



REFLOMAX®

CINTA REFLECTIVA TRANSFER KR500F

DESCRIPCION

REFLOMAX® TRANSFER KR500F Cinta reflectiva color Plata, compuesta de micro esferas expuestas, adheridas a una base de poliuretano con adhesivo sensible al calor, fijados a un material transportador de base PET que siempre lo traerá la película reflectiva. Este material transportador no se debe remover antes de su aplicación. Si se remueve pierde la garantía de la película reflectiva. La cinta cumple los estándares de la Norma EN ISO 20471:2013, Certificada por laboratorio SATRA TECHNOLOGY CENTRE LTD reporte No SPC0220708//1350/7.

REFLECTIVIDAD

REFLOMAX® TRANSFER KR500F La reflectividad promedio es de 577 cd/lux/m2 en un ángulo de observación de 0.20° y en un ángulo de entrada de +5° que supera el estándar mínimo de la Norma que es 330 cd/lux/m2.

COLOR

REFLOMAX® TRANSFER KR500F El color de la cinta, en el día es Plata Metálico, el color en la noche es Blanco luminoso, como consecuencia de la reflectividad de las micro esferas cuando se exponen a un foco de luz.

TIPOS DE LAVADO

REFLOMAX® TRANSFER KR500F De acuerdo a la **ISO 6330:2012 (6N, 60°C)**, método de lavado domestico para textiles a una temperatura de 60°C, tiene una resistencia de 50 Ciclos de lavado doméstico.

USOS

REFLOMAX® TRANSFER KR500F Se aplica en las camisas reflectivas tipo Polo de Policía Nacional ET-PN-217 JUNIO 13 2012. Se aplica en prendas reflectivas de seguridad personal, uniformes deportivos etc.

INSTRUCCIONES DE APLICACION

REFLOMAX® TRANSFER KR500F 1. Coloque el transportador con la película reflectiva sobre los productos de tela (Poliéster, Lycras, Lonas), y el adhesivo debe estar orientado sobre la tela para que se pueda termo fijar. No aplicar a telas que tenga impermeabilizantes. El rango de temperatura de la plancha o la termofijadora debe oscilar entre 120 y 150°C, tiempo entre 6 y 15 segundos, dependiendo del materia sobre el cual se aplica el reflectivo.

2. Retire el transportador de la tela una vez se asegure de que la tela se haya enfriado completamente.

3. Se debe probar de antemano si se obtiene la adhesión suficiente. Se recomienda su aplicación en telas livianas y medianas.

4. Una vez aplicado el material reflectivo a la tela, se deberá hacer pruebas de lavado y de fricción para verificación real que se hizo un procedimiento correcto: Se Introduce la prenda en la lavadora y poner la lavadora a ciclo fuerte para verificación del correcto aplicado de reflectivo, retirar la prenda y dejar secar al aire libre. Frotar fuertemente las cintas adheridas a la tela una contra otra y verificar que el material está en perfecto estado. El color y la apariencia sin rajaduras y buena presentación.

***Si presenta alguna falla en la prueba de lavado, se debe parar la aplicación e informar a nuestra empresa.

RECOMENDACIONES

No usar abrasivos cuando se limpie la cinta.

No usar blanqueadores con Cloro.

No usar cepillos para su limpieza.

No usar disolventes.

Indicaciones de Lavado de Prendas

Lavado doméstico

50 ciclos a 60°C



Plancha

110°C pasada suave



Secadora

Temperatura baja



No utilizar

Blanqueadores



GARANTIA

Antes de utilizar la tela **REFLOMAX® TRANSFER KR500F**, el comprador deberá determinar si el producto es adecuado para el uso requerido y de acuerdo a las especificaciones de esta ficha técnica. La única responsabilidad del vendedor será reemplazar la cantidad de producto que se pruebe defectuoso de fábrica.

REFLOMAX no será responsable de cualquier daño relacionado con el uso inadecuado o del uso de los productos. Para Mayor información consulte la hoja técnica y/o contacte a su asesor comercial.

CERTIFICACIONES INTERNACIONALES



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TEST REQUIREMENTS

EN ISO 20471:2013 Minimum coefficient of retro-reflection in $cd/(lx \cdot m^2)$ for separate performance retroreflective material.

Observation angle	Entrance angle β_i ($\beta_i = \theta$)							
	5°		20°		30°		40°	
	See Note 1	See Note 2	See Note 1	See Note 2	See Note 1	See Note 2	See Note 1	See Note 2
12°	350	247.5	290	217.5	180	135	65	48.8
20°	250	187.5	200	150	170	127.5	60	45
1°	25	18.9	15	11.3	12	9	10	7.5
1° 30'	10	7.5	7	5.25	5	3.75	4	3

Note 1: Requirements for materials that are not considered to be orientation sensitive, or for the strongest direction when the materials are considered to be orientation sensitive.

Note 2: Requirements for the weakest direction when materials are considered to be orientation sensitive.

EN ISO 20471:2013 Requirements for retroreflective performance after test exposure $cd/(lx \cdot m^2)$

Exposure	Observation angle 12°, Entrance angle 5° See note 1		Observation angle 12°, Entrance angle 5° See note 2	
	Separate Performance	Combined Performance	Separate Performance	Combined Performance
Abrasion	100	30	75	22.5
Flexing	100	30	75	22.5
Folding @ cold temperatures	100	30	75	22.5
Temperature variation	100	30	75	22.5
Rainfall	100	15	75	11.25
Washing	100	30	75	22.5
Dry cleaning	100	30	75	22.5

Separate performance retro-reflective material and combined performance material must also meet minimum specified requirements after being exposed to various pre-treatments and also under the influence of rainfall. After exposure a separate performance material, which is measured at the measurement condition of observation angle 12° and entrance angle 5°, must achieve a minimum coefficient of retro-reflection value of 100 $cd/(lx \cdot m^2)$. A combined performance material, measured under the same conditions, must meet the minimum requirements of 30 $cd/(lx \cdot m^2)$, and under the influence of rainfall it must be 15 $cd/(lx \cdot m^2)$.

Report by: Mark Gamble
Client: Reflomap Co., Ltd.
Job No: SPC0220708/1350/7
Date: 4th October 2013

Signed: M Gamble
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Technical Report

Subject: Limited testing to EN ISO 20471:2013
Your Ref: Reflective Material – KR-500F (Heat Transfer)
Our Ref: SPC0220708/1350/7

Date: 4th October 2013



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INTRODUCTION

Retroreflective material KR-500F (Heat Transfer) was tested against EN 471:2003+A1:2007, under our reference SPC0197825/1148, Issue 3, in 2012. Since that time EN 471:2003+A1:2007 has been revised and published as ISO 20471:2013. We have been requested to assess the material against the retroreflective performance requirements of EN ISO 20471:2013 using the results of the previously reported work. While it is possible to do this as the procedures followed by SATRA in the EN 471:2003+A1:2007 tests were the same as those specified in EN ISO 20471:2013, it was agreed that the assessment would not be solely based on these results. Instead a limited number of repeat tests - to clauses 6.1 and 6.2 rainfall of EN 471:2003+A1:2007/EN ISO 20471:2013 - would be carried out on a sample of current production of the tape and used in the assessment. The sample was received by SATRA on 6th September 2013. The results of the tests to clause 6.1 obtained with this sample are given page 4 and the result of the test to 6.2 rainfall is incorporated in the table on page 5 together with the results of the earlier work.

CONCLUSIONS

Sample Reference	EN ISO 20471:2013 / EN 471:2003+A1:2007	Result
KR-500F (Heat Transfer)	Clause 6.1 Retro-reflective Performance of new materials	PASS Separate
	Clause 6.2 Retro-reflective after pre-treatment	PASS
	Clause 6.2 Retro-reflectivity after washing, (ISO6330) 50 cycles, 60°C	PASS

TESTING

The sample was treated as a separate performance material.



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RESULTS *

EN ISO 20471:2013 Clause	Pre-Treatment	Observation angle 12°, Entrance angle 5° x orientation $cd/(lx \cdot m^2)$	Observation angle 12°, Entrance angle 5° y orientation $cd/(lx \cdot m^2)$	UoM % (See note 3)	PASS / FAIL
7.4.1	Abrasion	350	353	±8.0	PASS
7.4.2	Flexing	342	345		PASS
7.4.3	Folding @ Cold Temperature	364	366		PASS
7.4.4	Exposure to Temperature Variation	376	374		PASS
7.4.5	Retro-reflective Performance in Rainfall	315	---		PASS
7.5.1	Washing: 60°C: 5 cycles	363	362	PASS	
7.5.1	Washing: 60°C: 10 cycles	322	322	PASS	
7.5.1	Washing: 60°C: 25 cycles	291	288	PASS	
7.5.1	Washing: 60°C: 35 cycles	268	267	PASS	
7.5.1	Washing: 60°C: 40 cycles	239	239	PASS	
7.5.1	Washing: 60°C: 50 cycles	232	228	PASS	

* Results, other than 7.4.5, previously reported in SPC0197825/1148, Issue 3

Domestic washing according to ISO6330, Method 2A, 60°C.

ADDITIONAL INFORMATION / NOTES

Note 3: "UoM" denotes estimated Uncertainty of Measurement for stated test results. This uncertainty value is based on a standard uncertainty multiplied by a coverage factor k = 2, which provides for a confidence level of approximately 95%

***** END OF REPORT *****



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RESULTS

Results: Material as received – x orientation

Observation angle	Entrance angle				UoM (%)
	5°	20°	30°	40°	
12°	[330] 577	[290] 578	[180] 583	[65] 489	± 8.0 (See note 3)
20°	[250] 391	[200] 390	[170] 390	[60] 362	
1°	[25] 45.2	[15] 46.3	[12] 48.4	[10] 46.9	
1° 30'	[10] 21.1	[7] 21.1	[5] 20.7	[4] 24.9	

All measurements in $cd/(lx \cdot m^2)$. Minimum requirements for separate perf. material shown in [square brackets]

Results: Material as received – y orientation

Observation angle	Entrance angle				UoM (%)
	5°	20°	30°	40°	
12°	[330] 573	[290] 572	[180] 578	[65] 491	± 8.0 (See note 3)
20°	[250] 389	[200] 388	[170] 388	[60] 365	
1°	[25] 45.1	[15] 46.0	[12] 46.7	[10] 39.5	
1° 30'	[10] 21.2	[7] 21.2	[5] 20.9	[4] 24.4	

All measurements in $cd/(lx \cdot m^2)$. Minimum requirements for separate perf. material shown in [square brackets]

Orientation Sensitive Check Test

Sample direction	Observation angle	Entrance angle 5°	UoM (%)	Sensitive/ Non-sensitive
x - direction	12°	577	± 8.0 (See note 3)	Materials having coefficients of retro-reflection that differ by more than 15% are defined as orientation sensitive
y - direction	12°	573		
Difference between x & y direction		4	-----	Non-sensitive
Difference expressed as a percentage (%)		0.7		