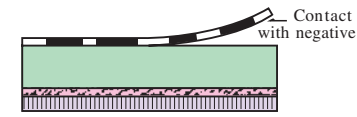


Plate Making

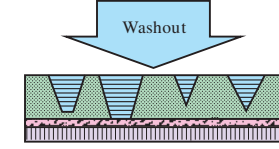
CONTACT WITH NEGATIVE FILM

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

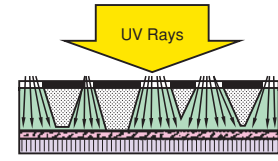


WASHOUT

- 1) **Alcohol washable plates**
Use denatured alcohol containing 20% water. Solution temp. : 30°C(86°F)
- 2) **Water washable plates**
Washout can be done with tap water. Solution temp. :
Brush washable type : 20~25°C(68~77°F)
Do not excess 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.



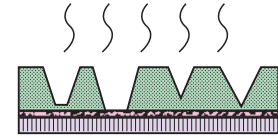
EXPOSURE

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

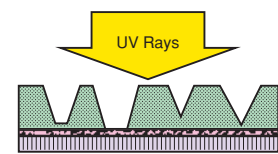
- NOTE 1. Do not over-wash "TORELIEF"
2. When washout is completed, rinse plate and remove solution right away from the surface.

DRYING

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



Conduct post exposure as long as main-exposure.



TORAY

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TORAY Photo-Sensitive Relief Printing Plate



Typical Plate Making Parameters

Fast and easy plate-making is one of the advantages of TORELIEF plates. The following data help you to have an idea for TORELIEF plate-making. *1

TYPE	Exposure Time(min.)	GS Steps *2	Washout Time(min.) *3	Drying Time(min.) *4	Post-ex. Time(min.)
WF95DY3	3~5	15~17	2.0~3.0	10	2~4
WF95DII	4~6	15~17	2.5~3.5	10	4~6
WS73HY3	3~5	15~17	1.5~2.5	10	2~4
WS73HII	4~6	15~17	2.0~3.0	10	4~6

*1 Using Toray Stacker Type Plate ProcessorTTW-L II

*2 Gray Scale : Stouffer 21 step sensitivity guide

*3 Water temperature at 20~25°C(68~77°F)

*4 Drying temperature at 50~60°C(120~140°F)



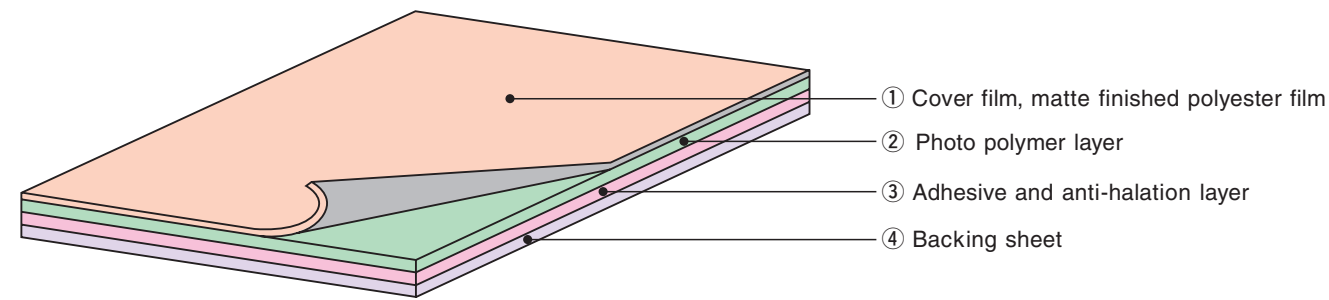
This brochure is printed with Toray Waterless Plate.
Printed in Japan

*Before use, read M.S.D.S. and the operation manuals.

TORELIEF



Structure of TORELIEF



Features of TORELIEF

- 1 Incomparable image reproduction**
Its excellent image reproduction assures constant higher quality printing.
- 2 Good contact with negative film**
Matte finished surface of TORELIEF ensures a good contact between the plate surface and a negative film.
- 3 Easy and fast plate-making process**
TORELIEF is an easy and fast plate to make with its quick exposure and quick washout properties.
- 4 Color change for easier inspection**
TORELIEF W type plates feature color change by exposure, for easier plate inspection and mounting.
- 5 Environmentally friendly**
All TORELIEF plates are made of environmentally friendly ingredients and require no chemicals in processing.
- 6 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.
- 7 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 a plate type best suited for your application. TORELIEF has four major types classified by different polymer characteristics.

- **N Type (Alcohol Washable Plates)**
Its tough & abrasion resistant polymer assures an extra long printing life.
- **Y3 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.
Its light reactive color change during exposure, provides easy inspection of relief content before processing.

TORELIEF Plate Line-up

TYPE	Base material	Thickness				Hardness Shore D	Relief Reproduction			Typical Application	
		Total		Relief			Half Tone	Minimum isolated dot	Narrowest Line		
		mm	in	mm	in						
N	CS43NT	Steel	0.43	.017	0.21	.008	65°	150L (3~95%)	200 μm	40 μm	Dry offset
	CS73NKX		0.73	.029	0.46	.018					
	CS83NKX		0.83	.033	0.56	.022					
	CS95NKX		0.95	.037	0.68	.027					
Y3	WF95CHII	Polyester film	0.95	.037	0.55	.022	70°	175L (1~95%)	150 μm	40 μm	Crush Printing
	WF80DHII		0.80	.031	0.50	.020	65°	175L (1~95%)	150 μm	40 μm	Label Printing
	WF95DHII		0.95	.037	0.65	.026					
	WF50II		0.50	.020	0.35	.014	55°	175L (3~95%)	200 μm	40 μm	Label Printing
	WF70II		0.70	.028	0.45	.018					
	WF80II		0.80	.031	0.55	.022					
	WF95DII		0.95	.037	0.65	.026					
	WF95II		0.95	.037	0.70	.028					
	WF95BII	Polyester film	0.95	.037	0.73	.029	40°	150L (5~95%)	200 μm	50 μm	Label Printing & Business Forms
	WF70BSIIN	Polyester film	0.70	.028	0.55	.022	30°	150L (5~95%)	200 μm	50 μm	Business Forms
WF95BSIIN		0.95	.037	0.73	.029						
W	WF95SS3	Polyester film	0.95	.037	0.73	.029	22°	150L (5~95%)	200 μm	50 μm	Business Forms & Varnishing
	WF95ESS3		0.95	.037	0.80	.031					
	WF152U	Polyester film	1.52	.060	1.30	.051	20°	150L (5~95%)	200 μm	50 μm	Spot carbon, Varnishing & Packaging
	WF170U		1.70	.067	1.48	.058					
	WF200U		2.00	.079	1.78	.070					
	WS30HII		0.30	.012	0.20	.008	65°	175L (1~95%)	150 μm	40 μm	Dry offset
	WS43HII		0.43	.017	0.21	.008					
	WS58HII		0.58	.023	0.31	.012					
	WS73HII	Steel	0.73	.029	0.46	.018					
	WS83HII		0.83	.033	0.56	.022		175L (1~95%)	200 μm	40 μm	
WS95HII		0.95	.037	0.68	.027						
WS100SS3		1.00	.039	0.80	.031	22°	150L (5~95%)	200 μm	50 μm	Business Forms & Varnishing	

TYPE	Base material	Thickness				Hardness Shore D	Relief Reproduction			Typical Application	
		Total		Relief			Half Tone	Minimum isolated dot	narrowest Line		
		mm	in	mm	in						
Y3	WF80Y3	Polyester film	0.80	.031	0.55	.022	55°	200L (1~95%)	120 μm	40 μm	Label Printing
	WF80DY3		0.80	.031	0.50	.020					
	WF95DY3		0.95	.037	0.65	.026					
	WF175MY3		1.75	.070	1.25	.049		175L (3~95%)	200 μm	50 μm	
Y3	WS73HY3	Steel	0.73	.029	0.46	.018	65°	200L (1~95%)	120 μm	40 μm	Dry offset
	WS83HY3		0.83	.033	0.56	.022					
	WS95HY3		0.95	.037	0.68	.027					
	WS73FHY3		0.73	.029	0.56	.022					
	WS43HY3		0.43	.017	0.21	.008					
	WS58HY3		0.58	.023	0.31	.012					
	WS152HY3		1.52	.060	1.25	.049		175L (3~95%)	200 μm	50 μm	

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 demand.
 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 cool & dark place.
- Inked 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%).

TORELIEF Plate Making Units

- **Stacker Type Plate Processor TTW-LII series are available from us.**

Model	The max. plate size for the unit
TTW 350L II	350×480mm
TTW 500L II	500×700mm

- **Filtration units for waste water are also available.**
- **Please contact us for more details.**