

Durch die Zentralstelle der Länder für Sicherheitstechnik (ZLS)  
benannte Zertifizierungsstelle für Produkte im Sinne der  
EG-Richtlinie für Persönliche Schutzausrüstungen  
89/686/EWG • Kenn-Nr. 0516

**ZLS**  
ZLS-ZE-693/09

## Certificate

Technical type-examination  
No. Z 5705/13-7001/13

Date: 18 February 2013

**Applicant:** Arvind Limited  
Santej, Near Khatraj  
Tal: Kalol  
Dist: Gandhinagar  
Gujarat: 382721  
INDIA

Application of: 09 January 2013

**Test specimen:**  
Type and designation: Fabric article 97675, 100% Nomex IIIA,  
colour yellow, approx. 155 g/m<sup>2</sup>


Intended use: Fabric for protective clothing according to EN ISO 11612, EN 1149-5

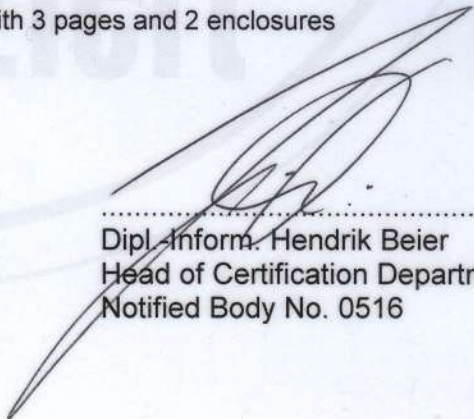
**Results of technical  
type-examination:** Test Report STFI No. 2013 0083 of 15 February 2013  
Certificate Report STFI No. Z 5705/13-7001/13 of 18 February 2013

This Certificate applies the suitability of tested fabric with essential requirements of document Council Directive 89/686/EEC. The fabric article 97675 is suitable for using in protective clothing against heat and flame according to EN ISO 11612:2008, code A1, B1, C1, F1, and possesses by proper earthing the electrostatic dissipative behaviour according to EN 1149-5:2008 in connection with EN 1149-3:2004.

The Certificate is not a proof for norm conformity of protective clothing produced from this material with regard to processability and design. This is not an entitlement to use the CE- or GS-Mark. It is valid – in dependence on the validity of the test and certification foundations – by 29 February 2016. To renew the validity of the Certificate and/or an adjustment on changed basis for testing/certification is possible on application.

This document consists of Certificate and Certificate Report with 3 pages and 2 enclosures

  
Dipl.-Ing.-Ök. Andreas Berthel  
Managing Director  
STFI e.V.

  
Dipl.-Inform. Hendrik Beier  
Head of Certification Department  
Notified Body No. 0516

## Certificate Report

Technical type-examination  
No. Z 5705/13 - 7001/13

Date: 18 February 2013

**1. Applicant:** Arvind Limited  
Santej, Near Khatraj  
Tal: Kalol  
Dist: Gandhinagar  
Gujarat: 382721  
INDIA

Application of: 09 January 2013

### 2. Test specimen:

2.1 Manufacturer: Arvind Limited  
Santej, Near Khatraj  
Tal: Kalol  
Dist: Gandhinagar  
Gujarat: 382721  
INDIA

2.2 Type and designation: Fabric article 97675, 100% Nomex IIIA,  
colour yellow, approx. 155 g/m<sup>2</sup>

2.3 Intended use: Fabric for protective clothing according to EN ISO 11612, EN 1149-5

### 3. Testing:

3.1 Type of test: Technical type-examination

3.2 Test laboratory: Prüfstelle Textil  
Sächsisches Textilforschungsinstitut e.V. Chemnitz

### 3.3 Test methods/ -fundamentals/ Requirements/ Evaluation:

Testing and evaluation are based on the instructions in Council Directive 89/686/EEC in connection with the documents EN ISO 11612:2008 and EN 1149-5:2008 in connection with EN 1149-3:2004.

Property - fabric	Test method	Requirement	Evaluation fabric article 97675
<u>EN ISO 11612:</u> Heat resistance / shrinkage	ISO 17493 (180 ± 5) °C	Shrinkage ≤ 5% no ignition no melting	met met met
Limited flame spread face ignition	ISO 15025 method A	- no further flaming to top or sides - no hole formation - no flaming melting debris - afterflame time ≤ 2 s - afterglow time ≤ 2 s	<b>Code A1</b> met met met met met
Dimensional change after 5 washing cycles	ISO 5077	≤ ± 3 %	met
Tensile strength	ISO 13934-1	≥ 300 N	met
Tear strength	ISO 13937-2	≥ 15 N	met
pH value	ISO 3071	3,5 < pH < 9,5	met
Convective heat Heat transfer index HTI <sub>24</sub>	ISO 9151	B1 4 to < 10 s B2 10 to < 12 s B3 ≥ 20 s	<b>Code B1</b> met
Radiant heat Heat transfer index RHTI <sub>24</sub>	ISO 6942	C1 7 to < 20 s C2 20 to < 50 s C3 50 to < 95 s C4 ≥ 95 s	<b>Code C1</b> met
Contact heat Threshold time	ISO 12127	F1 5 to < 10 s F2 10 to < 15 s F3 ≥ 15 s	<b>Code F1</b> met
<u>EN 1149-5:</u> Electrostatic dissipative behaviour	EN 1149-3, method 2	Half decay time < 4s or Shielding factor > 0,2	met
Dimensional change after 5 washing cycles	EN 25077	≤ ± 3 %	met

### 3.4 Test results:

The test results are included in the Test Report STFI No. 2013 0083 of 15 February 2013. The report is enclosed to this Certificate. There named and handed Test Reports and Certificates were included into the evaluation.

**4. Assessment / Suitability / EC-Conformity:**

From the evaluation of the results it has to be derived that the fabric fulfils the requirements for the intended use.

This Certificate applies the suitability of tested fabric with essential requirements of document Council Directive 89/686/EEC. The fabric article 97675 is suitable for protective clothing against heat and flame according to EN ISO 11612:2008, code A1, B1, C1, F1, and possesses by proper earthing the electrostatic dissipative behaviour according to EN 1149-5:2008 in connection with EN 1149-3:2004.

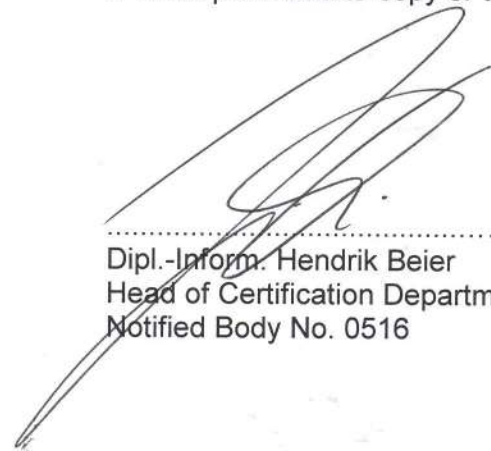
The Certificate is not a proof for norm conformity of protective clothing produced from this material with regard to processibility and design. This is not an entitlement to use the CE- or GS-Mark.

**5. Validity of the certificate:**


This Certificate applies to products identical with the specimen. It is valid – in dependence on the validity of the test and certification foundations – by 29 February 2016. To renew the validity of the Certificate and/or an adjustment on changed basis for testing/certification is possible on application.

**6. General notes:**

This Certificate Report includes 3 pages and 2 enclosures.  
It is not permitted to copy or to publish parts of Certificate and Certificate-Report.



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Dipl.-Inform. Hendrik Beier  
Head of Certification Department  
Notified Body No. 0516



.....  
Dipl.-Ing. Lore Mehnert  
Responsible Officer  
Certification Department

# PRÜFSTELLE TEXTIL



SÄCHSISCHES  
TEXTIL  
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Durch die Deutsche Akkreditierungsstelle GmbH nach DIN EN ISO / IEC 17025 akkreditiertes Prüflaboratorium. Die Akkreditierung gilt für die in der Urkundenanlage aufgeführten Prüfverfahren.



Durch die Zentralstelle der Länder für Sicherheitstechnik (ZLS) akkreditierte Prüfstelle für Produkte im Sinne der EG-Richtlinie für Persönliche Schutzausrüstungen 89/686/EWG und des §9 Abs. 2 Gerätesicherheitsgesetz



Von der Federation Internationale de L'Automobile (FIA) Paris zugelassene Stelle zur Prüfung von hitze- und flammresistenter Schutzkleidung für Auto-Rennfahrer gemäß Standard FIA 8856-2000

## UNTERSUCHUNGSBERICHT | TESTREPORT

**Order No. STFI:** 2013 0083  
**Order No applicant:**

**Date of Test-Report:** 15 February 2013  
**Testing officer:** Mehnert/Beyer

**Applicant:** Arvind Limited  
Santej, Near Khatraj  
Tal: Kalol  
Dist: Gandhinagar  
Gujarat: 382721  
INDIA

**Testing application:**

as of 09 January 2013  
order receipt on 11 January 2013  
sample receipt on 11 January 2013

**Test specimen:** fabric for protective clothing

Marking by applicant

Coding for testing

Fabric article 97675, 100% Nomex IIIA,  
colour yellow, approx. 155 g/m<sup>2</sup>

sample 01

The sampling happened by the applicant. There is no information about the sampling method.

**Testing method/testing conditions:**

Technical type-examination according to EN ISO 11612:2008 and EN 1149-5:2008 in connection with EN 1149-3:2004.

Pre-treatment: 5 cycles washing 60°C and tumbler drying according to EN ISO 6330:2012, method 6N+F (formerly 2A+E)

Property – Fabric	Test method <sup>1)</sup>
<u>EN ISO 11612:</u>	
Heat resistance / shrinkage after pre-treatment	ISO 17493:2000, 5 minutes, (180 ± 5) °C
Limited flame spread - code A1 new and after pre-treatment	EN ISO 15025:2002, method A surface ignition, flaming time 10 s
Dimensional change after 5 washing cycles	EN ISO 5077:2008/ EN ISO 3759:2011
Tensile strength after pre-treatment	EN ISO 13934-1:1999
Tear strength after pre-treatment	EN ISO 13937-2:2000
pH value	EN ISO 3071:2006
Convective heat - code B after pre-treatment	ISO 9151:1995
Radiant heat - code C after pre-treatment	EN ISO 6942:2002, q <sub>0</sub> = 20 kW/m <sup>2</sup>
Contact heat - code F after pre-treatment	ISO 12127:1996, <i>withdrawn but included in requirements of EN ISO 11612</i> Contact temperature T <sub>c</sub> = 250°C
<u>EN 1149-5:</u>	
Electrostatic dissipative behaviour after pre-treatment	EN 1149-3:2004, method 2 Test condition: relative humidity (25 ± 5)% temperature (23 ± 1)°C
Dimensional change after 5 washing cycles	EN ISO 5077:2008/ EN ISO 3759:2011

1) if available, the actual valid standard edition in German, identical to the international ones, is used for testing

**Test results:**

Property – fabric		Dimension	Test results fabric article 97675	
<u>EN ISO 11612:</u>				
Heat resistance shrinkage	lengthwise	%	± 0	
	across	%	± 0	
melting, dripping, ignition			no	
Limited flame spread - code A1 Surface ignition			new and after pre-treatment <i>lengthwise</i> <i>across</i>	
Further flaming to top or sides			no	no
Hole formation			no	no
Flaming or melting debris			no	no
Afterflame time		s	0	0
Afterglow time		s	0	0
Dimensional change	lengthwise	%	- 0,8	
	across	%	- 0,6	
Tensile strength	lengthwise	N	967	
	across		507	
Tear strength	lengthwise	N	33,1	
	across		36,3	
pH value			6,3	
Convective heat - code B Heat transfer index HTI <sub>24</sub>		s	4,3	
Radiant heat - code C Heat transfer index RHTI <sub>24</sub>		s	13,5	
Contact heat – code F Threshold time t <sub>t</sub>		s	5,6	
<u>EN 1149-5:</u>				
Half decay time t <sub>50</sub>		s	< 0,01	
Shielding factor S			0,61	
Dimensional change	lengthwise	%	- 0,8	
	across	%	- 0,6	

Test results refer to the delivered specimen. Test protocols and statistical information about test data can be viewed in the test house. The testing period is defined as timeframe between receipt of samples and issue date of test report. This Test Report consists of 3 pages and should not be published in parts.

  
 Dr.-Ing. Matthias Mägel  
 Head of the testing department





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