

फैक्स/FAX : 23919509

दूरभाष/TELEPHONE : 23984480, 23905170

ई-मेल/E-mail: ppe@inmas.drdo.in



क्रमांक/No. INM/TC/2518/COVID-19/2020/598

भारत सरकार, रक्षा मंत्रालय
GOVERNMENT OF INDIA, MINISTRY OF DEFENCE
रक्षा अनुसंधान तथा विकास संगठन
DEFENCE RESEARCH & DEVELOPMENT ORGANISATION
नाभिकीय औषधि तथा सम्बद्ध विज्ञान संस्थान
INSTITUTE OF NUCLEAR MEDICINE & ALLIED SCIENCES
ब्रिगेडियर एस. के. मजूमदार मार्ग, दिल्ली-110054
BRIG. S.K. MAZUMDAR MARG, DELHI-110054

सभी पत्रादि निदेशक के पते से भेजे जाने चाहिए।
All Correspondence to be addressed
to the Director

दिनांक/DATED 15 June, 2020

To

M/S 72 Networks Pvt. Ltd.
452/453/456, Tower B2, Spaze-I Tech Park, Sector49,
Sohna Road, Gurugram- 122018

Subject:- Test Report of PPE Body Coverall

Reference your letter No 72N/2020/04/COVID/INMAS/003 dated 27 April 2020.

2. The "PPE Garment/Fabric Body Coverall" sample(s) received from you have been tested at INMAS, Delhi and the test report is attached herewith.

Note:-

- i. This report holds good only for the sample submitted to INMAS as pilot sample.
- ii. The quality of the subsequent production lot has to be ensured by the purchaser.

(Dr Maninder Singh)
Nodal Officer COVID-19
Scientist 'F' & Head, Technical Coordination
& Project Management
for Director

Encl: Test report (2 pages)



Test Report No INMAS/SBPRT/14062020/08 Dt 14.06.2020

Institute of Nuclear Medicine & Allied Sciences, Delhi-54

Phone: 011-23905105; Fax : 011-23919509

E-mail ID: director@inmas.drdo.in

Synthetic Blood Penetration Resistance Test
For Bio-Protective Fabric/Garment

Sample Details	Coverall
Sampling Details	NA
Mode/Sample Receiving Date	INMAS reception on 30/2020
Reference and Date	72N/2020/04/COVID/INMAS/003 & dated: 27/04/2020
Acceptance Criterion	ISO 16603 class 3, or equivalent as communicated by HLL to DRDO vide their email dated 17.04.2020
Manufacturer / Developer	72 Networks Private Limited 452/453/456, Tower B2, Spaze-I Tech Park, Sector 49, Sohna Road, Gurugram- 122018 E-Mail : swati@72networks.com; Mobile No. 9560095688
Period of Testing	14/06/2020
Test & Evaluation by	Anuradha Tyagi, Rakesh Pandey
Results Reviewed & Report Prepared by	Anuradha Tyagi, Rakesh Pandey
Final Test Report Reviewed & Approved by	Director, INMAS

1. Aim: To determine the resistance of protective clothing materials to penetration by blood and body fluids using synthetic blood

2. Chemicals and Materials: Synthetic blood

3. Equipment/Instrument: Synthetic blood penetration resistance tester, (model: TN 140, Make: Testex, Hong Kong)

4. SBPRT Test reference: Samples were tested as per **ISO 16603:2004; Procedure D** involving the use of retaining screen.

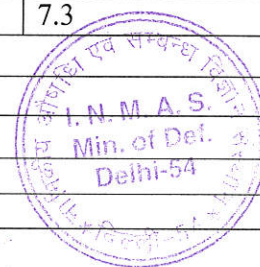
5. Test parameters:

a) Synthetic blood

S. No.	Parameters	Specified value	Observed value
1	Surface tension	0.042 ± 0.002 N/m	0.043 N/m
2	Temperature	28 °C	28 °C
3	pH	7.3 ± 0.1	7.3

b) Test conditions

S. No.	Parameters	Values
1	Conditioning	Not done
2	Temperature	28 ± 1 °C
3	Sample dimension	75 mm x 75 mm
4	Test duration	300 sec at each pressure level (0, 1.75, 3.5, 7, 14, 20 KPa)
5.	Sealing of test specimen	Done with taping the edges of specimen and using the gaskets
6	Sterilization of fabric	Not done
7.	Total number of specimen swatches	As mentioned in test results



6. Test Results: 72 Networks Private Limited

Report No: INMAS/SBPRT/14062020/008

S. No	Sample Details	Unique/ Sample Code	Thick- ness (mm)	Fabric Mass GSM	Observation, Fabric Swatch Class qualified/ Total class (Location of specimen)	Observation, Fabric Seam Swatch Class qualified/ Total class (Location of specimen)	*Result for Garment/ fabric Class qualified/ Total class	Acceptance/ Non Acceptance*
1.	Coverall white with blue tape, Laminated, non-woven	COVID19/ INMAS/14 0620- 13/72NPL- 01	0.42	65	6/6(Right Chest)	6/6 (Right Arm, Single Joint) 6/6 (Back, Double Joint)	6/6	PASS

***Notes: Acceptance criteria communicated to DRDO by HLL wide email dated 17/4/2020**

1. The final result of SBPRT for the garment will be lowest class of the test results obtained for fabric & joint (seam), if any.
2. The test does not apply to all forms or conditions of blood-borne pathogen exposure. Users of the product must review modes for work/clothing exposure and assess the appropriateness of the product for their specific application.
3. The results address only the performance of materials or certain material constructions (for example, seams) used in protective clothing. These results do not address the design, overall construction and components, or interfaces of garments, or other factors which may affect the overall protection offered by the protective clothing.
4. These results do not purport to address all of the safety concerns, if any, associated with use of final product. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

Classes

Class	Exposure Pressure (kPa)
6	20
5	14
4	7.0
3	3.5
2	1.75
1	0

- Exposure time is 5 min at each pressure level; Leakage is visually confirmed

