



## Test Report

No.: HKSL1602022603TX-01

Date: May 09, 2016

Page 1 of 2

Reflective Apparel Factory, Inc.  
1649 Sands Place SE, Ste j, Marietta, GA 30067

This report supersedes all previous documents bearing the test report number HKSL1602022603TX dated Mar 02, 2016.

The following sample was submitted and identified by the client as:

One sample of 100 polyester high quality reflective tape in silver for safety clothing.

Ref. No. :  
Manufacturer : RAF  
Country Of Origin : China  
Country Of Destination : United States  
Sample Receiving Date : Feb 25, 2016  
Test Performing Period : Feb 26, 2016 May 09, 2016  
Test Performed : Selected tests as requested by applicant.  
(details please refer to result page)  
Test Results : Please refer to the next page.

Signed for and on behalf of  
SGS Hong Kong Ltd.

Chan Hing Leung  
Senior Technical Development Executive

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



**Test Results :**
**American National Standard for High-Visibility Safety Apparel and Accessories**  
**(ANSI/ISEA 107-2015)**
**Combined-Performance and Retroreflective Material Testing Report**

| PHOTOMETRIC PERFORMANCE REQUIREMENTS                                                                                                                                        |                |                                 |                                        |     |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------|----------------------------------------|-----|---------------|
| Take measurements at $\epsilon_1$ 0° and $\epsilon_2$ 90°. Record maximum value on left side of test result column and the other value on right side of test result column. |                |                                 |                                        |     |               |
| ANSI/ISEA 107-2015 Requirement<br>Section 9.1, Table 5                                                                                                                      |                |                                 | Test Result<br>cd/(lx m <sup>2</sup> ) |     | Pass/<br>Fail |
| Observation Angle                                                                                                                                                           | Entrance Angle | Minimum cd/(lx m <sup>2</sup> ) |                                        |     |               |
| 12' (0.2°)                                                                                                                                                                  | 5°             | 330 / 2                         | 395                                    | 31  | Pass          |
|                                                                                                                                                                             | 20°            | 290 / 21                        | 376                                    | 362 | Pass          |
|                                                                                                                                                                             | 30°            | 10 / 135                        | 00                                     | 377 | Pass          |
| 20' (0.33°)                                                                                                                                                                 | 0°             | 65 / 7                          | 393                                    | 37  | Pass          |
|                                                                                                                                                                             | 5°             | 250 / 1                         | 279                                    | 272 | Pass          |
|                                                                                                                                                                             | 20°            | 200 / 150                       | 273                                    | 257 | Pass          |
|                                                                                                                                                                             | 30°            | 170 / 12                        | 27                                     | 271 | Pass          |
| 1.0°                                                                                                                                                                        | 0°             | 60 / 5                          | 2                                      | 275 | Pass          |
|                                                                                                                                                                             | 5°             | 25 / 1                          | 36                                     | 35  | Pass          |
|                                                                                                                                                                             | 20°            | 15 / 11.3                       | 32                                     | 31  | Pass          |
|                                                                                                                                                                             | 30°            | 12 / 9                          | 32                                     | 31  | Pass          |
| 1.5°                                                                                                                                                                        | 0°             | 10 / 7.5                        | 30                                     | 30  | Pass          |
|                                                                                                                                                                             | 5°             | 10 / 7.5                        | 20                                     | 1   | Pass          |
|                                                                                                                                                                             | 20°            | 7 / 5.25                        | 1                                      | 17  | Pass          |
|                                                                                                                                                                             | 30°            | 5 / 3.75                        | 17                                     | 16  | Pass          |
|                                                                                                                                                                             | 0°             | / 3                             | 17                                     | 16  | Pass          |

| PHYSICAL PERFORMANCE REQUIREMENTS                        |                |                                                                                                                                             |                                          |               |
|----------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------|
| Test                                                     | Section        | ANSI/ISEA 107 Requirement                                                                                                                   | Test Result                              | Pass/<br>Fail |
| Retroreflection, after abrasion                          | 9.2,<br>10. .1 | R <sub>A</sub> (0.2°/5°) 100 cd/(lx·m <sup>2</sup> ) at $\epsilon_1$<br>R <sub>A</sub> (0.2°/5°) 75 cd/(lx m <sup>2</sup> ) at $\epsilon_2$ | $\epsilon_1$ : 23<br>$\epsilon_2$ : 23   | Pass          |
| Retroreflection, after flexing                           | 9.2,<br>10. .2 | R <sub>A</sub> (0.2°/5°) 100 cd/(lx·m <sup>2</sup> ) at $\epsilon_1$<br>R <sub>A</sub> (0.2°/5°) 75 cd/(lx m <sup>2</sup> ) at $\epsilon_2$ | $\epsilon_1$ : 37<br>$\epsilon_2$ : 351  | Pass          |
| Retroreflection, after folding at cold temperatures      | 9.2,<br>10. .3 | R <sub>A</sub> (0.2°/5°) 100 cd/(lx·m <sup>2</sup> ) at $\epsilon_1$<br>R <sub>A</sub> (0.2°/5°) 75 cd/(lx m <sup>2</sup> ) at $\epsilon_2$ | $\epsilon_1$ : 36<br>$\epsilon_2$ : 30   | Pass          |
| Retroreflection, after exposure to temperature variation | 9.2,<br>10. .  | R <sub>A</sub> (0.2°/5°) 100 cd/(lx·m <sup>2</sup> ) at $\epsilon_1$<br>R <sub>A</sub> (0.2°/5°) 75 cd/(lx m <sup>2</sup> ) at $\epsilon_2$ | $\epsilon_1$ : 01<br>$\epsilon_2$ : 396  | Pass          |
| Retroreflection, after 25 washing                        | 9.2,<br>10. .5 | R <sub>A</sub> (0.2°/5°) 100 cd/(lx·m <sup>2</sup> ) at $\epsilon_1$<br>R <sub>A</sub> (0.2°/5°) 75 cd/(lx m <sup>2</sup> ) at $\epsilon_2$ | $\epsilon_1$ : 315<br>$\epsilon_2$ : 315 | Pass          |
| Retroreflection in rainfall                              | 9.2,<br>10. .6 | R <sub>A</sub> (0.2°/5°) 100 cd/(lx·m <sup>2</sup> ) at $\epsilon_1$<br>R <sub>A</sub> (0.2°/5°) 75 cd/(lx m <sup>2</sup> ) at $\epsilon_2$ | $\epsilon_1$ : 11<br>$\epsilon_2$ : 11   | Pass          |

**End of Report**

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.