



TC-5889

WOOL RESEARCH ASSOCIATION

(Linked to Ministry of Textiles, Govt. of India)

P.O. Sandoz Baug, Kolshet Road Thane-400607 (Maharashtra), India

Phone : (022) 25868109, 25868398 Fax : (022) 2586 8365

lab@wraindia.com (For Textile Lab), ecolab@wraindia.com (For Eco lab),

testing@wraindia.comwra@wraindia.com



TEST REPORT

Representative Name:	Mr. Jayant	Test Report No: W/T/801 2017-18
Company/Customer Name:	Honeywell Honeywell Industrial Safety	
Address & Contact Details:	Nagpal Business Tower, Ground Floor, A/91, Okhla Industrial Phase II, New Delhi – 110020	Test Report Date: 27.02.2018
		Lab Sample Code No. : TMTC-1122
Sample Description by Customer : Multilayer Fabric Sample (Navy Blue Colour) Layer-1: Style H2WAV1RB, Fabric Structure: 2/2 Twill Woven Fabric, Fiber content and percentages SHELL: 55% Meta-Aramid, 5% Para-Aramid, 25% FR Rayon and 15% FR Polyester Layer-2: Style H2NAF2Gr+H2WAV1RB, Fabric structure: Quilted (Felt+Fabric), Non-woven+Woven Fabric, Fiber content and percentages LINER: Quilted (Felt: 40% OPAN and 60% Para- Aramid) + (Fabric: 55% Meta-Aramid, 5% Para-Aramid, 25% FR Rayon and 15% FR Polyester)		
Sample forwarding Letter No. & Date:	Email dated 29.01.2018 (Purchase Order No. : 4301155709 dated 09.02.2018)	
Date of receipt of Sample:	16.02.2018	
Number of Samples :	One	
Date of Performance of test(s):	16.02.2018 to 20.02.2018	

Testing as per specification standard : ASTM F 1506-17be1

Sec Ref	Test Parameter	Unit	Test Method	Requirement as per ASTM F1506-17be1 (For Woven Fabric)	Actual Test Result	Compliance
--	Fabric Weight (GSM)	g/m ² (Oz/yd ²)	ASTM D 3776 (Option C)	--	201.6 (5.9)	---
7.1	Breaking Strength (Outer Fabric) Warpwise weftwise	Newton (N)	ASTM D 5034 (Grab Test)	Min 134 N Min 134 N	983.9 804.4	Pass Pass
7.2	Tear Resistance (Outer Fabric) Warpwise weftwise	Newton (N)	ASTM D 1424	Min 11N Min 11N	78.62 73.09	Pass Pass
7.4.1	Colour Fastness to Laundering (Multilayer Assembly fabric) Shade Change	Rating/Class	AATCC 61, IIA	Min Class 3	4-5	Pass
7.4.2	Colour Fastness to Drycleaning (Multilayer Assembly fabric) Shade Change	Rating/Class	AATCC Method 132	Min Class 3	4-5	Pass

Seema Patel
Joint Director (T & A)
Textile Testing Lab
WRA, Thane

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Grey Scale Rating

5. Excellent 4. Good
3. Fair 2. Poor
1. Very Poor



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Sr. No.	Test Parameter	Unit	Test Method	Test Result	Requirement as per ASTM F1506-17be1 (For Woven Fabric)	Compliance
7.5	Dimensional Change (Multilayer Assembly fabric) Warpwise Weftwise	%	AATCC Method 135, Machine Cycle 3, Wash Cycle IV, Drying Procedure A (After 5 wash and dry cycles)	Max 3% Max 3%	-2.32 -1.66	Pass Pass
7.6	Initial Flammability (Multilayer Assembly fabric) Char Length: Warpwise Weftwise Afterflame: Warpwise Weftwise	mm mm sec sec	ASTM D 6413	Max 152mm Max 152mm Max 2s Max 2s	0.0 0.0 Nil Nil	Pass
7.6	Flammability after 25 Washes (Multilayer Assembly fabric) Char Length: Warpwise Weftwise Afterflame: Warpwise Weftwise	mm mm sec sec	ASTM D 6413 Washing as per AATCC Method 135, Machine Cycle 3, Wash Cycle IV, Drying Procedure A (After 25 wash and dry cycles)	Max 152mm Max 152mm Max 2s Max 2s	0.0 0.0 Nil Nil	Pass

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Sr. No.	Test Parameter	Unit	Test Method	Test Result	Requirement as per ASTM F1506-17be1 (For Woven Fabric)	Compliance
*7.7.1	Arc Test Results After Flame Time	S	ASTM F1959 / F1959M – 14	2.91	Max 5s	Pass
*7.7.	Arc Test Results Arc Rating (ATPV)	Cal/cm ²	ASTM F1959 / F1959M – 14	43.0	**40 Cal/cm ²	Pass

* The test was carried out at Aitex, Textile Research Institute: High Current Laboratory located at Polígono Industrial Fuente del Jarro. C/ Ciudad de Gibraltar, 5; 46988 – Paterna (Valencia);. Test report N°2016EP1119 dated 25/04/2016 attached as annexure of this report.

** Client Requirement

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Testing as per specification standard : ASTM F 1506-10a

Sec Ref	Test Parameter	Unit	Test Method	Requirement as per ASTM F1506-17be1 (For Woven Fabric)	Actual Test Result	Compliance
7.3	Seam Slippage (Outer Fabric) Warpwise weftwise	N for 6mm seam opening	ASTM D 434	Min 134N at 6mm seam opening	288.2 (STB) 282.7 (STb)	Pass Pass

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