

GARMENT PERFORMANCE REQUIREMENTS



Item	NFPA 1971,2013 Edition Structural and Proximity Fire Fighting
THL	205 w/m ² for structural Proximity exempted (aluminized fabric impermeable)
TPP	35 w/m ²
Tear Resistance	Shell – 100N (22 lbs.) Thermal – 22N (5 lbs.) Moisture barrier – 22N (5 lbs.)
Shell Breaking Strength	140 lbs. (structural); No requirement for Proximity
Fastener Tape	Requirements for peel, shear, and cycle strength
Cleaning Shrinkage	Maximum 5%
Seam Breaking Strength	Major A = 667N (150 lbs.) Major B = 334N (75 lbs.) Minor & knits = 180N (40 lbs.)
Heat and Thermal Shrinkage, excluding hook & pile fasteners when body contact not possible	Tested at 500F for 5 minutes; No melting, separation, or ignition; Hardware to remain functional; Maximum shrinkage 10% in any direction; Moisture barrier seams shall not drip or ignite; Outer shell shall not char; Hardware to remain functional
Thread	Thread Melting Test at 500F for 5 minutes
Flame Test on all Textiles, except: Elastic & hook and pile fasteners; zippers and seam seal materials when body contact is possible; Labels on garment exterior	Maximum char length of 1"; afterflame of no more than 2 seconds and no melting or dripping; Harnesses, escape and ladder belts must meet requirement when they penetrate outer shell, are incorporated into closure system, or attached to pant
Metal Hardware	20 hr. Corrosion test
Labels	Legibility after 5 wash/dry cycles; Must use brand names on labels (no generic fibers)
RPP	Proximity test value is not less than 20 seconds
Outer Shell Water Absorption	30% or less
Water Penetration	Barrier layer minimum resistance of 25 psi
Liquid Penetration	Barrier & seams tested against 5 common liquids for 1 hr
Viral Penetration	Barrier and seams; 1 hr against Phi-X-174 Bacteriophage
Whole Garment Liquid Penetration Test	3 complete garments for each closure; Tested as received; 20 min. test; Proximity tests one garment for each closure if design is same as structural, without wash/dry preconditioning
Conductive, compressive, heat resistance	Shoulders tested at 2 psi; knees at 9 psi; 25 seconds until 2 nd degree burn
Water Penetration Resistance	Barrier layer tested at 25 psi
Light Degradation Resistance	Barrier layer only tested; no surface water after exposure
DRD Fabrics, Seams, Splices	Minimum 1,573 lbs
DRD Function Test	Deployment and mannequin drag
Transmitted and Stored Thermal Energy Test	Enhancements sewn to coat sleeves tested for stored energy; minimum time to second degree burn 130 seconds; Proximity does not require stored energy testing
Garment Trim	Coefficient of retro-reflectivity of minimum 100 cd/lux and fluorescent red, yellow-green, or orange-red; Proximity specifically prohibits trim
Wet Flex	No requirement in structural; Proximity shells must show no sign of cracking or delamination to fabric face
Adhesion After Wet Flex	No requirement in structural; Proximity shells must show no sign of separation of coating or laminated from base fabric
Flex at Low Temperatures	No requirement in structural; Proximity shells must show no sign of breaking, shattering or cracking of coating, laminate or fabric
Resistance to High Temperature Blocking	No requirement in structural; Proximity shells must show no sign of blocking