

### High-Visibility Safety Apparel (HVSA) – Testing Standards/Specifications

Testing Standards	Country	Tape & Certificate	Fabric & Certificate	Garment Report	Garment Certificate	Declaration of Conformity
ANSI-107	USA	✓	✓	✓	✓	*
CSA-Z96	Canada	✓	✓	✓	✓	N/A
EN ISO 20471	Europe	✓	✓	✓	**	N/A
AS/NZS 1906.4	Australia, New Zealand	✓	✓	✓	N/A	N/A

\* Document preparation service available

\*\* CE Mark must be provided by a Notified Body – please contact us for a list

### Other Retro-Reflective Testing Standards/Specifications

Testing Standards	Standard Description
NFPA 1971, 8.45	Structural Fire Fighting
ASTM E809, E810, E811	Retroreflection and Nighttime Color
ASTM D4956	Sheeting for USA Traffic Control
ISO 7591	European Licenses Plates

### Frequently Requested Test Methods used for PPE, HVSA, and NFPA Specifications

Test Method	Description	Test Method	Description
AATCC 22, ISO 4920, CAN/CGSB 4.2 No 26.2	Water Repellency (Spray Test)	ASTM F2302	Heat & Flame Resistance
AATCC 35	Water Resistance (Rain Test)	ASTM F1060	Conductive Heat, CCHR
AATCC 127, ISO 811, CAN/CGSB 4.2 No 26.3	Water Proof (Hydrostatic)	ASTM F2700 (D4108), ISO 17492	Thermal Protective Performance (TPP/HTP)
AATCC 42	Water Resistance (Impact Penetration)	ASTM F1939	Radiant Protective Performance (RPP)
EN 20811	Water Penetration	ASTM F2894	Heat & Thermal Shrinkage
ASTM E96 – B/BW, EN 31092	Water Vapor Permeability (Breathability)	ASTM F1868 A, B, C	Thermal Resistance (Dry), Evaporative Resistance (wet), and Total Heat Loss (THL)
ASTM F903	Liquid Penetration Resistance	ASTM D1518 – 1, 2	Thermal Retention
ASTM D4833	Puncture Propagation Tear	ISO 11092 – 1, 2	Thermal (CLO) & Vapour Resistance
ASTM D1683	Seam Breaking Strength	ASTM D6413	Flame Resistance
ASTM D6797	Burst Strength (CRE)	ASTM F2733	Flame-Resistant Rainwear
ASTM D5587, ASTM D1424, ASTM D2261	Tear Strength – Trapezoid, Elmendorf, Tongue	ASTM F1670, F1671	Resistance of Material to Blood & Viral Penetration
ASTM D2256	Thread Breaking Strength	AATCC 100, 147 ASTM E2149, E2180	Odor / Antimicrobial
ASTM D7138	Thread Melting Temperature	GL/PD 07-13, 07-14	Insect Repellent - Permethrin
ASTM D751	Coated Fabrics Testing	EN343 (various)	Protective Clothing