



THE IMPORTANCE OF PERSONAL PROTECTIVE EQUIPMENT:

PROVIDING COMFORT, PERFORMANCE & PROTECTION IN OILY CONDITIONS



Ansell

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Providing Comfort, Performance & Protection in Oily Conditions

AUTHORS

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ABOUT ANSELL

Ansell is a world leader in providing superior health and safety protection solutions that enhance human well-being. Every day, millions of people around the world depend on our products in their professional lives. Ansell designs, develops and manufactures a wide range of hand and arm protection solutions, clothing and condoms. Industrial workers, healthcare professionals and patients, and consumers around the world, invariably associate Ansell with premium quality, optimal protection and superior comfort. With Ansell, users always know they are safer or can perform better because our category expertise, innovative products and advanced technology give them peace of mind and confidence that no other brand can deliver. Our vision is clear: to create a world where people and products enjoy optimal protection against the risks to which they are exposed.

ABOUT ANSELL INDUSTRIAL GBU

Ansell Industrial GBU manufactures and markets hand and upper arm protective solutions for a wide array of industrial applications. Ansell Healthcare protects workers and products around the world in almost every industry.



THE DANGERS OF AN OILY ENVIRONMENT IN OIL AND GAS PRODUCTION

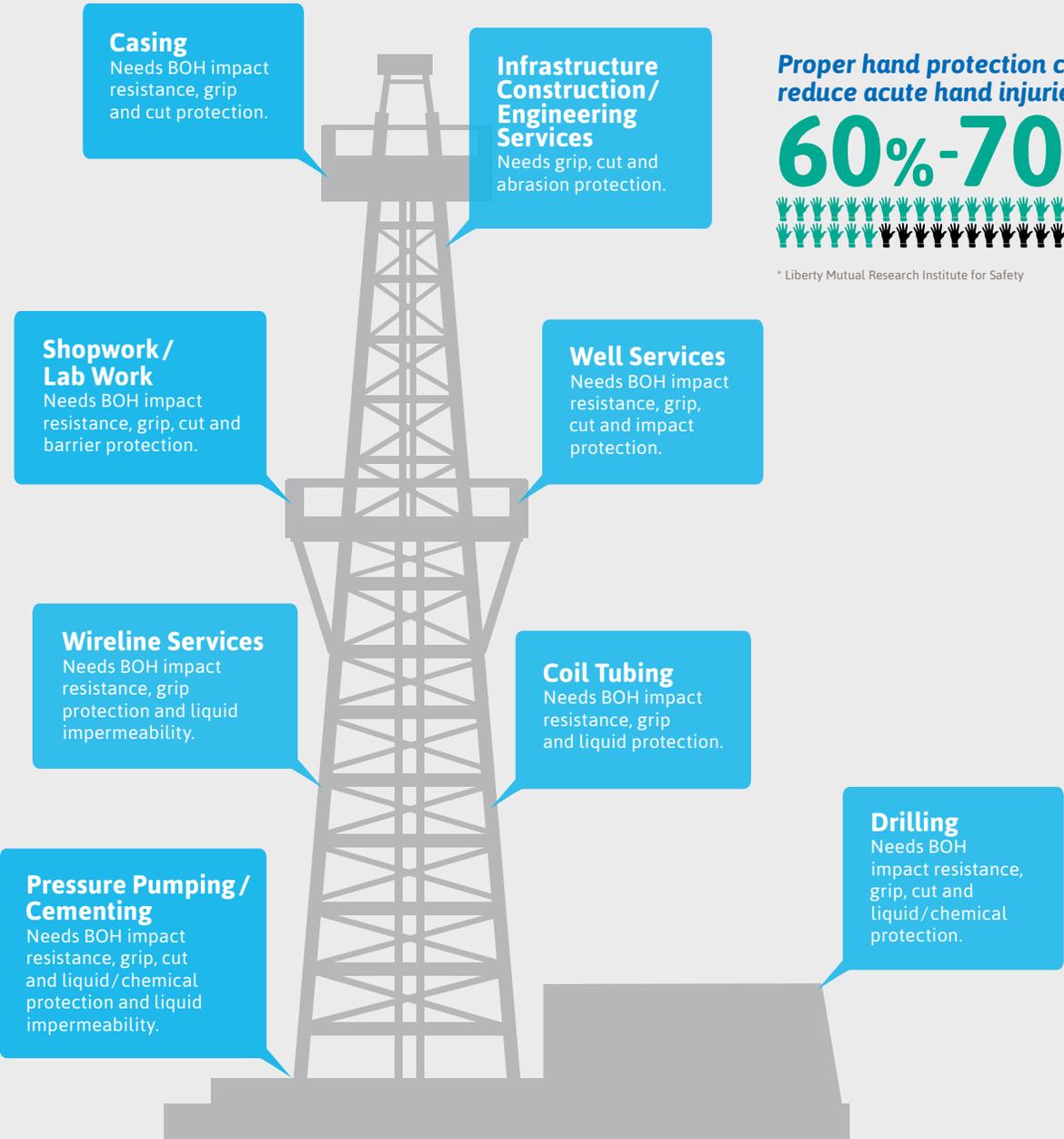
THERE ARE MANY INHERENT DANGERS SURROUNDING THE OPERATION AND MAINTENANCE OF OIL AND GAS PRODUCTION SITES. Workers handling heavy equipment, chains, pipes and other materials can be exposed to serious risks. And these dangers can lead to injuries, even death.

The numbers tell the full story. In recent information from the U.S. Bureau of Labor Statistics, there were an estimated **8,500** nonfatal injuries and illnesses within activities supporting oil and gas extraction in 2011. Of these, the majority (about 5,900) were in support activities for oil and gas operations. Drilling oil and gas wells accounted for about **2,600** nonfatal injuries and illnesses. In the same study, **112** people were killed while performing oil and gas extraction in 2011.¹

OIL EVERYWHERE

While contact with heavy objects and equipment may be blamed for many of the injuries or fatalities within the oil and gas industry, it's often the difficult, slippery conditions that also contribute to injury incidents.

Oil is pervasive throughout the industry. From site prep to drilling and pressure pumping to site cleanup and ongoing shop or lab work, workers can come in contact with oil and oily substances that can dramatically affect their safety, comfort and performance on the job. In fact, oil and other oily substances can become dangerous hazards that can lead to worker injuries either from direct contact with the skin, loss of grip, fire, or slips and falls from slick conditions.



Proper hand protection can reduce acute hand injuries by

60%-70%*



* Liberty Mutual Research Institute for Safety

How Oil Becomes a Work Hazard

In every sector of the oil and gas industry — upstream, midstream or downstream — [there are many ways that oil and oily substances can create hazards in the oil and gas workplace:](#)

Contact with the Skin

Potentially saturating the epidermis, especially if there are cuts or abrasions, raising the risk of unforeseeable health issues.

Saturating Gloves

Saturated gloves can affect worker comfort and productivity; as a result, workers may remove their gloves, raising the risk of injuries.

Reducing Productivity

Without proper grip and dexterity, worker productivity can be dramatically reduced; it can take more time for workers to complete tasks, or they may have time to change their PPE more often to keep up their pace despite the oily conditions.

On the Floor or Ground

Creating the ideal environment for slips and falls that can cause injury.

Risk of Fire

Highly combustible, oil and oily substances can ignite, raising the risk of flash fire that could burn production workers.



When it comes to protecting workers from oily hazards, generally, most oil and gas companies have their hearts in the right place — they want their workers to be safe. But they also want to maximize productivity and operate profitably. As a result, oil and gas companies' safety and PPE programs can range from stringent to indifferent. There is the opportunity for oil and gas companies to more closely examine their PPE programs and take into account the effects of oil and oily substances on the safety, performance and productivity of their operations.

REGULATIONS PROTECTING WORKERS

So if oil and oily substances can present hazards in oil and gas production, what standards or regulations protect workers from such hazards?

In the United States, the answer can be traced to the Occupational Safety and Health Act of 1970, which was passed to prevent workers from being killed or seriously harmed at work. As a result of the law, the Occupational Safety and Health Administration (OSHA) was created as a government agency to set safety and health standards that help businesses protect workers and reduce workplace injuries. OSHA also provides information, training and assistance to workers and employers.²

There are OSHA Codes of Federal Regulations (CFRs) for construction (29 CFR 1926), agriculture (29 CFR 1928), maritime (29 CFR 1915, 1917, 1918) and general industry (29 CFR 1910). OSHA standards relevant to Personal Protective Equipment are found under OSHA 29 CFR 1910.

For example, general standards for Personal Protective Equipment (29 CFR 1910.132), in part, states the following:

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact. Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.³

INTERESTINGLY, WHILE THE GENERAL STANDARDS CALL FOR PROTECTION FROM “PROCESSES OR ENVIRONMENT AND CHEMICAL HAZARDS,” THEY DON’T SPECIFICALLY MENTION OIL OR OILY SUBSTANCES.

However, OSHA does provide additional standards for the protection of the eyes, face, head, respiratory system, feet and hands:

Eyes and Face Protection 29 CFR 1910.133

Respiratory Protection 29 CFR 1910.134

Foot Protection 29 CFR 1910.135

Hand Protection 29 CFR 1910.138

In the area of hand protection specifically, the University of Nebraska-Lincoln provides a good overview of the type of hand hazards that can require protection:

- Contact with or absorption of harmful chemicals, microorganisms (such as bacteria, viruses, fungi, etc.) and/or their toxins and radioactive materials.
- Contact with sharp objects or surfaces that could result in severe cuts or lacerations (e.g., knives, saws, barbed wired, etc.).
- Contact with rough surfaces or materials that can cause severe abrasions (scrapes), such as sand, concrete blocks, rocks, ropes, etc.
- Penetration by sharp objects, such as nails, splinters, needles/sharps, or even puncture wounds inflicted by animal bites.
- Exposure to temperature extremes, which could be associated with outdoor winter conditions, heated surfaces (pots, pans, etc.), or cooled surfaces (lab specimens stored at -80 degrees C., etc.).
- Exposure to temperature extremes associated with processes or products, for example, cryogenic materials (like dry ice, liquid nitrogen, etc.), and torching or welding operations.
- Exposure to severe and prolonged/repeated vibration, such as using a jackhammer, sander, chainsaw, compactor, etc.
- Potential contact with live electrical systems operating at greater than 50 Volts AC (alternating current).⁴

Proper gloves are an important piece of PPE used to avoid hand injuries in oil and gas production.

Again, OSHA regulations cover many of the hazards as identified above including hand protection from “absorption of harmful substances,” but there is no specific mention of oil or oily substances:

Employers shall select and require employees to use appropriate hand protection when employees’ hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes. Employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.⁵

Regulations Specific to the Oil and Gas Industry

In the US, OSHA 29 CFR 1910 covers worker protection for all aspects of oil and gas well drilling except site preparation. For these activities, which include leveling the site, trenching and excavation, OSHA provides additional standards for worker protection under 29 CFR 1926, (the same standards covering construction). For additional information related to OSHA standards for the oil and gas industry, please visit: <https://www.osha.gov/SLTC/oilgaswelldrilling/standards.html>.

Regulations Outside of the United States

The International Labour Organization is a United Nations’ agency that deals with labor issues and has a tripartite governing structure — representing governments, organizations and workers — to provide guidelines on occupational safety and health management systems. The guidelines (ILS-OSH 2001) may be applied organizationally or nationally and call for coherent policies to protect workers from occupational hazards and risks while improving productivity.

BALANCING COSTS VS. PROTECTION

While the regulations are clear that worker safety is mandatory, compliance can come at a cost. PPE must be procured and maintained as part of doing business.

How PPE programs are selected, implemented and maintained are key to how successful they will be long term.

Oil and gas company employees evaluate and make decisions on the effectiveness of PPE programs from varying perspectives:

- Environmental Health & Safety (EH&S) managers are dedicated to workers' safety, and may even purchase more expensive PPE to guard it.
- Procurement managers are also concerned about workers' safety and appreciate cost-effective solutions with easy sourcing.
- Plant managers look for PPE that enables workers to maintain productivity and avoid injuries.
- Field and line workers want PPE solutions that are comfortable, safe and help make their jobs easier.
- C-level managers are concerned with mitigating risks while maintaining fiscal responsibility.

When evaluating PPE, looking at initial procurement costs does not provide a complete picture. A more fair evaluation takes into account Total Cost Of Ownership, or TCO.

TCO takes into account initial product costs, plus the savings achieved through effective use of the PPE. A TCO approach considers:

Workers' Comp

Fewer injuries means less paid to cover workers' comp costs.

Efficacy

A more expensive PPE may last longer, so fewer products are used over time.

Program Compliance

Workers may prefer to use a particular PPE better, so they are more likely to comply with their organization's safety standards.

Greater Productivity

Workers who don't have to change their PPE as often are less distracted and more productive.

Reduced SKU Count

Stocking the correct gloves for each task can result in fewer SKUs and contribute to PPE program savings.

In the end, many companies consider a TCO approach as the true measure of fiscal responsibility, safety and productivity while maintaining stringent PPE standards.



THE INDUSTRY'S PERSPECTIVE

While regulations require oil and gas companies to ensure worker safety, some companies just meet minimum requirements, while other companies strive to exceed standards. Those leading the charge often develop their own safety and PPE programs — stricter than federal regulations — to assure the safety of their workers. These programs include ongoing education and training of workers, as well as periodic analysis to evaluate worker preference, productivity and performance.

Rather than dictating program mandates, some companies' safety and PPE programs proactively involve employees from the start. Companies gather employees' input regarding PPE functionality and brand preferences, so PPE selections can be streamlined for the benefit of the workers and company alike. Some oil and gas companies share the opinion that the industry is ahead of the federal government in terms of concern for worker safety.

While oil and gas companies continue to strive to improve their safety and PPE programs, many manufacturers of PPE are also aware of the competitive landscape and doing what they can to meet companies' increasing demands.

SOME PPE COMPANIES ARE PROACTIVELY ENGAGING COMPANIES TO ANALYZE THEIR GEAR IN THE WORKPLACE AND DEVELOP OR IMPROVE PRODUCTS FOR **COMFORT, PROTECTION AND PERFORMANCE.**



THE ANSELL GUARDIAN® PROGRAM

As an industry-leader of glove innovation based on worker experience, Ansell engages oil and gas companies, and through its Ansell Guardian® Program, analyzes and evaluates current PPE practices, by providing best practice recommendations.

Ansell is a recognized leader in providing gloves that meet workers' protective needs right at the point of contact. Ansell understands that exposure risks, impaired grip and other challenges can compromise workers' safety and productivity and is committed to developing innovative solutions that support the oil and gas industry worldwide.

Ansell's commitment to innovation excellence is further demonstrated with its patented Ansell Guardian® Program. Through the program, Ansell takes a holistic approach — understanding and evaluating workers' needs following a logical Six Sigma approach. By gathering critical data at the production level, analysis can be completed at the operating unit, plant, country or international level. The data is then processed using proprietary software, matching user needs with PPE solutions.



The Ansell Guardian® Program addresses both safety and acceptance of PPE and is completed in **five phases**:

- Phase 1: Analyze** Using research, data collection and best practice surveys, the Ansell team identifies areas for operational improvement.
- Phase 2: Benchmark** Current performance measures are established as baselines to quantify process improvements and savings.
- Phase 3: Improve** An implementation plan is developed for business improvement. Pilot tests, program monitoring and reporting close the gap between existing and desired levels of performance.
- Phase 4: Measure** The success of the program is quantified against baseline measurements.
- Phase 5: Commit** The company establishes processes to help ensure that improvements made through the Ansell Guardian® Program are sustained.

Through the assessment process, Ansell conducts a full consultative analysis of **seven cost drivers**:

- 1. Injury Prevention** Reducing the risk and cost of employee injury.
- 2. Cost Performance** Helping to ensure that the right product is chosen for the right application to maximize performance.
- 3. SKU Management** Minimizing the number of SKUs used.
- 4. SKU Standardization** Ensuring the right products are used by those who perform similar job applications across multiple site locations.
- 5. Controls** Optimizing the dispensing, usage and disposal procedures associated with PPE.
- 6. Training** Educating employees in proper selection, usage and disposal of PPE.
- 7. Productivity** Improving output and eliminating waste.

As task-specific challenges in the workplace have shown “one solution fits all” is not accurate. Instead, the Ansell Guardian® Program recommends customized solutions to each customer’s unique situation. Ansell Guardian® sales representatives are trained to address and meet international requirements, so Ansell solutions can be appropriately scaled to work anywhere in the world.

SINCE THE INCEPTION OF THE ANSELL GUARDIAN® PROGRAM, MORE THAN 6,000 ASSESSMENTS HAVE BEEN COMPLETED.

6,000
ASSESSMENTS

RESULTS DEMONSTRATE THAT ANSELL CAN HELP COMPANIES ACHIEVE UP TO 30% MRO (MAINTENANCE, REPAIR, OPERATIONS) SAVINGS WITH THEIR PPE PROGRAMS.

What’s more, once a relationship has been established with a company, Ansell maintains its commitment to improvement — continually assessing, evaluating and developing solutions that meet both the company’s and employee’s unmet needs.

COMPANY SPOTLIGHT:

BAKER HUGHES

As one of the largest oilfield services companies in the world, Baker Hughes has been engaged in the Ansell Guardian® Program since 2012. After Ansell completed its initial assessment, three key areas for improvement were identified in the selection of gloves as part of their PPE program: injury costs, product costs and number of SKUs.

As a result of the program, Baker Hughes has realized a 30% savings by reducing the number of glove SKUs, focusing on employee acceptance and improving glove distribution to workers.

The relationship continues to be successful. “Ansell is always looking for the next thing — being proactive to make their gloves better,” explains Kevin Cochrum, District Safety Compliance Manager for Baker Hughes, Southern Area Operations. “What’s more, through the program, our employees now take more ownership for their safety and the safety of their fellow workers. It’s created a culture of caring and safety throughout our organization.”⁷

**“ANSELL IS ALWAYS
LOOKING FOR
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GLOVES BETTER.”**

Kevin Cochrum
District Safety Compliance Manager
for Baker Hughes,
Southern Area Operations

THE ELEMENTS OF A SUCCESSFUL PPE PROGRAM

Commitment

Everyone within an organization should be committed to the implementation and success of the PPE program including EH & S, procurement, C-level, plan supervisors and individual workers.

Proper PPE

Identifying and providing appropriate PPE based on job function and safety criteria.

Worker Involvement

Workers should have the opportunity to provide input on what PPE works for them and provide feedback as new products are tested. By demonstrating their opinions are valued, workers are also more likely to feel empowered to care more about their own safety.

Communication

As PPE programs are put in place and maintained, communication is vital and should include proper worker training and ongoing enforcement.

Maintenance

Replacing worn or damaged PPE regularly to maintain worker safety standards.

Periodic Tracking and Analysis

PPE programs should be monitored to make sure worker acceptance remains high and safety standards are maintained. Where there are gaps in productivity or performance, solutions should be investigated.

THE IDEAL GLOVE FOR WORKER COMFORT, PERFORMANCE AND PROTECTION

As an industry-leader in protection solutions, Ansell is a leading provider of PPE for hand protection. The company strives to produce gloves that provide excellent comfort for the wearer, superior protection from injury, and long-term performance.

Gloves used in oily environments have a unique set of requirements. [To address these needs, Ansell gloves provide excellent:](#)

- Grip** Gloves help workers maintain a strong grip on tools and equipment, despite the oily conditions.
- Comfort** Long days in the field require gloves that workers can wear for many hours, even in extreme weather conditions.
- Dexterity** Workers don't have to remove their gloves to complete intricate tasks.
- Durability** Gloves maintain their performance better over time, despite the rough conditions.
- Impact/Cut/Puncture Resistance** Workers hands are always right where the action is, so the gloves provide protection from crushing or abrasions.

Ansell provides solutions that offer additional features that are beneficial in the oil and gas environment including:

- Waterproof
- Chemical resistant
- Breathable
- Easy on, easy off
- Insulated for warmth
- Fire resistant
- High visibility
- Washability/durability



Ansell's comprehensive line of gloves for the oil and gas industry offers the perfect combination of **COMFORT**, **PERFORMANCE** and **PROTECTION**:

COMFORT
Ansell comfort technologies provide workers with an ultimately positive sensory wearing experience through glove fit, form and function.

PERFORMANCE
Ansell performance technologies enable workers to execute tasks more efficiently and effectively and with greater speed, agility and quality.

PROTECTION
Ansell protection technologies shield workers from exposures, injuries or damage caused by their environment, industrial materials and equipment.

ONE GLOVE DOES NOT FIT EVERY CHALLENGE.

Ansell believes in hand protection that provides point-of-contact performance. From the rig platform to delicate controls, to the shop where maximum dexterity is required, Ansell technologies provide targeted protection to improve point-of-contact performance for each task.

Based on Ansell's Worker Experience Innovation initiative, four Ansell glove brands serve the needs of the oil and gas industry as shown below. All feature proprietary **Ansell Grip™ Technology** — a patented grip feature that wicks away oil and moisture from the surface of the glove, ensuring safer handling and secure grip. As a result, workers enjoy a second-skin grip that reduces hand and arm fatigue and improves dexterity, safety and productivity.

ACTIVARMR® 97-120

Extreme oil and impact protection.

Addresses oilfield workers' top frustrations in the rugged environment. Outstanding mud-oil grip plus cut and impact resistance protects hands in extreme conditions, reducing fatigue and increasing productivity. Specialized oil-impermeable technology keeps hands clean and dry for all day comfort when handling wet or oily objects.

Oil and gas industry applications: drilling, wireline services, casing, coil tubing, pressure pumping/cementing, well services and shop work/lab work.



HyFlex® 11-926

The ultimate performance for oily environments.

The first lightweight HyFlex style that combines a ¾ grip geometry, oil repellence and oil grip in a single flexible glove. It features a durable coating for secure grip in oily environments. The liner is made of a fine gauge nylon fiber dipped in ¾ design to ensure full back of finger protection. The glove offers enhanced flexibility, tactility, oil grip and wear life. **Oil and gas industry applications:** wireline services and shop work/lab work.



AlphaTec® 58-435

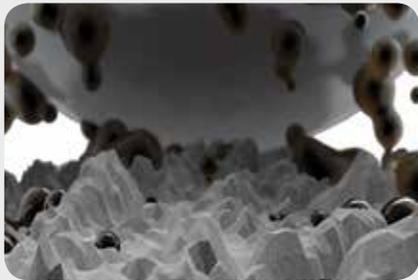
Confident grip performance with enhanced flexibility.

Engineered to provide workers with improved grip, flexibility and dexterity, thanks to a cotton flocked lined nitrile shell and snug, second-skin tailoring that tightens the fit across the palm. The heavy-duty 16-mil shell effectively protects against hydrocarbon derivatives, alcohol bases, many solvents and esters, while the nitrile coating offers superior snag, puncture and abrasion protection for long-term wear. Extra-long cuff extends protection to the upper forearm.

Oil and gas industry applications: drilling, coil tubing, pressure pumping/cementing, infrastructure construction and shop work/lab work.



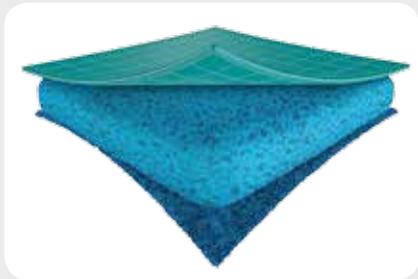
PROPRIETARY TECHNOLOGIES HELP ANSELL GLOVES STAND APART FROM COMPETITION, ADDRESSING THE UNIQUE NEEDS OF THE OIL AND GAS INDUSTRY



 **ANSELL GRIP™**
Ansell Grip Technology



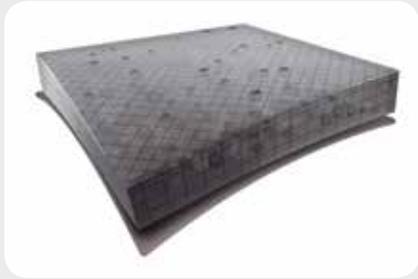
 **RIPEL™**
Liquid Repellance Technology



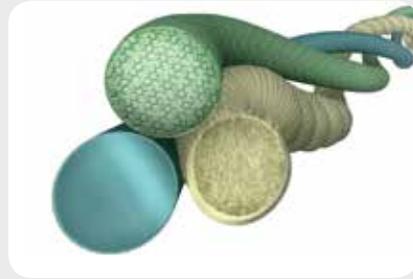
 **AQUADRI®**
Moisture Management Technology



 **ZONZ**
Comfort Fit Technology



 **FORTIX™**
Abrasion Resistance Technology



 **INTERCEPT™**
Cut Resistance Technology

IT'S TIME TO TAKE WORKPLACE SAFETY TO A NEW LEVEL OF PERFORMANCE

As we've learned, while regulations provide general standards for PPE across many industries, oil and gas production companies face additional challenges protecting workers due to the industry's inherent oily environments. Worker safety is in the hands of oil and gas companies dedicated to making sure their employees have the proper PPE. In implementing and maintaining PPE programs, ideally companies should put workers' safety first, then evaluate long-term success based on its performance on the job and Total Cost of Ownership (TCO).

As an industry-leading innovator of hand protection for the oil and gas industry, Ansell is leading the way with solutions that provide the perfect combination of point-of-contact performance with optimal TCO. Ansell welcomes the opportunity to partner with companies, and through its Ansell Guardian® Program, continue to develop industry-leading products and technologies that meet and exceed oil and gas industry demands for excellent comfort, performance and protection.

Let's Start the Conversation

Ansell invites oil and gas industry executives to learn more about the Ansell Guardian® Program and the full range of hand protection solutions available to protect their workers. For more information, visit ansell.com/ansellguardian.

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WARNING: Ansell flame resistant gloves are not "fire-proof" and will not completely prevent or eliminate the potential for burns or associated injuries. No glove completely prevents or eliminates the potential for cuts or punctures. Gloves are not intended or tested to provide protection against powered blades, serrated or other sharp or rotating equipment, nor will they completely prevent or eliminate the potential for abrasion-related injuries. Users are encouraged to always use caution and care when handling sharp materials or in potentially dangerous environments.

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The Ansell logo consists of the word "Ansell" in a bold, blue, sans-serif font. A thick, curved blue line underneath the letters "ell" creates a stylized underline or swoosh effect.