Ansell

DGI SUPPLY®

METAL FABRICATION, MACHINERY & EQUIPMENT

Hazards & Solutions

ansell.com

METAL FABRICATION, MACHINERY & EQUIPMENT

Manufacturing of metal and machinery, commonly referred to as Metal Fabrication and Machinery & Equipment (M&E), is one of the most dynamic manufacturing industries due to its strong ties and interconnections with major economic sectors such as raw materials, fabricated metal, finished goods and services. The industry covers the entire spectrum of sub-sectors ranging from general purpose and power machinery to specialized process and metal fabrication machinery.

Manufacturing and production are among top 3 occupations with the largest number of disabling injuries according to the US National Safety Council's (NSC) statistics. A 2019 study by NSC estimated the total cost of workplace injuries at a staggering $171 billion in the US only.[1] Injuries to hands and fingers account for approximately 25 percent of work injuries. Many of these injuries occur due to failure to observe safety protocols or caused by absence of adequate personal protective equipment (PPE) at production facilities. These injuries are, therefore, preventable.

Operating machinery and welding equipment, working from heights, carrying heavy loads, working on or near exposed energized parts and many other work activities can be hazardous and require safety consciousness and compliance with regulations and safety protocols including the use of PPE.

PRIMARY HAZARDS IN METAL FABRICATION INDUSTRY

Impact Risk

Cut Risk

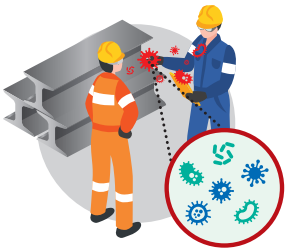
Electrical Risk

Abrasion & Scrapes

Extreme Temperatures

Musculoskeletal Disorders

Chemicals Burns



Viral Infections

1. https://injuryfacts.nsc.org/work/costs/work-injury-costs/#:~:text=The%20total%20cost%20of%20work,administrative%20expenses%20of%20%2459.7%20billion.

METAL FABRICATION, MACHINERY & EQUIPMENT HAZARDS & SOLUTIONS

Mechanical hazards like moving machine parts may potentially cause severe workplace injuries such as crushed fingers or hands, amputations and burns. Other common injuries in metal fabrication or M&E include cuts and severing injuries, stabbing or puncture caused by equipment or metal sheets as well as friction or abrasion due to rough surface parts and musculoskeletal diseases due to vibration. Machine parts, materials and emissions can be hot or cold enough to inflict burns or scalds and working with energized components may cause electrical shock and burns. Metal fabrication including welding, cutting, and brazing is exceptionally dangerous as these work processes create sparks, fumes, radiation, and other hazards. Following safety protocols and using adequate PPE is essential for protecting workers from these preventable injuries.

Ansell offers an expansive portfolio of hand and body protection solutions to guard against hazards such as cut, puncture, abrasion, vibration, electrical, and impact risks. Our product range also includes gloves and suits designed to protect skin from chemical hazards, such as paints, solvents, hexavalent chromium, and cleaning fluids that may be present in metal fabrication. Metal fabrication and M&E workers who are exposed to the industry-related hazards deserve appropriate protective solutions that help them stay safe and productive while delivering comfort and performance.

As the industry includes different types of machines and processes, a risk assessment should be conducted for each manufacturing line or work environment. It may be necessary to involve individuals with specialized or technical expertise to conduct such an assessment. AnsellGUARDIAN® helps companies around the world to assess potential risks and take steps to avoid them by making appropriate PPE selection based on various parameters including the types of hazards, job requirements, duration of use, etc.

CUT PROTECTION

One of the major hazards to M&E and metal fabrication safety is a high risk of cuts and lacerations while handling metal sheets, sharp-edged objects, and operating equipment with sharp-pointed parts. The workers are often exposed to glass, dangerous machinery, and other sharp objects and edges where cut, severing injuries or puncture are likely to occur. According to Bureau of Labor Statistics, roughly 30 percent of all workplace injuries in the US only are from cuts and lacerations, with 12 percent of those occurring on the hand. To ensure shop safety and to prevent manual handling accidents in the workplace, it is important to select the right PPE with an appropriate cut level protection adequate to the performed tasks.

HyFlex® 11-738

Ultra-strong fibers provide extreme resistance against cuts and burrs and the reinforced thumb crotch increases protection and extended use life. Made with water-based polyurethane for enhanced comfort and dexterity.

ANSI A4 CUT | ANSI 5 ABR | EN 388:2016 4X42C

HyFlex® 11-644

INTERCEPT™ Technology for enhanced cut protection to provide confidence while working with sharp objects. Allows for longer wear due to low palm weight and excellent abrasion resistance.

ANSI A2 CUT | ANSI 5 ABR | EN 388:2016 4342B

HyFlex® 11-542

INTERCEPT™ Technology provides high levels of protection against cuts and lacerations. Also provides high abrasion resistance and protection from intermittent heat contact.

ANSI A7 CUT | ANSI 4 ABR | EN 388:2016 4X32F | EN 407 X1XXXX

AlphaTec® 58-735

INTERCEPT™ Cut Resistance Technology provides protection against lacerations. High-visibility cut liner acts as an indicator for when glove is cut, highlighting when chemical protection is compromised.

ANSI A3 CUT | ANSI 6 ABR | EN 388:2016 4X32C | EN ISO 374-1:2016 Type A AJKLMNOPT | EN ISO 374-5:2016 | EN 407 X1XXXX

HyFlex® 11-755

Ultra-thin glove provides dexterity and high cut resistance while maintaining enhanced flexibility and tactility. Touchscreen compatible for enhanced productivity.

ANSI A5 CUT | ANSI 4 ABR | EN 388:2016 3X41E

HyFlex® 11-754

The unique combination of ultra-lightweight comfort and high cut performance in an ultra-thin glove featuring touchscreen capability for enhanced productivity, when you need the precision handling and assembly of sharp, dry, ultra-fine parts.

ANSI A4 CUT | ANSI 4 ABR | EN 388:2016 3X41D

HyFlex® 11-280

HyFlex® 11-281

Excellent cut protection with a soft and cool feel, making it the best choice for all-day comfort. Seamless design with INTERCEPT™ Technology. Engineered to perform in combination with any HyFlex® cut-resistant glove.

ANSI A4 CUT | EN 388:2016 3X42C

Note: Product availability may vary. These styles serve as examples only. For tailored recommendations for your unique needs and applications, please request an AnsellGUARDIAN® assessment.

ABRASION PROTECTION

When manufacturing or operating M&E with rough surface and moving parts, workers expose their hands and arms to the risk of abrasion and scrapes. Ansell offers a wide range of abrasion-resistant gloves that are extremely durable for extended wear in various abrasive applications that involve repetitive movements and handling metal sheets and panels. Ansell uses a resilient coating that dramatically extends working life of protective gloves and sleeves while improving their comfort.

HyFlex® 11-727

Excellent abrasion resistance and high-level cut protection with a flexible fit. The light, seamless liner keeps hands cool and dry.

ANSI A2 CUT | ANSI 6 ABR | EN 388:2016 4342B

HyFlex® 11-840

Outstanding durability and unmatched comfort. Longer lasting handling in abrasive conditions. Offers FORTIX™ Abrasion Resistance Technology for enhanced durability. Nylon and spandex liner improves breathability and range of movement.

ANSI 4 ABR | EN 388:2016 4131A | EN 407 X1XXXX

HyFlex® 11-751

Abrasion-resistant gloves with INTERCEPT™ Technology deliver excellent cut performance providing ANSI cut A4, and meet EN420 standards.

ANSI A4 CUT | ANSI 6 ABR | EN 388:2016 4X43C

HyFlex® 11-735

Breathable gloves featuring a 10G light-weight liner with INTERCEPT™ Technology (ANSI Level A4) performance for the ultimate in cut resistance. The comfortable and flexible plaited liner also features an optimized lycra content that is soft and cool on the skin for all-day comfort. The palm-dipped polyurethane (PU) coating provides enhanced grip in dry and light oil environments for secure handling.

ANSI A4 CUT | ANSI 6 ABR | EN 388:2016 4X43C

Note: Product availability may vary. These styles serve as examples only. For tailored recommendations for your unique needs and applications, please request an AnsellGUARDIAN® assessment.

IMPACT PROTECTION

Workers manufacturing or operating heavy machinery with moving parts or pneumatic equipment put their hands and arms to the risks of crush and pinch. Many tasks in M&E industry and metal fabrication include the use of large tools like presses, shears and saws, handling metal sheets and heavy materials, further exposing hands to hazards which can lead to devasting injuries if not properly protected. Ansell's Ringers® Impact Protection System guards workers against impact risks while providing superior comfort and dexterity.

RINGERS® R-168

TPR impact protection on top of the hand and full length of fingers with a secure cuff and PVC palm for maximum grip and additional palm layer for enhanced cut resistance. High visibility and added durability with wrap around index finger protecting wear and tear zone.

RINGERS® R-665

Premium leather impact glove and excellent cut protection for ultimate comfort, durability, and performance. Single piece palm and point finger-tip construction enhances flexibility and dexterity when handling tools and objects.

RINGERS® R-068

Light duty impact glove with breathable knit shell and fully dipped nitrile coating for a water-resistant finish. High visibility colors for increased safety awareness and touchscreen compatibility.

RINGERS® R-065

Breathable knit shell offers cut resistance, while the half-dipped nitrile coating on palm with a sandy finish offers enhanced grip. TPR impact protection on top of hand and full length of fingers.

RINGERS® R-161

High visibility impact protection with synthetic red leather padded palm and touchscreen compatibility for comfort and ease of use. Excellent for all-day versatility performing general maintenance and operation activities.

RINGERS® R-169

TPR impact protection on top of the hand and full length of fingers with synthetic leather palm for enhanced grip and additional palm layer for enhanced cut resistance. Added security and durability with secure cuff and wrap around index finger protecting wear and tear zone.

RINGERS® R-167

Certified impact protection with A3 cut resistance, for versatile and complete protection for general tasks in any industrial environment. Features comfortable padded synthetic leather palm and touchscreen compatibility for technology interaction.

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ELECTRICAL PROTECTION

Working on or near energized parts is associated with risks of an electric shock or serious burns. Electric shock is one of the major risks encountered by welders and other workers using electric-powered tools and equipment where even low voltage or low current can cause serious harm or death. Occupational Safety and Health Administration (OSHA) considers electrical hazards as the second biggest safety concern in metal fabrication. Using the right PPE can help prevent potential accidents. Ansell offers best-in-class ActivArmr® electrical protection gloves that deliver ultimate comfort, performance and safety in challenging environments.

ActivArmr® Natural Rubber Electrical Insulating Gloves are designed to deliver ultimate comfort, performance, and safety. Better by design, these gloves allow for flexibility and dexterity with an ergonomic shape to reduce hand fatigue.

Low Voltage	**ActivArmr® Class 00**	**ActivArmr® Class 0**		
High Voltage	**ActivArmr® Class 1**	**ActivArmr® Class 2**	**ActivArmr® Class 3**	**ActivArmr® Class 4**

ActivArmr® 96-001 Canvas Bag

Essential storage solution for your electrical insulating gloves that protects the gloves from folding and keeps them out of excessive heat, sunlight, humidity, ozone, and chemicals or substances that could damage the rubber.

ActivArmr® 96-002

Low voltage leather premium goat skin leather protector.

ActivArmr® 96-003

High voltage leather premium goat skin leather protector.

Note: Product availability may vary. These styles serve as examples only. For tailored recommendations for your unique needs and applications, please request an AnsellGUARDIAN® assessment.

HEAT AND COLD PROTECTION

Workers in metal fabrication are exposed to both contact heat or cold and convective heat, requiring appropriate PPE for handling hot or cold objects, working in extreme temperatures, and to protect hands while welding, casting and melting, molding and forging. Moreover, machine parts, materials and emissions such as steam and water can be hot or cold enough to inflict burns or scalds. To mitigate these risks Ansell provides a range of PPE designed to resist extreme temperatures while delivering comfort and performance.

HEAT

HyFlex® 11-542

High protection in high cut risk applications for increased compliance and an uninterrupted workday. Intermittent handling of hot work items up to 212°F.

ANSI A7 CUT · ANSI 4 ABR · EN 388:2016 4X32F · EN 407 X1XXXX

ActivArmr® 70-765

Advanced cut protection combined with premium leather for superior grip, protects hands from intermittent heat contact up to 212°F.

ANSI A5 CUT · ANSI 5 ABR · EN 388:2016 4X43D · EN 407 X1XXXX

ActivArmr® 43-216

These industrial heat-resistant gloves offer high levels of durability, control and protection from heat, flame, sparks and puncture.

EN 388:2016 3243B · EN 407 413X4X

COLD

ActivArmr® 97-631

Industrial work in the frigid cold requires PPE so the work gets done in comfort and protection. For outdoor works in the wintertime or in low temperature environments such as cold storage, the PVC coating on this cold-resistant glove is made to be an invaluable resource.

ANSI A2 CUT · ANSI 3 ABR · EN 388:2016 223JB · EN 511 12X

AlphaTec® 23-202

Comfortable PVC glove designed to protect at low temperatures and warms the hands immediately after donning.

ANSI A2 CUT · EN 388:2016 3121B · EN ISO 374-1:2016 Type B KLT · EN ISO 374-5:2016 · EN 511 021

AlphaTec® 09-022

Special Hi-Lo insulated gauntlet permits intermittent handling in cold temperatures.

ANSI 4 ABR · EN 388:2016 3232C · EN ISO 374-1:2016 Type A AJKLPT · EN ISO 374-5:2016 · EN 407 32XXXX · EN 511 111

Note: Product availability may vary. These styles serve as examples only. For tailored recommendations for your unique needs and applications, please request an AnsellGUARDIAN® assessment.

VIRAL PROTECTION

As a result of COVID-19, workplaces must consider the need to protect against the spread of illness and viral infection. Ansell offers a wide range of solutions that comply with the World Health Organization's (WHO) guidance regarding infection prevention and control. In order to make an informed decision, product purchasers and users should stay abreast of the latest and most complete information regarding appropriate PPE to protect against COVID-19 and other viruses in their specific environments and applications.

HyFlex® 11-100*

The only industrial glove designed with Ionic+™, an EPA-registered antimicrobial technology. The gloves include self-cleaning 360° antimicrobial protection of both the liner and coating and is also touchscreen compatible for use with a wide range of devices.

ANSI 3 ABR · EN 388:2016 2131A

MICROFLEX® XCEED® XC-310

Extremely durable thin mil nitrile disposable glove for extra durability while maintaining tactility.

MICROFLEX® MidKnight™ MK-296

Black nitrile examination grade disposable glove offers tough protection. Fully textured for a confident grip, 9.5" length.

AlphaTec® Solvex® 37-676

Tested and certified for protection against viruses according to the EN ISO 374-5 VIRUS standard and excellent chemical protection.

ANSI 5 ABR · EN 388:2016 4101X · EN ISO 374-1:2016 Type A JKLOPT · EN ISO 374-5:2016 VIRUS · ISO 16889

AlphaTec® Solvex® 37-175

Offers versatile chemical protection and is certified for protection against viruses according to the EN ISO 374-5 VIRUS standard.

ANSI 4 ABR · EN 388:2016 4101X · EN ISO 374-1:2016 Type A JKLOPT · EN ISO 374-5:2016 VIRUS

AlphaTec® 2000 Ts PLUS - Model 111

Guards against liquids and particulate biological hazards. Certified according to the EN 14126 standard to protect against infective agents such as bacteria, fungi and viruses and ASTM F 1671.

TYPE 4-B · TYPE 5-B · TYPE 6-B · EN 1073-2 · EN 1149-5 · EN 14126 · DIN 32781

**Ansell does not claim that the HyFlex® 11-100 will protect users against viruses, however, the Ionic+™ Technology can effectively prevent viruses and other microorganisms from remaining on the glove over time.*

Note: Product availability may vary. These styles serve as examples only. For tailored recommendations for your unique needs and applications, please request an AnsellGUARDIAN® assessment. Gloves not labeled "examination grade„ are not designed for use in medical or patient care settings.

REPETITIVE/ ERGONOMIC MOVEMENT PROTECTION

Vibration is a potential hazard for workers operating hand-held tools and powered equipment like impact drills, air powered wrenches, grinders and saws of all types. Prolonged exposure to vibration can cause changes in tendons, muscles, sensory nerves, bones and joints that may eventually lead to the hand and arm muscles damage known as hand–arm vibration syndrome. In addition to muscle fatigue due to vibration, musculoskeletal injuries are often caused by repetitive movements, overexertion of the muscle, and improper positioning while working. Along with the general precautions like mechanical isolation of vibrating source, limiting the duration of exposure, and equipment maintenance to avoid excessive vibration it is important to consider appropriate PPE to reduce the risks of damage to muscles, bones and joints ensuring workers' safety and comfort.

HyFlex® 11-931

Palm-coated cut resistance which repels oil and liquid combined. A reinforced thumb crotch extends glove life. ERGOFORM™ Technology minimizes risk of hand fatigue and the development of cumulative trauma disorders.

HyFlex® 11-937

¾ double dipped coated cut resistance which repels oil and liquid combined. A reinforced thumb crotch extends glove life. ERGOFORM™ Technology minimizes risk of hand fatigue and the development of cumulative trauma disorders.

HyFlex® 11-939

Fully coated double dipped coated cut resistance which repels oil and liquid combined. A reinforced thumb crotch extends glove life. ERGOFORM™ Technology minimizes risk of hand fatigue and the development of cumulative trauma disorders.

HyFlex® 11-816

Ultra-thin ergonomic design provides extreme tactility. Thin liner and coating provide maximum comfort and a barehand feel for workers who rely on fingertip sensitivity. Clean and skin-friendly.

HyFlex® 11-812

Patented knitted design allows the glove to easily tear at multiple high-risk areas to minimize the risk of entanglement in rotating tools. Provides excellent tactility to grab even the smallest parts.

AlphaTec® 58-128

Provides quantifiable ergonomic benefits and delivers high-performance musculoskeletal support. Conforms to the shape of the wearer's hand enabling natural movement. Enhanced dexterity with light duty chemical protection and ANSELL GRIP™ Technology.

AlphaTec® 53-001

Multi-layer polymer design of nitrile/neoprene/nitrile layers provides chemical protection against a wide range of chemicals from acids and bases to hydrocarbons and organic solvents. MICROCHEM™ Chemical Barrier Technology provides superior protection for use in hazardous environments.

MICROFLEX® XCEED® XC-310

Ansell's most durable thin mil nitrile disposable glove. Featuring ERGOFORM™ Technology to reduce hand fatigue and improve performance.

MICROFLEX® Neogard™ C52

Neoprene glove with textured finish for exceptional grip in wet or dry conditions. ERGOFORM™ Technology to reduce hand fatigue and improve performance.

Note: Product availability may vary. These styles serve as examples only. For tailored recommendations for your unique needs and applications, please request an AnsellGUARDIAN® assessment.

CHEMICAL PROTECTION

Machinery and metal fabrication hazards are not only limited to mechanical risks. Workers are exposed to a variety of harsh chemicals including paints, solvents, hexavalent chromium, and cleaning fluids. Without proper PPE, workers may experience chemical burns or any other type of skin irritation. Repetitive and prolonged exposure to these chemicals can prove toxic to the worker and severely affect their skin or respiratory system. Thick, nonporous PPE is needed that will prevent liquids from leaking inside and touching the skin, with the durability to withstand scrubbing and sharp corners.

AlphaTec® 53-001

Multi-layer polymer design of nitrile/ neoprene/nitrile layers provides chemical protection against a wide range of chemicals from acids and bases to hydrocarbons and organic solvents. MICROCHEM™ Chemical Barrier Technology provides superior protection for use in hazardous environments.

AlphaTec® Solvex® 37-185

High performance nitrile compound provides an outstanding combination of chemical resistance and strength, for optimal results in wet or dry work environments, providing a heavy duty chemical resistant glove covering to the top of the elbow and G2 level certified according to ISO 18889:2019 standard.

AlphaTec® 53-530B/535B

AlphaTec® 58-530B

AlphaTec® 58-535B

Reliable liquid-proof chemical protection. ANSELL GRIP™ Technology is a coating treatment that minimizes the force required to grip dry, oily and wet tools or materials, relieving hand and arm strength caused by poor grip.

AlphaTec® 04-002/003

AlphaTec® 04-002

AlphaTec® 04-003

PVC glove offering chemical resistance and superb oil resistant coating. Designed with special grip for confidence in dry, wet and oily applications.

AlphaTec® 87-118

High resistance to water-based chemicals. Thicker black natural rubber latex glove with extra protection in heavy duty applications.

AlphaTec® 2000 STANDARD - Model 111

Made from superior breathable microporous laminate technology to provide superior protection from low hazard liquid spray and fine particulates. Tunneled elasticated 3-piece hood, wrists and ankles help minimize the risk of linting and cross contamination.

AlphaTec® 2300 STANDARD - Model 111

Lightweight and durable chemical protection against a range of inorganic liquid chemicals including acids and bases. Includes respirator fit hood and a zip flap with self-adhesive tape closure. Coverall, 3-piece hood, elasticated hood, waist, wrists and ankles. 2-way front zipper with resealable storm flap and finger loops.

AlphaTec® 2300 PLUS - Model 132

An entry level Type 3 chemical protective coverall for workers involved in environmental clean-up and general chemical handling applications. Provides an excellent barrier against infective agents and offers viral protection. Tested for protection against fentanyl.

AlphaTec® 3000 - Model 111

Durable material providing an effective barrier against a range of inorganic chemicals and biological agents.

AlphaTec® 4000 - Model 111

Engineered to provide an exceptional barrier against a wide range of organic and inorganic chemicals and biological agents.

MICROFLEX® 93-260

Three-layer design for superior protection against harsh chemicals. Nitrile and neoprene offer broad resistance to acids, bases and solvents. Disposable glove with 12" length.

TouchNTuff® 92-600

The world's leading disposable glove for chemical splash protection. Strong and stretchy nitrile provides added durability.

Note: Product availability may vary. These styles serve as examples only. For tailored recommendations for your unique needs and applications, please request an AnsellGUARDIAN® assessment. Or use our self-service AnsellGUARDIAN® Partner tool to search our extensive chemical permeation and degradation data to identify the appropriate hand and body protection for the chemicals you use.

AnsellGUARDIAN®

AnsellGUARDIAN® is our consultative service to help companies select and implement the right personal protective equipment solutions to improve safety, increase productivity and reduce costs. Using our 125 years of experience, proprietary software system and database of over 30,000 chemicals, we analyze PPE needs and identify the solutions that will work best for each company's unique risks and applications. As an industry pioneer with the most advanced technology and analytics, we have evaluated and implemented best business practices in over 15,000 facilities worldwide, reducing injuries and saving companies a total of $165M. AnsellGUARDIAN® assessments address 7 functional areas:

1. **Injury Awareness**
   Identify hazards to reduce the risk of injury and lower the direct and indirect costs of injuries
2. **Cost Reduction**
   Make performance improvements to lower direct and indirect PPE costs
3. **Standardization**
   Ensure optimum product selection across similar jobs
4. **SKU Reduction**
   Minimize SKUs to improve working capital
5. **Controls**
   Optimize dispensing, usage and disposal procedures
6. **Training**
   Educate workers on the proper selection and effective use of PPE
7. **Waste Reduction**
   Improve output through waste elimination

Get Started Today

There's no cost for an AnsellGUARDIAN® assessment. Learn how we can help you reduce injuries, improve productivity and lower costs. Contact your local Ansell Sales Representative or Customer Service Representative today.

ABOUT ANSELL

As a global leader in personal protective solutions with over 125 years of experience in keeping people safe, Ansell's mission is to provide innovative and reliable solutions for safety, well-being and peace of mind to workers around the world. Our global team of more than 12,000 people in 55 countries design, manufacture and market cutting edge PPE that millions of workers in industrial and healthcare settings rely upon every day. We offer a comprehensive portfolio of hand and body protection products and provide customers with tailored solutions to meet their unique needs across a wide range of industries and applications.

ANSELL HEALTHCARE PRODUCTS LLC
111 Wood Avenue South,
Suite 210
Iselin, NJ 08830, USA
T: +1-800-800-0444

ANSELL CANADA INC
105 Lauder
Cowansville, QC,
J2K 2K8 Canada
T: +1-800-363-8340