

Hand Safety for Oil & Gas – Prepared For: NTEPS



*North Texas
Exploration and
Production
Safety Network
(NTEPS)*

www.NTEPS.com

Who wants to buy gloves ?

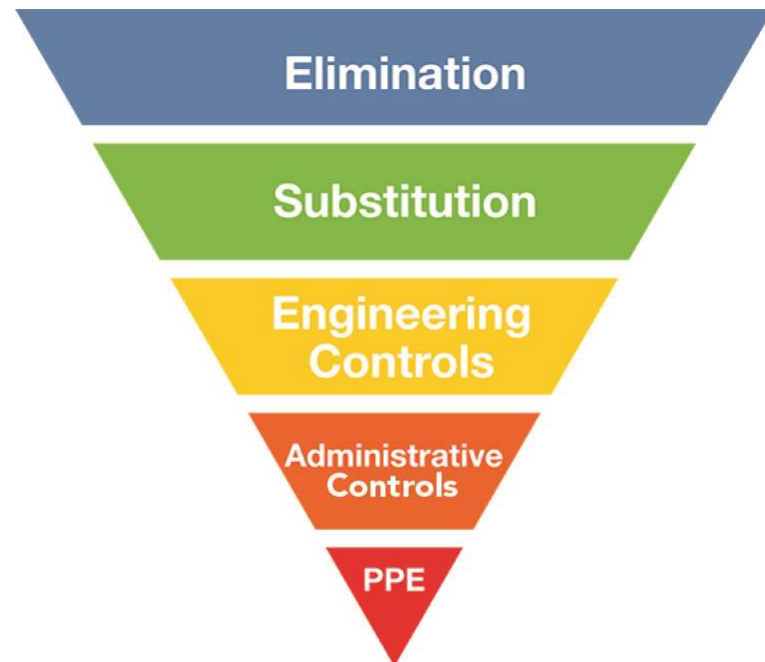
Who wants to buy “hand protection” ?



Why are gloves important ?

Hazards –

Hand Injuries -



HAND INJURY STATISTICS According to OSHA

- Most Hand Injuries:
 - Not Wearing Gloves (Bare Hand)
 - Not Wearing the Right Glove
- 25% of Work Related Injuries Involve Hands & Arms
- OSHA Stats - 100,000 Recordable, Non-Fatal Hand Injuries
- Average Cost to Employer of \$7000.00 per Incident.
- 275 non-fatal hand injuries per day (\$165 K per Day)
- Medical Costs: Small % of Total Cost of a Hand Injury → Production Interruption, Incident Investigation, Corrective Actions to Prevent a Re-Occurrence
- ❖ Estimate that North America Experiences 450,000 Non-Fatal Hand Injuries Annually.

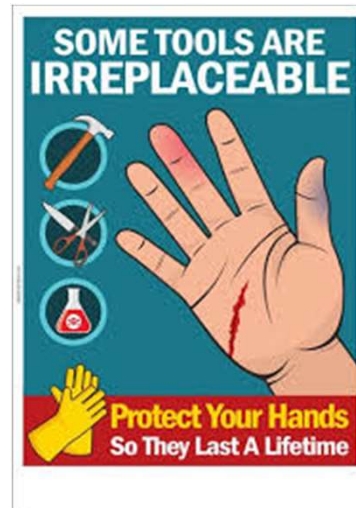


TYPES of HAND INJURIES

Hand Injury Hazard Causes - 8 Categories:

- Lacerations (cuts)
- Fractures & Dislocations
- Soft Tissue Injuries
- Amputations
- Infections
- Thermal Burns
- High Pressure Injuries

(Avulsions: grease/paint/staple guns or jewelry related)



How do you train your people on hand hazards, hand safety, gloves, and PPE limitations ?



Glove Tool Box Talks:

Hazard Identification

Rational for PPE – Value

Limitations

Testimonials

Glove - Holy Grail ?







*Most Safety Professionals are Still Looking for the “Holy Grail of Hand Protection”.
One Glove for All Hazards !*



Job Hazard Analysis

JHA
Example

no signed company was not returned on the basis, please do not share this with.

SHELL PIPELINE COMPANY LP - HSE GLOVE ASSESSMENT TOOL					
Version 1.0 - June 2017					
A hazard assessment must be completed to determine the appropriate glove for the task. Gloves must follow the ANSI/EN 388:2016 Standard.					
Shell is not promoting a particular glove brand or manufacturer; we are promoting the proper type of glove as identified by hazard assessment for the task.					
					
Chemical, Medical Emergencies, Catering and Light Duty	General Duty	High Cut and Puncture Potential	High Impact Potential	Chemical Handling	Heat Resistant
Level 45 - Cut	Level 45 - Cut	Level 45 - Cut & Puncture	Level 47 - Cut, Puncture, Impact & Abrasion	Level 1 - Chemical Protection	Level 1 - Conductor Heat Resistance & Cut
NOTE: Level 45 is the minimum requirement for General Duty gloves. Gloves used must meet the appropriate requirements or exceed the level of the hazard (see Shell's HSE website for more details).					
Protection: Chemical, gases and fumes	Protection: Cut	Protection: Cut & Puncture	Protection: Impact, Cut, Puncture & Abrasion	Protection: Chemical Protection	Protection: Heat & Cut
Availability: High	Availability: High	Availability: Medium	Availability: Limited	Availability: Limited	Availability: Limited
Notes: Recommended for use for 2000 - 2005 gloves to cut for light to medium cut hazards.	Notes: Recommended for use for 2000 - 2005 gloves to cut for light to medium cut hazards.	Notes: Recommended for use for 2000 - 2005 gloves to cut for light to medium cut hazards.	Notes: Recommended for use for 2000 - 2005 gloves to cut for light to medium cut hazards.	Notes: Recommended for use for 2000 - 2005 gloves to cut for light to medium cut hazards.	Notes: Recommended for use for 2000 - 2005 gloves to cut for light to medium cut hazards.
Applications: General purpose protection, light to medium cut hazards, general maintenance, general construction, general maintenance.	Applications: General purpose protection, light to medium cut hazards, general maintenance, general construction, general maintenance.	Applications: General purpose protection, light to medium cut hazards, general maintenance, general construction, general maintenance.	Applications: General purpose protection, light to medium cut hazards, general maintenance, general construction, general maintenance.	Applications: General purpose protection, light to medium cut hazards, general maintenance, general construction, general maintenance.	Applications: General purpose protection, light to medium cut hazards, general maintenance, general construction, general maintenance.

Training Roll-Out



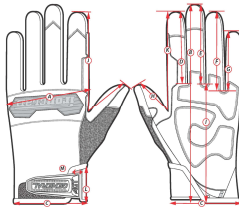
When was a “detailed” JHA performed ?

When was PPE selection last modified or changed ?

When were your Employees Trained about changes ?

Glove - Holy Grail Myths

- Size



- Cut Protection



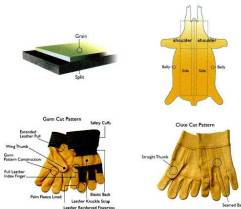
- Impact Standard

- There is No ANSI Standard for Sizing
- ANSI has Evaluated Cut Gloves - ***Not Hand Hazards***
- No Impact Standard -
(Refer Ironclad Testing)



Glove - Holy Grail Myths

- Leather Works



- Not all Leather Gloves are Equal in Performance

- Chemical Gloves



- Not all “Rubber” Gloves are Equal in Performance



- Heat Gloves

- At what temperature does skin burn ?

Traditional Work Gloves ?

Leather (Gunn) & Cotton (Clute)

Too Big and/or Too Small for Worker Hands –

Poor Fit on Hands

Not Enough Touch to Perform Task/Work

Poor Function on Job

Not Enough Dexterity

Too Many Bulky Seams



Ironclad Value -

Fit

Durability

Function

Dexterity

PPE* is Price Positioned not Task/Hazard Positioned

Ironclad Hand Measurement

16 Points of Sizing

- Value to Wearer and Company

FIT – DURABILITY – FUNCTION – DEXTERITY
(Better FIT to Eliminate “Bare Hand” Work)

70 % of Injuries: Bare Hand or Wrong Glove

Thumb & Index Finger Reinforced

Knuckle & Back of Hand (Finger Protection)

Ranchworx Goat Skin



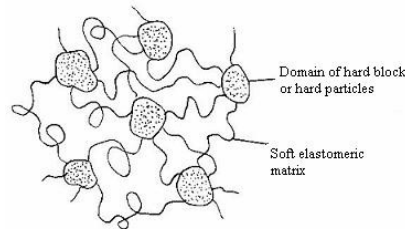
Ironclad Technology - TPR

Thermal Plastic Rubber – TPR

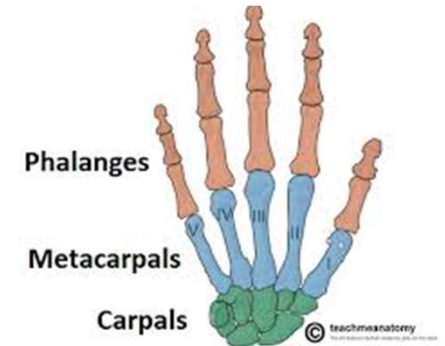
Exo-Skeleton Hand Protection

Ironclad's KONG Technology Addressed “Back of Hand” Protection

(See TPR Image to right.)



(U of Wisconsin Testing Force Reduction of 80 %)



KONG Development

KONG https://www.youtube.com/watch?v=E0E4F-I_iY4

2008 Off-Shore Injuries

- \$70,000 per “Smash” Incident
 - Cotton Corded Glove Standard
 - Adapted 2005 Innovations
- Original KONG –
 - Meaning ?



Ironclad IVE

IVE Hand Awareness



IVE™ Optical Technology: Extends the Field of Visual Recognition

Proven Maximum Impact Protection (U of Wisc)

Reflective Fabric - Nighttime Visibility

Ironclad IVE Sustainability



IVE Hand Awareness



INDI-HAD – Dotted Synthetic Leather
High Abrasion and Dexterity
Low Profile Impact Protection

LPI-OC5 – Open Cuff Cut 5 (ANSI A3)

LPI-CC5 – Closed Cuff Cut 5 (ANSI A3)



IVE Styles

INDI-RIG



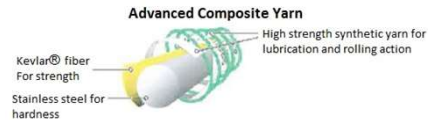
Styles -

- INDI-CCP Cotton Corded Palm
- INDI-HAD High Abrasion Dexterity
- INDI-KC5G A3 Nitrile Coated Impact
- INDI-RC5 Rigger Cut 5 (A5) Impact
- INDI-RIG DuraClad Palm Impact
- LPI-CC5 Hook & Loop Cuff (A3 1240)
- LPI-OC5 Open Cuff Style (A3 1240)

Ironclad – Seamless Coated

HPPE – High Performance Yarn

INDI-KC5



Strength, Durability, and Deflection
can help Prevent Cuts/Lacerations.

Foam Nitrile Palm for Grip.



IRONCLAD GLOVE FAMILIES – KONG (KING OF OIL & GAS)



KONG – Heavy Duty On & Off the Drill Head Work



KONG (SDX2) – 25 % Heavier Dotted Palm

KONG (SDXG2) – Diamondclad Grip Palm

KONG (KRIG) – Duraclad Reinforced Palm

KONG (KDC5) – ANSI Cut Level A4 - Coated Shell

KONG (KC5G) – Padded Foam Nitrile Palm (New Green)

KONG (SDXO2) – Slip & Oil Resistant

KONG (INDI-CCP) – Cotton Corded Palm

KONG (SDXW2) – Water Proof/Cold Condition

Ironclad Value to Worker



Rigger DuraClad Style

- ✓ Fit and Comfort
- ✓ Dexterity to Perform
- ✓ Ability to Use Tools and Equipment w/Gloves-On
- ✓ Knuckle Protection
- ✓ Sweat Wipe
- ✓ Ability to Launder & Re-Use

ironclad

Problems with Traditional Materials & Construction

- Material wear in harsh work environments
Lacks protection & durability
- Seam construction and fatigue
Lacks durability and comfort inside & outside
- Glove decontamination and cleaning

Hi-Viz Impact/Anti-Vibration

Features & Advantages

FIT – DURABILITY – FUNCTION – DEXTERITY

16 Point Sizing for Fit & Dexterity

Embossed Synthetic Leather for Touch & Wear

Back of the Hand Knuckle Protection

Padded Palm for Handling Air (Pneumatic) and
Electrically Powered Tools & Equipment

Fork Lift Tire Changing

DuraClad Reinforced Finger Tips

High Visibility Color System for
Worker Awareness



Available: Black, Brown, Hi-Viz
& Leather Goat

Coated Work Glove Materials

Material: Mechanical Property

1. Natural Rubber: Grip and Cut Resistance
2. PolyVinyl Chloride: Abrasion/Wear Resist
3. Neoprene: Good Durability & Thermal
4. PolyUrethane: Durable, Won't Flake
5. Solid Nitrile: Snag, Abrasion, Tear

Chemical Resistance

Mild Acids, Detergents , Ketones
Acids, Bases, and Chromic Acid
Broad Range of Chemicals
Resist Oil and Grease
Grease, Oil, Solvents (“ene” family)

Chemical Resistant Outline for Glove Materials

Glove material	physical properties	chemical resistance characteristics
natural rubber	wet grip cut resistance	water based acids ketones
neoprene	some snag & puncture	broad range of chemicals some chemical combinations
PVC or vinyl	abrasion	acids & caustics in various concentrations
nitrile buna rubber (nitrile)	snag puncture abrasion cut	solvents & grease oil & additives petroleum products coolants & cleaners



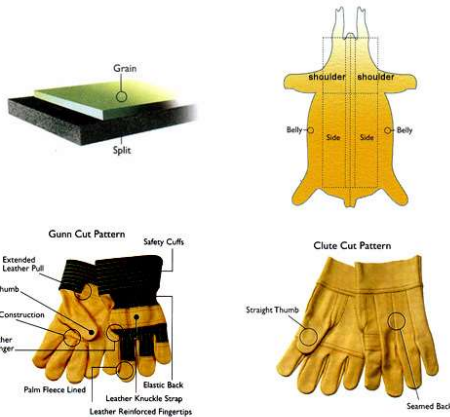
Choosing The Right Glove For The Job

*Your hands are the most exposed to chemicals.
 *Know which type to use.
 *Always wear. Check manufacturer recommendation.
 *Always wear your gloves properly.

Ironclad Leather Technology

Skin Palms

1. Synthetic Leather
2. Cow
3. Pig
4. Goat
5. Deer



Benefits

Syn Nylon – High Performance - Stable Price Point vs. Cowhide and Pigskin

Cowhide – Abrasion & Wear

Pig – Tan for Toughness & Pliability

Goat – Great Dexterity. Soft & Pliable Even after Laundering

Deer – Soft & Pliable (Expensive \$\$)

Ironclad Limitless Leather

ULD- IMPC5



360 Degrees of Cut Protection
ANSI A5 (2992 grams of cut score)
Case Hardened Leather Durability
Stays Supple & Flexible on Task
Longer Life Cycle on the Job
Flawless-Fit 13 Point Sizing
Worker Acceptance & Comfort

ULD-C5



Questions ?

There's not one glove from every task !

XTO Testing

JW Energy – Gloves Lasting 1+ Year

TransOcean, Baker Hughes and others

- JSA or JHA (Hand-Outs)
- Identify Hazards
- PPE is Last Line of Defense

by Ken Rogus - CSHO

