

PROTECTING FIRST RESPONDERS: CHOOSING THE RIGHT GLOVE



Peter B. Graves, BSN, RN, CNOR is an experienced perioperative nursing specialist and accomplished clinical leader focused on the prevention of surgical site infections and evidenced-based best practices in the operating room. Peter has also served as a volunteer firefighter and EMT during his career. He is an active professional with AORN and APIC, has chaired several national committees and served as a past board member for AORN. Peter has authored several peer reviewed publications and presented internationally to multiple healthcare audiences.



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1.0 hour CAPCE for EMS Professionals* | CE Approval for Police & Corrections† | 1 CE for Registered Nurses‡

The COVID-19 pandemic has created many challenges for first responders throughout the world. Supply chain shortages of gloves and other necessary personal protective equipment (PPE) have limited choices requiring, caregivers to wear “whatever is available.” This has created a greater awareness of the differences in PPE performance and the need to better understand glove selection options for optimal protection for first responders and patients.

Occupational Safety and Health Administration (OSHA) and National Fire Protection Association (NFPA) have been unwavering in their requirements regarding exam gloves during the pandemic



Performance requirements for exam gloves



Definitions for levels of protection needed



Testing requirements due to chemical, petroleum, and fentanyl exposure

Exam Glove Material Choices

	Durability	Comfort	Grip	Reduced Allergy Risk*
Nitrile	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Neoprene	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Natural Rubber Latex	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Vinyl	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●

*Reduced risk of reaction that can occur as a result of Type 1 Latex Allergies

Barrier Protection

	Exam**		
Physical properties	Latex	Nitrile	Vinyl
Length (inches)	9.25 – 10.0		
Palm Thickness (mils)	Min. 2.0 (10-13)		
Tensile (MPa min.)	14	14	9
Elongation (% min.)	650	500	300
Modulus (MPa at 500%* and 300%** strain)	< 2.8	n/a	n/a
Acceptable Quality Limit (AQL for pinhole detection)	2.5		
Packaging	100-300 per box / except for sterile gloves		

*ASTM D3577, **ASTM D3578 and or D6319

AQL (Acceptable Quality Level) Quality Focus - Exceeding Current Standards

AQL indicates the number of defects that may be accepted in a production lot of disposable gloves and is measured by a water leak test. The lower the AQL, the lower the chance of finding a defect in the batch of gloves and the higher the quality.



Glove Characteristics and Testing

Glove Characteristic	Why it matters	How we prove it*
Better Strength	Fewer rips and tears Less risk of exposure to harmful substances Better protection	High tensile strength or force of break indicates a stronger material
Superior Comfort	Better fit and feel	Lower modulus of elasticity means gloves will feel softer and more elastic
More Consistent Barrier Integrity	Indicates high quality and less risk of finding a glove with a pinhole defect that can compromise worker safety	Lower Acceptable Quality Limits (AQL) which means fewer pinhole defects are allowed in each lot of gloves produced
Better Dexterity and Stretch	Fewer rips and tears during donning of gloves Less hand fatigue due to better dexterity	The higher the elongation %, the better the stretch and dexterity
Chemical Protection	Protection against hazardous chemicals that may cause adverse reactions when exposed	Chemical permeation testing using ASTM D6978-05 to identify chemical barrier profiles

*Each material type (e.g., NR Latex, nitrile, vinyl) will have different measures as a result of the inherent material characteristics

Glove Sizing Chart

XS	5½ - 6" 14 - 15.2 cm
S	6½ - 7" 16.5 - 17.8 cm
M	7½ - 8" 19.1 - 20.3 cm
L	8½ - 9" 21.6 - 22.9 cm
XL	9½ - 10" 24.1 - 25.4 cm
XXL	10½ - 11" 26.7 - 27.9 cm

* This webinar is approved for 1.0 hours CAPCE Credit for EMS professionals by Guardian Education Group. CAPCE activity approval number: 22-GEDG-F3-4003.

† Post-approval documentation available for Police and Corrections at completion of webinar.

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WS.03.22

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