

# COVID-19 PROTECTION KIT

## TESTING SERVICES

[www.ttilabs.net](http://www.ttilabs.net)

- SURGICAL GOWNS & DRAPES
- SURGICAL FACE MASKS
- SURGICAL GLOVES
- HAND SANITIZER
- DISINFECTANTS



### **Tti Testing Laboratories**

ISO/IEC 17025 Accredited Testing Laboratory  
ISO/IEC 17020 Accredited Inspection Body  
CPSC Accredited Testing Laboratory  
EPA Certified Testing Laboratory  
OGRA Approved Lab  
PSQCA Approved Inspection Agency

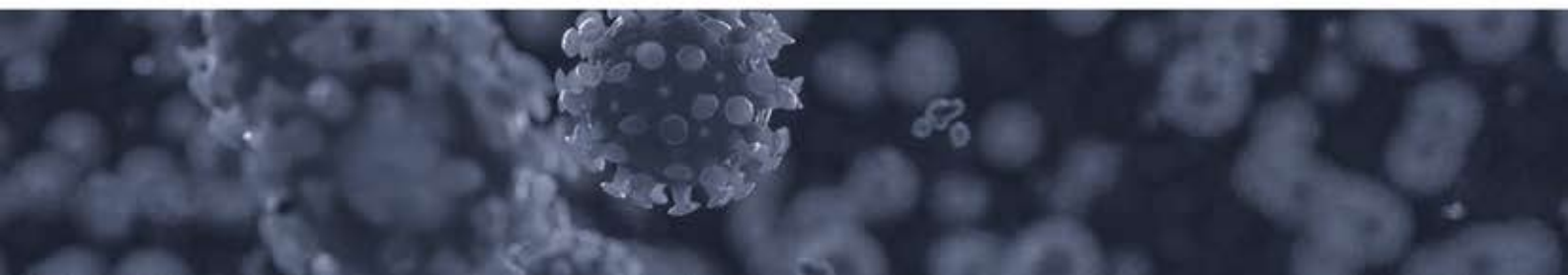


# OUR COVID-19 PROTECTIVE WEAR TESTING SERVICES

Ensure "Suppliers" of all "COVID-19 Protection Wear" comply with at least the basic performance and quality requirements. Although something is better than nothing, but people (especially doctors, Hospital Staff and Rescue workers) wearing substandard "COVID-19 Protection Wear" are at times more prone to catch the virus since they might end up exposing themselves to a potential threat without realizing what they are wearing is not capable of protecting against the virus. Tti is a world class, globally recognized, ISO/IEC 17025 accredited testing facility and ISO/IEC 17020 Accredited and PSQCA Approved Inspection body having the honor of being the first lab approved by US Consumer Product Safety Commission (CPSC) for consumer safety testing in Pakistan. In addition to OGRA Lab approval, Tti is also approved from the Environmental Protection Agency as an EPA certified lab. Tti has a country-wide network of Labs and customer centers including a state of the art purpose built main testing facility in Lahore followed by liaison offices in Karachi, Faisalabad and Sialkot. We at Tti have been in service since 1995 serving a wide range of Industries including COVID-19 Protection Kit Testing, Environmental Protection, government sector, Textiles, Leather, Chemical, Oil and Gas, Food, pharmaceutical and Paint/Coatings. We provide our clients a one stop comprehensive spectrum testing services which helps them add more value to their complex Supply chain, Regulatory Compliance and Brand Integrity.

## Face Mask

Test Parameters	Method Number
<b>ASTM F2100:2019</b>	
BFE (Bacterial Filtration Efficiency)	ASTM F2101
PFE (Particulate Filtration Efficiency)	ASTM F2299
Breathability	MIL-M-36954C
Resistance to synthetic blood penetration	ASTM 1862
Flame retardant	16 CFR 1610
<b>EN 14683:2019</b>	
BFE (Bacterial Filtration Efficiency)	EN 14683 Annex B
Differential Pressure (Breathability)	EN 14683 Annex C
Synthetic Blood Penetration for Face Mask, Pressure: 16kPa (120mmHg)*	ISO 22609
Required for fulfilment of the type IIR class only	
Microbial cleanliness (Bioburden)	EN 14683 Annex D (ISO 11737 Part 1)
General - Materials and construction & Design	EN 14683



## EU Standards Gowns & Coverall

Test Parameters	Method Number	
<b>EN 13795-1:2019</b>		
Resistance to Dry Microbial Penetration	EN ISO 22612	
Resistance to Wet Microbial Penetration	EN ISO 22610	
Cleanliness microbial / Bioburden	EN ISO 11737-1	
Particle Shed analysis (Lint Generation)	EN ISO 9073-10	
Resistance to liquid penetration Hydrostatic Pressure	EN ISO 811	
Hydraulic bursting Strength (Dry/Wet)	EN ISO 13938-1	
Tensile Strength (Dry/Wet)	EN 29073-3	
<b>EN 13795-2:2019</b>		
Resistance to Dry Microbial Penetration	EN ISO 22612	
Cleanliness microbial / Bioburden	EN ISO 11737-1	
Particle Shed analysis (Lint Generation)	EN ISO 9073-10	
Hydraulic bursting Strength (Dry/Wet)	EN ISO 13938-1	
Tensile Strength (Dry)	EN 29073-3	
<b>EN 13034:2005 + A1:2009</b>		<b>Clause</b>
Pre-Treatment by Dry Cleaning (5 Cycles)	EN 14325:2004 clause 4.2	ISO 3176
Pre-Treatment by washing (5 Cycles)		ISO 6331
Pre-Treatment by Cleaning & Disinfection		ISO 3176 ISO 6331
Abrasion Resistance (Up to 2000 Cycle)	EN 14325:2004 clause 4.4	EN 12947-3
Tear Resistance - Non woven	EN 14325:2004 clause 4.7	ISO 9073-5
Tensile Strength	EN 14325:2004 clause 4.9	EN 13934-2
Puncture Resistance	EN 14325:2004 clause 4.10	EN 864
Liquid Repellency	EN 14325:2004 clause 4.12	EN ISO 6530
Resistance to penetration by liquids	EN 14325:2004 clause 4.13	EN ISO 6530
Seam Strength (Per Seam)	EN 13034:2005 +A1:2009	EN ISO 13935-3



## US Standards Gowns & Coverall

Test Parameters	Method Number
<b>ASTM F2407:2019</b>	
Impact Penetration	AATCC 42-2017
Fluid Resistant/Hydrostatic Test	AATCC 127-2018
Viral Penetration Resistance	ASTM F1671
Tensile Strength	ASTM D5034
Tear Strength	ASTM D5733
Seam Strength	ASTM D751 /ASTM D1683
Lint Generation	ISO 9073-10
Evaporative Resistance	ASTM F1686-B
<b>ASTM F3352:2019</b>	
Impact Penetration	AATCC 42-2017
Fluid Resistant/Hydrostatic Test	AATCC 127-2018
Viral Penetration Resistance	ASTM F1671
Blood Penetration-Drapes	ASTM F1670
Tensile Strength	ASTM D5034
Tear Strength	ASTM D5733
Seam Strength	ASTM D751 /ASTM D1683
Lint Generation	ISO 9073-10
Evaporative Resistance	ASTM F1686-B
<b>AAMI PB 70</b>	
Breaking Strength of Non-Woven <span style="float: right;"><b>Level 1</b></span>	ASTM D5034
Tear Strength of fabric by trapezoid Method	ASTM D5733
Seam strength	ASTM D1683
Water Resistance: Impact Penetration (Critical Area & Less Critical Area)	AATCC 42
Breaking Strength of Non-Woven <span style="float: right;"><b>Level 2</b></span>	ASTM D5034
Tear Strength of fabric by trapezoid Method	ASTM D5733
Seam strength	ASTM D1683
Water Resistance: Impact Penetration (Critical Area & Less Critical Area)	AATCC 42
Water Resistance: Hydrostatic Pressure Test (Critical Area & Less Critical Area)	AATCC 127
Breaking Strength of Non-Woven <span style="float: right;"><b>Level 3</b></span>	ASTM D5034
Tear Strength of fabric by trapezoid Method	ASTM D5733
Seam strength	ASTM D1683
Water Resistance: Impact Penetration (Critical Area & Less Critical Area)	AATCC 42
Water Resistance: Hydrostatic Pressure Test (Critical Area & Less Critical Area)	AATCC 127

<b>Level 4</b>	
Breaking Strength of Non-Woven	ASTM D5034
Tear Strength of fabric by trapezoid Method	ASTM D5733
Seam strength	ASTM D1683
Water Resistance: Impact Penetration (Critical Area & Less Critical Area)	AATCC 42
Water Resistance: Hydrostatic Pressure Test (Critical Area & Less Critical Area)	AATCC 127
Blood Penetration	ASTM F1670
Viral Penetration Resistance	ASTM F1671 (Under Development)

## Disinfectants Performance Testing

Test Parameters	Method Number
Bacterial Disinfection Efficiency (E. coli)	Based on USP 1072
Bacterial Disinfection Efficiency (S. aureus)	Based on USP 1072
Covid-19 Viral Disinfection Efficiency	Virucide Efficacy Analysis
Covid-19 Viral Disinfection Contact Time Evaluation	Virucide Efficacy Analysis
Covid-19 Viral Disinfection Concentration Evaluation	Virucide Efficacy Analysis

## Hand Sanitizer

Lead	Ammonium
Mercury	Alcohol % or Ethyl Alcohol
pH	Odor
Chlorine	

## Sectors We Serve:



**Leather**



**Textile/Apparel**



**Power Generation**



**Oil & Gas**



**Food Processing**



**Cement**



**Chemical Manufacturing**



**Engineering**



**Housing/Construction**



**Sugar**



# Our Services

Textile Testing  
 Apparel Testing  
 Leather Testing  
 Environmental Testing  
 Petroleum Testing  
 Paints & Coatings  
 Food & Pharmaceutical Testing  
 Restricted Substances Testing  
 Inspections & Audits  
 Trainings



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 ISO/IEC 17020 Accredited Inspection Body  
 CPSC Accredited Testing Laboratory  
 EPA Certified Testing Laboratory  
 OGRA Approved Lab  
 PSQCA Approved Inspection Agency

### Lahore

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## Global Presence

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