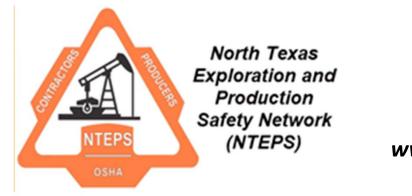


# Hand Safety for Oil & Gas – Prepared For: NTEPS



www.NTEPS.com

Dironclad KONG IRONCLAD (200



# Who wants to buy gloves ?

# Who wants to buy "hand protection" ?

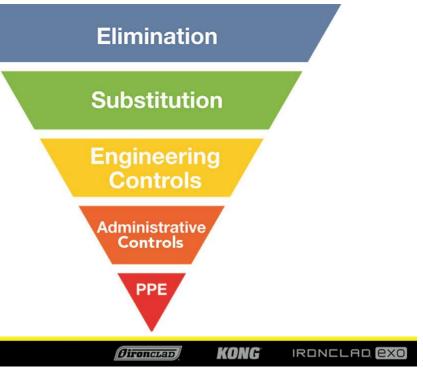




# Why are gloves important ?



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.



#### **Dironclad** Performance wear

# **TYPES of HAND INJURIES**

SOME TOOLS ARE

EPI ACEARI E

So They Last A Lifetime

### Hand Injury Hazard Causes - 8 Categories:

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







# 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 !



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## **Job Hazard Analysis**

JHA

Example

			lioves must follow the ANSI/ISE				
ited is not promoting a par	ticolar glove brand or manufactu	rec; we are promoting the pr	oper type of glove as identified	I by hazard assessment for th	er task		
ACCOUNT OF	10		an	S.	-1		
Chemical, Medical Emergencies, Catering and Light Duty	General Duty	High Cut and Puncture Potential	High Impact Potential	Chemical Handling	Heat Resistant		
No Cut Level Protection	Level A3-Cut NOTE-Level A3-Cut is the minimum requirement for Gameral Dury Givers. Givers and must mean the minimum requirement or sourced it. A pair of Gameral Duty Glaves must be with the employment all traces.	level /6 - Cut & Denthes	Level A2 - Cut, Puecture, Impact & Miczanie	Inst5. Chemical Promotion	Level 3 - Conductive Heat Resistance & Cut		
Protections Diamical, gams and doese	Protection: Cut	Protection: Out & Puncture	Protections Impact, Cat, Puncture & Abrasion	Protection: Chemical Permeation	Protection: Heat & Cut		
Dexterity: High	Deuterity: High	Devlerity: Medium	Deuterity: Linited	Destantly Limited	Device Hys Grinted		
Glove Description: Disposable Ninha, Povolar Anes, Norlie gloves are made with premium nitrile, making them lates free.	Glove Dewription: Denaral Use, reted for 1000 - 1499 grams to cut for light- medium cut heards.	Glove Description: Rated for 2200 - 2009 grains to cut for medium to heavy cut histerds.	Gleve Decorption: Rand for 4000- 4999 grams to cut for heavy cut haterfs. Impact resistance give, hard wearing, SOBM resistant.	Glave Description Chemical resistant for handling chemicals tach as acids, caustics, brives, soils ash and hydrocarbons.	Glove Description: A31M heat-lavel 2 medium duty gloves for conductive heat resistance up to 500° F (260° C). In contro terry or cances, some with Nithile or Keular.		
Sadication: Onicare and precise univities, light handling, sockaips, food handling, medical intergencies, blood or bookly holds	Autocation: General construction, general maintenance, fight and medium material handing, gipt duty rigging ectivities, working with small power tools, use of email hand stools, power, fingging mobile equipment, according (decembing ladders and stars,	Batterior Mechanical and stormal tasks, frequent handling of sharp and puncture prone stipict, rigging schlieter, working with power tools, general compruction, general maintenance.	Application: Job tasks requiring the use of hand toors, possible drift motors, handfling gips or or other heavy objects, opening and dooing process isdes, use of powerstoic tools and rigging activities. NOT FOR USE IN INTERCAREOUN AREAS	Autoation in tasks requiring and ust handling. Deensal and handling of happdous substances can be used in combination with other glows 10011: Enformed Safety Data Sheet for PET couplements required for all chemicals.	Applications Job tasks respecting protection from electric shock from welding early, famera, hot parts, sharp or flying metal, and arc ray.		

### **Training Roll-Out**



When was a "detailed" JHA performed ? When was PPE selection last modified or changed ? When were your <u>Employees Trained</u> about changes ?



# **Glove - Holy Grail Myths**



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



Chemical Gloves



• Heat Gloves

- Not all Leather Gloves are Equal in Performance
- Not all "Rubber" Gloves are Equal in Performance



KONG

IRONCLAD EXO

• At what temperature does skin burn ?

**Hiron**clan



**Traditional Work Gloves ?** 



#### Leather (Gunn) & Cotton (Clute)

Too Big and/or Too Small for Worker Hands –

Poor <u>Fit</u> on Hands

Not Enough Touch to Perform Task/Work

Poor Function on Job

Not Enough **Dexterity** 

Too Many Bulky Seams



PPE\* is Price Positioned not Task/Hazard Positioned

#### Ironclad Value -



Fit Durability Function

Dexterity





Dironclad KONG IRDNELAD EXO



## **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**



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# **Ironclad Technology - TPR**

Domain of hard block or hard particles

off, elastomeric

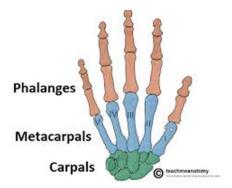
#### **Thermal Plastic Rubber – TPR**

**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 %)







*fironclan* 

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# 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<sup>™</sup> 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)



#### 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.



Dironclad KONG IRDNELAD EXO



## Ironclad Value to Worker

#### 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



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





# **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

Dironclad KONG IRONELAD 200

#### **Dironclad** Performance wear

### Coated Work Glove Materials nanical Property Chemical Resistance

#### **Material: Mechanical Property**

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

Chemical Resistant Or	characteristics       al tubber     wet grip cut resistance     water based acids ketones       ene     some snag & puncture     broad range of cher some chemical com       or vinyl     abrasion     acids & caustics in concentrations       buna rubber     snag puncture     solvents & grease oil & additives	als		Fits	Like A G	love						
Glove material	physical properties	chemical resistance characteristics	11	M	Vin	JUD .	ML					
			POLYETHYLENE			BUTYL						
		broad range of chemicals some chemical combinations	Dealieri potactice from common addi end bases     Insepanoive     Limited tear resistance	High density     Tear Resistant     Impoined     density     Cover protection     density     Provides     Provides	Healthe     Sarrby     Sarrb	Sturdy     Sturdy     Rouachie     Umited State     Impointd docentry     Const an extension     Persoides     Strang colds	Protection from     orde sortery of     devices     devices     Contact a liner     suddr other glavis     Good doctority     Good doctority     Good doctority     Good doctority     doctority					
PVC or vinyl	abrasion	acids & caustics in various concentrations	Axids     Ortergrets     Cocomposition     Cocomposition     Cocomposition     Cocomposition     Cocommitmed     mogrets and	<ul> <li>Freed</li> <li>Akobala</li> <li>Organic coirds</li> <li>end benesi</li> <li>end benesis</li> <li>end benesis<td>Olix and grooses     Anity, counties     Anity, counties     Altenhois     Olivrineted     solveets     Poor protection     from     Strong axidaing     agevits</td><td>ond bases • Noteholo • Addehodes • Kotoses • Kotose</td><td>Pist pancture mainteet     Const pancture     Const pancture     Pistonet     Pistonet     Pistonet     Pistonet     Constant     Pistonet     Constant     Pistonet     Pistones     Pistones</td><td></td><td></td><td></td><td></td><td></td></li></ul>	Olix and grooses     Anity, counties     Anity, counties     Altenhois     Olivrineted     solveets     Poor protection     from     Strong axidaing     agevits	ond bases • Noteholo • Addehodes • Kotoses • Kotose	Pist pancture mainteet     Const pancture     Const pancture     Pistonet     Pistonet     Pistonet     Pistonet     Constant     Pistonet     Constant     Pistonet     Pistones     Pistones					
(nitrile)	puncture abrasion	oil & additives petroleum products	solverts C	Choosing The	Accounts solverts     Solverts     Accounts     Accounts     Right Glove	e For The L	Esters Pace protection fram: Oak reconfactorer information					
	un.		N	• Your hends are the more Know which type to use Brands vary. Check ma Graphics used with persisten a www.icchemicsydgibiol.org for	e. Inufocturer recomme	-	Linoin Side					
								<b><i><b>Biron</b>clad</i></b>	(fironcean)	Dironclad KONG	Dironerad KONG	() KONG IRDNELA

Mild Acids, Detergents, Ketones

Grease, Oil, Solvents ("ene" family)

Acids, Bases, and Chromic Acid

**Broad Range of Chemicals** 

**Resist Oil and Grease** 

#### **Dironclad** Performance wear

### Ironclad Leather Technology Benefits

### Skin Palms

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



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



Dironglad KONG IRDNELAD EXO



# **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



**Hiron**clan

by Ken Rogus - CSHO

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