GLASC Meeting 16 AUG 2023

Industrial Hand Protection Basics "101"





Identifying Proper Hand Protection for Workplace & Workforce

person & product

- Injury Data talking points
- General Duty/Mutliple Usage
- Cut Resistant
- Chemical Resistant
- Disposable/Single Use
- "Other" (thermal/heat-cold/electrical/etc) but I won't get into specifics here...



Injury Data/Talking Points

- \$167.0b Overall Workplace Injuries Cost to Employers in 2021
- > 2.6m total recordable cases
 - Approx. \$64k per case overall avg
- > 1.06m total cases resulting in lost time...of which
- > 170,000 non fatal/lost time injuries "just" to hand, arm, wrists
- 1 laceration can cost as much as \$45,000
 If all 170K are 45k lacerations...that's more than 7.5b
- > 1 burn as much as \$99,000 or more

sources: OHSA, USBLS, NSC https://www.osha.gov/safetypays/estimator

General & Multipurpose Gloves



Identifying Proper Hand Protection for Workplace & Workforce-General Duty

ejendals **TEGERA**®







Cotton String Knit

Brown Jersey

Knit/Dipped; Polymer/Palm Coated; Multi Use



Multipurpose/General Duty

> Popular Styles:

Cotton Knit, Cut/Sewn (jersey), Dot Coated, Knit & Dipped/Polymer Coated

> Primary Use & Function:

- Sorting/Box Handling, Small Parts Assembly, PIT Operators and maintaining a good grip of material
- Keep hands free from abrasion and resist oils/fluids
- Low hazards areas, typically dry and light duty tasks

> Materials & Components:

- Yarns include Cotton, Nylon, Spandex (natural and synthetic yarns & fibers)
- Coatings include latex, water- and solvent-based PU and nitrile amongst others (PVC/vinyl, silicone, neoprene, etc)



Out Resistant



Identifying Proper Hand Protection for Workplace & Workforce-Cut Resistant

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Cut Resistant Knit (Kevlar or Aramid Fibers, HPPE, other engineered yarn)

Lined (Kevlar/HPPE)

Knit and Dipped/Coated



Cut Resistant Gloves

> Popular Styles:

Kevlar/Aramid Fiber Knits, Engineered yarns, Lined Product (Leather, Polymer shell), Knit and Dipped/Polymer Coated

> Primary Use & Function:

- Metal Fab, Machining, Automotive/Heavy Assembly, Aerospace, White Goods/Appliance mfg, etc
- Keep hands free from cut hazards, reduce & eliminate likelihood of first aids and recordables due to cuts and lacerations
- Medium level material handling hazards where protection from sharp edges, rough/raw materials and cuts or lacerations including hand/wrist/arm are top priority

> Materials & Components:

- Cut resistant fibers and yarns include Kevlar[™] and Dyneema[™] as well as generic Para Aramid and HPPE fibers as well as glass fiber, basalt, steel and others
- Coatings include latex, water- and solvent-based PU and nitrile amongst others (PVC/vinyl, silicone, neoprene, etc)



Chemical Resistant



Identifying Proper Hand Protection for Workplace & Workforce-Chemical Resistant

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Unlined/Unsupported

Lined/Supported

Blended/Layered/Multiple Hazard





Chemical Resistant Gloves

> Popular Styles:

Unsupported/Supported/Multi Use/Layered/Blended

> Primary Use & Function:

- Chemical Splash Resistance, Resistance to burns via permeation/degradation and/or absorption
- Keep hands free from chemical exposure and keep hands dry in less critical environments
- Chemical Resistance is hard science. Make sure you've got the right polymer commensurate with your chemical exposure especially if you've got both immersion and longterm contact hazards

> Materials & Components:

- Lining materials include cotton, nylon, polyester, Kevlar/HPPE and others
- Shell/outer materials as well as unlined materials include Latex, PVC, Nitrile, Neoprene and others

Single Use & Disposable



Identifying Proper Hand Protection for Workplace & Workforce-Disposable Gloves

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Food/Industrial Grade

Exam Grade (non-Surgical)

Blended/Layered/Multiple Hazard





Disposable/Single Use

> Popular Styles:

- Food/Industrial Grade and Exam Grade are Differentiated by AQL (pinhole defect rate)
- Disposable gloves provide various lengths, thicknesses, elongation and levels of quality based on polymer(s) configuration, blending and amount of purity

> Primary Use & Function:

- Food handling (McDonalds, Panera, etc) and Auto Service/Retail (Jiffy Lube, etc) as well as misc. tasks to prevent light abrasion or oil/fluid/solvent exposure
- Product protection in non-sterile/non-medical pharma and scientific areas (testing labs for various products, etc)
- Prevention of spread of contaminants or exposure to hazardous substances

> Materials & Components:

Popular polymers and blends include Nitrile, Neoprene, Latex, PVC/Vinyl, TPE and others (Vitrile, PI, etc)



"Other"





Identifying Proper Hand Protection for Workplace & Workforce

Extreme Condition Products:

- High Heat/Thermal/Welding/Aluminized
- Cold Weather/Cold Storage/Insulated/Cryo
- Random Access Barrier/Isolation
 - > Radioactive material, Carcinogens, Cancer Meds, etc
- Electrical
 - High Voltage Electricians Gloves
- ➢ Leather, Robotic, etc
- Chain/Metal Mesh

Standards and Testing (lots of acronyms!)





OSHA and ANSI/ASTM v. EN

These are recommendations Identify Hazard by "worst case scenario" Electrical, chemical, heat, cut, etc OSHA = Workplace ANSI = Voluntary with little to no governance ASTM = Voluntary with limited governance ISEA = Int'I Safety Equipment Assoc. works in concert EN = workforce protection and barrier to entry w/ authority

Thank you & Questions

