

JISLON[®]

**Road Traffic Safety Products
Product Manual
vol. 3**

-3- Dimensional Road Marking
Solidsheet

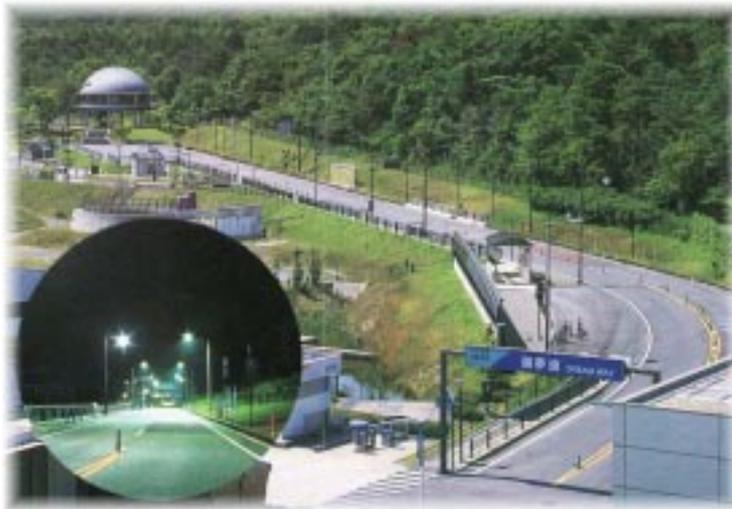


SEKISUI JUSHI CORPORATION

-3- Dimensional Road Marking Solidsheet

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Solidsheet

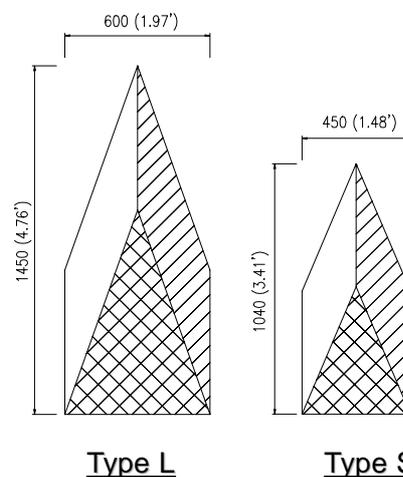
[Characteristics]

Solidsheets cause drivers to slow down by using a -3-dimensional obstacle effect.

- Principles of the -3-dimensional effect are demonstrated by a 3 color combination of flat sheets.
- Concerning -3-dimensional shapes and color, we selected the most effective ones of samples after our various tests.
- Solidsheets have a great effect on drivers to reduce their speed.
- Solidsheets optionally contain reflective glass beads, giving high night time visibility.
- Solidsheets are thermoplastic flat sheets and can be easily installed using primer and burner.
- Mainly used for narrow roads going through housing areas.

[Product line up]

Mountain type L, S



2 sizes are available. (L size, S size)

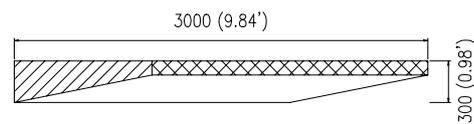
Install L size only or L and S size combination.

(Only S size installation is not effective.)

Mountain-type has a deceleration effect on the driver driving at about 40km/h (25mph) and under.

Solidsheet

Block type



This type has an effect on making a narrower looking lane to drivers and causing them to reduce their speed.

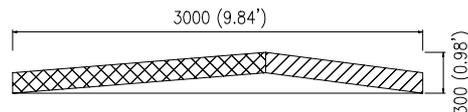
This type is effective in separated lanes.

To maximize their effect, at least 5 sets* per installation are needed.

(*1 set : right and left pattern)

Compared with Mountain type, this type can be installed in higher speed roads.

Notch type



This type has an effect on making a narrower looking lane to drivers and causing them to reduce their speed.

This type is effective in separated lanes.

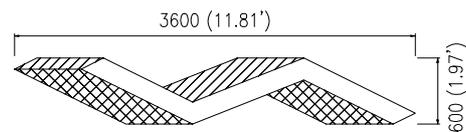
To maximize their effect, at least 5 sets* per installation are needed.

(*1 set : right and left pattern)

Compared with Mountain type, this type can be installed in higher speed roads.

Solidsheet

Thunder type



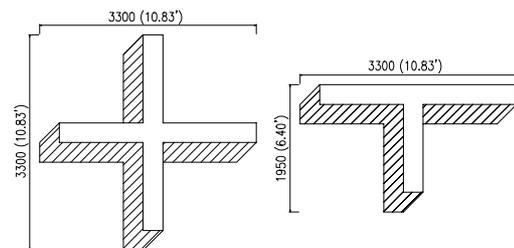
This type has an effect on making a narrower looking lane to drivers and causing them to reduce their speed.

This type gives strong visual impact to drivers.

This type is effective in separated lanes.

Compared with Mountain type, this type can be installed in higher speed roads.

Cross-mark type



This type is effective in cross section without any traffic light.

Solidsheet

[Specifications]

Item	Dimension	Packed per
Mountain type L	1450(4.76') x 600(1.97')	5 pcs
Mountain type S	1040(3.41') x 450(1.48')	8 pcs
Block type	3000(9.84') x 300(0.98')	8 pcs
Notch type	3000(9.84') x 300(0.98')	5 pcs
Thunder type	3600(11.81') x 600(1.97')	5 pcs
Cross-mark type	3300(10.83') x 3300(10.83')	1 pc

[Instruction manual]

I. Installation process

1. Marking out



Decide position, and mark out the road surface.
Make accurate markings corresponding to road surface shape / curve.

2. Painting *primer



Painting primer* on the road surface.
In advance, be sure to completely remove any dust, moisture, oil, etc. from the road surface.
After that, paint the special primer on the marked road.

*The component of the primer.

Chemicals	CAS No.	%
Chloroprene	9010 - 98 - 4	10 ~ 15
Phenolic resin	9003 - 35 - 4	5 ~ 10
Toluene	108 - 88 - 3	65 ~ 70
Hexane	110 - 54 - 3	10 ~ 15
Ethyl acetate	141 - 78 - 6	5 ~ 10

• CAS No. means Chemical Abstract Services.

Solidsheet

3. Positioning



Positioning the sheet

After solvent of primer has vaporized, put the sheet precisely in position.

Combine the sheets in accord with the drawing.

4. Heating to adhere



Heating the sheet

In the beginning, heat the sheet with a low flame and allow the air out from sheet's center.

Next, turn the gas up and melt the sheet with sufficient heating.

(Move gas burner back and forth to heat the sheet uniformly.)

If you spray glass beads on the sheets after heating, it will enhance nighttime reflection.

5. Cooling to finish



Cooling to finish

Allow the sheets to completely cool.

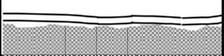
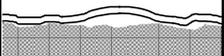
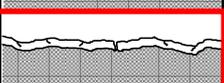
(Under the high temperature conditions of summer days, cool the sheets by spraying with water.)

II. Special attention at installation

- Do not install Solidsheets when the road surface is wet.
- Avoid installing Solidsheets when the temperature is below 5 °C (41F).
- Arrange the sheet in accordance with the drawing.
- Allow each sheet to overlap by about 5mm (1/5").

Solidsheet

How to judge whether the Solidsheet was correctly heated

Sketch	Situation of surface	Figure
A	It is starts to stick, but not yet sufficiently.	
B	Insufficiently adhesion, due to air bubble.	
C	The bubble has burst, adhesion not good.	
D	Almost good, the Solidsheet feels dry and sticks to the the surface.	
E	Good, the Solidsheet is dry, the bigger pinholes are closed, there are many small pinholes on the sheet surface.	

[Product test data]

I. Measuring data by portable skid tester (BPN)

	DRY	WET
The pavement surface of ASPHALT	90 ~ 95	70 ~ 75
-3-Dimensional Solidsheet (JISLINE-S)	60 ~ 65	45 ~ 50

* 24th December 1996
98309487. 5

II. Concerning durability of -3-Dimensional Solidsheet

Testing of the -3-dimensional Solidsheet on the actual road is difficult, because of the reasons given below. Therefore we advise an abrasion test; for which we give values below.

1. The exact position on the road has of course influence on the durability:
 - a – if it is in a curve.
 - b – if it is uphill, downhill or an inclined angle.
 - c – if it is on an accelerating or braking point such as a crossroads.

Solidsheet

2. The situation on the each road may be different:
 - a – is it horizontal.
 - b – is it uneven.
 - c – is there sand or moisture on the surface.

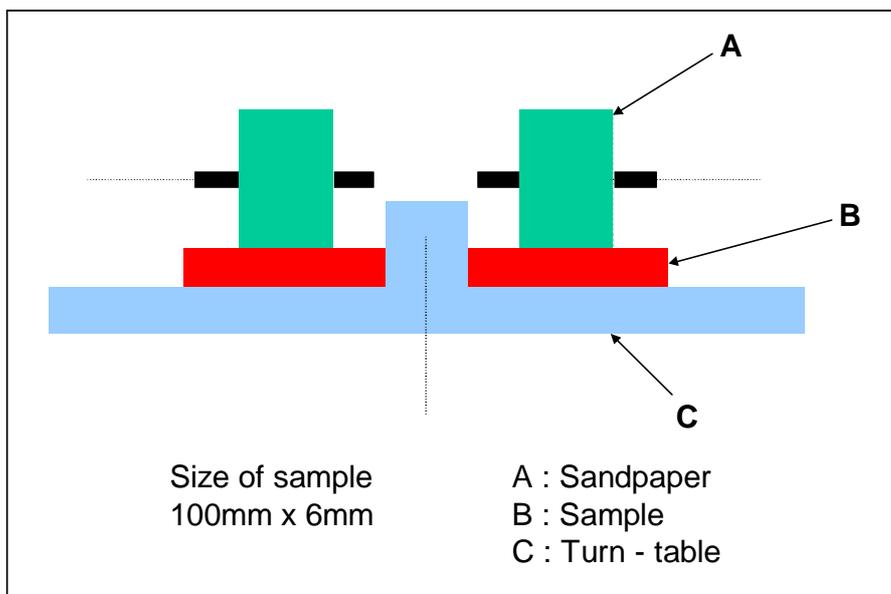
3. The traffic conditions may differ:
 - a – what is the number of vehicles passing over it?
 - b – how many trucks are passing?
 - c – what is their speed?

4. Other influences such as climate, rainfall, snowfall etc.

III. Abrasion test (by TABER abrasion tester)

This test gives an indication of the abrasion by using sandpaper over the sheet surface.

Materials	Quantity by abrasion
-3-Dimensional Solidsheet	30 (mg / 200times)

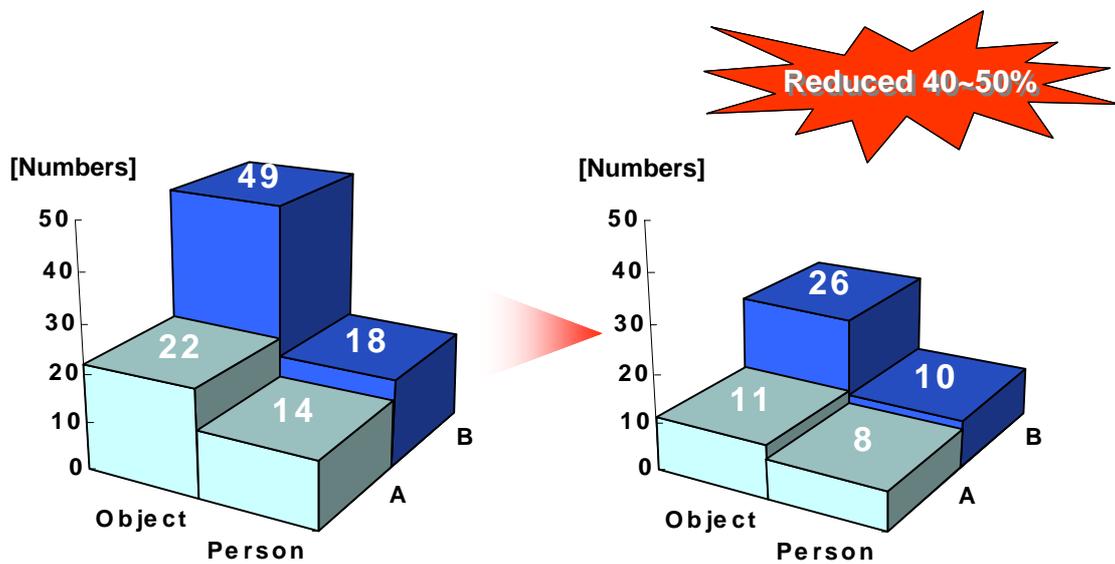


Solidsheet

[Traffic accident data]

After installing our "Solidsheet", the numbers of traffic accidents were greatly reduced.

Number of traffic accident

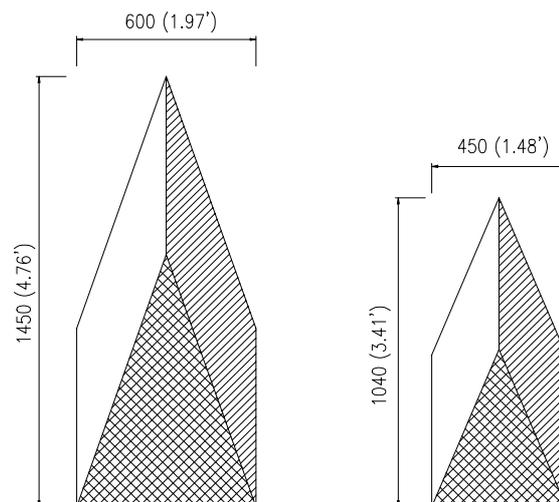
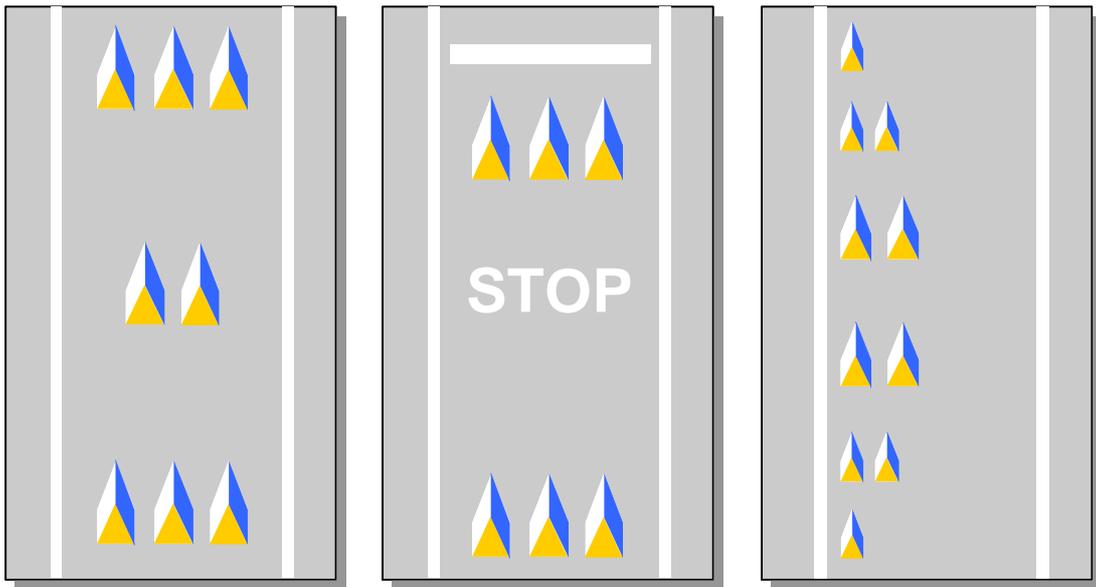


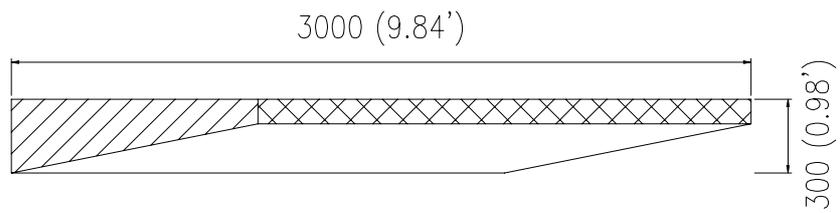
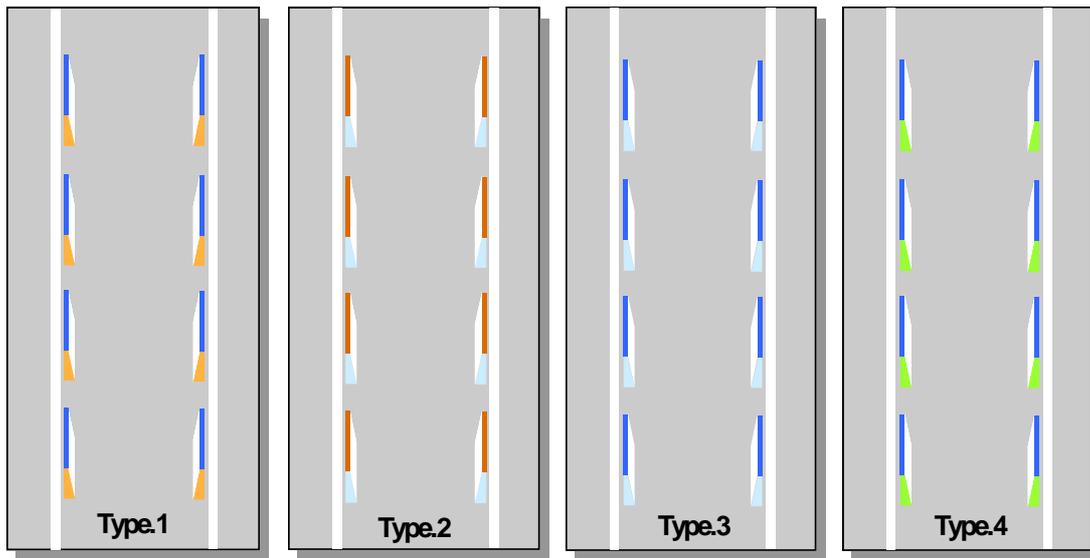
A : Numbers of traffic accidents at an intersection without traffic lights.
 B : Total number of traffic accidents.

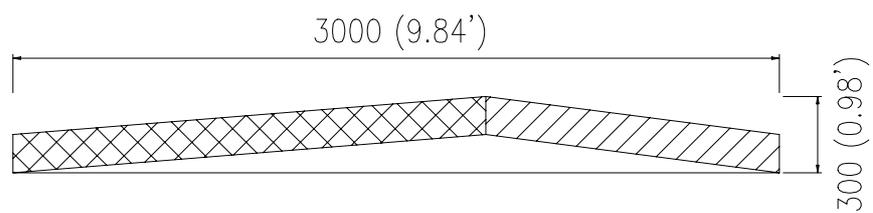
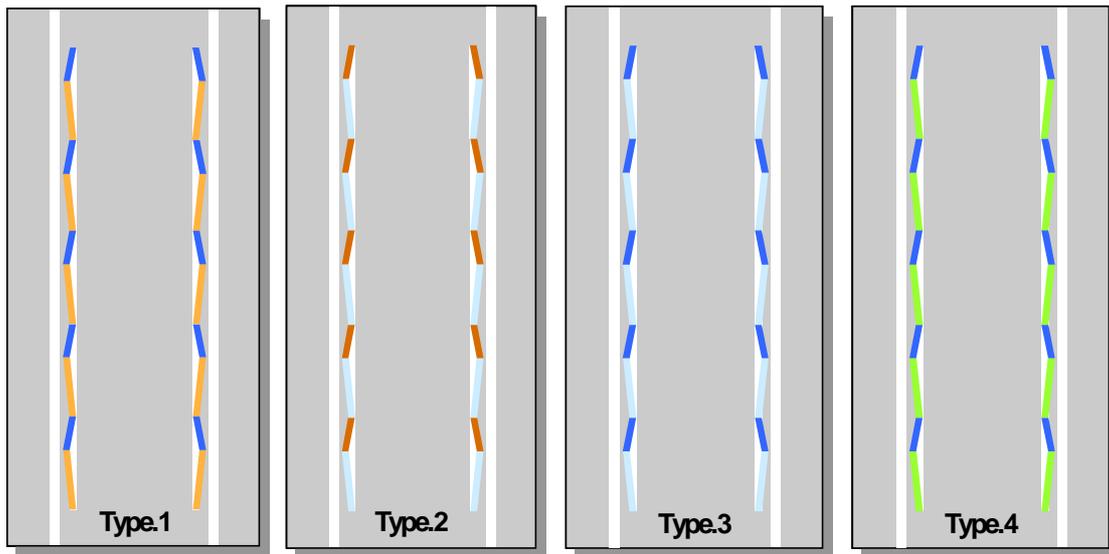
During 4 months before installation
 (From Feb./ '96 to May/ '96 in Japan)

During 4 months after installation
 (From Feb./ '96 to May/ '96 in Japan)

[Examples & Drawings]

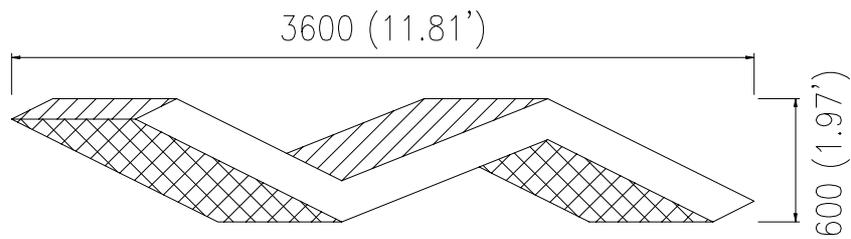
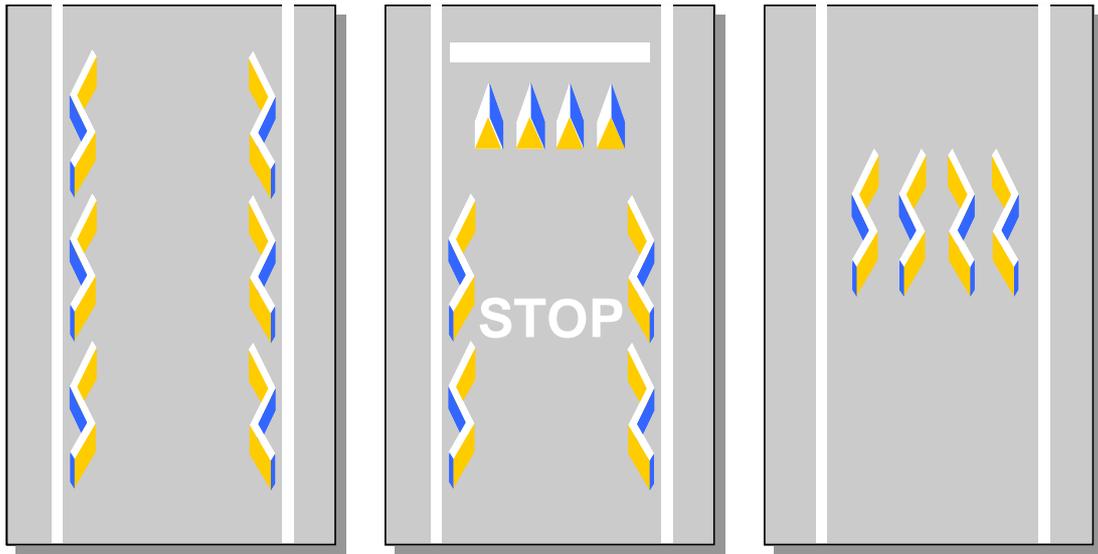
1. Mountain type

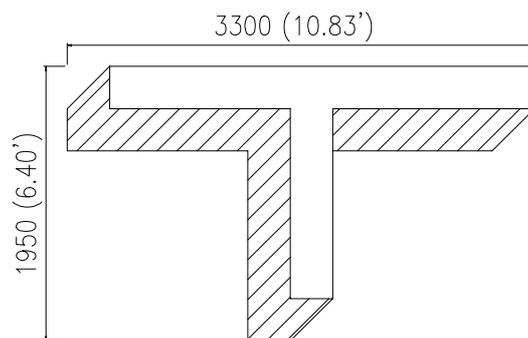
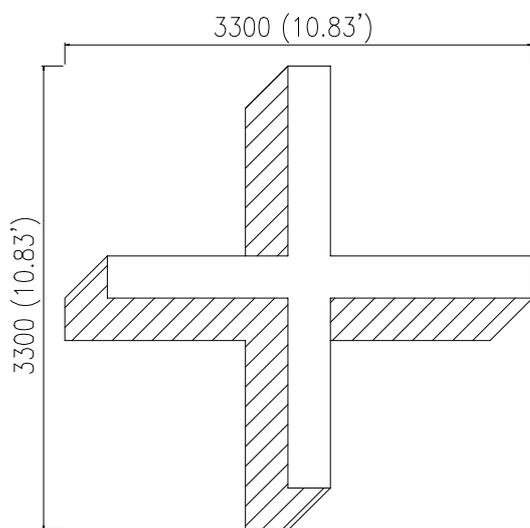
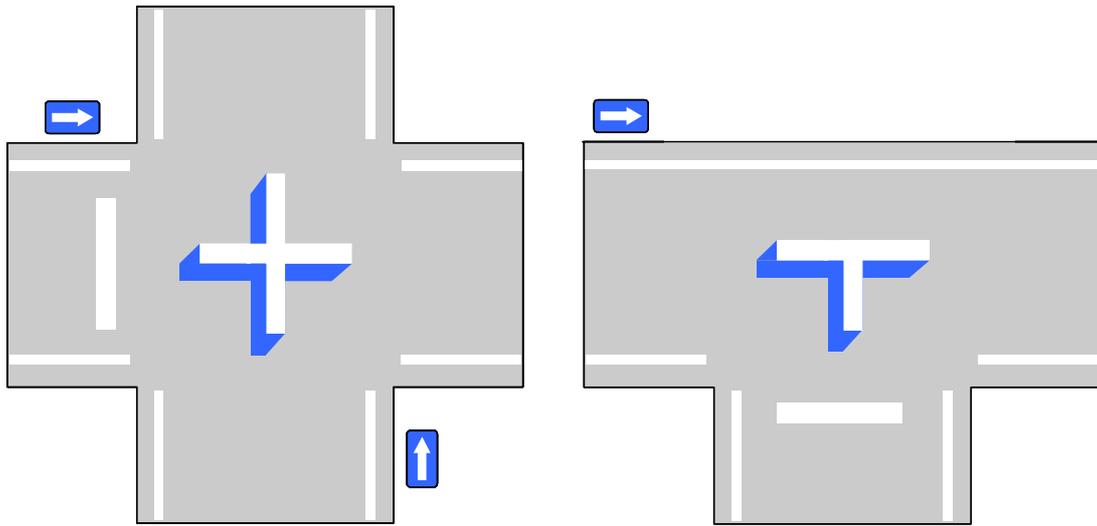
Solidsheet2. Block type

Solidsheet**3. Notch type**

Solidsheet

4. Thunder type

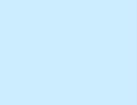


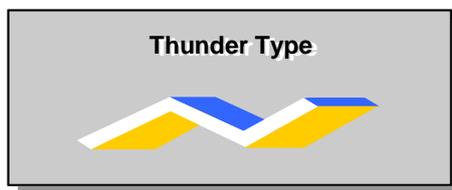
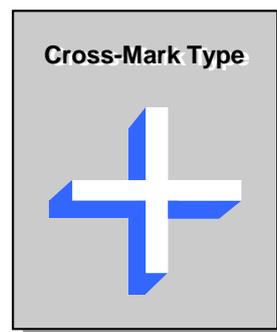
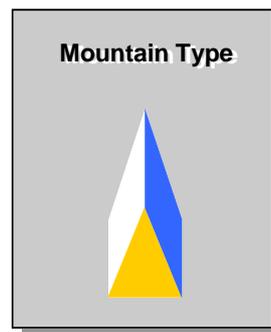
Solidsheet5. Cross-mark type

Solidsheet

[Color variation]

JISLINE S -DX- Color Sheet

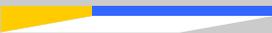
		
JS White 1	JS Blue 1	JS Yellow 1
		
JS Brown 1	JS Blue 2	JS Green 2
		
JS Red 1	JS Green 1	



Notch Type

	Type.1
	Type.2
	Type.3
	Type.4

Block Type

	Type.1
	Type.2
	Type.3
	Type.4

Solidsheet**[Locations]**

Before installation in Edmonds in WA State (U.S.A.)



After installation in Edmonds in WA State (U.S.A.)



Wateringen (The Netherlands)



Sliedrecht (The Netherlands)

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