

**TORAY Photo-Sensitive  
Relief Printing Plate**



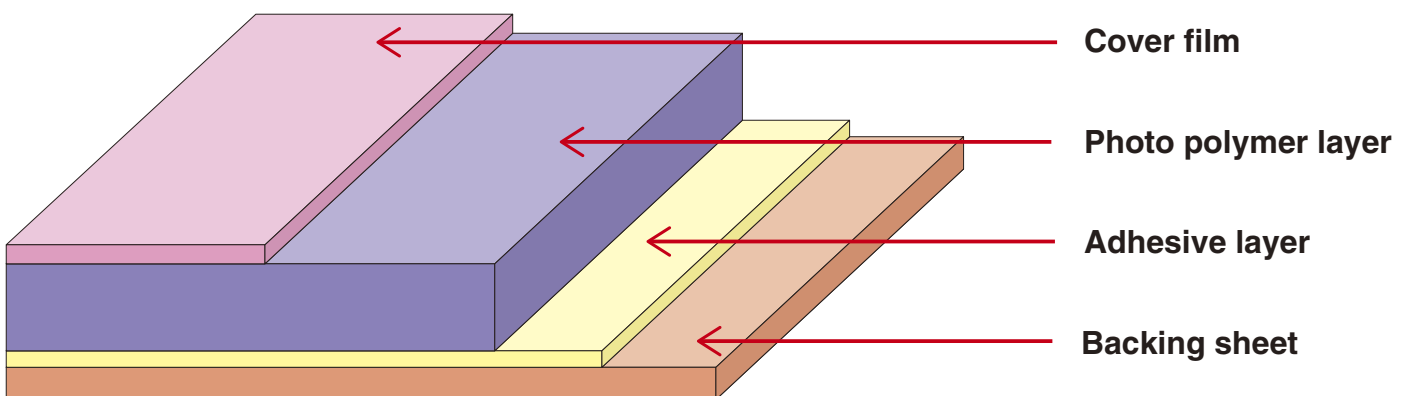
**TORAY  
RELIEF**

# TORELIEF®

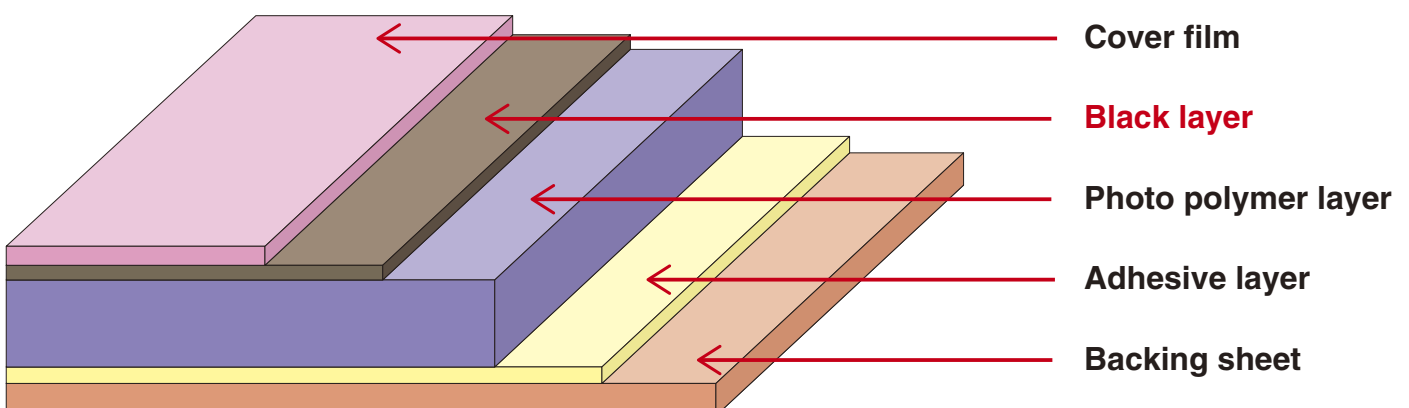
**Incomparable Quality**  
**Wide Variety**  
**High Performance**  
**Environmentally Friendly**

## ■ Structure of TORELIEF

### I) Analogue plates



### II) CTP plates



## ■ Features of TORELIEF

### Incomparable image reproduction

Its excellent image reproduction assures constant higher quality printing

### Easy and fast plate-making process

TORELIEF is an easy and fast plate to make with its quick exposure and quick washout properties

### Color change for easier inspection

TORELIEF W type plates feature color change by exposure, for easier plate inspection and mounting

### Environmentally friendly

All TORELIEF plate are made of environmentally friendly ingredients and require no chemicals in processing.

### Superior ink receptivity

TORELIEF plates, especially soft and flexible BS, SS & U plates have superior ink receptivity which stands out among the competition and makes them ideal for business form and varnishing applications.

### Higher durability

Due to tough & abrasion resistant polymer being used as one of its main components, TORELIEF features an extra long printing life.

## ■ Wide Variety of Plate Types

TORELIEF has a variety of plate types which enables you to choose plate type best suited for your application. TORELIEF has 4 major types classified by different polymer characteristics.

## ■ Analogue

### ● Y TYPE(Water Washable Plates, both spray & brush washable)

Its high resolution capability achieves very fine screen jobs and extra long life in printing.

### ● W TYPE(Water Washable Plates-brush washable)

Its unique polymer, water softened and brush washed, offers extremely wide plate making latitude for optimum reproduction

**NEW**

### ● K TYPE(Water Washable Plates-brush washable)

It offers sharper dots, higher resolution and superior reusability.

### ● N TYPE(Alcohol Washable Plates-brush washable)

Its tough and abrasion resistant polymer assures an longer printing life. It should be washed in the solution which contains 80% of denatured ethyl alcohol and 20% of water.

## ■ CTP

### ● CTP TYPE

CTP(Computer to Plate) device from all major manufacturers enable customers to reach significant improvement in quality. The perfect combination of “CTP Technology” and “TORAY’s polymer Technology” make TORELIEF CTP achieve the highest satisfaction for customers

## TORELIEF Main Plate Types (Y)

TYPE	Base material	Thickness				Hardness Shore D	Relief Reproduction			
		Total		Relief			Half Tone	Minimum isolated dot	Narrow	
		mm	in	mm	in					
Y	WF80Y3	Polyester film	0.80	.031	0.55	.022	55°	200L (2 ~ 95%)	120 μm	40 μm
	WF80DY3		0.80	.031	0.50	.020				
	WF95DY3		0.95	.037	0.65	.026	175L (3 ~ 95%)	200 μm	50 μm	
	WF175MY3		1.75	.070	1.25	.049				
	WS73HY3	Steel	0.73	.029	0.46	.018	65°	200L (2 ~ 95%)	120 μm	40 μm
	WS83HY3		0.83	.033	0.56	.022				
	WS95HY3		0.95	.037	0.68	.027				
	WS43HY3		0.43	.017	0.21	.008				

## TORELIEF Main Plate Types (W)

TYPE	Base material	Thickness				Hardness Shore D	Relief Reproduction				
		Total		Relief			Half Tone	Minimum isolated dot	Narrow		
		mm	in	mm	in						
W	WF95CH2	Polyester film	0.95	.037	0.55	.022	70°	175L (2 ~ 95%)	150 μm	40 μm	
	WF95DH2		0.95	.037	0.65	.026	65°	175L (2 ~ 95%)	150 μm	40 μm	
	WF502		0.50	.020	0.35	.014	55°	175L (3 ~ 95%)	200 μm	40 μm	
	WF802		0.80	.031	0.55	.022					
	WF95D2		0.95	.037	0.65	.026					
	WF95B2		0.95	.037	0.73	.029					
	WF95BS2N		0.95	.037	0.73	.029	40°	150L (5 ~ 95%)	200 μm	50 μm	
	WF95SS3		0.95	.037	0.73	.029	30°	150L (5 ~ 95%)	200 μm	50 μm	
	WF170U		1.70	.067	1.48	.058	22°	150L (5 ~ 95%)	200 μm	50 μm	
	WF200U		2.00	.079	1.78	.070					
	WS43H2		Steel	0.43	.017	0.21	.008	65°	175L (2 ~ 95%)	150 μm	40 μm
	WS58H2			0.58	.023	0.31	.012				
	WS73H2			0.73	.029	0.46	.018				
	WS83H2			0.83	.033	0.56	.022				
	WS95H2			0.95	.037	0.68	.027		200 μm	40 μm	
	WS73H3			0.73	.029	0.46	.018				
	WS83H3			0.83	.033	0.66	.022		200L (2 ~ 95%)	150 μm	30 μm
	WS95H3			0.95	.037	0.78	.027				
WS100SS3	1.00	.039		0.80	.031	22°	150L (5 ~ 95%)		200 μm	50 μm	

## TORELIEF Main Plate Types (K)

TYPE	Base material	Thickness				Hardness Shore D	Relief Reproduction			
		Total		Relief			Half Tone	Minimum isolated dot	Narrow	
		mm	in	mm	in					
K	WF80DK2	Polyester film	0.80	.031	0.51	.020	55°	175L (1 ~ 98%)	100 μm	20 μm
	WF95DK2		0.95	.037	0.66	.026				
	WS83HK	Steel	0.83	.033	0.56	.022	65°	200L (1 ~ 99%)		20 μm
	WS95HK		0.95	.037	0.68	.027				

## TORELIEF Main Plate Types (N)

TYPE	Base material	Thickness				Hardness Shore D	Relief Reproduction			
		Total		Relief			Half Tone	Minimum isolated dot	Narrow	
		mm	in	mm	in					
N	CS73NKX	Steel	0.73	.029	0.46	.018	65°	150L (3 ~ 95%)	200 μm	40 μm

## TORELIEF Main Plate Types (CTP)

TYPE	Base material	Thickness				Hardness Shore D	Relief Reproduction			
		Total		Relief			Half Tone	Minimum isolated dot	Narrow	
		mm	in	mm	in					
CTPW	DWF95D3	Polyester film	0.95	.037	0.65	.026	55°	175L (2 ~ 98%)	200 μm	40 μm
	DWF95BS4		0.95	.037	0.73	.029				
CTPY	DWF80NM		0.80	.031	0.50	.020	55°	200L (1 ~ 98%)	100 μm	20 μm
	DWF80ANM		0.80	.031	0.55	.022				
	DWF95NM	0.95	.037	0.65	.026	65°	200L (1 ~ 98%)	100 μm	20 μm	
	DWS73NM	0.73	.029	0.46	.018					
	DWS73FNM	0.73	.029	0.56	.022					
	DWS83NM	0.83	.033	0.56	.022					
DWS95NM	0.95	.037	0.68	.027						
CTPK	DWF80DK2	Polyester film	0.80	.031	0.51	.020	55°	200L (1 ~ 98%)	100 μm	20 μm
	DWF95DK2		0.95	.037	0.66	.026				
	DWS73HK2	Steel	0.73	.029	0.46	.018	65°	200L (1 ~ 98%)	100 μm	20 μm
	DWS83HK2		0.83	.033	0.56	.022				
	DWS95HK2		0.95	.037	0.68	.027				

st Line	Typical Application
m	Label Printing
m	
m	Dry Offset / Pad Printing

st Line	Typical Application
m	Crush Printing
m	Label Printing
m	Label Printing
m	Label Printing & Business Forms
m	Business Forms
m	Business Forms & Varnishing
m	Spot carbon, Varnishing & Packaging
m	Dry Offset / Pad Printing
m	
m	
m	Business Forms & Varnishing

st Line	Typical Application
m	Label Printing
m	Dry Offset

st Line	Typical Application
m	Pad Printing

st Line	Typical Application
m	Label Printing Business Forms
m	Label Printing
m	Dry Offset
m	Label Printing
m	Dry Offset



## Remarks;

- 1) Please consult with your local TORELIEF distributor or with us for the best suitable plate type(s) for your application.
- 2) Other special types are available upon request.
- 3) The above mentioned data of relief reproduction were measured in our laboratory. They may differ from your measurements. Your local TORELIEF distributor will assist you in order to realize the best plate-makings at your facilities.

## ■ Plate Storage

- Unopened boxes of TORELIEF should be stored in a cool & dark place.
- Used plates should be cleaned with hydrocarbon solvent such as kerosene.
- Processed plates of polyester film based TORELIEF should be stored in a cool, dark place, rolled. With the relief surface "outside" wrapped with clean protective cover film. (Recommended humidity 50~70%)

**NEW!!**

# Perfect Option for UV Toray UV Flexo Plate

## Incomparable image reproduction

Our polymer technology enables to achieve the finest image reproduction

## Environmentally friendly

Plates can be washed with tap water, so it does not require any chemicals during plate-making

## Unbelievable Productivity

Thanks to water-washable polymer technology, we offer you the shortest plate-making time of around 30minutes

## Compatible with various presses

Flexible polymer gives you a perfect combination with wide variety of presses from all across the world

## ■ Plate Types

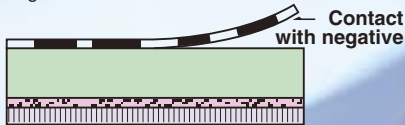
TYPE		Base material	Thickness				Hardness Shore A	Half Tone
			Total		Relief			
			mm	in	mm	in		
analogue	WF114YSE	Polyester film	1.14	.045	0.90	.035	75°	150L (2 ~ 95%)
	WF170YSE		1.70	.066	1.46	.057		
CTP	DF114YSE		1.14	.045	0.90	.035	75°	175L (2 ~ 95%)
	DF170YSE		1.70	.066	1.46	.057	70°	175L (2 ~ 95%)
	DF114HR		1.14	.045	0.90	.035		

# Flexo Printing Line-up

## 1) For Analogue

### CONTACT WITH NEGATIVE FILM

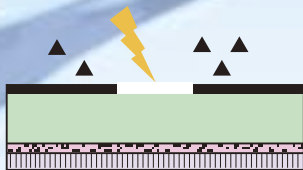
Peel off cover film and place negative film. Matte surface of "TORELIEF" gives you good contact.



## 2) For CTP Plates

### Laser Ablation

Finer image can be reproduced with CTP, because of direct exposure to plates.



### Water washable plates

Washout can be done with tap water.

Solution temp.:

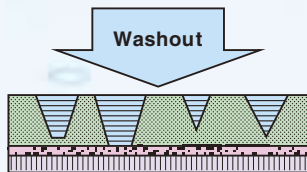
Brush washable type: 20~25°C (68~77°F)

Do not exceed 30°C (86°F).

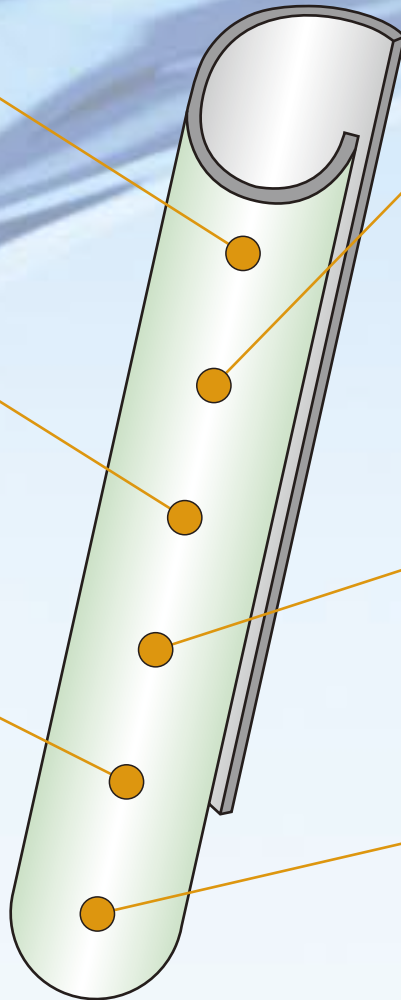
Brush/Spray washable type:

With brush: 20~30°C (68~86°F)

With spray: 25~30°C (77~86°F)



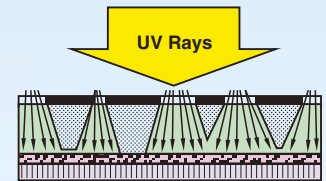
After washout, rinse plate and lightly sponge dry.



### EXPOSURE

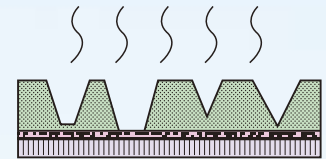
Expose "TORELIEF" to UV rays, Required Gray Scale Step: 14~17 step solid. Peak of sensitivity: 350~370 nm.

- NOTE 1. Do not over-wash "TORELIEF"  
2. When washout is completed, rinse plate and remove solution right away from the surface.

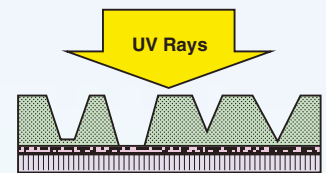


### DRYING

Use hot air dryer. Drying temp.: 50~60°C (120~140°F)



Conduct post exposure as long as main-exposure.



Relief Reproduction		Typical Application
Minimum isolated dot	Narrowest Line	
150 μm	40 μm	Label Printing & Varnishing
100 μm	30 μm	
100 μm	30 μm	

# TORAY

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This brochure is printed with Toray Waterless Plate.  
Printed in Japan

