



INDUSTRIAL TESTING LABORATORY

Report No. 061019-02A

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TEST REPORT

Report Date: 10 November 2006

Material Tested: King Tech Industries Reflective Fabrics
8004 FR Reflective Trim

Submitted by: King Tech Industries
San Diego, CA 92122

Test Laboratory: Calcoast - ITL
Emeryville, CA 94608

Product: 50 mm (2") wide retroreflective trim

SUMMARY

Specification: ANSI/ISEA 107-2004
American National Standard for High-Visibility Safety Apparel
Retroreflective Material, Level 1 or 2

Photometric Performance, Initial

Level 2.....	Passed
Level 1.....	Passed

Retroreflection after Test Exposure

Abrasion.....	Not Tested
Flexing.....	Not Tested
Folding at Cold Temperatures.....	Not Tested
Exposure to Temperature Variation.....	Not Tested
Washing (50X).....	Not Tested
Dry-cleaning (0X).....	Not Tested
Retroreflective Performance in Rainfall.....	Not Tested

Signature of Responsible Laboratory Official:

Douglas G. Cummins
Photometric Engineer

TEST DATA SHEET

Material Tested: King Tech Industries Reflective Fabrics
8004 FR Reflective Trim

Retroreflective Performance, Initial

Requirement: ANSI/ISEA 107-2004 8.1 Table 5 (Level 1), Table 6 (Level 2)
Test Method: ASTM E808/E809

200 mm x 200 mm retroreflective samples were created by cutting submitted material into 200 mm strips and mounting 4 strips side-by-side on a 200 mm x 200 mm black mounting surface. Measured samples at orientations of $\epsilon_1 = 0^\circ$ and $\epsilon_2 = 90^\circ$ where ϵ_1 mounting orientation is with the strips parallel to the projector/detector plane.

Sample Area: 0.0400 m²

Coefficient of Retroreflection, Candela/Lux/m²

Observation Angle	Entrance Angle	Minimum Requirement		Measured	
		Level 2	Level 1	ϵ_1	ϵ_2
12' (0.20°)	5°	330 / 248	250 / 187.5	414.2	416.4
	20°	290 / 218	220 / 165	475.9	481.5
	30°	180 / 135	135 / 101.25	487.3	492.5
	40°	65 / 47	50 / 37.5	395.8	394.7
20' (0.33°)	5°	250 / 188	120 / 90	273.1	276.1
	20°	200 / 150	100 / 75	315.0	319.7
	30°	170 / 128	75 / 56.25	327.9	332.0
	40°	60 / 45	30 / 22.5	293.2	292.0
1.00°	5°	25 / 18.8	19 / 14.25	62.4	65.0
	20°	15 / 11.3	11 / 8.25	54.5	56.1
	30°	12 / 9	9 / 6.75	50.1	51.6
	40°	10 / 7.5	7 / 5.25	36.3	37.6
1°30' (1.50°)	5°	10 / 7.5	7 / 5.25	18.6	18.3
	20°	7 / 5.25	5 / 3.75	15.2	15.5
	30°	5 / 3.75	3 / 2.25	16.7	16.8
	40°	4 / 3	3 / 2.25	21.0	20.3

Samples meet requirements for ANSI 107-2004 Level 1 or 2 reflectivity.

