommended with a comfortable working height. For the bench surface,

consider plate glass, Nylon plastic plate or cutting mat. A double roller feed unit for the application tape, mounted on the table is most beneficial as it ensures a smooth feed of materials to the layout and cutting.

7. COLOR MATCHING

When using more than one piece of Overlay Film sheeting on a large sign, sheeting from the same roll should be used for uniform color matching.

Color matching is the responsibility of the sign manufacturer.

8. CLEANING / MAINTENANCE

During its lifetime the sign may require cleaning at some stage. The sign will probably have sand/grit within the surface dirt, therefore it is recommended that a **(low-pressure)** flow of water is used to help remove this loose dirt and sand/grit from the sign first.

【Never use a strong jet of water.】

Rubbing the sand/grit into the sign during the cleaning procedure may cause irreparable damage to the sign material. Therefore, care must be taken during the cleaning process.

A small solution of a mild detergent in clean warm water is recommended for cleaning the material surface. The detergent and cloth must be non-abrasive, free of any strong aromatic solvents or alcohols and be chemically neutral.

Rinse the whole area thoroughly after washing and allow to dry naturally or use a lint cloth. Tar or similar deposits can be removed by a light application of turpentine, following with the washing instructions above.

Reliability of Information

All recommendations and technical information contained herein are based on experiences and tests, which the manufacturer believes to be reliable; however, their accuracy and completeness are not warranted.

Warranty

Nikkalite® Products are warranted to be free from defects in materials and workmanship at the time of their sale, except herein expressly warranted. NCI's (Nippon Carbide Industries Co., Inc.) liability is limited to replace the defective materials solely as

The user is requested to conduct their own test/tests to determine the fitness of this product for the intended application.

stated herein. NCI shall not be liable for any loss, damage or injury, direct or indirect or incidental, arising from the use or inability to use said products, and the warranties of merchantability or fitness for a particular purpose as well.

Warning

Failure to comply with the explicit instructions in this bulletin will result in voiding all warranties express or implied for use of this product. If retroreflective sheeting is to be applied to a surface other than conventional

sign blank materials, prospective users should contact technical representatives of Nippon Carbide Industries Co., Inc. for advice before such application.

Safety and Health Information

Read carefully in advance the labels, instruction manuals, material safety data sheets (MSDS), and first aid measures of the retroreflective sheetings supplied by Nippon Carbide Industries Co., Inc. (hereinafter referred

to as "NCI"), the auxiliary materials such as inks and solvents used for NCI's products, and proprietarily used chemicals such as substrate cleansers.



NIPPON CARBIDE INDUSTRIES CO.,INC.

■Japan(Head Office)

Nippon Carbide Industries Co., Inc. : 11-19, 2-chome Konan, Minato-ku, Tokyo
108-8466, Japan
Telephone : 81-3-5462-8206 Telefax : 81-3-5462-8271

■U.S.A.

Nippon Carbide Industries (USA) Inc. : 3136 East Victoria St., Rancho
Dominguez, CA. 90221, U.S.A.
Telephone : 310-632-7500 Telefax : 310-632-1959

■Germany

Nippon Carbide Industries (Europe) GmbH : Halskestraße 27, D-47877, Willich,
F.R.Germany
Telephone : 49-(0)21 54 42 86 05 Telefax : 49-(0)21 54 42 86 80

■France

Nippon Carbide Industries France S.A. : 5 bis, rue du Petit Robinson 78353
Jouy-en-Josas Cedex France
Telephone : 33(0)1 34 65 00 00 Telefax : 33(0)1 30 70 64 55

■Spain

Nippon Carbide Industries España S.A. : Rocafort, 250, bajos, 08029 Barcelona,
Spain
Telephone : 34-93-419.79.90 Telefax : 34-93-410.01.61

■Netherlands

Nippon Carbide Industries (Netherlands) B.V. : Eisterweg 5, 6422 PN Heerlen, The
Netherlands
Telephone : 31-(0)45-542 95 00 Telefax : 31-(0)45-542 96 39

■China

Nippon Carbide Industries (Hangzhou) Co., Ltd. :
No.99 Hongda Road Qiaonan-Qu, Xiaoshan Economic & Technology Development
Zone, Hangzhou, Zhejiang, China
Telephone : 86-(0)571-82696666 Telefax : 86-(0)571-82696473