

CD17.4.2

Starfield LION

Address to

Community Development and Recreation
Committee

Monday, January 16, 2017

9:30 am.

Agenda Item CD17.4

Re: Contract Award - Request for Proposal (RFP) No.
3806-15-0012 for the Supply and Delivery of
Firefighter's Structural Bunker Suits to Innotex Inc.

Andy Schwartz

Robert Hosselet



Executive Summary

Starfield LION Presentation to


Community Development and Recreation Committee

Monday, January 16, 2017

Key Points:

- **Starfield LION has significant concerns about the procurement process revolving around fabric selection, and a subsequent award**
- ***Starfield LION is requesting a debrief on choice of product selection before final award of this contract***
- **Starfield LION is the incumbent of this contract for the past 11 years**
- **Starfield LION has concerns of the choice of the outer shell product that was brand new and unproven with any large fire department across North America when the tender closed in February 2016**
- **Starfield LION presented both the current products manufactured as recently as fall 2016, and a newer superior product that has proven itself in the field over the last couple of years**
- **Our third proposal is superior to the final product recommended**

- **The third proposal was rejected out of hand by City of Toronto Purchasing with no explanation**
- **Both these proposed products are lower cost to the City**
- **This third proposal addressed a key area of moisture management in a vastly superior way, but was rejected**
- **Starfield LION's plant is located in the City of Toronto; one of only 5 or 6 fire services manufacturers across Canada**
- **We are a leading supplier to the majority of large fire departments in Canada, the only one in the City**
- **Starfield LION has a stellar record of providing service in a very demanding product field to the City of Toronto because of our proximity, responsiveness, excellent relationship across the spectrum of Toronto Fire Service (TFS) personnel**
- **Starfield LION pays municipal taxes to the City of Toronto and supports a \$3.5M payroll to staff who live in this city**
- **Starfield LION as recently as May 2016 delivered the last of 2800+ sets of gear to TFS at a substantial discount utilizing the outer shell in our proposal #3**
- ***Starfield LION would like a debrief before award to ensure questions on safety, comfort, quality and service are not compromised by this award***

 D3884 - 09 (2013)

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5.7 Before definite predictions of fabric usefulness can be drawn from an abrasion test as made on the rotary platform, double-head (RPDH) abrader (Fig. 1), actual end use trials should be conducted and related to the abrasion test. Different types of wear (for example, wear on men's clothing at cuffs, crotch, etc.) may correspond to different ratings of the RPDH test.

5.8 In making a comparison of different fabrics (that is, of different fibers, weights, etc.) the RPDH test will not always reveal a difference known to exist when the fabrics are actually used. Therefore, end-use trials should be conducted in conjunction with the RPDH abrasion test, at least as a guide for future testing of these fabrics.

5.9 Uncontrolled manufacturing or finishing variations occurring within a fabric or within lots of the same style of fabric can, however, be detected satisfactorily with the RPDH tester.

5.10 Because of the conditions mentioned above, technicians frequently fail to get good agreement between results obtained on the same type of testing instrument both within and between laboratories, and the precision of these test methods is uncertain. This test method is accordingly not recommended for acceptance testing in contractual agreements between purchaser and supplier because of the poor between-laboratory precision of the test method.

5.11 If there are differences of practical significance between reported test results for two laboratories (or more), comparative tests should be performed to determine if there is a statistical bias between them, using competent statistical assistance. As a minimum, the test samples used are to be as homogeneous as possible, drawn from the material from which the disparate test results were obtained, and randomly assigned in equal numbers to each laboratory for testing. The test results from the two laboratories should be compared using a statistical test for unpaired data, at a probability level chosen prior to the testing series. If bias is found, either its cause must be

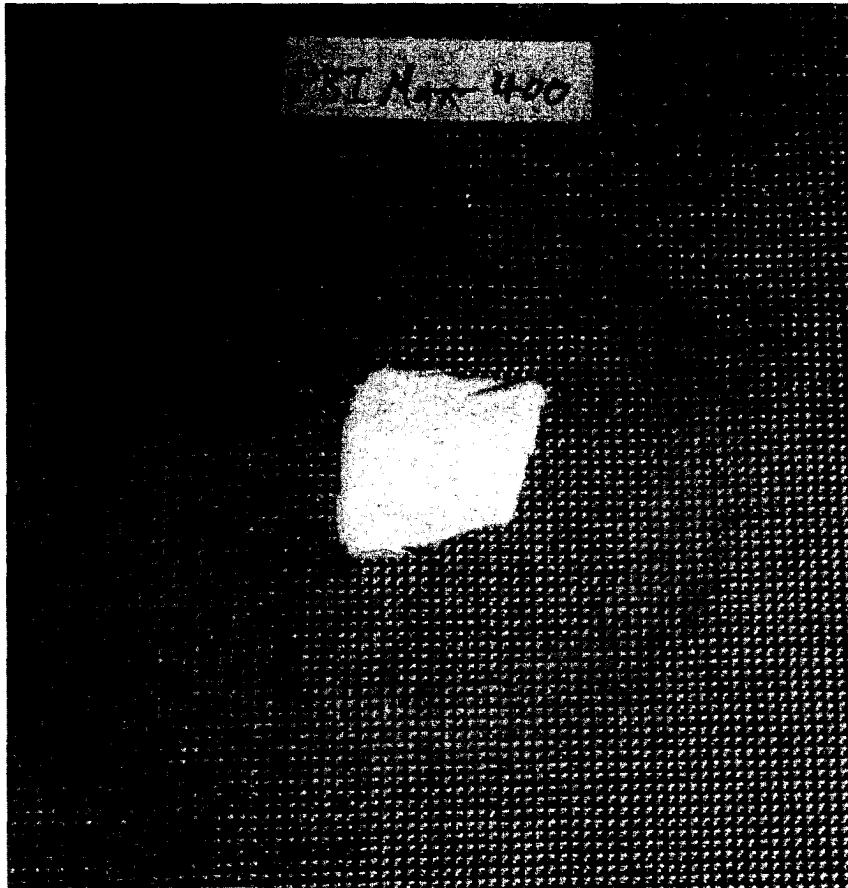
ASTM recommends AGAINST taber abrasion requirements in a specification or bid because of:

“poor between-laboratory precision of the test method.”

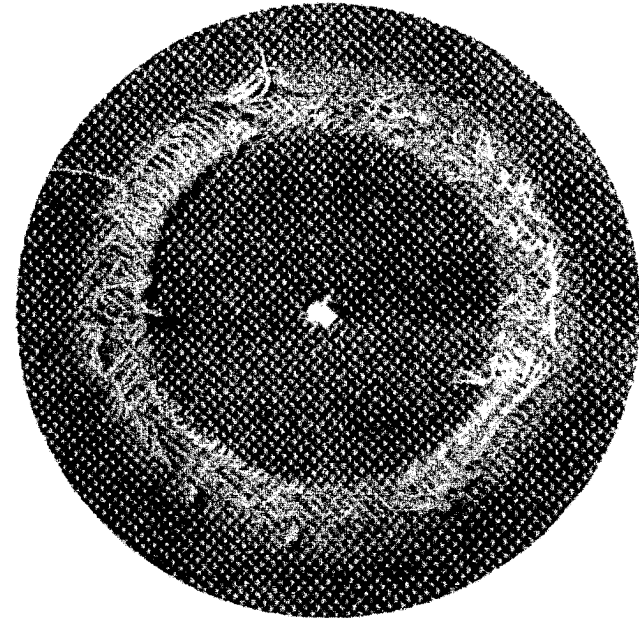


Which outer shell would you specify?

PBI Max™



PBI Performance Products, Inc. Results



400 cycles

TENCATE

materials that make a difference

Different labs...different results...same fabric
(one reason taber results aren't reliable)

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Section 1 – Letter to the Committee

Letter addressed to the Committee, provided to the City clerk on line in preparation for this speaking request on Friday, January 13, 2017



Friday, January 13, 2017

Community Development and Recreation Committee
Toronto City Hall
100 Queen Street West
Toronto, Ontario
M5H 2N2

Re: CDRC Meeting, Jan 16, 2017 9:30 am.; Agenda Item CD17.4, RFP No. 3806-15-0012
To: Committee Clerk

Starfield LION was a proponent for the above referenced RFP for the supply to the Toronto Fire Service (TFS) of its structural firefighting bunker suits. The recommendation for award for this RFP is to be debated Monday January 16th in Committee Room #1 with the CDRC.

Starfield LION has significant concerns about the procurement process and the award.

Immediately upon notice of the recommendation, we requested repeatedly a debrief as per the announcement letter and City policy, so as to understand more fully the reasons for the selection of the recommended product and address our concerns. However, the Purchasing Department has in our view unfairly rejected our request until after the Council approves the contract award.

We ask the Committee to postpone action until a full debrief can be made and questions about the product selected can be thoroughly investigated to assure that proper procurement principles and City policy have been followed and the desired safety, comfort, quality, and service are not compromised by this award.

As the incumbent supplier to the TFS of its structural firefighting bunker suits for the past 11 years, and aware of the absolute value the TFS places on safety, comfort quality and service, we must call attention to what in our view are significant questions regarding the procurement of the product proposed to be purchased that must be considered by the Committee. Because firefighter bunker gear is a safety product, in our view the selected product and vendor should raise concerns among Committee members that are significant enough that any action by the Committee must be postponed until a thorough debrief with our representatives has been provided to review the details of the procurement of this product and possible risks to the City and the TFS of proceeding with purchasing what we believe is an unproven fabric.

We are also concerned that it appears that the recommended product contains an outer shell fabric material called Ten Cate "Pioneer." The mandatory material specified in the RFP was TenCate "Advance." Addendum No. 3 amended the mandatory requirement to state that, "an approved equivalent is an outer shell fabric that is equivalent or superior to the physical properties of the TenCate Advance."

We are concerned that proven lower cost but superior performing and more comfortable alternative products were not considered in the procurement, to the detriment of the City. Starfield LION submitted a total of three proposals for the tender; each consisted of a different composite, different performance values and different costs. However, one of Starfield Lion's "approved equivalent" composites was rejected without explanation prior to wear trial, while we now understand that the winning proponent was allowed to provide a similar "approved equivalent" fabric composite for wear trial. This particular composite should have been considered the best performing of any composite submitted not only by Starfield LION but other proponents as well, with respect to overall performance, safety and comfort for the firefighters. The rejected fabric composite meets all the requirements of the RFP specifications and is the latest generation of high strength fabric that has been purchased by many major metro fire departments in North America and proven has several years of proven performance. Based on our pricing provided in the pricing envelope and the

winning proponents pricing, this rejected composite was the lowest cost/best value offering for this tender. Starfield LION was able to meet 100% of the tender specifications' original requirements with no substitutions and should have been considered an approved equivalent because it is "equivalent or superior to the physical properties of TenCate Advance. Simply put, the wear trials failed to include a technically superior or equivalent composite which would have performed equally or better to the recommended product in the wear trial. Because of the lack of explanation of the rejection of Starfield's third product submission, and its unfair exclusion from the wear trial, this rejection raises questions that this RFP process may have violated best practices with respect to principles and duties of fairness and consistency.

The RFP also states on page 81 that "Consideration will be given to the performance of total moisture management and overall breathability of the garment." Again, it is unclear how the evaluation objectively and fairly considered "total moisture management" and rejected Starfield's fabric composite as non-compliant, even though this composite has 20 years of proven superior moisture management and comfort properties over the selected product. This apparent inconsistency further raises questions about whether the RFP process violated duties of fairness and consistency.

The recommendation in the Report for Action submitted to the committee is for the City to purchase its bunker gear from another vendor, a small Quebec-based vendor called Innutex, with no prior experience, to our knowledge, supplying large quantities of firefighter bunker gear to the City of Toronto. In addition, the committee is recommending the selection of a product made with an outer shell fabric that at the time of the RFP submission deadline was on the market for only several months and even now to our knowledge has not been purchased in large quantities by any single major metropolitan fire department and does not have multiple-year proven durability in real firefighting conditions.

Starfield LION is by far the long-standing market-leading supplier of structural bunker gear in Canada, making bunker gear for hundreds of Canadian cities and towns, including Ottawa, Vancouver, Mississauga, Winnipeg, Hamilton, Brampton, Vaughn, Regina, Saskatoon, St. Johns and many others. We have been the incumbent supplier of firefighting bunker gear to the TFS for 11 years through three award cycles, starting in 2005. The product that we currently supply to the TFS is made right here in the City of Toronto at our Benton Rd. plant located near Keele St. and Lawrence Ave. where 90 hardworking employees contribute to the local economy.

Through the three award cycles, Starfield LION has proven to be a valued partner to TFS because of i) our proximity to both Quartermaster stores on Rotherham Ave. and HQ on Dufferin St. ii) the deep and vast relationships between key Starfield LION staff and multiple TFS stakeholders including senior officer staff, health and safety committee members, logistic and purchasing staff iii) quick response to any and all questions regarding not only our production for TFS, but information on NFPA standards, upgrades, repairs, adjustments, scheduling of recruit classes and large measuring/handout exercises (all key personnel and support staff are available through the Toronto plant office iv) support of various TFS groups in fund raising and public awareness campaigns v) consistently competitive pricing over 11 years.

As recently as the last contract extension award in 2015/2016, Starfield LION was called upon to supply additional product to TFS in a closely negotiated extension that allowed us to meet the requirements of the TPFA in their demands for updated bunker gear before expiry date, within a short time frame. Over 2800 sets of gear were delivered, without any problems, to the TFS during 2016, including 40 delivered in June at a very substantially discounted rate using the proven outer shell that was specifically named as a fabric brand in this RFP.

Throughout these many years, we have proven ourselves to be an important partner of the TFS, with outstanding customer service and personal attention, and impeccable quality, safety and reliability. All of TFS's requests have been dealt with professionally and within a very timely manner because of the proximity to and the very high value we place on TFS as a very important customer. We are one of only 5 or 6 Canadian fire services manufacturers (not including truck manufacturers), that can supply any type of equipment to the Canadian fire services. We are the only supplier located in Toronto, providing what can be called the most demanding, important and nuanced product to fire services across the country and internationally.

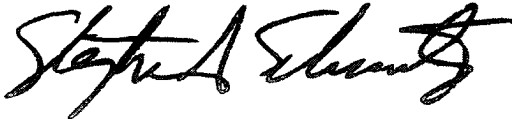
Starfield Lion is also a significant employer in the City of Toronto. Our plant pays City of Toronto municipal taxes and the vast majority of our staff live within the City boundaries, and contribute additional municipal taxes and have a total payroll in 2016 of over \$3.4 million. Starfield Lion is the rare success story of a Toronto-based cut and sew manufacturing operation that has grown employment instead of moving overseas like so many other apparel sewing companies.

In all the circumstances and having regard to our significant concerns about the procurement process and its outcome (which we believe the Committee, once properly informed by our further submissions, will share), we must respectfully ask the Committee to postpone action until a full debrief can be made and questions about the procurement of the product selected can be thoroughly investigated to assure that safety, comfort, quality, and service are not compromised by this award.

We thank you for your review of our concerns and look forward to discussing this further with you at the committee meeting on Monday January 16th at 9:30 am.

Thank you.

Respectfully,



Steven Schwartz
Chief Executive Officer
Starfield LION

Cc: Mark Smith – Senior Vice President, LSRG
Andy Schwartz – Corporate Counsel
Robert Hosselet – National Sales Manager, Starfield LION

Section 2 – Previous and Current Awards, Debrief

January 4 2017 notice of award recommendation

Request and confirmation of debrief schedule

Award acceptance, December 2010

Award acceptance, August 2015

January 4, 2017

Via Email: rkalenuik@lionprotects.com
(1 page)

Starfield LION
23 Benton Road
Toronto, ON
Canada M6M 3G2

Attention: Stephen A. Schwartz

Re: Request for Proposal No. 3806-15-0012
For the Supply and Delivery of New, Firefighting Structural Bunker Suits for Fire
Services Division

Dear Mr. Schwartz,

Thank you for your response to the above Request for Proposal for the Supply and Delivery of
New, Firefighting Structural Bunker Suits for Fire Services Division.

We appreciate the time and effort your firm has invested in this RFP. The Evaluation Team has
reviewed all of the proposals and based on the results of the evaluation an award has been
recommended to Innotex Inc.

All firms are entitled to a debriefing (formal or informal), upon written request made to the
Corporate Buyer, to obtain feedback on why their proposal was not successful.

In closing, we again thank you for your interest in this RFP, and invite you to submit proposals
for any future initiatives the City of Toronto may advertise.

If you have any questions, please contact Acting Senior Corporate Buyer Sue Chakraborti at
Sreyashi.chakraborti@toronto.ca or (416) 392-7468.

Yours truly,



Elena Caruso
Manager, Goods & Services,
Purchasing and Materials Management

Request and Confirmation of Debrief Schedule

Hello Rob,

RFP No. 3806-15-0012 for the supply and delivery of Firefighter's Structural Bunker Suits is being recommended for award at Community Development and Recreation Committee on January 16, 2017. Following the meeting, the report will be presented at City Council meeting being held on January 31, 2017 to February 2, 2017. The De-briefing will be held once the report has been presented and been approved by both CDRC and Council.

Once I receive the dates and times in early February from Fire Services I will forward them to you so we can arrange for the de-briefing.

Thank you,

Sue Chakraborti

(416) 392-7468

Sreyashi.Chakraborti@toronto.ca

From: Hosselet, Rob [<mailto:RHosselet@lionprotects.com>]

Sent: January-10-17 11:13 AM

To: Elena Caruso <Elena.Caruso@toronto.ca>; Sreyashi (Sue) Chakraborti <Sreyashi.Chakraborti@toronto.ca>

Cc: Smith, Mark <MSmith@lionprotects.com>; Schwartz, Andy <ASchwartz@lionprotects.com>

Subject: RE: RFP No. 3806-15-0012 supply and delivery of bunker gear

Thank you for your quick response. We of course have a preference for a debriefing as quickly as possible, as both the incumbent and the local Toronto manufacturer.

That being said, please try to provide a schedule with a few days in advance as there may be additional people from our team who are coming from out of town that need notice to book flights.

Thank you again, and a Happy New Year to you to.

Robert Hosselet

National Sales Manager



home office 613.627.1069 | cell 613.296.7153 | home office fax 1.888.627.7553 | web: www.starfieldlion.com

From: Elena Caruso [<mailto:Elena.Caruso@toronto.ca>]

Sent: Tuesday, January 10, 2017 7:15 AM

To: Hosselet, Rob <RHosselet@lionprotects.com>; Sreyashi (Sue) Chakraborti <Sreyashi.Chakraborti@toronto.ca>

Cc: Smith, Mark <MSmith@lionprotects.com>; Schwartz, Andy <ASchwartz@lionprotects.com>
Subject: RE: RFP No. 3806-15-0012 supply and delivery of bunker gear
Importance: High

Good morning Rob and happy new year....

We will be conducting debriefing sessions with all vendors whom have requested one. We are trying to co-ordinate these sessions in one day. We are trying to co-ordinate the appropriate staff to be in attendance as you may be aware you will be meeting not only with Purchasing staff but Fire Staff as well. We appreciate your patience, we will advise by end of week on the scheduled date.

From: Hosselet, Rob [<mailto:RHosselet@lionprotects.com>]

Sent: January-09-17 5:28 PM

To: Sreyashi (Sue) Chakraborti <Sreyashi.Chakraborti@toronto.ca>

Cc: Elena Caruso <Elena.Caruso@toronto.ca>; Smith, Mark <MSmith@lionprotects.com>; Schwartz, Andy <ASchwartz@lionprotects.com>

Subject: FW: RFP No. 3806-15-0012 supply and delivery of bunker gear

Dear Ms. Chakraborti,

I left a telephone message on your office line Friday afternoon regarding our request below. It was close to but before 4 pm. so you might not have received at that time.

This is our third request for resolution on securing a debrief to the above quoted RFP (in the subject line). Preference is for this to occur sometime this week.

We look forward to your quick response.

Thank you for your cooperation.

Robert Hosselet

National Sales Manager



home office 613.627.1069 | cell 613.296.7153 | home office fax 1.888.627.7553 | web: www.starfieldlion.com

From: Hosselet, Rob

Sent: Wednesday, January 04, 2017 2:27 PM

To: 'sreyashi.chakraborti@toronto.ca' <sreyashi.chakraborti@toronto.ca>

Cc: Rosanne Kalenuik <Rkalenuik@lionprotects.com>

Subject: RFP No. 3806-15-0012 supply and delivery of bunker gear

Dear Ms. Chakraborti,

With respect to the RFP referenced in the subject line, Starfield LION is formally requesting a debrief regarding the decision for award of purchase of bunker gear as noted in the letter supplied by Rabia Mistry (please see attached).

Rosanne Kalenuik and myself are available at a mutually convenient time next week, perhaps on Tues Jan 10 in the morning, Wed Jan 11 at any time, or Thurs Jan 12 at any time for this debrief and to pick up the suits we supplied for the wear trial.

Can you please confirm this is possible, and suggest a date and time that can work within the above schedule? Also, please confirm the location that we will meet with you or other representatives of Toronto Purchasing or Toronto Fire Services.

Thank you for your consideration.

Robert Hosselet

National Sales Manager



23 Benton Road | Toronto, ON M6M 3G2

office: 416.789.4354 | cell: 613.296.7153 | fax: 416.789.5475 | web: www.starfieldlion.com

home office 613.627.1069 | home office fax 1.888.627.7553

Connect with us on: *Facebook | Instagram | Twitter | Pinterest | YouTube | Our Blog*



CONTRACT
47015536

REFER TO THE ABOVE NUMBER
ON ALL CORRESPONDENCE.

Purchasing and Materials Management Division
18th Floor, West Tower
100 Queen St. W., Toronto, On M5H 2N2

Vendor: STARFIELD LION COMPANY
23 BENTON RD
TORONTO, ON M6M 3G2
Phone: 416-789-4354 / Fax: 416-789-5475

Ship to:

Various locations as
specified per individual
Contract Release Order.

| | |
|---|----------------------------|
| Del Terms: FOB DESTINATION | Vendor No.: 3010112 |
| Payment Terms: net 30 days | |
| Buyer Name and Phone # Vanessa Magalona at 416 392-7178 | |
| Refer to: 3806-10-0020 | |
| Purchasing Authorization | |
| Treasurer | |

| |
|---|
| IF NO DATA APPEARS IN THIS WINDOW, SEE ITEM DETAILS BELOW. |
| Valid from.....: 12/30/2010 |
| Valid to.....: 12/31/2015 |
| Total Value Estimated: \$3,861,634.00 |

**THIS ORDER IS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN
AUTHORITY BID COMMITTEE MEETING # BD4.1-ITEM 9 HELD ON WEDNESDAY DECEMBER 22,
2010.**

Department Contact: David Sheen at (416) 338-9101
Division: Fire Services Division
Requisition No: 1118995

Vendor Contact: Rosanne Kalenuik

With reference to your Proposal submitted in response to RFP 3806-10-0020.

For the supply and deliver firefighter's Bunker Suits for the period of January 1, 2011 to December 31, 2015 for the Fire Services Division, all in accordance with the provisions and specifications contained in this Request for Proposal (RFP) and the City of Toronto's Procurement Policies, the attached Appendix D Price Detail Form, and the City of Toronto Fair Wage Policy and Labour Trades Contractual Obligations in the Construction Industry.

Harmonized Sales Tax:

To help us pay you promptly the billing invoice must contain, as a separate line item, tax charges that are applicable to the goods/services provided. The City is required to pay taxes in the following categories:

- A) Zero Percent (0%) for Zero Rated items under Schedule VI of the Excise Tax Act (ETA), such as prescription drugs as outlined in Part I, medical devices for the disabled as outlined in Part II, and basic groceries as outlined in Part III, etc.
- B) HST exempt services under Schedule V (exempt supplies) of ETA, such as used residential properties under Part I, health care services under Part II, child and personal care services under Part IV, etc.
- C) Five Percent (5%) for selected items (i.e., newspapers, feminine hygiene products, prepared food/beverages, books) as detailed on Info Sheet GI-060/062/063/064 and 065 located on the

Canada Revenue Agency website at www.cra-arc.gc.ca

D) 8% Ontario Retail Sales Tax on insurance premiums charged by insurance companies, as per the following publication from the Ontario Ministry of Revenue:
<http://www.rev.gov.on.ca/en/taxtips/hst/pdf/04.pdf>

E) Thirteen Percent (13%) Harmonized Sales Tax (HST) for all other goods/services that are not included in items A, B, C, and D above. Goods and services supplied by out of Province vendors must be invoiced at 13% - the Ontario HST rate.

Invoices that do not include the appropriate Sales Tax or do not include the HST Registration Number will be returned with non payment for corrections.

Billing Information:

To ensure prompt payment, it is essential that all required billing information is provided on the invoice/s submitted to the City of Toronto. Any missing billing information on an invoice will result in a payment delay and the invoice may be returned to the vendor with non-payment.

1) All original vendor invoices must be addressed and be sent DIRECTLY to:

City of Toronto
 Accounting Services Division
 Corporate Accounts Payable
 55 John Street
 14 Floor, Metro Hall
 Toronto, ON
 M5V 3C6

2) Invoice/s submitted to the City of Toronto must have complete "ship to" information including:

- I. Name of City Division,
- II. The City Division's contact name and phone number (the person ordering or picking up the goods and/or services),
- III. Delivery location of goods and/or services,
- IV. Purchasing document information on the invoice (blanket contract number, contract release order number (CRO) purchase order (PO) or Divisional Purchase Order (DPO) must be clearly indicated on the invoice. (*This purchasing number should be provided by City staff at the time of order*)

Invoices that do not contain the required billing information may be returned with non-payment to the vendor for correction.

3) City purchases with the use of a credit card/Pcard, are NOT to be sent to Corporate Accounts Payable. These invoices are considered paid.

| Item Description | Unit | Material | Unit Price | Price Unit |
|--------------------------------|------|----------|------------|------------|
| 0010 Year 1: Bunker suit coats | EA | | 584.65 | / 1 |
| 0020 Year 1: Bunker suit pants | EA | | 415.30 | / 1 |
| 0030 Year 2: Bunker suit coats | EA | | 602.19 | / 1 |
| 0040 Year 2: Bunker suit pants | EA | | 427.76 | / 1 |
| 0050 Year 3: Bunker suit coats | EA | | 620.26 | / 1 |

| Item Description | Unit | Material | Unit Price | Price Unit |
|--------------------------------|------|----------|------------|------------|
| 0060 Year 3: Bunker suit pants | EA | | 440.59 | / 1 |
| 0070 Year 4: Bunker suit coats | EA | | 638.86 | / 1 |
| 0080 Year 4: Bunker suit pants | EA | | 453.81 | / 1 |
| 0090 Year 5: Bunker suit coats | EA | | 658.03 | / 1 |
| 0100 Year 5: Bunker suit pants | EA | | 467.42 | / 1 |



**CONTRACT
47015536**


REFER TO THE ABOVE NUMBER
ON ALL CORRESPONDENCE.

Purchasing and Materials Management Division
18th Floor, West Tower
100 Queen St. W, Toronto, On M5H 2N2

Vendor: STARFIELD LION COMPANY
23 BENTON RD
TORONTO, ON M6M 3G2
Phone: 416-789-4354 / Fax: 416-789-5475

Ship to:

Various locations as
specified per individual
Contract Release Order.

| | |
|--|-----------------------------|
| Del Terms: FOB DESTINATION | Vendor No. : 3010112 |
| Payment Terms: net 30 days | |
| Buyer Name and Phone # Sabrina Di Pietro at 416-397-4809 | |
| Refer to: 3806-10-0020 | |
| Purchasing Authorization  Treasurer | |

| |
|---|
| IF NO DATA APPEARS IN THIS WINDOW, SEE ITEM DETAILS BELOW. |
| Valid from.....: 12/30/2010 |
| Valid to.....: 12/31/2016 |
| Total Value Estimated: \$7,869,334.00 |

**THIS ORDER IS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN
AMENDMENT NO. 1 DATED AUGUST 18, 2015**

per City Council Meeting held on June 10, 2015 adopted Report No. CD4.3. As a result, the attached Amending Agreement was executed dated August 17, 2015 and lines 120 and 130 have been added. The total value of the contract has been increased by \$4,007,700.00 from \$3,861,634.00 to \$7,869,334.00 and the validity date has been extended from December 31, 2015 to December 31, 2016. Terms and Conditions remain the same.

AUTHORITY BID COMMITTEE MEETING # BD4.1-ITEM 9 HELD ON WEDNESDAY DECEMBER 22, 2010.

Department Contact: Mirella Greco at (416) 338-9420
Division: Fire Services Division
Requisition No: 1118995

Vendor Contact: Rosanne Kalenuik

With reference to your Proposal submitted in response to RFP 3806-10-0020.

For the supply and deliver firefighter's Bunker Suits for the period of January 1, 2011 to December 31, 2015 for the Fire Services Division, all in accordance with the provisions and specifications contained in this Request for Proposal (RFP) and the City of Toronto's Procurement Policies, the attached Appendix D Price Detail Form, and the City of Toronto Fair Wage Policy and Labour Trades Contractual Obligations in the Construction Industry.

Harmonized Sales Tax:

To help us pay you promptly the billing invoice must contain, as a separate line item, tax charges that are applicable to the goods/services provided. The City is required to pay taxes in the following categories:

- A) Zero Percent (0%) for Zero Rated items under Schedule VI of the Excise Tax Act (ETA), such as prescription drugs as outlined in Part I, medical devices for the disabled as outlined in Part II, and basic groceries as outlined in Part III, etc.

B) HST exempt services under Schedule V (exempt supplies) of ETA, such as used residential properties under Part I, health care services under Part II, child and personal care services under Part IV, etc.

C) Five Percent (5%) for selected items (i.e., newspapers, feminine hygiene products, prepared food/beverages, books) as detailed on Info Sheet GI-060/062/063/064 and 065 located on the Canada Revenue Agency website at www.cra-arc.gc.ca

D) 8% Ontario Retail Sales Tax on insurance premiums charged by insurance companies, as per the following publication from the Ontario Ministry of Revenue:
<http://www.rev.gov.on.ca/en/taxtips/hst/pdf/04.pdf>

E) Thirteen Percent (13%) Harmonized Sales Tax (HST) for all other goods/services that are not included in items A, B, C, and D above. Goods and services supplied by out of Province vendors must be invoiced at 13% - the Ontario HST rate.

Invoices that do not include the appropriate Sales Tax or do not include the HST Registration Number will be returned with non payment for corrections.

Billing Information:

To ensure prompt payment, it is essential that all required billing information is provided on the invoice/s submitted to the City of Toronto. Any missing billing information on an invoice will result in a payment delay and the invoice may be returned to the vendor with non-payment.

1) All original vendor invoices must be addressed and be sent DIRECTLY to:

City of Toronto
 Accounting Services Division
 Corporate Accounts Payable
 55 John Street
 14 Floor, Metro Hall
 Toronto, ON
 M5V 3C6

2) Invoice/s submitted to the City of Toronto must have complete "ship to" information including:

- I. Name of City Division,
- II. The City Division's contact name and phone number (the person ordering or picking up the goods and/or services),
- III. Delivery location of goods and/or services,
- IV. Purchasing document information on the invoice (blanket contract number, contract release order number (CRO) purchase order (PO) or Divisional Purchase Order (DPO) must be clearly indicated on the invoice. (*This purchasing number should be provided by City staff at the time of order*)

Invoices that do not contain the required billing information may be returned with non-payment to the vendor for correction.

3) City purchases with the use of a credit card/Pcard, are NOT to be sent to Corporate Accounts Payable. These invoices are considered paid.

| Item | Description | Unit | Material | Unit Price | Price Unit |
|------|---------------------------|------|----------|------------|------------|
| 0010 | Year 1: Bunker suit coats | EA | | 584.65 | / 1 |
| 0020 | Year 1: Bunker suit pants | EA | | 415.30 | / 1 |
| 0030 | Year 2: Bunker suit coats | EA | | 602.19 | / 1 |

| Item | Description | Unit | Material | Unit Price | Price Unit |
|------|---------------------------------|------|----------|------------|------------|
| 0040 | Year 2: Bunker suit pants | EA | | 427.76 | / 1 |
| 0050 | Year 3: Bunker suit coats | EA | | 620.26 | / 1 |
| 0060 | Year 3: Bunker suit pants | EA | | 440.59 | / 1 |
| 0070 | Year 4: Bunker suit coats | EA | | 638.86 | / 1 |
| 0080 | Year 4: Bunker suit pants | EA | | 453.81 | / 1 |
| 0090 | Year 5: Bunker suit coats | EA | | 658.03 | / 1 |
| 0100 | Year 5: Bunker suit pants | EA | | 467.42 | / 1 |
| 0110 | Miscellaneous Line Item | | | | |
| 0120 | Primary Bunker Suit | EA | | 1,314.00 | / 1 |
| 0130 | In-Year Replacement Bunker Suit | EA | | 1,314.00 | / 1 |

Section 3 – Technical Requirements and Subsequent Addenda

Technical requirements for outer shell, moisture barrier, thermal liner, page 82 from tender document– reference 10.3.3, 10.3.5, 10.3.6

Allowed deviations, pages 79-80 from tender document– reference 6.

Addendum 2, page 3 of 4, “TFS will accept Stedair 4000 as an approved moisture barrier...” – reference A10.

Addendum 3, page 1 of 8, “approved equivalent for outer shell...” – reference A1.

Mobility Features - Bellows, gussets and other features designed to improve the mobility of the firefighter must be present in all layers and work together.

- 10.3.3 Outer shell fabric for both Structural Bunker Suit coat and pants must be TenCate Advance, at 7.5 oz./sq. yd. This product must be a composite of Kevlar, typically 60%, and Nomex typically 40%, in a rip-stop weave or approved equivalent. Colour must be Khaki or approved equivalent Kahki colour and treated (may also be known, in the industry, as SST).
- 10.3.4 Outer shell fabric must be used for outer fabric of pockets, attachment points, and coat hanger.
- 10.3.5 Moisture Barrier shall be one (1) of the following:
- Gore Crosstech Black
 - Gore Crosstech 3 Layer
 - Stedair Gold.
- Only moisture barriers that are approved equivalent or exceed the above will be accepted.
- 10.3.6 Thermal liner must be two layers of Dupont Nomex E89 with a TenCate Caldura face cloth, for a total weight of 7.3 oz./sq. yd. or less.
- 10.3.7 Thread must be Dupont Nomex thread that will resist heat and must not ignite, or char when exposed to a temperature of 500degrees F (260degrees C) in accordance with Method 1534, "Melting Point of Synthetic Fibres," of Federal Test Method Standard 191A, Textile Test Methods.
- 10.3.8 Knit material must be 100% knit Dupont Nomex.
- 10.3.9 Hook and loop fastener must meet the requirements of MIL-SPEC A-A-55126B, "Fastener Tapes, Hook and Loop, Synthetic", with Flame Resistant Type II, Class 2 Hook 88 and Flame Resistant Class 2 Loop 1000 combination or approved (by TFS) equivalent.
- 10.3.10 The snap fasteners, snap hooks, "D" rings, eyelets, rivets, spring clips for waist adjustments, suspender sliders, I.D. Accountability tag D-ring, flashlight hook and any other hardware must be corrosion resistant metal and, where applicable, must meet the requirements given in NFPA 1971-2013 standard for structural firefighting ensembles.
- 10.3.11 Reflective trim must be as specified in this RFP. All trim must be sewn with four rows lock stitch; minimum seven (7) stitches per inch for most secure trim attachment. There must be two rows of lock stitch sewing utilized on each edge of the reflective trim; unless there is an amour stitched protection method.
- 10.3.12 Seams and stitching must conform to NFPA1971-2013, Lock stitching must be used throughout the suit's outer shell (unless otherwise specified), using Nomex thread. All major outer shell seam assemblies, where rupture could reduce protection of the garment by exposing the moisture barrier, thermal liner, the wearer's work/station uniform, or other clothing, or skin, must be double or triple lock stitched. All raw edges must be suitably bound. All stress points must be bar tacked. All hook and pile

APPENDIX J - Structural Bunker Suit Requirements and Specifications

(A) Technical Specifications

1. Definition

This specification applies to: Structural Firefighting Structural Bunker Suit Suitable for use by: Toronto Fire Services

2. General Requirements

Toronto Fire Services requires the manufacture, supply, delivery and warranty of customized Structural Bunker Suits for structural firefighting.

The Vendor shall measure Toronto fire fighters and manufacture and supply the customized Structural Bunker Suits to a fixed time schedule and shall fully and completely warranty these garments for a minimum period of five (5) years, commencing on the date that the bunker suit is delivered to Toronto Fire Services. Warranty shall be all-inclusive and shall include all components of the garment for a minimum period of five (5) years and shall include any and all materials and labour required to complete warranty repairs.

3. Certification to One Standard for Structural Firefighting

Manufactured and supplied Structural Bunker Suits shall be certified to the following safety standard of the National Fire Protection Association as amended from time to time

- NFPA 1971 – Standard on Protective Ensembles for Structural Firefighting and Proximity Firefighting, 2013 Edition

As per the Occupational Health and Safety Act, specifically Ontario Regulation 714/94 - Firefighters — Protective Equipment.

4. Design

The Structural Bunker Suit shall be designed to provide firefighters with the ability to perform their duties efficiently and effectively under a wide range of emergency and other operating conditions. Safety, comfort, fit, breathability, mobility, durability, appearance, and style are all important design features. The Structural Bunker Suits shall be constructed with high quality materials and a high degree of work quality.

5. Manufacturing Defects

Structural Bunker Suits shall be free from manufacturing defects, imperfections and design deficiencies that may affect their operation, appearance, serviceability and performance. In all particulars not covered by this specification and proposal documents, production shall be in accordance with the best commercial practice. Materials not defined here shall be of the best commercial quality and suitable for the purpose intended.

6. Deviations

The following specifications, including services delivery methods and performance requirements, for the garments requested, are prepared to provide a basis for securing competitive Proposals.

In the case of specified items, the Proponent shall supply the specified item or items that meet or exceed the specifications of the specified items. Where a manufacturer and brand name are listed, only the listed manufacturer and the listed brand shall be offered, with the exception that the listed brand may be substituted with the same manufacturer's higher or latest generation of listed brand if higher or latest generation of listed brand meets or exceeds performance requirements and is considered to be suitable for the intended application in the opinion of the Toronto Fire Service.

In the case of specified service delivery methods, the Proponent shall supply the specified method or methods that meet or exceed the specifications of the specified methods.

In the case of specified performance requirements, the Proponent shall reply with a full description of how the Proponent's offered garment meets or exceeds the stated performance requirements.

Please Note: there is no ambiguity if the City of Toronto decides in the evaluation phase that a Deviation is not acceptable.

7. Size of Samples

The sample Structural Bunker Suits shall be made to fit six (6) sample sizes— specific names to be supplied of members of Toronto Fire Services. Members of Toronto Fire Services will be made available to short-listed Proponents for measurement and fitting at a time and date to be determined.

8. Individual Labels: Identification and Garment Tracking

Each garment must be labelled:

- (a) in accordance with the requirements of NFPA 1971-2013 standard for structural firefighting ensembles; and
- (b) with the name and employee number of the user for whom the garment was fitted; and
- (c) all labels shall be permanently sewn so they will stay intact and be legible for the life of the garment.

Each garment shall be labeled using industry standard bar coding on FR fabric for inventory and tracking purposes. This label shall contain all information necessary / unique identifiers for tracking and be contained in a bar code and the information shall also be printed on the label to be humanly readable. A separate number must be used for the upper coat and the lower pant.

The bar coding must be optical scanner compatible and capable of interfacing with software to produce forms and records consistent with expectations under the requirement of NFPA 1851-2014.

10. General Fabrication Requirements

10.1 Standards

All materials, labels, and component parts, as well as the finished product, must meet or exceed the NFPA 1971-2013 standard for structural firefighting ensembles.

Q8. Pg 91 – 12.8.2 – Your pants pocketing only asks for a single portion of hook and loop to connect the flap to the outside of the pockets. Your current specification asks for two portion of hook and loop, spread across the width of the flap/outside of the pocket, which provides stronger closure. Please clarify that you would like only one portion of hook and loop versus the current two.

A8. The pants pocketing must have 2 portions of hook and loop spread across the width of the outside flap of the pocket. Proponents may submit an alternative proposal in accordance with the terms and conditions of the RFP if they wish.

Q9. References to “Arashield” : Pg 86 – 11.6.1; pg 89 – 12.2.6; pg 90 – 12.6.1; pg 91 – 12.6.2; Will the city accept as an equivalent polymer coated Kevlar Stedshield, which is also NFPA 1971 certified, in place of Arashield?

A9. “Arashield” is the specified product. However, Proponents may submit an alternative proposal in accordance with the terms and conditions of the RFP if they wish. However, any product proposed in place of “Arashield” must be equivalent and/or superior to “Arashield”.

Q10. In reference to the request for proposal (RFP) 3806-15-0012, we would like to seek clarification on item number 4 of section 10.3.5. Item number 4 of Section 10.3.5 states that: moisture barriers that are approved equivalent or exceeds the above are acceptable.

Published data on STEDAIR 4000 demonstrates (NFPA 1971 approved equivalent) that STEDAIR 4000 does exceed the composite performance requirements of section 10.3.2 Based on the above statements, we would like the city of Toronto, to please confirm that STEDAIR 4000 is an approved equivalent.

A10. TFS will accept STEDAIR 4000 as an approved moisture barrier in addition to the other 3 approved moisture barriers identified in the specifications.

Q11. In reference to the request for proposal (RFP) 3806-15-0012, we would like the City of Toronto to review the Turnout gear Specifications concerning the selection of the moisture barriers.

On page 82 of 91, section 10.3.5 of the RFP, we observed that: only one moisture barrier of the three named in this section meets the composites performance requirements stated in section 10.3.2. From published data, the minimum requirement on THL of 250 and the minimum of TPP of 40 stated in this section are eliminating two moisture barriers out of three.

In order to render these moisture barriers acceptable in the bidding process, we propose that the City of Toronto amends these minimum requirements as follows: THL of not less than 240 and TPP of not less than 39.

January 4, 2016

Via Internet Posting
(8 pages)

**ADDENDUM NO. 3
REQUEST FOR PROPOSAL NO. 3806-15-0012
CLOSING: JANUARY 22, 2016 12:00 NOON (LOCAL TIME)**

For: the Supply and Delivery of New, Firefighting Structural Bunker Suits for Toronto Fire Services Division

Please refer to the above Request for Proposal (RFP) document in your possession and be advised of the following clarifications:

I. QUESTIONS:

Q1. P.7 section 2.3

As mentioned in section 2.3, TFS is open to alternative proposals.

TFS seems to be open to alternative outer shells as “or approved equivalent” is mentioned in section 10.3.3. What outer shells are considered equivalent as we want to make sure we also meet Section 4.2.2, Sub section 1, Step 2, point 11 (page 14 of 91) that mentions “Materials not specified in this specification (i.e. unspecified materials such as Basofil, Q9, etc.) will not be considered further and will render the Proposal non-compliant” Can TFS supply a list of approved equivalents?

A1. An approved equivalent is an outer shell fabric that is equivalent or superior to the physical properties of the TenCate Advance. As part of the composite, any approved equivalent fabric must meet all THL and TPP thresholds identified in the RFP document.

Q2. Some parts of the requirements and Specifications are covered by patents or trademarks?

Specifically the overhanging pockets that are protected by Canadian patent number 2542091 from Lion Apparel, the American owner of Starfield-Lion. The patent is available to view at the following link to Service Canada http://www.ic.gc.ca/opic-cipo/cpd/eng/patent/2542091/summary.html?query=Protective+garment+with+hang-down+pockets&start=1&num=50&type=basic_search Is TFS open to alternative construction methods than those specified in appendix J?

A2. Yes, Toronto Fire Services is open to alternative construction methods.

Q3. Is TFS interested in manufacturer’s suggestions for performance features that meet and EXCEED the gear specifications as published and in turn offer the wearer increased protection and safety?”

A3. Yes, Proponents may submit alternative proposals in accordance with the terms and conditions of the RFP.

Q4. P. 10-11, Section 4.2.2, Sub section 1, Step 2, point 3

Please clarify the following: In Section 4.2.2 Sub section 1, Step 2, point 3; it is mentioned that proponents are required to achieve a minimum of 70% in section 1 (a), (b), (c), (d), and (e). How

Section 4 – Starfield LION Proposal Options 1 and 3, Technical Requirements

Primary and Secondary Service Criteria, Tables A and B, pages 12-14 from tender document

Advance, Stedair 4000, Caldura SL2i Table A Primary and Secondary Service Criteria

Advance, Stedair 4000, Caldura SL2i Table B Primary and Secondary Service Criteria

Advance data sheet

Caldura SL2i data sheet

Armor, Stedair 4000, Glide 2L Araflo Table A Primary and Secondary Service Criteria

Armor, Stedair 4000, Glide 2L Araflo Table B Primary and Secondary Service Criteria

Armor AP data sheet

Armor AP specification sheet

Tencate Pioneer technical data sheet

Glide 2L Araflo specification sheet

Glide 2L Araflo UL testing

Glide 2L Araflo additional UL testing

LION water absorption rates Glide 2L Araflo vs. Caldura SL2i

Large Canadian departments wearing Armor AP and Glide 2L Araflo

Taber Abrasion Testing not an NFPA requirement

**TABLE A
PRIMARY SERVICE CRITERIA**

| FEATURE | COMPONENT | TEST METHOD | SCORING |
|---|------------------|--------------------|---|
| TPP | Composite | NFPA 1971 | Proposal with highest TPP receives 2 points, while the remaining submissions will receive points based on the following formula: (TPP proposed / highest TPP) x 2 points *Scores will be rounded to the nearest hundredth of a point |
| THL | Composite | ASTM – F1868 | Proposal with highest THL receives 2 points, while the remaining submissions will receive points based on the following formula: (THL proposed / highest THL) x 2 points *Scores will be rounded to the nearest hundredth of a point |
| CCHR(Reinforced Areas) | Composite | NFPA1971 | Proposal with highest CCHR time receives 2 points, while the remaining submissions will receive points based on the following formula: (CCHR proposed / highest CCHR) x 2 points *Scores will be rounded to the nearest hundredth of a point |
| Transmitted and Stored Thermal Energy (SET) | Composite | NFPA1971 | Proposal with highest SET time receives 2 points, while the remaining submissions will receive points based on the following formula: (SET proposed / highest SET) x 2 points *Scores will be rounded to the nearest hundredth of a point |
| Weight | Composite Layers | FTMS-191A-4041 | Proposal with lowest weight receives 2 points, while the remaining submissions will receive points based on the following formula: (lowest weight / proposed weight) x 2 points *Scores will be rounded to the nearest hundredth of a point |
| Water Absorption | Outer Shell | NFPA – 1971 | Proposal with lowest water absorption receives 2 points, while the remaining submissions will receive points based on the following formula: (lowest water absorption / water absorption proposed) x 2 points *Scores will be rounded to the nearest hundredth of a point |

**TABLE B
SECONDARY SERVICE CRITERIA**

| FEATURE | COMPONENT | TEST METHOD | SCORING |
|-------------------|------------------|--|---|
| Taber Abrasion | Outer Shell | ASTM D3884-92-H-18 wheel, 500g and 1000g weights | Proposal with highest number of cycles receive 1 point, while the remaining submissions will receive points based on the following formula: $(\text{number of cycles proposed} / \text{highest number of cycles}) \times 1 \text{ point}$ *Scores will be rounded to the nearest hundredth of a point |
| Tear Strength | Outer Shell | NFPA – 1971 | Proposal with highest tear strength for the outer shell receives 1 point, while the remaining submissions will receive points based on the following formula: $(\text{tear strength proposed} / \text{highest tear strength}) \times 1 \text{ point}$ *Scores will be rounded to the nearest hundredth of a point |
| | Thermal Liner | NFPA – 1971 | Proposal with highest tear strength for the thermal liner receives 1 point, while the remaining submissions will receive points based on the following formula: $(\text{tear strength proposed} / \text{highest tear strength}) \times 1 \text{ point}$ *Scores will be rounded to the nearest hundredth of a point |
| Breaking Strength | Outer Shell | NFPA – 1971 | Proposal with highest breaking strength for the outer shell receives 1 point, while the remaining submissions will receive points based on the following formula: $(\text{breaking strength proposed} / \text{highest breaking strength}) \times 1 \text{ point}$ *Scores will be rounded to the nearest hundredth of a point |
| Light Fastness | Outer Shell | NFPA-1971 | Proposal with highest light fastness for the outer shell receives 1 point, while the remaining submissions will receive points based on the following formula: $(\text{light fastness proposed} / \text{highest light fastness}) \times 1 \text{ point}$ *Scores will be rounded to the nearest hundredth of a point |

| FEATURE | COMPONENT | TEST METHOD | SCORING |
|---|---------------|-------------|--|
| Thermal Shrinkage and Heat Resistance (oven test) | Outer Shell | NFPA – 1971 | Proposal with lowest thermal shrinkage and highest heat resistance for the outer shell receives 1 point, while the remaining submissions will receive points based on the following formula: (lowest thermal shrinkage / thermal shrinkage proposed) x 1 point *Scores will be rounded to the nearest hundredth of a point |
| | Thermal Liner | NFPA – 1971 | Proposal with lowest thermal shrinkage and highest heat resistance for the thermal liner receives 1 point, while the remaining submissions will receive points based on the following formula: (heat resistance proposed/ highest heat resistance) x 1 point *Scores will be rounded to the nearest hundredth of a point |
| Cleaning Shrinkage | Outer Shell | NFPA– 1971 | Proposal with lowest cleaning shrinkage receives 1 point, while the remaining submissions will receive points based on the following formula: (lowest cleaning shrinkage / cleaning shrinkage proposed) x 1 point |

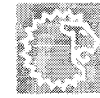
- 6) The Proposal shall include verification [certification as per section 5.2 (c) (vi) satisfactory to the Fire Services (e.g. Independent accredited laboratory and/or fabric manufacturer's certified test reports) of the values submitted for the performance criteria specified.
- 7) Proponents must provide valid (not expired) third party accredited laboratory documentation, within five (5) business days of request, confirming the NFPA 1971-2013 standard for structural firefighting ensembles protective ensembles Thermal Protective Performance (TPP), Total Heat Loss (THL), Conductive and Compressive Heat Resistance (CCHR) and Transmitted and Stored Thermal Energy Test rating of the garments proposed to be supplied under the legal agreement and/or Contract.
- 8) Certificates of compliance for Structural Bunker Suit components may be requested for further verification of any or all components (materials and hardware not specifically mentioned in NFPA 1971), and must be provided within five (5) working days of request.
- 9) A summary of data, presented in table form, **must be included** for the Primary and Secondary service criteria specified in Tables A and B specific to the Structural Bunker Suit(s) proposed.
- 10) Fit, Comfort and Construction: Appendix-F - 2015 TORONTO FIRE STRUCTURAL BUNKER GEAR TESTING PROTOCOL will be used as the mechanism to determine the scoring for this section, Step 2.
- 11) Materials not specified in this specification (i.e. unspecified materials such as Basofil, Q9, etc.) will not be considered further and will render the Proposal non-compliant.



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Supply and Delivery of Firefighting Bunker Gear
Fire Services Division
RFQ – 3806-15-0012
January 22, 2016



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Table A: Primary Service Criteria, Advance™/Stedair/Caldura SL2i

| Feature | Test Method | Component | Before Wash | After Wash |
|---|------------------------------|---|----------------------------|----------------|
| TPP | NFPA – 1971 2013 | Advance 7.2 oz Stedair 4000 5 oz Caldura SL2i 7.7 oz | 41.2 | 52.3 |
| THL | ASTM-F1868 | Advance 7.2 oz Stedair 4000 5 oz Caldura SL2i 7.7 oz | 251.5 | N/A |
| CCHR (Shoulders) | NFPA – 1971 2013 | Advance 7.2 oz Stedair 4000 5 oz Caldura SL2i 7.7 oz Caldura SL2i 7.7 oz | N/A | 25.9 Average |
| CCHR (Knees) | NFPA – 1971 2013 | Advance 7.2 oz Stedair 4000 5 oz Caldura SL2i 7.7 oz 4 layers Lite N Dri | N/A | 177.8. Average |
| Weight | FTMS-191A-4041 | Advance 7.2 oz Stedair 4000 5 oz Caldura SL2i 7.7 oz | 7.2 oz 5.0 oz 7.6 oz | N/A |
| Water Absorption | NFPA – 1971 2013 AATCC-42 | Advance 7.2 oz | < 2.0 % | < 5.0% |
| Transmitted and Stored Thermal Energy SET | NFPA – 1971 2013 | SET is Stored Energy Test. UL does not have any numbers for this, since this is only for sleeve enhancements (i.e. reflective trim, patches, etc.). This is done on a case by case basis, depending on how each manufacturer builds their garments. The only numbers that we would have for a composite is the TPP and THL. And the SL TPP number is typically not published, since there is so much variability in this testing after laundering | | |

All tests performed to NFPA 1971 2013 edition Test information is also included
Fabric weight Advance 7.2 oz, Stedair 4000 5.0 oz, Caldura SL2i 7.7 oz



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| Moisture | Thermal | THL | TPP | TPP (5L) |
|----------------------|-----------------|--------|------|----------|
| CROSSTECH® Black, 2F | Caldura SL2i | 250.99 | 41.2 | 52.8 |
| Stedair 4000 | Glide 2L Araflo | 255.0 | 39.2 | 52.3 |
| Stedair 4000 | Caldura SL2i | 251.5 | 41.2 | 51.0 |

Nick Galloway
Lead Engineering Associate
Personal Protective Equipment

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Table B: Secondary Service Criteria, Advance / Stedair 4000 / Caldura SL2i

| Feature | Components | Test Method | Before Wash | After Wash |
|--|------------------|--|--|--|
| Taber abrasion Tested at CTT | Advance 7.2 oz | ASTM D3884-92 H-18 until perforation | *H18-500 gm Abrasion 564 cycles H18-1000 gm Abrasion 213 cycles | |
| Tear strength, outer shell | Advance 7.2 oz | ASTM D 5587 NFPA 1971 2013ed. | Warp 175 N (40 lbf) Weft 155 N (35 lbf) | Warp 175 N (35 lbf) Weft 155 N (30 lbf) |
| Tear strength, thermal liner | Caldura SL2i 7.7 | NFPA 1971 2013 ASTM D5587 | Warp 40 lbs Weft 100 lbs | Warp 30 lbs Weft 115 lbs |
| Breaking strength, outer shell | Advance 7.2 oz | NFPA 1971 2013. ASTM D5587 | Warp 1420 N (320 lbf) Weft 1245 N (280 lbf) | Warp 1200 N (270 lbf) Weft 1110 N (250 lbf) |
| Thermal Shrinkage and heat resistance. outer shell | Advance 7.2 oz | NFPA 1971 2013 ed. (oven test - 500°F for 5 minutes) | Warp -1.3% Weft -0.2% | Warp -0.7% Weft 0.0% |
| Thermal Shrinkage and heat resistance, thermal liner | Caldura SL2i 7.7 | NFPA 1971 2013 500°F at 5 minutes | <3.5 x <.05 | <3.5 x <.05 |
| Cleaning Shrinkage, outer shell | Advance 7.2 oz | NFPA 1971 2013 | <2.0 | <2.0 |
| Cleaning Shrinkage, outer shell | Caldura SL2i 7.7 | NFPA 1971 2013 | <5.0 | <5.0 |

Outer Shell Advance - All tests performed to NFPA 1971 2013 ed. have been tested at UL, others were tested at the CTT.

All Mill test results are included in Section 3 Appendix 3



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Supply and Delivery of Firefighting Bunker Gear
Fire Services Division
RFQ – 3806-15-0012
January 22, 2016



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January 25, 2016

Test Report No.



LAB REPORT

Form #210L

7200 Poe Avenue Dayton, OH 45414

Tabor Abrasion Testing

Sample Description: Tabor Abrasion tests were performed using a Teledyne Tabor Abraser Model 503 with 500gm weights and H-18 Abrading Wheels, on structural firefighting fabrics. Samples were washed and dried one time to remove any coating prior to testing.

Result:

| Material | Average Cycles to Break Fabric |
|----------------|--------------------------------|
| Advance Khaki | 564 |
| Armor AP Khaki | 372 |

Sample Description: Tabor Abrasion tests were performed using a Teledyne Tabor Abraser Model 503 with 1,000gm weights and H-18 Abrading Wheels, on structural firefighting fabrics. Samples were washed and dried one time to remove any coating prior to testing.

Result:

| Material | Average Cycles to Break Fabric |
|----------------|--------------------------------|
| Advance Khaki | 213 |
| Armor AP Khaki | 158 |

Mike Brammer / Lab Technician

Performance terms and corresponding data refer to typical performance in specified tests and should not be construed to imply behavior of FR fabrics under fire conditions. Results may vary from one construction weight or fabric lot to another. Textile resistance to heat and flame is only one aspect of a product's ability to meet or exceed a safety standard for clothing. It is the purchaser's responsibility to assure that all requirements have been met before accepting a finished product as compliant with that standard. It is the wearer's responsibility to restrict the use and maintenance of apparel products to the use for which they were purchased and intended. All textile fabrics will burn and generate smoke under some fire condition



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* Taber Abrasion testing is not an NFPA 1971 requirement and has not been deemed as a critical performance requirement within the NFPA standards making process. While the method is published by ASTM, it is classified as a Guide and not a Performance Requirement or a Standard Test Method. The Guide itself states that it is not recommended to be used as a guide for purchasing criteria.

“All test procedures and instruments that have been developed for abrasion resistance of fabrics may show a high degree of variability in results obtained by different operators and in different laboratories. In general, they should not be relied upon for prediction of actual wear-life in specific end uses unless there are data showing the specific relationship between laboratory abrasion tests and actual wear in the intended end-use.”

Taber abrasion test data can vary significantly from laboratory to laboratory and has not been correlated to field abrasion or product wear life. Simple variances in test equipment, not specified in the ASTM guide, utilized in different laboratories produce varying results as you may see in some of the data presented to you. Laboratory data alone should not be utilized to determine wear life of fabrics against the effects of abrasion.



TENCATE Advance™

| PROPERTIES | | |
|---|---|---------------------------------------|
| Nominal Weight | 7.2 osy (245 gsm) | |
| Fabric Content | DuPont™ Kevlar® & DuPont™ Nomex® | |
| Weave | Ripstop | |
| Colors | Khaki, Yellow, Gold, Navy Blue, Spruce & Black | |
| Finish | Super Shelltite™ | |
| Made in America | Yes | |
| Certifications | NFPA 1971, 1977 | |
| COMPOSITE TESTING | | |
| TPP NFPA 1971 UL CERTIFIED RESULTS USING GORE® CROSSTECH® BLACK MOISTURE BARRIER | Quantum 4™ i | N/A |
| | Quantum3D® SL2i | 44 - 46 |
| | Defender® M SL2i | 45 - 47 |
| | Caldura® SL2i | 40 - 42 |
| THL NFPA 1971 UL CERTIFIED RESULTS USING GORE® CROSSTECH® BLACK MOISTURE BARRIER | Quantum 4™ i | pending |
| | Quantum3D® SL2i | 230 - 250 |
| | Defender® M SL2i | 250 - 270 |
| | Caldura® SL2i | 240 - 260 |
| STRENGTH / DURABILITY | | |
| Taber Abrasion | 3,500 cycles | |
| Trap Tear ASTM 5587, NFPA 1971 (WARP X FILL) | Initial | 40 lbf x 35 lbf (175 N x 155 N) |
| | 5x After Wash | 35 lbf x 30 lbf (175 N x 155 N) |
| Tensile Strength ASTM D5034 (WARP X FILL) | Initial | 320 lbf x 280 lbf (1,420 N x 1,245 N) |
| | 10x After Wash | 270 lbf x 250 lbf (1,200 N x 1,110 N) |
| THERMAL TESTING | | |
| Flame Resistance ASTM D6413, NFPA 1971 CHAR LENGTH (WARP X FILL) | Initial char length | 0.2 in x 0.2 in (5 x 5 mm) |
| | 5x after wash | 0.6 in x 0.6 in (15 mm x 15 mm) |
| | After flame | 0 seconds |
| Thermal Shrinkage NFPA 1971-2013 | Initial | < 2.0% |
| | 5x after wash | < 1.0% |
| WATER RESISTANCE | | |
| Water Absorption AATCC 42 | Initial | < 2.0% |
| | 5x after wash | < 1.0% |



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All listed data represent typical values. Results from multiple tests unless otherwise stated. To the best of our knowledge, all information contained herein is accurate. TenCate Protective Fabrics USA assumes no liability whatsoever for the accuracy or completeness of the information contained herein. Users of any substance must satisfy themselves by independent investigation that the material can be used safely. TenCate Protective Fabrics describes only certain hazards but can not guarantee these are the only hazards.

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TenCate Caldura® SL2i

The TenCate Caldura® SL2i Thermal Barrier is designed for optimum slickness, soft hand and inherent wicking for improved moisture management. This unique fiber blend in the face cloth offers structural firefighters superior moisture management and exceptional comfort.

- Thin and flexible fabric offers superior comfort and thermal protection
- Multi-layer air trapping construction for higher thermal protection
- 50% Kevlar filament has increased slickness for easier donning and doffing of gear
- Inherent wicking of face fabric ensures durable moisture management
- Outstanding pilling performance
- Pending certification to NFPA 1971 and CAN/CGSB 155.1

Face Cloth: Kevlar filament and FR rayon/para-aramid/nylon, spun yarns, twill weave

Batt: 2 layers of spun lace; fiber composition meta-aramid/para-aramid

Weight: 7.7 osy (sq yd)

Colors: Gold

TenCate Caldura® SL2i Physical Data

| Physical Properties | | Caldura® SL2i | NFPA 1971 Requirement |
|--|-----------------------|--|-----------------------|
| Weight (osy) | | 7.7 | — |
| Trapezoidal Tear Strength (lbs) | ASTM D 5587 | | |
| Initial (warp x fill) | | 60 x 85 | 5.0 min |
| After 5 launderings (warp x fill) | | 60 x 75 | |
| Flame Resistance | ASTM D 6413 | | |
| Char length in inches (warp x fill) (initial) | | <0.5 x <1.5 | 4.0 max |
| After Flame in seconds (warp x fill) | | 0.0 x 0.0 | 2.0 max |
| Char length in inches (warp x fill) (After 5 launderings) | | <0.5 x <1.5 | 4.0 max |
| After Flame in seconds (warp x fill) (After 5 launderings) | | 0.0 x 0.0 | 2.0 max |
| Heat and Thermal Shrinkage (%) | NFPA 1971-2007 | | |
| 500° F at 5 minutes (warp x fill) | | <3.5 x <0.5 | 10.0 max |
| After 5 launderings (warp x fill) | | <3.5 x <0.5 | |
| Laundry Shrinkage (%) | AATCC | | |
| After 5 launderings (cotton sturdy cycle) (warp x fill) | | <5.0 x <5.0 | 5.0 max |
| Thermal Protective Performance (TPP) | NFPA 1971-2007 | Similar Performance Expected as Caldura® SL2 | 35.0 min |
| Total Heat Loss (THL) | ASTM F 1868 | Similar Performance Expected as Caldura® SL2 | 205 min |

Test results from initial testing. Data ranges may change as more data are acquired.

To the best of our knowledge, the information contained herein is accurate. However, TenCate assumes no liability whatsoever for the accuracy or completeness of the information contained herein. Users must satisfy themselves that the recommendations are suitable for their use and meet all appropriate safety and health standards.

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Technical Proposal
City Of Toronto
Supply and Delivery of Firefighting Bunker Gear
Fire Services Division
RFQ - 3806-15-0012
January 22, 2016



Table A: Primary Service Criteria, Armor AP™/Stedair 4000®/Glide Gold Araflo®

| Feature | Test Method | Component | Before Wash | After Wash |
|---|------------------|---|----------------------------|----------------|
| TPP | NFPA - 1971 2013 | Armor AP 6.5 oz Stedair 4000 5 oz Glide Gold Araflo 7.4 oz | 39.2 | 52.3 |
| THL | ASTM-F1868 | Armor AP 6.5 oz Stedair 4000 5 oz Glide Gold Araflo 7.4 oz | 255 | N/A |
| CCHR (Shoulders) | NFPA - 1971 2013 | Armor AP 6.5 oz Stedair 4000 5 oz Glide Gold Araflo 7.4 oz Glide Gold Araflo 7.4 oz | N/A | 27.3 Average* |
| CCHR (Knees) | NFPA - 1971 2013 | Armor AP 6.5 oz Stedair 4000 5 oz Glide Gold Araflo 7.4 oz 4 layers Lite N Dri Poly Coated Aramid | N/A | 173.2 Average* |
| Weight | FTMS-191A-4041 | Armor AP 6.5 oz Stedair 4000 5 oz Glide Gold Araflo 7.4 oz | 6.5 oz 5.0 oz 7.4 oz | N/A |
| Water Absorption | NFPA - 1971 2013 | Armor AP 6.5 oz | .01 | .03 |
| Transmitted and Stored Thermal Energy SET | NFPA - 1971 2013 | SET is Stored Energy Test. We do not have any numbers for this, since this is only for sleeve enhancements (i.e. reflective trim, patches, etc.). This is done on a case by case basis, depending on how each manufacturer builds their garments. The only numbers that we would have for a composite is the TPP and THL. And the 5L TPP number is typically not published, since there is so much variability in this testing after laundering | | |

All tests performed to NFPA 1971 2013 edition Test information is also included

*Tests performed 3 times.

Fabric weight - Armor AP 6.5 oz, Stedair 4000 5 oz, Glide Gold Araflo 7.4 oz



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| Moisture | Thermal | THL | TPP | TPP (5L) |
|----------------------|-----------------|--------|------|----------|
| CROSSTECH® Black, 2F | Caldura SL2i | 250.99 | 41.2 | 52.8 |
| Stedair 4000 | Glide 2L Araflo | 255.0 | 39.2 | 52.3 |
| Stedair 4000 | Caldura SL2i | 251.5 | 41.2 | 51.0 |

Nick Galloway
Lead Engineering Associate
 Personal Protective Equipment

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Fire Services Division
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January 22, 2016



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Table B: Secondary Service Criteria, Armor AP / Stedair 4000 / Glide Gold 2L Araflo

| Feature | Components | Test Method | Before Wash | After Wash |
|---|---------------|--|--|------------------------------|
| Taber abrasion Tested at CTT | Armor AP | ASTM D3884-92 H-18 until perforation | *H18-500 gm Abrasion 372 cycles H18-1000 gm Abrasion 158 cycles | NA |
| Tear strength, outer shell | Armor AP | ASTM D 5587 | Warp 71 lbf Weft 87 lbf | Warp 69 lbf Weft 76 lbf |
| Tear strength, thermal liner | **GG2L Araflo | ASTM D5587 | Warp 71 lbf Weft 87 lbf | Warp 69 lbf Weft 76 lbf |
| Breaking strength, outer shell | Armor AP | ASTM D5587 | Warp 406 lbf Weft 432 lbf | Warp 330 lbf Weft 350 lbf |
| Thermal Shrinkage and heat resistance, outer shell | Armor AP | NFPA 1971 2013 ed. (oven test - 500°F for 5 minutes) | Warp -0.3% Weft -0.0% | Warp -0.0% Weft 0.1% |
| Thermal Shrinkage and heat resistance, thermal liner | **GG2L Araflo | NFPA 1971 2013 ed. 500°F at 5 minutes | N/A | <5.0% < 5.0% |
| Cleaning Shrinkage, outer shell | Armor AP | NFPA 1971 2013 ed. | N/A | Warp -2.7% Weft -.06% |

All tests performed to NFPA 1971 2013 ed. have been tested at UL, others were tested at the CTT.

*This test an unreliable predictor of abrasion resistance performance. You can get different results depending on how you run the test and the test method does not give strict enough parameters.

Fabric weight Armor AP 6.5 oz, Stedair 4000 5 oz, Glide Gold 2L Araflo 7.4 oz**

ARMOR



STEP UP YOUR GAME WITH THE BEST DUPONT NOMEX/KEVLAR OUTER SHELL BLEND

For the last two decades, fire departments choosing outer shells made of 40% DuPont® Nomex®/60% DuPont® Kevlar® have been limited to stiff and uncomfortable gear...until now. Utilizing the groundbreaking Filament Twill Technology™ used in PBI Max®, Safety Components is launching Armor AP™ to fill the needs of firefighters who prefer improved mobility, improved durability, and improved protection at an economical price. Armor AP — a 6.5 oz. outer shell with absolute performance.

of the Top 10

Metro Cities specify

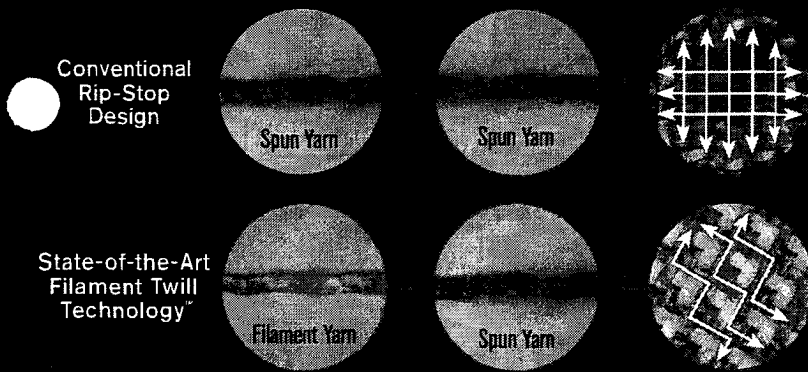
Safety Components

protective fabrics.



SAFETY COMPONENTS

PROVEN PROTECTION. PROVEN PERFORMANCE. PROVEN DURABILITY.



GOLD/BLACK

80% Nomex[®]/Kevlar spun yarns
20% 400 denier Kevlar filament

KHAKI

80% Nomex[®]/Kevlar/Teijinconex[™] spun yarns
20% 400 denier Kevlar filament

6.5 oz.

Comfort Twill with Filament Twill Technology

Gold, Khaki, Black

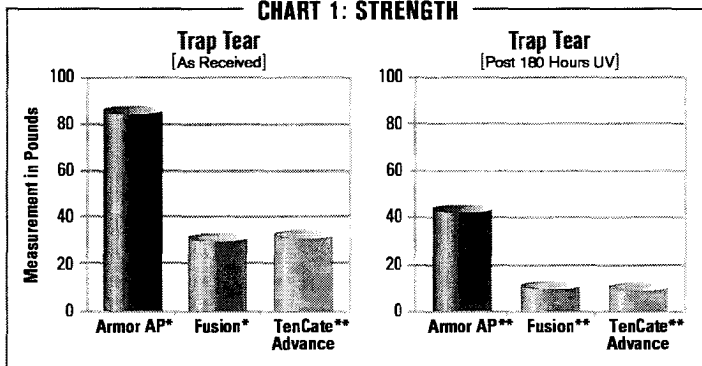
Absolute Performance

How does one achieve absolute performance utilizing the same fibers (meta-aramid, para-aramid) used to make Fusion[™] and TenCate Advance[™]...and not increase the cost 25-50%? The answer lies in Filament Twill Technology[™] (see diagram above). Like PBI Max[™], Armor AP[™] is powered by DuPont[™] Kevlar[®] filament in a twill weave. The result is a lighter weight outer shell (6.5 oz.) with improved comfort/flexibility, improved strength and durability, and equal to improved protection.

Improved Durability

Most firefighters agree longevity in turnout gear comes from better tear strength. While some companies try to spin abrasion as the most important indicator of durability, turnout gear isn't retired from holes due to abrasion. Turnout gear is retired when it starts ripping and tearing from "wear and tear" and UV degradation. DuPont Kevlar filament allows Armor AP to resist tearing (see chart 1) for a longer period of time than traditional outer shells like Fusion and TenCate Advance...improving durability.

CHART 1: STRENGTH

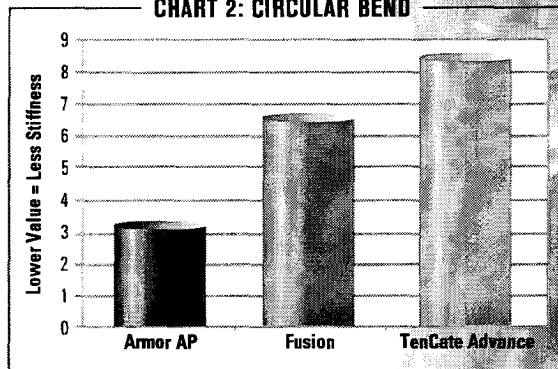


Strength values denote lowest value of warp or fill. *UL test results. **Independent lab results.

Improved Comfort/Flexibility

Protection and durability are important characteristics of any outer shell...but so is comfort and flexibility. Better comfort and flexibility (see chart 2) lead to better mobility. Better mobility can make all the difference in a life threatening situation. Firefighters wearing Fusion and TenCate Advance don't need to sacrifice mobility any longer...Armor AP is the answer.

CHART 2: CIRCULAR BEND



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Safety Components maintains ISO 9001:2000, TS 16949 and ISO 14001 certifications. Our fabric testing laboratories are ISO 1725 approved, ASTM (North America), DIN (Europe), JIS (Asia), and NFPA certified. Throughout our 100 year history, Safety Components has developed a reputation for product quality, product innovation, product diversity and on-time delivery.

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A Proud
Supporter of



DuPont[™] Nomex. | DuPont[™] Kevlar.

SAFETY COMPONENTS

an



company
open the future[™]



Fiber Blend: **Kevlar®/Nomex® Blend**
 Weight: **6.5 oz/sqyd**
 Weave: **Modified Twill**
 Width: **60 Inches usable**
 Thickness: **0.014 Inch**
 Finish: **Teflon F-PPE**

| | Initial * | Launderings * | NFPA 1971 Requirements |
|--|--------------------|--------------------|------------------------|
| Flame Resistance | | | |
| ASTM D 6413 | | After 5 washes | |
| Char Length in Inch (Warp x Filling) | 0.6 x 0.5 | 0.6 x 0.5 | 4.0 Max |
| After Flame in Second (Warp x Filling) | 0 x 0 | 0 x 0 | 2.0 Max |
| Heat/Thermal Resistance | | | |
| NFPA 1971 | | After 5 washes | |
| % of Shrinkage - 5mn at 500°F (Warp x Filling) | 0.3 x 0.0 | 0.0 x 0.1 | 10.0 Max |
| Tear Resistance - Trapezoid Method | | | |
| ASTM D 5587 | | After 5 washes | |
| Tear Strength in lbf (Warp x Filling) | 71 x 87 | 69 x 76 | 22.0 Min |
| Cleaning Shrinkage Resistance | | | |
| AATCC 135 | | After 5 washes | |
| % of Shrinkage (Warp x Weft) | N/A | 2.7 x 0.6 | 5.0 Max |
| Spray Rating | | | |
| AATCC 22 | | After 5 washes | |
| AATCC SCALE | 100 (ISO 5) | 100 (ISO 5) | 90 (ISO 4) Mini |
| Water Absorption Resistance | | | |
| AATCC 42 | | After 5 washes | |
| % of Absorption | 0.1 | 0.3 | 30.0 Max |
| Breaking Strength | | | |
| ASTM D 5034 | | After 10 washes | |
| Breaking Strength in lbf (Warp x Filling) | 406 x 435 | 330 x 350 | 140.0 Min |
| Abrasion Resistance (Taber Method) | | | |
| ASTM D 3884 | | After 5 washes | |
| Cycles to Tearing (H18 - 500g) | 1500 | 1000 | N/A |

* Represent typical values based on averages from production lots.

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Information is presented in good faith and believed to be accurate. SCI makes no recommendation or representation and neither expresses nor implies a warranty as to the completeness and accuracy of data, or the use to which the information is put. Many hazards exist and users of protective materials must satisfy themselves that their usage and practices are safe.



The Technology Leader in Flame Retardant Protection

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TENCATE
Pioneer



| FABRIC PROPERTIES | | |
|---|--|---|
| Fabric Nominal Weight | | 6.6 osy (225 gsm) |
| Special Feature | | TenCate ENFORCE™ Technology (Patent Pending) |
| Fiber Blend | | DuPont™ Nomex® and Kevlar® |
| Weave | | Twill |
| Colors | | Khaki, Light Gold, Black, Yellow and Spruce Green |
| Finish | | Super Shelltite™ |
| Made in America | | Yes |
| Certifications | | NFPA 1971 |
| COMPOSITE TESTING | | |
| TPP NFPA 1971 | Quantum3D® SL2i & Gore® Crosstech® Black | 41 to 43 |
| | Caldura® SL2i & Gore® Crosstech® Black | 40 to 42 |
| | Defender® M & Stedfast Stedair® 4000 | 44 to 46 |
| | Defender® M & Stedfast Stedair® 3000 | 44 to 46 |
| TIIL NFPA 1971 | Quantum3D® SL2i & Gore® Crosstech® Black | 250 to 270 |
| | Caldura® SL2i & Gore® Crosstech® Black | 270 to 290 |
| | Defender® M & Stedfast Stedair® 4000 | 220 to 240 |
| | Defender® M & Stedfast Stedair® 3000 | 220 to 240 |
| FABRIC STRENGTH | | |
| Taber Abrasion ASTM D3884 | | 3,000 cycles |
| Trap Tear ASTM 5587, NFPA 1971 (WARP x FILL) | Initial | 45 x 45 lbf (200 x 200 N) |
| | 5X After Wash | 45 x 45 lbf (200 x 200 N) |
| Tensile Strength ASTM 6034 (WARP x FILL) | Initial | 350 x 350 lbf (1,555 x 1,555 N) |
| | 10X After Wash | 350 x 350 lbf (1,555 x 1,555 N) |
| FLAME TESTING | | |
| Flame Resistance ASTM D6413, NFPA 1971 | Initial | 0.5 x 0.5 in (13 x 13 mm) |
| | 5X After Wash | 0.4 x 0.4 in (10 x 10 mm) |
| | After Flame | 0 x 0 seconds |
| Thermal Shrinkage NFPA 1971-2013 | Initial | < 1.0% |
| | 5X After Wash | < 1.0% |
| WATER TESTING | | |
| Water Absorption Resistance AATCC 42 | Initial | < 5.0% |
| | 5X After Wash | < 7.0% |



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TenCate Freedom pdf | Version 08132015A

Fiber Blend: **60% Filament Kevlar®**
40% Meta-Aramid / FR Viscose

2 Layers Araflo

Battings: **1 Layer of 2.3 oz/Yd² apertured Aramid Spunlace with DWR treatment**
1 Layer of 1.5 oz/Yd² apertured Aramid Spunlace with DWR treatment

Weight: **7.4 oz/sqyd**

Weave: **Twill**

Width: **60 Inches usable**

Thickness: **0.05 Inch**

Color: **Gold**

*Glide*TM
THERMAL LINERS

| | Initial | After 5 Launderings | NFPA 1971 Requirements |
|--|------------------|--------------------------------|-----------------------------------|
| Flame Resistance | | | |
| ASTM D 6413 | | | |
| Char Length in Inch (Warp x Filling) | 0.7 x 0.0 | 0.6 x 0.0 | 4.0 Max |
| After Flame in Second (Warp x Filling) | 0 x 0 | 0 x 0 | 2.0 Max |
| Melt or Drip | 0 | 0 | 0 Max |
| Heat/Thermal Resistance | | | |
| NFPA 1971-2007 | | | |
| % of Shrinkage - 5mn at 500°F (Warp x Filling) | 0.0 x 2.0 | 0.0 x 1.9 | 10.0 Max |
| Melt or Drip | 0 | 0 | 0 Max |
| Tear Resistance | | | |
| ASTM D 5587 | | | |
| Tear Strength in lbf (Warp x Filling) | 191 x 33 | 116 x 31 | 5 Min |
| Cleaning Shrinkage Resistance (5 Launderings) | | | |
| AATCC 135 | | | |
| % of Shrinkage (Warp x Filling) | N/A | 1.8 x 4.9 | 5.0 Max |

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Greenville, South Carolina 29605

Tel: 800.896.6926 ext. 28

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Kevlar is a registered trademark from DuPont.

TEAR RESISTANCE TEST - GARMENT
MATERIALS (CONT'D)

NFPA 1971-2007, SECTION 8.12

2.0 RESULTS - MOISTURE BARRIER, THERMAL BARRIER, AND WINTER LINER MATERIALS

| | |
|--------------|--|
| Article: | Thermal Barrier |
| Description: | Glide 2L Araflo Gold from Lion Apparel |
| Color: | Yellow |

CONDITIONING: AS RECEIVED AND AFTER 5 LAUNDERINGS

| Specimen | Tear Resistance Strength (N) | | | |
|--------------------|------------------------------|--------------|------------------|--------------|
| | As Received | | After Laundering | |
| | Warp Average | Fill Average | Warp Average | Fill Average |
| 1 | 895.5 | 151.4 | 522.7 | 126.2 |
| 2 | 795.3 | 152.6 | 503.7 | 165.8 |
| 3 | 908.3 | 142.2 | 472.8 | 145.4 |
| 4 | 824.2 | 150.0 | 592.7 | 134.1 |
| 5 | 827.6 | 132.1 | 498.5 | 123.1 |
| Average | 850.2 | 145.7 | 518.1 | 138.9 |
| Rounded Average | 850 | 146 | 518 | 139 |

3.0 COMPLIANCE CRITERIA - MOISTURE BARRIER, THERMAL BARRIER, AND WINTER
LINER MATERIALS

- 3.1 Specimens shall have a tear resistance strength of not less than 22 N (5 lbf).
- 3.2 Results did comply with the requirements.

HEAT AND THERMAL SHRINKAGE RESISTANCE
TEST - GARMENT MATERIALS (CONT'D)

NFPA 1971-2007, SECTION 8.6

2.0 RESULTS - MOISTURE BARRIER, THERMAL BARRIER AND WINTER LINER MATERIALS

| | |
|--------------|--|
| Article: | Thermal Barrier |
| Description: | Glide 2L Araflo Gold from Lion Apparel |
| Color: | Yellow |

CONDITIONING: AS RECEIVED AND AFTER 5 LAUNDERINGS

| As Received | | | | | | | | | |
|------------------|---------------|-----|-----|---------------|------|------|---------------|-------------------|-----------------|
| Specimen | Warp % Change | | | Fill % Change | | | Melt [Y/N] | Separate [Y/N] | Ignite [Y/N] |
| | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| 1 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| 2 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| 3 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| Average | 0.0 | | | -2.0 | | | N/A | | |
| After Laundering | | | | | | | | | |
| Specimen | Warp % Change | | | Fill % Change | | | Melt [Y/N] | Separate [Y/N] | Ignite [Y/N] |
| | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| 1 | 0.0 | 0.0 | 0.0 | -2.0 | -2.5 | -2.0 | N | N | N |
| 2 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| 3 | 0.0 | 0.0 | 0.0 | -2.0 | -1.5 | -1.5 | N | N | N |
| Average | 0.0 | | | -1.9 | | | N/A | | |

3.0 COMPLIANCE CRITERIA - MOISTURE BARRIER, THERMAL BARRIER, WINTER LINER
AND WRISTLET MATERIALS

- 3.1 1. Specimens shall not shrink more than 10.0 percent in any direction.
2. Specimens shall not melt, separate or ignite.

- 3.2 Results did comply with the requirements.

CLEANING SHRINKAGE RESISTANCE TEST -
GARMENT MATERIALS (CONT'D)

NFPA 1971-2007, SECTION 8.25

2.0 RESULTS - MATERIALS OTHER THAN WRISTLETS

| | |
|--------------|--|
| Article: | Thermal Barrier |
| Description: | Glide 2L Araflo Gold from Lion Apparel |
| Color: | Yellow |

CONDITIONING: SHRINKAGE AFTER 5 LAUNDERINGS

| Warp (Wales) | | | | |
|--------------|----------------|------|------|---------------------|
| Specimen | Percent Change | | | Specimen Average |
| | 1 | 2 | 3 | |
| 1 | -2.0 | -2.0 | -1.5 | -1.8 |
| 2 | -1.5 | -1.5 | -2.0 | -1.7 |
| 3 | -2.0 | -2.0 | -2.0 | -2.0 |
| Average | | | | -1.8 |

| Fill (Courses) | | | | |
|----------------|----------------|------|------|---------------------|
| Specimen | Percent Change | | | Specimen Average |
| | 1 | 2 | 3 | |
| 1 | -5.5 | -5.5 | -4.0 | -5.0 |
| 2 | -5.5 | -5.5 | -5.0 | -5.3 |
| 3 | -4.5 | -4.5 | -4.5 | -4.5 |
| Average | | | | -4.9 |

3.0 COMPLIANCE CRITERIA - MATERIALS OTHER THAN WRISTLETS

3.1 The average shrinkage shall not exceed 5 percent in any direction.

3.2 Results did comply with the requirements.



Sent via email: AScott@lionprotects.com

April 6, 2016

Ms. Ashley Scott
Lion First Responder PPE Inc. DBA LION
1200 Poe Avenue
Dayton, OH 45414 USA

Subject: Glide 2L Araflo data per NFPA 1971-2013 from File MH14967

Dear Ms. Ashley Scott,

Per your request, please see the attached data for Glide 2L Araflo, specifically Heat and Thermal Shrinkage Resistance, Cleaning Shrinkage Resistance, and Tear Resistance per NFPA 1971-2013.

Please note, this product was originally tested as Glide 2L Araflo Gold, which was later changed to Glide 2L Araflo. The testing was performed per NFPA 1971-2007 and it was determined that this data could be used when your garments were updated to NFPA 1971-2013 since there were no changes to the requirements. This product is currently included in your report for NFPA 1971-2013 and has gone through ongoing compliance testing on an annual basis. Also, due to the time that this

Should you have any questions or comments pertaining to the above, please do not hesitate in contacting the undersigned.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Nicholas B. Galloway'.

Nicholas B. Galloway
Lead Engineering Associate
Conformity Assessment Services
Tel: 919-549-1415
E-mail: Nicholas.B.Galloway@ul.com

Appendix

HEAT AND THERMAL SHRINKAGE
RESISTANCE TEST – GARMENT MATERIALS

NFPA 1971-2007, SECTION 8.6

1.0 PROCEDURE

1.1 Test in accordance with:

| TEST NAME | NFPA 1971-2007 SECTION | UL WORK INSTRUCTION |
|--|------------------------|---------------------|
| Heat and Thermal Shrinkage Resistance Test | 8.6 | 03-LO-W0035 |

2.0 RESULTS – MOISTURE BARRIER, THERMAL BARRIER AND WINTER LINER MATERIALS

| | |
|--------------|--|
| Article: | Thermal Barrier |
| Description: | Glide 2L Araflo Gold from Lion Apparel |
| Color: | Yellow |

CONDITIONING: AS RECEIVED AND AFTER 5 LAUNDERINGS

| As Received | | | | | | | | | |
|------------------|---------------|-----|-----|---------------|------|------|------------|----------------|--------------|
| Specimen | Warp % Change | | | Fill % Change | | | Melt [Y/N] | Separate [Y/N] | Ignite [Y/N] |
| | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| 1 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| 2 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| 3 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| Average | 0.0 | | | -2.0 | | | N/A | | |
| After Laundering | | | | | | | | | |
| Specimen | Warp % Change | | | Fill % Change | | | Melt [Y/N] | Separate [Y/N] | Ignite [Y/N] |
| | 1 | 2 | 3 | 1 | 2 | 3 | | | |
| 1 | 0.0 | 0.0 | 0.0 | -2.0 | -2.5 | -2.0 | N | N | N |
| 2 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | -2.0 | N | N | N |
| 3 | 0.0 | 0.0 | 0.0 | -2.0 | -1.5 | -1.5 | N | N | N |
| Average | 0.0 | | | -1.9 | | | N/A | | |

3.0 COMPLIANCE CRITERIA – MOISTURE BARRIER, THERMAL BARRIER, WINTER LINER AND WRISTLET MATERIALS

- 3.1 1. Specimens shall not shrink more than 10.0 percent in any direction.
2. Specimens shall not melt, separate or ignite.
- 3.2 Results did comply with the requirements.

CLEANING SHRINKAGE RESISTANCE TEST –
GARMENT MATERIALS

NFPA 1971-2007, SECTION 8.25

1.0 PROCEDURE

1.1 Test in accordance with:

| TEST NAME | NFPA 1971-2007 SECTION | UL WORK INSTRUCTION |
|------------------------------------|------------------------|---------------------|
| Cleaning Shrinkage Resistance Test | 8.25 | 03-LO-W0088 |

2.0 RESULTS - MATERIALS OTHER THAN WRISTLETS

| | |
|--------------|--|
| Article: | Thermal Barrier |
| Description: | Glide 2L Araflo Gold from Lion Apparel |
| Color: | Yellow |

CONDITIONING: SHRINKAGE AFTER 5 LAUNDERINGS

| Specimen | Warp (Wales) | | | Specimen Average |
|----------|----------------|------|------|------------------|
| | Percent Change | | | |
| | 1 | 2 | 3 | |
| 1 | -2.0 | -2.0 | -1.5 | -1.8 |
| 2 | -1.5 | -1.5 | -2.0 | -1.7 |
| 3 | -2.0 | -2.0 | -2.0 | -2.0 |
| | Average | | | -1.8 |

| Specimen | Fill (Courses) | | | Specimen Average |
|----------|----------------|------|------|------------------|
| | Percent Change | | | |
| | 1 | 2 | 3 | |
| 1 | -5.5 | -5.5 | -4.0 | -5.0 |
| 2 | -5.5 | -5.5 | -5.0 | -5.3 |
| 3 | -4.5 | -4.5 | -4.5 | -4.5 |
| | Average | | | -4.9 |

3.0 COMPLIANCE CRITERIA - MATERIALS OTHER THAN WRISTLETS

- 3.1 The average shrinkage shall not exceed 5 percent in any direction.
- 3.2 Results did comply with the requirements.

TEAR RESISTANCE TEST – GARMENT
MATERIALS

NFPA 1971-2007, SECTION 8.12

1.0 PROCEDURE

1.1 Test in accordance with:

| TEST NAME | NFPA 1971-2007 SECTION | UL WORK INSTRUCTION |
|----------------------|------------------------|---------------------|
| Tear Resistance Test | 8.12 | 03-LO-W0101 |

2.0 RESULTS - MOISTURE BARRIER, THERMAL BARRIER, AND WINTER LINER MATERIALS

| | |
|--------------|--|
| Article: | Thermal Barrier |
| Description: | Glide 2L Araflo Gold from Lion Apparel |
| Color: | Yellow |

CONDITIONING: AS RECEIVED AND AFTER 5 LAUNDERINGS

| Specimen | Tear Resistance Strength (N) | | | |
|-----------------|------------------------------|--------------|------------------|--------------|
| | As Received | | After Laundering | |
| | Warp Average | Fill Average | Warp Average | Fill Average |
| 1 | 895.5 | 151.4 | 522.7 | 126.2 |
| 2 | 795.3 | 152.6 | 503.7 | 165.8 |
| 3 | 908.3 | 142.2 | 472.8 | 145.4 |
| 4 | 824.2 | 150.0 | 592.7 | 134.1 |
| 5 | 827.6 | 132.1 | 498.5 | 123.1 |
| Average | 850.2 | 145.7 | 518.1 | 138.9 |
| Rounded Average | 850 | 146 | 518 | 139 |

3.0 COMPLIANCE CRITERIA - MOISTURE BARRIER, THERMAL BARRIER, AND WINTER LINER
MATERIALS

3.1 Specimens shall have a tear resistance strength of not less than 22 N (5 lbf).

3.2 Results did comply with the requirements.

January 26, 2016

Test Report No.



LAB REPORT

Form #210L

7200 Poe Avenue Dayton, OH 45414

Water Absorption Resistance (NFPA 1971)

| Fabric | Percent Water Absorption |
|-----------------|--------------------------|
| Glide 2L Araflo | 22.7% |
| Caldura SL2i | 339% |

Mike Brammer / Lab Technician

Performance terms and corresponding data refer to typical performance in specified tests and should not be construed to imply behavior of FR fabrics under fire conditions. Results may vary from one construction weight or fabric lot to another. Textile resistance to heat and flame is only one aspect of a product's ability to meet or exceed a safety standard for clothing. It is the purchaser's responsibility to assure that all requirements have been met before accepting a finished product as compliant with that standard. It is the wearer's responsibility to restrict the use and maintenance of apparel products to the use for which they were purchased and intended. All textile fabrics will burn and generate smoke under some fire conditions.

Large Departments Wearing Armor AP and Glide 2L Araflo

Wearing Armor AP

Vancouver FD – since early 2015

Mississauga FD – since early 2015

Wearing Glide 2L Araflo or Isodri

Ottawa (Isodri)

Vancouver FD

Surrey FD

Mississauga FD

Burnaby FD

Hamilton FD

Pickering FD

Vaughan FD

Moncton FD

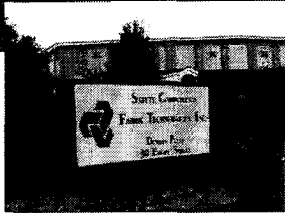
St. Catherines FD

Burlington FD

Note: in April 2014, information on this new Armor AP outer shell product was provided to the former Division Chief as an improved product for future consideration for Toronto Fire Service.

ASK THE EXPERT

by Safety Components Greenville,



Taber Abrasion Testing 101

Nothing More Than a Game of Numbers

Is abrasion testing an NFPA required or recommended test for outer shell fabrics?

No. The NFPA 1971 standard does not recommend nor recognize this test as a requirement in industry testing protocol.

What is the position of the textile industry on taber abrasion testing as a determinate for fabric durability?

The governing body of textile testing, ASTM, does not recommend abrasion testing to be used as a guide for purchasing criteria. In D3884, their position is as follows:

"All test procedures and instruments that have been developed for abrasion resistance of fabrics may show a high degree of variability in results obtained by different operators and in different laboratories. In general, they should not be relied upon for prediction of actual wear-life in specific end uses unless there are data showing the specific relationship between laboratory abrasion tests and actual wear in the intended end-use."

Why is taber abrasion testing so unreliable?

There are many reasons.

First, there are multiple abrasion tests in the form of Taber, Wyzenbeck, and Martindale. Taber testing uses a wheel rotating in a continuous circle. It was originally developed to measure the resistance of paint on automobiles. Most upholstery and apparel applications use Wyzenbeck testing, which uses a steel mesh rubbing against fabric. Martindale testing is a combination test and is better in measuring pill resistance.

Second, there are no agreed standards between laboratories, industries or companies on how to run these tests. Any laboratory can vary their testing protocol by changing abrasion weights; employ smoother abrasion wheels or changing vacuum settings to optimize their fabric versus others.

Third, and maybe most important, chemical finishes can be added to fabrics

that provide higher than normal taber abrasion test results. These same finishes, while providing impressive test results giving the impression of longer lasting fabric, do nothing to improve fabric or garment durability in actual use.

Many fabrics after having advanced water, chemical and fuel run-off capabilities applied, like PBI Matrix from Safety Components, have seen taber test results go from 500 cycles in 2004 to over 2000 cycles in 2011. With these improvements in taber abrasion performance, we saw no significant improvement in wear life. We do not believe it is appropriate to mislead first responders that increased taber abrasion performance under this test = increased wear life of their garment.

What testing does the NFPA require for outer shell fabrics that can be counted on as a guide for fabric performance in the field?

There is a rigorous battery of tests that each lot of fabric going into fire fighting garments must pass before it can be used in a garment. Other than standard flame testing, the key tests that are used to determine fabric durability are tensile testing (fabric strength), trap tear testing (ability of a fabric to resist rips and tears), and water absorption testing (ability of a fabric to repel water before and after laundering).

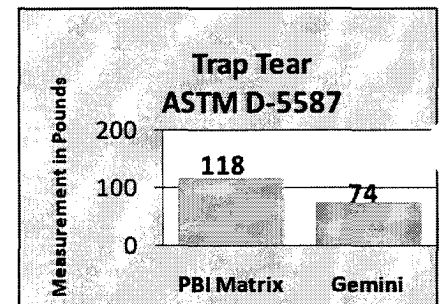
So how does a department determine how to measure a fabric's durability in a fire fighting outer shell?

The tensile and trap tear testing referenced above are accurate measures of a fabrics strength and ability to resist tearing. These tests, which are included in NFPA 1971 are good determinates of garment durability and should be a fire department's focus when specifying new gear.

How can my department make our gear last longer?

There are many ways.

First, you can choose reinforcement materials on areas that see a great deal of wear and tear, such as knees and cuffs. Second, you should have your gear properly cleaned and maintained as recommended by your turnout manufacturer. Simple things like improper ph in your wash can damage your turnout materials. Third, you must properly store your gear. All turnout fabrics are susceptible to strength loss after exposure to UV. Properly storing and maintaining your gear, in accordance with NFPA 1851, is a sure way to add years of service to your gear.



Executive Summary

- ASTM does not recommend abrasion testing as a guide for purchasing criteria.
- Abrasion Testing is high variable – unreliable
- Fabric finishes that may improve abrasion test results have shown no correlation to longer wear life.
- Reinforcement materials on areas of wear and tear have proven to extend garment wear life.
- Proper care and maintenance will extend garment wear life.



40 Emery Street
Greenville, SC 29605
800-896-6926 Ext. 28

www.safetycomponents.com

Section 5 – Starfield LION Proposal 1 and 2 Pricing, Competitor Pricing

Starfield LION Option 1 pricing, 5 and 10 years

Starfield LION Option 3 pricing, 5 and 10 years

Competitor pricing, 5 and 10 years

Costing Comparison, Starfield LION vs. competitor

**APPENDIX D
SUPPLEMENTARY SUBMISSION FORMS**

FORMS PRICE DETAIL FORM

NOTES: PROPOSAL NUMBER 1 - ADVANCE/STEDAIR 4000/CALDURA SL2i

1) The quantities as shown in the Proposal documents are estimates only.

These quantities shall be used as a basis for comparison upon which the award of the contract will be made.

2) In the event of mathematical errors found in the pricing pages, the unit prices quoted shall prevail. Extensions and totals will be corrected accordingly and adjustments resulting from the correction will be applied to the Grand Total Price in your Proposal.

Price Per Unit Shown in Canadian Currency, including Delivery, Duties, Tariffs, Imports, Customs and all other charges, excluding all taxes:

| Initial Term | Approximate Quantity | | Structural Bunker Suit | Unit Price | Extended Price | Total Price For All That Is Required |
|---|----------------------|-------|------------------------|------------|-----------------|--------------------------------------|
| YEAR 1 | 200 | /Each | Coat | \$ 880.78 | \$ 176,156.00 | \$ 299,800.00 |
| January 1, 2017 to Dec.31, 2017 | | | Pants | \$ 618.22 | \$ 123,644.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2017 | | | | | | (coat + pants x qty) |
| YEAR 2 | 200 | /Each | Coat | \$ 903.36 | \$ 180,672.00 | \$ 307,486.00 |
| For the Period Ending Dec. 31, 2018 | | | Pants | \$ 634.07 | \$ 126,814.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2018 | | | | | | (coat + pants x qty) |
| YEAR 3 | 200 | /Each | Coat | \$ 926.53 | \$ 185,306.00 | \$ 315,372.00 |
| For the Period Ending Dec. 31, 2019 | | | Pants | \$ 650.33 | \$ 130,066.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2019 | | | | | | (coat + pants x qty) |
| YEAR 4 | 1000 | /Each | Coat | \$ 950.28 | \$ 950,280.00 | \$ 1,617,290.00 |
| For the Period Ending Dec. 31, 2020 | | | Pants | \$ 667.01 | \$ 667,010.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2020 | | | | | | (coat + pants x qty) |
| YEAR 5 | 2200 | /Each | Coat | \$ 974.65 | \$ 2,144,230.00 | \$ 3,649,272.00 |
| For the Period Ending Dec. 31, 2021 | | | Pants | \$ 684.11 | \$ 1,505,042.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2021 | | | | | | (coat + pants x qty) |
| GRAND TOTAL PRICE | | | | | | \$ 6,189,220.00 |

GRAND TOTAL PRICE TO PURCHASE APPROX. 3,800 NEW STRUCTURAL BUNKER SUITS, FOR FIVE YEAR PERIOD SHOWN IN CANADIAN CURRENCY, INCLUDING DELIVERY, DUTIES, TARIFFS, IMPORTS, CUSTOMS AND ALL OTHER CHARGES, EXCLUDING ALL TAXES

\$ 6,189,220.00

State your percentage discount offered (to be valid for all possible option years) from your current catalogue list price from miscellaneous items not included in the Price Schedule 25 %

NOTES:

1) The quantities as shown in the Proposal documents are estimates only.

These quantities shall be used as a basis for comparison upon which the award of the contract will be made.

2) In the event of mathematical errors found in the pricing pages, the unit prices quoted shall prevail. Extensions and totals will be corrected accordingly and adjustments resulting from the correction will be applied to the Grand Total Price in your Proposal.

OPTIONAL YEAR PERIOD (YEARS 2022 – 2026)

OPTION YEAR PRICE TO PURCHASE APPROX. 3,800 NEW STRUCTURAL BUNKER SUITS, FOR FIVE INDIVIDUAL OPTIONAL YEAR PERIOD SHOWN IN CANADIAN CURRENCY, INCLUDING DELIVERY, DUTIES, TARIFFS, IMPORTS, CUSTOMS AND ALL OTHER CHARGES, EXCLUDING ALL TAXES

| Option Period | Approximate Quantity | | Structural Bunker Suit | Unit Price | Extended Price | Total Price For All That Is Required |
|--|----------------------|-------|------------------------|-------------|-----------------|--------------------------------------|
| YEAR 1 | 200 | /Each | Coat | \$ 999.64 | \$ 199,928.00 | \$ 340,258.00 |
| January 1, 2022 to Dec.31, 2022 | | | Pants | \$ 701.65 | \$ 140,330.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2022 | | | | | | (coat + pants x qty) |
| YEAR 2 | 200 | /Each | Coat | \$ 1,025.27 | \$ 205,054.00 | \$ 348,982.00 |
| For the Period Ending Dec. 31, 2023 | | | Pants | \$ 719.64 | \$ 143,928.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2023 | | | | | | (coat + pants x qty) |
| YEAR 3 | 200 | /Each | Coat | \$ 1,051.56 | \$ 210,312.00 | \$ 357,930.00 |
| For the Period Ending Dec. 31, 2024 | | | Pants | \$ 738.09 | \$ 147,618.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2024 | | | | | | (coat + pants x qty) |
| YEAR 4 | 1000 | /Each | Coat | \$ 1,078.53 | \$ 1,078,530.00 | \$ 1,835,550.00 |
| For the Period Ending Dec. 31, 2025 | | | Pants | \$ 757.02 | \$ 757,020.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2025 | | | | | | (coat + pants x qty) |
| YEAR 5 | 2200 | /Each | Coat | \$ 1,106.18 | \$ 2,433,596.00 | \$ 4,141,742.00 |
| For the Period Ending Dec. 31, 2026 | | | Pants | \$ 776.43 | \$ 1,708,146.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2026 | | | | | | (coat + pants x qty) |

**APPENDIX D
SUPPLEMENTARY SUBMISSION FORMS**

FORMS PRICE DETAIL FORM

NOTES: PROPOSAL NUMBER 3 - ARMOR AP / STEDAIR 4000 / GLIDE 2L ARFLO

1) The quantities as shown in the Proposal documents are estimates only. These quantities shall be used as a basis for comparison upon which the award of the contract will be made.

2) In the event of mathematical errors found in the pricing pages, the unit prices quoted shall prevail. Extensions and totals will be corrected accordingly and adjustments resulting from the correction will be applied to the Grand Total Price in your Proposal.

Price Per Unit Shown in Canadian Currency, including Delivery, Duties, Tariffs, Imports, Customs and all other charges, excluding all taxes:

| Initial Term | Approximate Quantity | | Structural Bunker Suit | Unit Price | Extended Price | Total Price For All That Is Required |
|---|----------------------|-------|------------------------|------------|-----------------|--------------------------------------|
| YEAR 1 | 200 | /Each | Coat | \$ 869.64 | \$ 179,928.00 | \$ 301,800.00 |
| January 1, 2017 to Dec.31, 2017 | | | Pants | \$ 609.36 | \$ 121,872.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2017 | | | | | | (coat + pants x qty) |
| YEAR 2 | 200 | /Each | Coat | \$ 891.94 | \$ 178,388.00 | \$ 303,384.00 |
| For the Period Ending Dec. 31, 2018 | | | Pants | \$ 624.98 | \$ 124,996.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2018 | | | | | | (coat + pants x qty) |
| YEAR 3 | 200 | /Each | Coat | \$ 914.81 | \$ 182,962.00 | \$ 311,164.00 |
| For the Period Ending Dec. 31, 2019 | | | Pants | \$ 641.01 | \$ 128,202.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2019 | | | | | | (coat + pants x qty) |
| YEAR 4 | 1000 | /Each | Coat | \$ 938.27 | \$ 938,270.00 | \$ 1,595,720.00 |
| For the Period Ending Dec. 31, 2020 | | | Pants | \$ 657.45 | \$ 657,450.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2020 | | | | | | (coat + pants x qty) |
| YEAR 5 | 2200 | /Each | Coat | \$ 962.32 | \$ 2,117,104.00 | \$ 3,600,564.00 |
| For the Period Ending Dec. 31, 2021 | | | Pants | \$ 674.30 | \$ 1,483,460.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2021 | | | | | | (coat + pants x qty) |
| GRAND TOTAL PRICE | | | | | | \$ 6,112,632.00 |

GRAND TOTAL PRICE TO PURCHASE APPROX. 3,800 NEW STRUCTURAL BUNKER SUITS, FOR FIVE YEAR PERIOD SHOWN IN CANADIAN CURRENCY, INCLUDING DELIVERY, DUTIES, TARIFFS, IMPORTS, CUSTOMS AND ALL OTHER CHARGES, EXCLUDING ALL TAXES

\$ 6,112,632.00

State your percentage discount offered (to be valid for all possible option years) from your current catalogue list price from miscellaneous items not included in the Price Schedule 25 %

NOTES:

- The quantities as shown in the Proposal documents are estimates only. These quantities shall be used as a basis for comparison upon which the award of the contract will be made.
- In the event of mathematical errors found in the pricing pages, the unit prices quoted shall prevail. Extensions and totals will be corrected accordingly and adjustments resulting from the correction will be applied to the Grand Total Price in your Proposal.

OPTIONAL YEAR PERIOD (YEARS 2022 – 2026)

OPTION YEAR PRICE TO PURCHASE APPROX. 3,800 NEW STRUCTURAL BUNKER SUITS, FOR FIVE INDIVIDUAL OPTIONAL YEAR PERIOD SHOWN IN CANADIAN CURRENCY, INCLUDING DELIVERY, DUTIES, TARIFFS, IMPORTS, CUSTOMS AND ALL OTHER CHARGES, EXCLUDING ALL TAXES

| Option Period | Approximate Quantity | | Structural Bunker Suit | Unit Price | Extended Price | Total Price For All That Is Required |
|--|----------------------|-------|------------------------|-------------|-----------------|--------------------------------------|
| YEAR 1 | 200 | /Each | Coat | \$ 987.00 | \$ 197,400.00 | \$ 335,718.00 |
| January 1, 2022 to Dec.31, 2022 | | | Pants | \$ 691.59 | \$ 138,318.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2022 | | | | | | (coat + pants x qty) |
| YEAR 2 | 200 | /Each | Coat | \$ 1,012.31 | \$ 202,462.00 | \$ 344,328.00 |
| For the Period Ending Dec. 31, 2023 | | | Pants | \$ 709.33 | \$ 141,866.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2023 | | | | | | (coat + pants x qty) |
| YEAR 3 | 200 | /Each | Coat | \$ 1,038.76 | \$ 207,752.00 | \$ 353,254.00 |
| For the Period Ending Dec. 31, 2024 | | | Pants | \$ 727.51 | \$ 145,502.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2024 | | | | | | (coat + pants x qty) |
| YEAR 4 | 1000 | /Each | Coat | \$ 1,064.88 | \$ 1,064,880.00 | \$ 1,811,050.00 |
| For the Period Ending Dec. 31, 2025 | | | Pants | \$ 746.17 | \$ 746,170.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2025 | | | | | | (coat + pants x qty) |
| YEAR 5 | 2200 | /Each | Coat | \$ 1,092.19 | \$ 2,402,818.00 | \$ 4,086,478.00 |
| For the Period Ending Dec. 31, 2026 | | | Pants | \$ 765.30 | \$ 1,683,660.00 | |
| GRAND TOTAL PRICE FOR THE PERIOD ENDING DEC. 31, 2026 | | | | | | (coat + pants x qty) |

CD17.4

Attachment 1

Attachment 1: Funding Details

Table 1: Initial Contract

| COST CENTRE/ WBS ELEMENT | 1ST YEAR | 2ND YEAR | 3RD YEAR | 4TH YEAR | 5TH YEAR | TOTAL (Net HST Recoveries) |
|-------------------------------|--|--|--|--|--|----------------------------------|
| | DATE OF AWARD TO DEC. 31, 2017 (Net HST Recoveries) | JAN. 1, 2018 TO DEC. 31, 2018 (Net HST Recoveries) | JAN. 1, 2019 TO DEC. 31, 2019 (Net HST Recoveries) | JAN. 1, 2020 TO DEC. 31, 2020 (Net HST Recoveries) | JAN. 1, 2021 TO DEC. 31, 2021 (Net HST Recoveries) | |
| FR0019 G/L 2665 | \$330,164 | \$336,472 | \$342,890 | \$581,979 | \$581,979 | \$2,173,484 |
| CFR | - | - | - | \$1,165,114 | \$3,334,886 | \$4,500,000 |
| TOTAL (Net HST Recoveries) | \$330,164 | \$336,472 | \$342,890 | \$1,747,093 | \$3,916,865 | \$6,673,484 |

Table 2: Option Years

| COST CENTRE/ WBS ELEMENT | OPTION YEAR 1 | OPTION YEAR 2 | OPTION YEAR 3 | OPTION YEAR 4 | OPTION YEAR 5 | TOTAL (Net HST Recoveries) |
|--|--|--|--|--|--|----------------------------------|
| | JAN. 1, 2022 TO DEC. 31, 2022 (Net HST Recoveries) | JAN. 1, 2023 TO DEC. 31, 2023 (Net HST Recoveries) | JAN. 1, 2024 TO DEC. 31, 2024 (Net HST Recoveries) | JAN. 1, 2025 TO DEC. 31, 2025 (Net HST Recoveries) | JAN. 1, 2026 TO DEC. 31, 2026 (Net HST Recoveries) | |
| FR0019 G/L 2665 | \$340,099 | \$346,583 | \$353,199 | \$667,119 | \$667,119 | \$2,374,119 |
| CFR | - | - | - | \$1,132,507 | \$3,367,493 | \$4,500,000 |
| TOTAL (Net HST Recoveries) | \$340,099 | \$346,583 | \$353,199 | \$1,799,626 | \$4,034,612 | \$6,874,119 |
| GRAND TOTAL INCLUDING OPTION YEARS (Net of HST Recoveries) | \$670,263 | \$683,055 | \$696,089 | \$3,546,719 | \$7,951,477 | \$13,547,603 |

Costing SL vs. Innotex

First 5 years - 3800 suits total

Second 5 years - 3800 suits total

SL Final Proposal Pricing (HST not included)

Composite - Advance Stedair 4000 Caldura SL2i

| | | | |
|-----------------|--------------|--------------------|-------------------|
| 1st 5 years> | \$6,189,220 | Average cost/suit> | \$1,628.74 |
| 2nd 5 years> | \$7,024,462 | Average cost/suit> | \$1,848.54 |
| Total 10 years> | \$13,213,682 | Average cost/suit> | \$1,738.64 |

Composite - Advance Crosstech Caldura SL2i

| | | | |
|-----------------|--------------|--------------------|------------|
| 1st 5 years> | \$6,519,538 | Average cost/suit> | \$1,715.66 |
| 2nd 5 years> | \$7,399,336 | Average cost/suit> | \$1,947.19 |
| Total 10 years> | \$13,918,874 | Average cost/suit> | \$1,831.43 |

Composite - Armor AP Stedair 4000 Glide 2L Araflo

| | | | |
|-----------------|--------------|--------------------|-------------------|
| 1st 5 years> | \$6,112,632 | Average cost/suit> | \$1,608.58 |
| 2nd 5 years> | \$6,930,828 | Average cost/suit> | \$1,823.90 |
| Total 10 years> | \$13,043,460 | Average cost/suit> | \$1,716.24 |

Innotex Final Proposal Pricing

Composite - Pioneer Stedair 4000 Caldura SL2i

| | | | |
|-----------------|----------------|--------------------|-------------------|
| 1st 5 years> | \$6,558,062 * | Average cost/suit> | \$1,725.81 |
| 2nd 5 years> | \$6,755,227 ** | Average cost/suit> | \$1,777.69 |
| Total 10 years> | \$13,313,290 | Average cost/suit> | \$1,751.75 |

This is without any tax

* Estimate with out tax (\$6,673,484 net of HST recoveries - factor of 1.759993% divide into this number)

**Estimate with out tax (\$6,874,119 net of HST recoveries - factor of 1.759993% divide into this number)

Section 6 – Starfield LION Municipal Annual Tax Remittance and Payroll

Starfield LION payroll and taxes, 2015/2016

| | YEAR 2015 | YEAR 2016 |
|----------------------------------|--------------|--------------|
| TOTAL GROSS PAY (T4'S AND T4A'S) | 2,967,261.65 | 3,160,724.57 |
| EMPLOYER'S CPP CONTRIBUTION | 118,017.37 | 125,940.11 |
| EMPLOYER'S EI CONTRIBUTION | 69,935.69 | 74,708.80 |
| WSIB | 69,678.56 | 73,891.46 |
| PROPERTY TAX | 52,520.00 | 52,520.00 |

