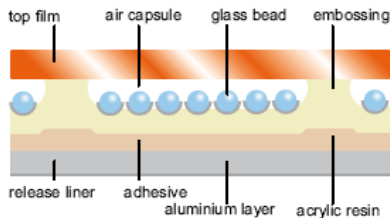


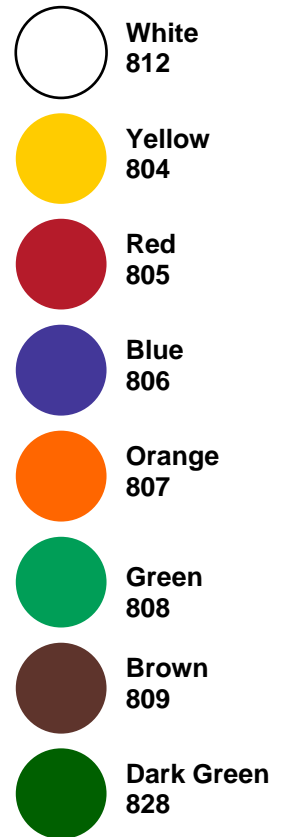
Nikkalite® 800 series Ultralite grade (ULS)

Introduction

Nikkalite® Ultralite is an encapsulated lens retroreflective sheeting manufactured by Nippon Carbide Industries (NCI), with a highly transparent plastic film providing a very flat and smooth top surface. Ultralite has been specially designed to ensure long durability and high performance with an average life expectancy in excess of 12 years for traffic signs mounted vertically in the UK or Ireland.



Ultralite provides similar daytime and night time colours at distant and short viewing angles and fulfils the requirements of Class RA 2 according to BS EN 12899-1;2007, and is coated with a permanent high tack adhesive



BS EN 12899-1; 2007 Fixed, vertical road traffic signs

4.1 Retroreflective glass bead sign face material

4.1.1.3 Daylight chromaticity and luminance factor

Nikkalite® 800 series Ultralite retroreflective sheeting complies with retroreflective sign face material to Table 1 Class CR1.

4.1.1.4 Coefficient of retroreflection R_A

Nikkalite® 800 series Ultralite retroreflective sheeting complies with the requirements of Table 4 Class RA 2 sheeting shown below.

Geometry of measurements		Colour								
α	β_1 ($\beta^2=0$)	White	Yellow	Red	Green	Dark green	Blue	Brown	Orange	Grey
12°	+5°	250	170	45	45	20	20	12	100	125
	+30°	150	100	25	25	15	11	8,5	60	75
	+40°	110	70	15	12	6	8	5	29	55
20°	+5°	180	120	25	21	14	14	8	65	90
	+30°	100	70	14	12	11	8	5	40	50
	+40°	95	60	13	11	5	7	3	20	47
2°	+5°	5	3	1	0,5	0,5	0,2	0,2	1,5	2,5
	+30°	2,5	1,5	0,4	0,3	0,3	#	#	1	1,2
	+40°	1,5	1,0	0,3	0,2	0,2	#	#	#	0,7

indicates "Value greater than zero but not significant or applicable".

4.1.1.5 Durability

4.1.1.5.1 Resistance to weathering

4.1.1.5.2 Accelerated natural weathering

When **Nikkalite®** 800 series Ultralite retroreflective sheeting is tested in accordance with 4.1.1.5.2, the sheeting complies with the requirements of 4.1.1.3 Table 1 and the coefficient of retroreflection shall be not less than 80% of the values stated in 4.1.1.4 Table 4 Class RA 2 sheeting.

4.1.2 Impact resistance

Nikkalite[®]800 series Ultralite retroreflective sheeting complies with the requirements of this clause when tested on 3mm aluminium sheet and certain other substrates.

9.2 Marking and labelling

Nikkalite[®]800series Ultralite retroreflective sheeting is identifiable by the cell pattern on its surface and contains durable and visible identification as required by this clause; NCI logo, production identification code and RA 2 retroreflective performance marking.



Roll storage

Please refer to separate detailed technical information

[Roll Storage, Substrate Preparation & Application of sign face sheetings.](#)

Application of ULS sheeting

Nikkalite[®] sheetings will bond to clean smooth surfaces of tested and approved metal, coated metal, and certain plastic sheets. Please refer to more detailed separate technical information sheet; [Roll Storage, Substrate Preparation & Application of sign face sheetings](#)

Coloured overlay films

Nikkalite[®] PA100 self-coloured transparent overlay films have a clear acrylic pressure sensitive adhesive and are designed to offer a simplified and efficient system of sign manufacture for various types of Road Traffic Signs manufactured to BS EN 12899-1, and BS 8442.

Please refer to separate detailed technical information [PA100 Coloured overlay films](#)

Ultralite grade Health & Safety (COSHH)

Although the adhesive contains a small amount of solvent, it is almost certain that this solvent will not be emitted from the sheeting. For further information please contact Rennicks (UK) for a COSHH data sheet.

Screen printing

Both the **Nikkalite**[®] N3500 and N3600 types of inks are durable, highly transparent, quick drying screen printing inks, that bond strongly and permanently to **Nikkalite**[®] retroreflective sheeting.

Please refer to separate detailed technical information

[Screen printing & preparation for Nikkalite inks](#)

Colour matching

When using more than one piece of reflective sheeting together, sheeting from the same roll should be used for uniform colour matching and reflectivity. Every other piece of material should be rotated by 180°, so the same roll edges come together. When required the sheeting may be overlapped by 6mm from top to bottom.

Colour matching is the responsibility of the sign manufacturer.

Graphic cutting

The material must be allowed to condition, out of its box and correctly supported, ideally in a room with an ambient temperature of 15°C to 25°C (59°F to 77°F) before cutting.

Certain upright friction and flat bed plotters are suitable for cutting **Nikkalite**[®] 800 series Ultralite sheeting. The sheeting should be tested to determine suitability of equipment. Off cuts of sheeting should be stored flat or tightly wound around the outside of a core diameter of 106mm or greater.

Packaging & Storage of finished signs prior to installation

Finished signs should be adequately packaged to prevent damage during handling and transit. The sheeting liner may be used against the sign face in addition to bubble wrap and the signs should be placed face to face.

The effective performance life and guarantees may be become void by mishandling, or incorrect storage and installation techniques.

[Please refer to our separate handling and storage instruction sheet.](#)

Sign cleaning

Signs covered with DT142-S Dewtect dew resistant sheeting should not require cleaning and the surface properties may be damaged or destroyed by cleaning. Please refer to our separate information [Sign cleaning](#)

Durability

When processed and applied in line with NCI instructions, **Nikkalite**[®] 800 series Ultralite sheeting when exposed vertically under normal weathering conditions in the UK or Ireland can be expected to have a useful performance life as shown in the table below.

However, actual performance depends greatly on type and treatment of substrate and on weathering conditions.

Type	Effective life UK & Ireland
804 Yellow	12 years
805 Red	12 years
806 Blue	12 years
807 Orange	6 years
808 Green	12 years
809 Brown	12 years
812 White	12 years
828 Dark Green	12 years

Reliability of information

All recommendations and technical information contained herein are based on experience and tests, which the manufacturer believes to be reliable, but their accuracy and completion are not warranted.

The user is cautioned to undertake tests to determine the suitability of a particular product for the intended application.

Warranty

Nikkalite[®] products are warranted to be free from defects in materials and workmanship at the time of their sale. Subject to paragraph two hereof, **Nikkalite**[®] products are sold without any warranty whatsoever, including warranties of merchantability or fitness for a particular purpose. The sole remedy for failure of **Nikkalite**[®] products to conform to said warranty is the replacement of the defective products; neither the manufacturer nor the seller shall be liable for any loss, damage or injury, direct or indirect, consequential or incidental, arising from the use of or inability to use said products.

Nikkalite[®] products sold in the United Kingdom are sold with a warranty subject to the [Road Traffic Sign Warranty](#) agreement between Rennicks (UK) Limited, Nippon Carbide Industries Inc., and the Traffic Sign Manufacturer.