

**RENNICKS**  
 Attention : Mr C. Versfeld  
 PO Box 11381  
 ASTON MANOR  
 1630

Your ref: Class I  
 Our ref: ZE 1149  
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 Report: 2330 / ZE 1149  
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 Date: 15 September 2006

**TESTING TO STANDARD SANS 1519-PART 1: 2006**  
 "RETRO - REFLECTIVE SHEETING MATERIAL"  
 "ARTIFICIAL WEATHERING CYCLE ( PART A )"

**0. CONCLUSION**

- 0.1 The Nikkalite Class I retro-reflective sheeting material in white, yellow, red, green and blue complied with the requirements as requested in clause 3 as specified in standard SANS 1519-1: 2006 as part of the artificial weathering cycle (Part A).
- 0.2 The natural weathering cycle ( Part B ) is in progress and will be reported every six months for coefficient of retro-reflection and colour and luminance factor for a period of two years.

**1. SAMPLE DESCRIPTION**

**TABLE 1 - DESCRIPTION OF SAMPLE SUBMITTED**

Sample	Colour
Nikkalite Engineering Grade - Cass I	White
	Yellow
	Red
	Green
	Blue

**2. SAMPLE SUBMITTED**

The sample received in a condition suitable for testing.

Submission date : 2006-06-30  
 Testing starting date : 2006-06-30  
 Testing completion date : 2006-09-14

SANAS Accredited Testing Laboratory No. T0085

**3. TESTS REQUESTED**

Full test.

**4. METHOD OF TEST**

The tests were conducted in accordance with the test methods of standard SANS 1519-1: 2006.

**5. SUBCONTRACTING OF SABS LABORATORIES**Paints and Sealants Division - test for resistance to corrosion.  
Textile Division- test for resistance to artificial weathering.**6. TEST RESULTS**

The test results are given in Tables 2 to 5.

**TABLE 2 - COLOUR AND LUMINANCE FACTOR (INITIAL TEST)**

Class	Test specimens	Chromaticity co-ordinates			Luminance factor	Minimum requirements
		x	y	z		
I	white	0,306	0,329	0,365	0,402	0,35
	yellow	0,506	0,477	0,016	0,327	0,27
	red	0,651	0,323	0,027	0,089	0,05
	green	0,121	0,435	0,444	0,040	0,04
	blue	0,147	0,105	0,748	0,019	0,01

**TABLE 3 - COLOUR AND LUMINANCE FACTOR (AFTER RESISTANCE TO WEATHERING )**

Class	Test specimens	Chromaticity co-ordinates			Luminance factor	Minimum requirements
		x	y	z		
I	white	0,312	0,333	0,356	0,394	0,35
	yellow	0,509	0,482	0,009	0,329	0,27
	red	0,650	0,326	0,024	0,087	0,05
	green	0,130	0,434	0,436	0,040	0,04
	blue	0,153	0,118	0,729	0,021	0,01

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This test was performed by SABS Commercial ( Pty ) Ltd.

This report relates only to the specific sample(s) tested as identified herein. It does not imply SABS approval of the quality and/or performance of the item(s) in question and the test results do not apply to any similar item that has not been tested. (Refer also to the complete conditions printed on the back of official test reports.)

**TABLE 4 - COLOUR AND LUMINANCE FACTOR  
(AFTER RESISTANCE TO TEMPERATURE CHANGES )**

Class	Test specimens	Chromaticity co-ordinates			Luminance factor	Minimum requirements
		x	y	z		
I	white	0,307	0,329	0,364	0,427	0,35
	yellow	0,510	0,480	0,010	0,334	0,27
	red	0,669	0,327	0,004	0,084	0,05
	green	0,123	0,439	0,438	0,040	0,04
	blue	0,148	0,108	0,744	0,022	0,01

**7. EXCLUSIONS**

None.

**8. UNCERTAINTY OF MEASUREMENT**

The estimated uncertainty of measurement of the photometric measurement is approximately 5,8% for a 95 % level of confidence.

**9. NOTE**

The sample will be disposed of if not collected within three months of completion of testing.

TABLE 5 - DESCRIPTION OF REQUIREMENTS

Description of requirements	Test results	Requirements
Constructional requirements	Complied	Clause 4.1
Coefficient of retro-reflection (initial test)	Complied See attached photometric test results	Clause 4.2.2
Colour & luminance factor (initial test)	Complied See Table 2 and attached chromaticity diagrams	Clause 4.2.3 to 4.2.4
Visual appearance (after accelerated artificial weathering)	Complied (Part A)	Clause 4.3.1
Coefficient of retro-reflection (after the test for resistance to artificial weathering)	Complied See attached photometric test results	Clause 4.3.1
Colour & luminance factor (after the test for resistance to artificial weathering)	Complied See Table 3 and attached chromaticity diagrams	Clause 4.3.1
Natural weathering	Tests in progress (Part B)	Clause 4.3.1
Flexibility	Complied	Clause 4.3.2
Resistance to impact	Complied	Clause 4.3.3
Adhesion	Complied	Clause 4.3.4
Visual appearance (after resistance to corrosion)	Complied	Clause 4.3.5
Coefficient of retro-reflection (after resistance to corrosion)	Complied See attached photometric test results	Clause 4.3.5
Visual appearance (after resistance to temperature changes)	Complied	Clause 4.3.6
Coefficient of retro-reflection (after resistance to temperature changes)	Complied See attached photometric test results	Clause 4.3.6
Colour & luminance factor (after resistance to temperature changes)	Complied See Table 4 and attached chromaticity diagrams	Clause 4.3.6
Marking (visual inspection)	Complied	Clause 6.1


  
 Tested by: A Rocha  
 TECHNICAL SIGNATORY  
 LIGHTING TECHNOLOGY

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