Green gloves shrink your eco-footprint
Biodegradable disposables meet customer demands ...............p.26

Bump up your bottom line
Five ways hand protection can pay dividends .......................p.28

Think thermal gloves
Work doesn’t stop when the thermometer drops ......................p.30

Small but deadly
New testing helps prevent needlestick injuries .........................p.31

Mesh gloves 101
Know their benefits and limits .................................................p.32

Chemical contact
All about glove degradation, permeation & breakthrough time ...p.34

Continuous improvement
Engineering advances create sophisticated hand protection ....p.38

A glove is a glove: Avoid the wrong glove syndrome
Why the right glove for the right job is so important .................p.40

When the glove fits
Lower your risk of hand injuries by 60-70 percent ....................p.42

Passing the test
Glove ratings should reflect real-world risks .............................p.44

2013 Glove Symposium: Get a global grip
International Glove Association meets March 17-19
in Palm Coast, FL .................................................................p.46
leads to amazing products, processes and experiences. In the personal protection equipment (PPE) industry, we need look no further than our hands. Remember when the only glove choices were leather, cotton, or no glove at all?

**Protection drives innovation**

The number one reason to wear gloves is to protect hand and fingers. According to the National Safety Council, there are 3.4 billion work-related injuries annually with $156.2 billion spent each year on work-related injuries. Slices, cuts and abrasions account for almost 30 percent of the lost time and productivity in the U.S. and almost 80 percent of these incidents involve the hands, which according to the U.S. Bureau of Labor Statistics, is the leading body part injured on-the-job.

In fact, more than one million U.S. workers receive treatment in emergency departments annually for acute hand and finger injuries. Approximately 110,000 workers had hand and finger injuries lose days from work annually. Many of these injuries are preventable by wearing the proper hand protection. Wearing any glove reduces the risk of hand injury by 27 percent.

The creativity of worker input

In the old macho world of industrial jobs, no one questioned gloves, typically made of leather or cotton, to ensure worker safety. The problem was getting workers to wear their gloves. Research bore out what those on the front lines knew: wearing gloves increased muscle fatigue, reduced dexterity and decreased the amount of turning force that could be exerted by a worker.

To get workers to wear gloves, manufacturers must understand what workers need in a glove. Today’s glove wearer is looking for a glove with improved attributes relating to longevity, dexterity, comfort, grip and health. Key wants continue to be a need for less hand fatigue, increased hand coverage (3/4 coat, fully coated) protection and no-related irritations or allergic reactions associated to polymer choice of latex, nitrile or neoprene.

The good news: technological innovations introduced over the past several years have greatly improved the performance characteristics of the fibers and fibers that make up gloves. Today’s work-coated gloves are both comfortable and protective. New gloves feature lighter coatings, greater dexterity, touch sensitivity, and oil absorbency for grip. Additionally, there are new categories of work gloves that make more gloves job specific to function or application across industry segments and market channels. Now we find gloves that have specific functions with features and benefits designed for contractors, carpenters, HVAC workers, and IBEW millwrights, etc.

These new gloves essentially eliminate old excuses for taking off the gloves because the job is too difficult with gloves on.

**Engineered fibers lead the cut-resistant charge**

In the glove market, it’s about finding innovative ways to modernize and refresh products in a way that is relevant to the market and delivers significant differentiation. The use of engineered fibers is leading this charge in the category of cut-resistant gloves, which is where we have seen most of the product innovations in the last few years.

Two major classes of cut-resistant fibers are aramids, best known by DuPont’s trademarked Kevlar® product, and the high molecular weight polyethylene (HMPE) fibers of Royal SDM N.V.'s Dyneema®. The aramids are more insulative and better for high-temperature applications while the HMPE fibers are typically softer to the touch, cooler for the wearer and often considered the more comfortable of the two classes of fibers.

The functionality of cut-resistant gloves made of engineered fibers is further enhanced by the addition of sponge nitrile, PVC, neoprene, natural rubber latex or polyurethane coatings to add liquid barrier protection and/or wet-dry-oily grip. In addition, some of these gloves have anti-microbial coatings, hi-vis coloration and other special features. Every element in cut-resistant glove equations — from fibers to knitting techniques to coatings — is being fine-tuned for better protection.

**Reduce that carbon footprint**

One of the more exciting developments in the glove industry is being asked by our customers to be a part of their environmental and sustainability efforts. Conservation of the earth’s natural resources is important. Some major glove manufacturers are incorporating green research and innovation into all their products as a general business practice.

Particularly innovative is the recent introduction of the first biodegradable disposable nitrile glove. The glove has been molecularly engineered to change the structure of nitrile so that it breaks down only when placed in a landfill. While it will biodegrade in a landfill, it retains all the other desirable performance characters of a nitrile glove. Manufacturing gloves that perform the way users need them to, but that don’t harm the environment, is a new way gloves manufacturers are innovating.

**Conclusion**

Ill-fitting gloves with little technology are becoming a thing of the past. Glove companies are designing products focused on the safety and functional requirements of customers. With innovation, product expansion, and a focus on applying technology, glove manufacturers are able to keep pace with workers’ demands. And game-changing technology will continue.

Donald F. Groce is a technical product specialist and research chemist at Showa Best Glove. Showa Best is recognized internationally for its commitment to innovation and superior quality. Examples of Showa Best’s R&D innovation include ATLAS®, the world’s most popular brand of flat-coated latex-coated gloves, N-DEX®, the industry’s first non-latex, non-vinyl disposable glove, and GREEN-DEX®, the first biodegradable disposable nitrile glove.
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Investing in a well-designed hand protection program pays dividends. Not only is worker safety enhanced but employers realize a significant reduction in costs and an increase in productivity that gives a boost to the company’s bottom line. By applying the tips and best practices gathered from those who have implemented successful programs, most companies can achieve similar results.

**TIP #1: Increase worker compliance**

According to OSHA, finger and hand injuries rank number one in workplace accidents¹, and just one cut or laceration can result in up to $36,000² in direct and indirect costs. With studies showing that over 72 percent of injured workers reported not wearing gloves at the time of their injury³, something as simple as getting workers to wear the hand protection provided can lead to a significant reduction in injuries and their associated costs.

Training and supervision can certainly help increase worker compliance, but the old safety adage also bears consideration — the best hand protection is the hand protection that employees will want to wear. As important as matching the glove to the task and level of protection needed, criteria such as dexterity, comfort and worker acceptance should be part of the selection process. Luckily, today’s advanced materials and spinning techniques make possible gloves that offer increased protection in a thinner, less bulky construction.

The two fibers most commonly used in cut and abrasion-resistant gloves are para-aramids and high performance polyethylene (HPPE/UHMWPE). Para-aramids, of which Kevlar® brand fiber is an example, provide strength in a lightweight composition and are an excellent solution where heat and flame resistance is required. HPPE, such as Dyneema® brand and ChromaTek™ brand fiber are 40 percent stronger than para-aramid and feel cool and comfortable. While providing protection from cuts and abrasions, HPPE offers excellent dexterity, resistance to chemicals, water and UV light and possesses low-lint properties.

Advances in yarn spinning techniques have allowed the blending of engineered fibers such as para-aramid or HPPE with steel, fiberglass and/or other materials. Composite blends are designed to deliver higher cut and abrasion resistance while allowing excellent dexterity and comfort in a thinner glove construction. By incorporating moisture-wicking materials, some composite yarns can also draw sweat away from the skin, keeping the worker cool and comfortable.

The glove’s coating can also encourage compliance by providing the right gripping properties given the task and environment at hand. Polyurethane delivers excellent grip and abrasion resistance while providing protection against oils and fats. It is soft and flexible and can be applied in thin coats, allowing for excellent dexterity and tactile sensitivity. Heavier than polyurethane, nitrile coatings can provide a better barrier from oils and coolants, enhanced puncture resistance and improved grip. Latex rubber coatings are flexible, provide excellent dry grip and are resistant to tears.

Oftentimes selecting gloves with advanced features does not mean paying a higher price tag. Even when it does, one should consider the total costs factoring in a glove’s lifespan and its impact on the reduction of injuries. For all of these reasons, gloves made with advanced fibers, composite blends and innovative coatings make them an increasingly popular solution for companies wishing to advance both protection and worker compliance while positively impacting their bottom line.

**TIP #2: Extend glove service life**

Once workers are wearing gloves, employers can increase the wear time of a glove to lower hand protection program costs even further. With few exceptions, most gloves can be laundered effectively multiple times to remove dirt and odors. However, it is important to recognize that laundering can affect the performance properties of the glove. Always launder based on the manufacturer’s specific instructions to minimize shrinkage, dexterity and comfort and loss of protective properties.

Laundering can be done either in-house or through a commercial facility. Factors to consider in making this decision include space, cost and time limitations, which may restrict the set-up of an on-site facility. The cost of laundering ranges from 50 cents to $1 per pair, costing significantly less than replacing the pair. Otherwise stated, employers can realize a cost savings of up to 90 percent to launder a $10 pair of gloves five times at $2.50 total, as opposed to purchasing five new pairs of gloves for $50.00. Other methods, such as selecting darker colored gloves, can also extend service life. Darker colors hide dirt, which means workers generally wear the gloves longer. This, combined with laundering, can extend the life of the glove even more. Fortunately, many of today’s advanced materials have more color options available, allowing for greater visibility while also hiding dirt and grime more effectively.

Another simple method to extend service life is training workers to know when to dispose of their gloves. Workers often dispose of gloves when they become lightly soiled. Appearance is not always the best indicator that a pair of gloves can no longer be used. By educating workers to look instead for tears, holes, a worn-
out shell or coating, or excessive dirt or oil, a glove’s true end of service life can better be realized.

**TIP #3: Employ standardization programs**

The primary objective of any standardization program is reducing costs, decreasing SKU count and increasing compliance. The first step in this process is to perform an assessment of the facility in an effort to evaluate the hand protection currently being used. If workers are wearing different types of gloves for similar tasks, consolidating the options down to one style almost always results in a reduction in both direct and indirect costs. This is particularly true if the consolidation occurs across different brands of gloves. Through consolidation, the increased usage of a particular style can translate into volume discount from the supplier and/or manufacturer. This discount can be even greater if standardization can be achieved across multiple locations or plants.

**TIP #4: Seek value-added services**

Most leading safety suppliers provide extra services at little or no additional cost. Such services can include safety assessments, fit testing, sample evaluations, product recommendations, an easy-to-use website, personalized reporting, and same-day and discounted shipping, among others.

A trained sales force with specific safety experience can be essential to providing these services and, in-turn, reducing overall hand protection costs. Their knowledge working with thousands of companies across a broad range of industries can be extremely beneficial in terms of providing a facility assessment or evaluation, along with recommendations for the proper glove(s) needed for a given application. In addition, they can provide training on website ordering, personalized reporting and guidance in setting up specialized programs that will make business run more efficiently.

With resources often stretched to the limit, utilize your glove supplier as an extension to the company’s team of safety professionals.

**TIP #5: Utilize partnership programs**

To dovetail the value-added services, many suppliers also offer partnership programs. Many of these programs are designed not only to increase customer satisfaction, but to streamline processes, increase efficiencies and reduce costs.

Vending programs are becoming more and more popular, and have shown to be effective in reducing overall PPE costs. Traditionally, facilities dispense supplies through a crib or safety store. Vending machines can in effect replace or supplement these traditional methods while providing a more cost-effective, convenient and reliable alternative.

Vending machines can be placed in close proximity to the production line, fostering increased productivity because workers no longer need to walk to and from the crib. The reduction of PPE located in the crib also reduces staffing requirements, and supplies are available 24 hours a day. The dispensing method used in vending machines is controlled and traceable back to the employee, so reductions in consumption and waste often occur. Automatically generated reports also provide detailed documentation for internal and external audits. Finally, vending machines control the PPE employees can access, further improving compliance.

Consignment programs are a worthwhile option to consider. These programs reduce inventory risk, up-front investments and ongoing inventory carrying costs. By consigning product to the facility, companies are charged only when the product is used. Because the supplier’s personnel are responsible for maintaining agreed-upon inventory levels, the likelihood of stock-outs is reduced and companies are able to focus on their core business objectives. Suppliers also provide customized, detailed monthly reporting, allowing usage to be easily monitored. Additional benefits include reduced administrative costs through monthly reconciliations and billing requiring only one purchase order, receiver, invoice and payment.

If multiple locations are at play, companies may also want to consider whether they qualify for a national accounts program, which may lead to additional savings and efficiencies. Although the programs mentioned above are among the most often utilized by companies, many safety suppliers offer a full menu of programs aimed at improving safety and streamlining the supply chain.

**Successful strategies**

By and large, hand protection stands as one of the most important aspects of a facility’s operations. Without sacrificing safety, there are a variety of ways to keep costs down and enhance productivity. Methods such as increasing worker compliance, extending glove service life, employing standardization programs, seeking value-added services and utilizing partnership programs have proven successful. By utilizing the precise combination of these practices, companies can impact the bottom line and still keep workers safe.

**FOOTNOTES**

1. U.S. Department of Labor
Think **thermal gloves**

Work doesn’t stop when the thermometer drops

By ANDY OLSON

In industries such as oil and gas, mining, transportation and construction, workers are expected to perform their jobs year round — no matter the conditions. Hand protection needs change depending on these conditions, especially when cold weather enters the equation as the competing desires of warmth and dexterity don’t always go hand in hand.

Injuries to the hands and fingers accounted for 12.5 percent of incidents that caused workers to lose time away from work in 2009.1 Without proper glove protection, exposed workers are left to suffer thermal discomfort, increased strain and even tissue damage from frostbite. The technology behind work gloves has continued to advance as has the need for stronger more durable gloves that can protect workers from the toughest environments. However, not all gloves are created equal.

**Effective insulation**

To keep hands dry and safe from the elements, cold weather work gloves utilize insulation and waterproofing (WP) technology. Insulation works by trapping cold air between the outside of the glove-wearers hand. Low-quality insulations use thicker, bulkier fibers that do not trap air as effectively as others. In premium insulation, finer microfibers trap more air in a given space which allows the glove to perform better than those made from thicker fibers.

Insulation weight is also a key factor in cold weather work gloves. It doesn’t take a rocket scientist to determine that more insulation equals more warmth. However, you also have to consider the purpose of these gloves: working. A glove with a large amount of insulation may do a great job of keeping the worker’s hands warm but workers will be unable to perform even the most basic tasks in these bulky gloves due to the loss of dexterity. Finding the optimal balance between insulation quality, insulation weight and dexterity needed for the job at hand is a key factor in selecting a cold weather work glove.

**Keep water away**

The other element that causes cold weather work gloves hand misery is water from: rain, snow, ice and standing water encountered in the work environment. Just because a glove is “thermal” or reports to be designed for cold weather does not mean it’s also waterproof. A glove is only as strong as its ability to handle moisture both inside and out; this means dealing with sweat and different forms of precipitation. And like insulation, there are different options within glove waterproofing technologies.

Traditional waterproof gloves use a waterproof hand-shaped insert that is placed into the shell of a glove and stitched in at the fingertips. While these inserts succeed at stopping water from coming in contact with the hand, the gloves will still saturate as there is always a “gap” between the inside of the outer shell of the glove. Over time, the glove will feel heavier due to the water that has soaked into the glove shell and the “gap;” the insulation will not perform as efficiently because of water and cold air trapped inside the glove; and the waterproof insert may even “pull out” from sweaty hands, which at best is annoying and at worst may damage the glove.

Recently there have been breakthroughs in WP technology that replace the waterproof insert with a bonded waterproof membrane.2 This new WP membrane can be coated to the inside of the glove rendering the older insert method obsolete. Without the insert, dexterity and comfort are maximized. This new membrane also carries high vapor permeability, allowing the moisture created by the wearer’s sweat to pass through the membrane helping to further keep hands dry. This bonded membrane also eliminates space between the glove’s outer material and the insulation, so when the glove is saturated by water, less moisture is absorbed into the fabric and the glove maintains a lighter weight.

**Balance protection & performance**

Not all gloves are created equal, especially when it comes to thermal. Cold weather can wreak havoc on a worker’s ability to get the job done by decreasing dexterity in hands and fingers; slowing productivity; and increasing the chances of dropped tools and other jobsite mishaps, which can result in damaged equipment, injury, and in some cases, death.

Reap the full benefits thermal gloves can provide (but don’t inherently). Find a glove with the right combination of protection, warmth and dexterity — (but don’t inherently). Find a glove with the right combination of protection, warmth and dexterity — so no matter the conditions, the job will get done safely and done right.

Andy Olson is senior product manager at Ergodyne.

FOOTNOTES

1 NSC Injury Facts 2012 Edition: Percent of injuries involving days away from work by part of body affected, private industry, United States, 2009.

2 http://www.outdry.com/ENG_home.html

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Small but deadly
New testing helps prevent needlestick injuries

By MAUREEN PARAVENTI, Assistant Editor

A puncture wound as small as 0.00725" can be deadly — when it's made by the tip of a hypodermic needle containing dangerous microorganisms. Known as bloodborne pathogens, these microorganisms can carry life-altering diseases like HIV and hepatitis A, B and C into the bloodstream.

About 385,000 injuries involving hypodermic needles and other sharp objects occur annually among hospital employees in the U.S., according to the Centers for Disease Control and Prevention (CDC).

Nursing staff are the most frequently injured. OSHA estimates 5.6 million workers in the healthcare industry are at risk for sharps injuries.1

The type of device involved in a sharps injury makes a big difference in the level of risk. In hospital settings, most sharps injuries come from suture needles. Only 13 percent are caused by hollow-bore needles, but these are much more likely to transmit infection, because the volume of blood transferred through a hollow-bore needle is double that of a suture needle.

Workers at risk

Health care professionals are not the only workers exposed to this hazard. People who work in law enforcement, customs, park maintenance, the funeral industry, garbage collection and the body piercing/body art industry are also in danger.

Plus, needles aren't the concern. Scalpels, blood collection and phlebotomy devices, broken glass and other sharp objects which may be contaminated can all inflict serious injury.

Puncture protection and dexterity

Prevention has traditionally focused on the use of safer devices and better work practices. Today, puncture-resistant gloves are being explored as a means of protection. Double gloving — the practice of wearing one glove over another — has been shown to reduce the risk of a needlestick by as much as 87 percent when one glove over another — has been shown to reduce the risk of a needlestick by as much as 87 percent when

But many health care professionals are reluctant to double glove. It affects tactile sensitivity and the dexterity needed to perform complex surgical procedures. Help may be on the way. Researchers at the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST) in Québec reported in 2012 developing a method for testing glove material specifically for needlestick puncture resistance.3 — a method that has been adopted in the current versions of the ASTM and ISO standards for measuring the cut resistance of protective clothing (ASTM F1790-05 and ISO 13997). This was the only study of testing gloves for needlestick puncture resistance (ISHN was able to reference).

The IRSST scientists took into account the influence of needle characteristics, test material properties and experimental conditions like angle, temperature and humidity. One major improvement they made in puncture testing: the use of probes of a size and shape that more closely match the hazards in question, rather than using sharp objects found in industrial settings. They also simulated the real workplace conditions in which gloves are used, which yielded some important results:

Applying a lubricant can significantly reduce the needlestick resistance of materials.

Much less force is needed to puncture gloves that are deformed from wear.

A (simulated) hand in a glove had little effect because a needlestick is “very local in nature and does not involve significant deformation of the protective material.”3

The new method was used to test protective gloves for three types of mechanical hazards: needlesticks, puncture and cutting, so that the findings can help people choose gloves that offer protection against the specific hazards they may encounter.

“It is important to realize, however, that choosing gloves demands a compromise between protection and usability/comfort,” caution the researchers, who note that glove selection must be based on a risk analysis that identifies and quantifies all of the hazards involved. Additionally, factors such as comfort, flexibility, grip, dexterity and tactile sensitivity affect the user’s ability to perform their tasks and willingness to wear the gloves.

Another important consideration: The long-term impact of wearing gloves, and the possibility that certain types of materials might lead to increased fatigue and musculoskeletal problems. With this in mind, the researchers say: “Emphasis should be placed on choosing the right level of protection, rather than trying to overprotect.”3

Using their new testing method, the IRSST team found four types of materials offer the best needle-related puncture resistance: fabric consisting of tiny hard plates attached to a textile backing; those containing a fine weave of aramid fibres; a model containing many layers of a fine nylon fabric; and another model having fine metal mesh between the liner and the outer shell.

REFERENCES:

“Emphasis should be placed on choosing the right level of protection, rather than trying to overprotect.”
Imagine depictions of King Arthur and his Knights of the Round Table draped in chain mail garments and gloves. It was then that the concept of metal mesh gloves was born — in the Middle Ages when European knights wore gloves made of chain mail to protect them from puncture of the swords and lances used in jousts and battles.

Leap forward 1,500 years. Metal mesh gloves have been modernized, but at their root are still woven together with thousands of individually formed metal rings. In the 1980s almost all manufacturers of mesh gloves switched to stainless steel.

Who uses mesh gloves and when?
Industries including textile cutting and sheet metal use metal mesh gloves for cut protection. The most popular user remains food processing, where anyone who uses a hand knife or cleans/moves a slicer blade can (should) wear a metal mesh glove.

It’s important to note even metal mesh gloves are neither cut-proof nor puncture-proof. They are cut- and puncture-resistant. But no glove is 100-percent cut-proof. Mesh gloves are only designed to be used around hand knives, not powered blades or saws with serrated edges. Warnings on packaging from almost all manufacturers read something like:

“WARNING: these gloves will not withstand the force of power-driven blades, saws, and tools; avoid this hazard.”

“WARNING: These gloves could be caught in moving machinery and should not be used where such contact is possible.”

What does the law state about mesh gloves?
There is no OSHA standard or regulation that requires metal mesh gloves to be used in any specific industry or application. However, OSHA has published the reference document OSHA 3108, “Safety and Health Guide for the Meatpacking Industry.” It can be accessed online at http://www.osha.gov/Publications/OSHA3108/osha3108.html.

In the section, “Protective Clothing and Equipment,” the last sentence of the first paragraph reads: “In addition, workers who use knives must be provided with metal mesh gloves and aprons, and wrist and forearm guards to protect them from knife cuts.”

How to tell one mesh glove from another?
Currently, there is no U.S. federal or state government standard about how to make a mesh glove. Several of the leading mesh glove manufacturers follow the European standard EN1082, and apply the CE mark as evidence of certified compliance. This standard covers several performance and design criteria, including ring weld (tensile) strength and ring assembly.

The tensile strength requirement, section 4.3.1 states that: “When tested...no ring, link or plate shall break open when a force of 100N is applied.” (An “N” is a Newton, a measure of force. 1 N is roughly 0.22481 pounds of force. So 100N, the minimum requirement, is roughly 22.481 pounds of force.)

Additionally, section 4.2.1 states that: “Chain mail...shall have 4 rings passing through each
Again, because there is no standard in the U.S. for mesh gloves, some mesh glove manufacturers only connect their pieces of mesh using one ring and not four. As a result, the gaps at a glove’s seams are as large as 6.3mm, allowing enough room for a knife point to protrude.

The gloves produced by leading mesh glove manufacturers are assembled by weaving the joining ring around (over and under) at least four adjacent rings, in exactly the same way as the basic mesh material is interlocked. As a result, the seams are as strong, safe and secure as any other part of the glove, and the maximum gap is less than 3.1mm.

To be sure mesh gloves are the safest possible, check that they are compliant with EN1082.

Hygienic concerns

In most cases mesh gloves are worn in a slaughterhouse, food processing or food service environment, a kitchen cut-up or grocery— all locations where they contact food.

In each of these environments almost all of the tools and knives used are stainless steel. So are many of the surface materials, transport bins, etc. Why? Because stainless steel is a non-porous material that is relatively simple to clean and will not harbor bacteria.

However, original metal mesh gloves had a fabric strap around the wrist to close the glove around the hand. With a fabric strap you introduce a porous material to a purportedly hygienic environment. Fabric straps are challenging to clean, and they can be a place for bacteria to hide and grow—even after the most thorough cleaning processes.

As a result, a new generation of metal mesh gloves was developed without fabric straps. Eliminate fabric straps and you can reduce the risk of bacteria and cross contamination. Advanced metal mesh gloves can fasten around the wearer’s wrist without a fabric strap using a variety of stainless steel closing systems, including adjustable hook designs. This helps facilities comply with the USDA FSIS (Food Safety and Inspection Service) which states: “All plants must develop, adopt and implement a HACCP (Hazard Analysis and Critical Control Point) plan for each of their processes.” Plus, FSIS, in its Standard Operating Procedures for Sanitation states: “All plants must prepare and implement plant-specific standard operating procedures (SOPs) for sanitation to ensure they are meeting their responsibility to keep their facilities and equipment clean.”

Should you wear a metal mesh glove?

Think about your task and its hazards. Are you using hand knives? Are you cutting up food?

Initially the cost may seem prohibitive. Wrist-length gloves can cost approximately $100 each. But that expense should be compared to the costs that can be saved.

According to a 2005 report from the U.S. Bureau of Labor Statistics, 25 percent of all injuries resulting in days away from work were hand-related. The average cost per reportable hand injuries is $4,200, according to the National Safety Council. BLS data puts the cost of hand injuries at $8,500 for combined medical and indemnity costs. (This includes everything from a couple of stitches to severed tendons.) Even more alarming: 70 percent of workers suffering hand injuries were not wearing gloves. For the remaining 30 percent, injuries occurred because the gloves used were either inadequate or worn out.

In the food service industry, in 2005 OSHA estimated hand injuries cost about $300 million a year in medical costs, lost time from work and workers’ compensation payouts. In 2003, nearly 24,000 restaurant workers lost at least a day of work because of a cut, burn or scald, predominantly to the hands, according to the BLS.

Loren Rivkin is executive vice president of Niroflex USA, a manufacturer of metal mesh gloves and garments, and is also a member of the American Meat Institute’s Worker Safety Committee.
OSHA’s personal protective equipment standards for general industry (29 CFR 1910.132-1910.138) are in effect. One of these standards (29 CFR 1910.138) specifically addresses the need for hand protection or chemical protective gloves:

(a) Appropriate hand protection must be worn when hands are exposed to hazards such as skin absorption of harmful substances, severe cuts, lacerations or abrasions, punctures, chemical or thermal burns and harmful temperature extremes.

(b) Employers must base the selection of 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. This rule makes it mandatory to match the right glove material with each application or task. This includes assessing the job for chemical exposures, and then selecting the appropriate chemical protective glove based on material, thickness, length and other traits.

Hazard assessment

A hazard assessment can be performed by an industrial hygienist or other safety professional familiar with the task. The hazard assessment begins with knowing what chemicals or combination of chemicals the task or job requires. The next step is to determine the chemicals’ toxic properties by reviewing the Material Safety Data Sheets (MSDS). Attention should be focused on potential local skin effects, as well as potential absorption through the skin and resultant systemic effects.

When reviewing the job requirements, the degree of dexterity required for each task must be taken into account. Tasks that require fine motor skills, such as laboratory work, may require a thinner glove material, while operations such as industrial parts cleaning may not.

Also, the length of exposure to the chemicals must be considered. Some tasks may require only splash protection or include intermittent contact, while others may involve complete immersion or continual contact with the chemicals.

Other factors to consider are chemical concentration and temperature. The higher the concentration and temperature of a chemical, the shorter the breakthrough time. The hazard assessment must also take into account additional hazards of the job, such as cut or abrasion hazards.

It’s important to remember that although the number of glove choices can be staggering, no one glove can possibly address all types of hand hazards. Gloves are never a substitute for safe work practices or proper engineering controls.

Choosing a glove material

Because different glove materials resist different chemicals, no one glove is suited for all chemical exposures. A glove that is well suited for one application may not be right for another. It is best to base glove material selection on the manufacturer’s chemical resistance guide. From the guide, choose a glove that is most resistant to the chemicals being used. Remember, the actual chemical compatibility of a given glove material can vary from manufacturer to manufacturer. Selections must be based on the particular manufacturer’s test data. To read a chemical resistance guide, it is important to become familiar with the terminology. (See Chemical Compatibility chart below.)

Another factor to consider is chemical combinations. Glove permeation guides generally list test data for pure chemicals only — not mixtures — because combining chemicals can change their physical properties and permeation rates.

In the non-mandatory Appendix B to the personal protective equipment rule, OSHA recommends the following:

(a) Appropriate hand protection must be worn when hands are exposed to hazards such as skin absorption of harmful substances, severe cuts, lacerations or abrasions, punctures, chemical or thermal burns and harmful temperature extremes.

(b) Employers must base the selection of 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.

(c) For mixtures and formulated products, (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials.

ANSI/ISEA 105-2011

ANSI/ISEA 105-2011, American National Standard for Hand Protection Selection Criteria, provides a consistent, numeric-scale method for manufacturers to rate their products against certain contaminants and exposures. With classifications based on this scale, users can make better-informed decisions about which gloves are best suited for their application.

Glove performance and pass/fail criteria are included for cut, puncture and abrasion resistance; chemical permeation and degradation; detection of holes; heat and flame resistance; and vibration reduction and dexterity.

The standard also includes a recommended hand protection selection procedure, and reference information on special considerations such as biological protection, extreme temperature applications, cleanroom applica-
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Chemical contact

continued from page 34

tions, hazardous materials response applications, electrical protection and radiation hazards.

A section on human factors describes how fit, function and comfort are incorporated into glove selection.

Thickness and length

Other choices you must make in selecting chemical protective gloves include thickness and length. Thicker gauge gloves are heavier and have better chemical resistance than thinner gauge gloves. Thinner, lighter gloves offer better touch sensitivity and flexibility while chemical resistance is sacrificed. Glove manufacturers generally state that doubling the thickness of a glove quadruples the breakthrough time of the chemical.

Glove thickness is stated in either mils or gauge. A 10-gauge glove equals 10 mils, or 0.010 inches. When choosing your glove, look for the stated thickness on the manufacturer’s test data.

When assessing the job, also take into account the length of glove needed. Extra splash or immersion protection is provided by gloves longer than 14 inches. For deep tank cleaning or glove box applications, gloves can be as long as 31 inches. Generally longer gloves are made with thicker materials.

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Chemical processes, hazardous materials response applications, electrical protection and radiation hazards.

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Gloves also have a variety of finishes and linings. Textured finishes are applied to gloves to give a better grip. flock and knit linings are offered on many styles of gloves. Cotton flock linings are applied for basic perspiration absorption. Knit linings do this too, as well as offering a small amount of temperature protection.

Inspection and care

Even the best chemically resistant glove will break down after repeated chemical exposures. Before each use, gloves must be inspected for signs of chemical degradation such as swelling, cracking, shrinking or discoloration of the material. If detected, it means the glove material has undergone a physical change due to chemical contact and will no longer provide chemical protection. Also during inspection, look for any signs of holes or punctures and remove the gloves from service if any are found. For complete care and maintenance instructions, refer to the glove manufacturer’s information.

Commonly asked questions

Q. Can I get a thin surgical glove that offers chemical resistance?

A. Thinner glove materials sacrifice chemical resistance to offer the best touch sensitivity and dexterity. Because surgical gloves are so thin, the material is easily stretched over the hand, allowing better sensitivity. But this stretching also leaves bigger spaces in the glove material at a molecular level. These larger spaces allow a chemical to permeate through very quickly, limiting the amount of time it can be worn. Some surgical nitrile gloves offer limited splash protection from chemicals. These gloves are not intended for complete immersion in chemicals, and should only be used for a very limited time period.

Q. Can I decontaminate and reuse gloves?

A. Decontaminating gloves is possible, but generally not practical. The decontamination procedures would probably cost more than replacing the gloves, so glove manufacturers do not recommend it. Gloves are a limited-use item that requires replacement after time and chemical exposures.

Q. Is there a standardized test used to test the chemical compatibility of glove materials?

A. The manufacturer runs permeation and degradation tests in accordance with standards established by the American Society for Testing and Materials (ASTM F739).

Please Note:
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It is impossible to ignore the effect of legislation when discussing personal protective equipment (PPE) in the workplace, and in most industrialised nations it is now mandatory for employers to provide appropriate PPE to the workforce. In the U.S., OSHA requirements for PPE started in 1970. In Europe and in line with the formal law-making procedures of the European Union parliamentary system of creating Directives, a PPE Directive was formulated and came into law in the early 1990s. It was an ambitious, complex and far-reaching piece of legislation and a revision is expected in 2014. It proposed and defined the basic health and safety requirements of all PPE and defined and categorised risk in order to assist in the selection of appropriate PPE.

At the same time, a series of Harmonised Standards — European Norms (ENs) — were created for all products groups within the definition of PPE. These standards were formulated to produce performance levels rather than simple pass or fail criteria.

In addition, Notified Bodies were created by Government appointment in the various EU countries, usually to existing recognised and independent accredited test houses, so that PPE could be independently tested against one or more appropriate Standards (ENs).

A Technical File for each product is submitted to a Notified Body and if all is correct, a unique EC Type Examination Certificate is issued by the Notified Body which permits the use of the CE mark on the product.

The system also embraces and encourages the use of Quality Systems, such as ISO 9001, in the manufacture of PPE, and the Notified Bodies, where appropriate, are involved in regular auditing and scrutiny of such systems or product at the place of manufacture. Only CE-marked PPE product is permitted to enter the EU market. This system of product evaluation and CE marking can only have legal status within the EU, but it is now recognised and accepted in many parts of the world and all major manufacturers show in their catalogues the product performance levels that have been evaluated by this independent system.

Advances in hand & arm protection

Developments in hand and arm protection have dramatically expanded in recent years. Traditional methods of cutting and sewing materials such as leather and textiles, sometimes in combination, are still very much alive. So too is the conversion of mainly knitted textiles into coated product in this sector, and the processes involved make use of polymer systems such as PVC, natural and synthetic rubbers and PU using various coating techniques to produce a very wide range of products from ultra lightweight to heavy duty in order to meet the end use demands associated with mechanical risk and chemical hazard, sometimes in combination.

Gloves produced from Automatic Glove making machines in both coated and uncoated forms have witnessed an expanding demand in recent times. Automatic machine knitted glove products date back to the early 1960’s but early machine gauges, that is needles per inch, were in the 5 to 7 range and accommodated bulky yarns such as wool and acrylics and regenerated mixed fibres etc. These products were ideal for the domestic/retail markets and flourished there. Early efforts to produce industrial products were not successful to meet a wide product range, but some PVC dotted and patterned gloves appeared at the low end of the market. Meanwhile technical yarns and textiles in general advanced apace and these developments continue today. Only after machine makers went into the next...
stage of development with 10 gauge then 13 gauge did industrial products take off. When the advances in technical yarns were able to be incorporated, this opened up a much wider market for these products. Knitted structures are an interconnected series of loops and even fairly inelastic yarns such as spun cotton, the aramids, flat nylon and polyester filaments etc., can produce a degree of stretch when knitted and add comfort to the finished product. However, the incorporation of textured nylon, which has inherent stretch property and ultra fine elastane-type yarns in machine-knitted products have been major factors in enabling machine-knitted gloves, both coated and uncoated and in all the various yarn combinations, to confer better fitting to the hand.

Meeting end-user requirements

Automatic glove making machinery has continued to develop and through advances in engineering and computerisation, 15 gauge and the latest 18 gauge machines are now available. All automatic machines for glove production use a single yarn as the feed, but the yarn can be a compound of other yarns. Yarn combinations in single and multiple arrangements are endless, but range from simple spun natural and synthetic yarns, filament synthetics such as polyester and nylon through to the aramids such as Kevlar®, Nomex® and Dyneema®, ceramic and steel to mention the main ones. All of these can be combined with ultra fine elastane-type elastic yarns in achieving better fit and comfort to the wearer. Finished products are available in coated or uncoated versions depending on end use, with coatings such as PVC, Natural Rubber, Nitrile, Neoprene and Polyurethane being the main polymer systems.

The latest machines are increasingly clever and complex and allow changes in structure to be made in different areas of the glove so particular requirements of end use can be met. Some of the recent 18-gauge lightweight coated products approach “second skin,” while possessing excellent dexterity, comfort and performance. Each progression in machine gauge has led to product with increased comfort, while maintaining a high performance with yarn selection. The 18-gauge machine knit products are capable of producing very sophisticated products. Investment in this technology continues to be massive but unavoidable for all major manufacturers. Yarns and fabrics continue to be developed for new products in all areas of domestic, industrial and military end uses. There is no doubt that the sophistication of product and design in this important area of industrial protection will continue to meet increasing demand in end use.

Allan Knowles, technical director for Midas Safety Inc., has over 50 year’s industrial experience and held senior technical and managerial positions with leading companies within the PPE industry. Throughout his career he has been associated with the application of polymer systems to textiles in the production of industrial protective clothing. For the past 27 years, Allan has been with Midas Safety Inc. group of companies working exclusively on Industrial Safety Gloves, alongside a devoted and enthusiastic team, which has led to the worldwide prominence of this ever-expanding group.
A glove is a glove: Avoid the wrong glove syndrome

Why the right glove for the right job is so important

By MATT PIOTROWSKI

Selecting the correct hand protection for a specific application is one of the most important and often overlooked aspects of a safety director’s responsibility. Finding the glove that is a perfect fit for your particular application can be a daunting task, however its necessity cannot be disputed.

A common & costly mistake

Imagine this……

You are standing in the aisle at one of the “big box” hardware stores in your hometown. The water heater in your home has just sprung a leak and your beautifully refinished basement/man-cave has become victim to gallons of scalding hot water. That nice new carpet you laid down last year is now a soggy mess and your decision to put off replacing that old worn out water heater has come back to bite you in the proverbial behind.

Being a hardworking citizen, cost is a factor, and you are not looking to spend this month’s paycheck on a new hot water tank. You eye up the first one you see, look at the price tag and see that it’s within your budget and start hauling the box onto your cart. You ignore the complimentary signs and books located close by that are designed to aid you in selecting your new water tank.

One of the “helpful” store associates sees you struggling with the box and offers to lend you a hand. The associate asks “Are you certain you made the right selection for your home?” You answer, “Yes, I just need a new hot water tank, any one of these will be fine, and I’m on a tight budget,” and away you go to the register.

It is in this moment that you have made a very common (and usually very costly) error; you have assumed, “they all work the same.”

You neglected to take into account the fact that your home is 2,200 sq. ft and you have four children and a wife who all seem to require an hour-long soak in the shower at the same time. Nevertheless, you load the brand new, 20-gallon, economy-grade water tank, which is really only suitable for a small apartment, onto the back of your pickup truck and you head home feeling good about your purchase.

All gloves are not the same

Now take a look at your hands and imagine yourself as an industrial specialist. Every day you are running those hands across a razor sharp piece of unfinished plate glass, or maneuvering stamped steel in position on an assembly line, or working with slag in a steel foundry — would you want the person who selected the gloves that are protecting your hands to have made his decision in a similar fashion as the guy buying his new hot water tank?

Imagine the decision has been made that plain old cotton string knit gloves will work just fine for handling those glass solar panels, or that a cut and sewn leather glove will offer you the same protection as an aluminized para-aramid safety glove while working around 2000˚F molten slag.

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Imagine the glove you are wearing to protect one of your most vital occupational assets was chosen because “a glove is a glove is a glove.” A mistake like this at home means a flooded basement. A mistake like this on the job means lacerations and lost time; not to mention how costly it is to the company and to the injured employee, who was not wearing the correct hand protection for his or her particular job.

Now we all certainly hope that no one in our industry is as clueless about hand protection as the person described above; however the “wrong glove for that job syndrome” is more prevalent than one might think and is certainly not something to be taken lightly.

Pay attention to the details

In this day and age, most users have become highly educated in existing glove technologies, and any profitable company realizes that a cotton or leather glove does not provide adequate protection for every job. What many end users may not realize is that more and more glove manufacturers are focusing on application-specific hand protection solutions, rather than broad-based “one size fits most” designs.

The glove industry is doing more and more to provide solutions that meet very specific criteria. Innovation and technology have shown us that what works in one automobile plant in the welding department, may not be the correct type of glove for a different automobile plant’s stamping operation and vice versa.

A 20-gallon hot water tank will never keep a family of five happy with enough warm water in the morning, and the same correlation holds true for hand protection. Entire niches are being carved out within the industry, focusing on job-specific hand protection that has in turn acted as a much needed catalyst to improving workplace safety.

Traditionally, politics and unit cost sometimes played a large role in hand protection selection criteria; however the glove industry has evolved over time to allow for effective solutions to be very cost-effective and very application specific. The development focus has not solely been on the actual job that is taking place, but also on the reported and recordable injuries that have occurred in the past in that particular application. This information is effectively used to design and structure more effective glove styles that help reduce instances of worker hand injuries and increase production and profitability. For instance, injuries classified as lacerations or cuts are very commonly misinterpreted as product failure. Research and development has shown that, in many cases, it can be either a tear or an abrasion that has caused the failure in said product, which contributed to the laceration injury. With this knowledge, glove manufacturers can aid end users in tailoring a glove that fits their needs and offers the best protection from the hazards present in that particular job.

Work closely with your partners to get the right solution for your application. Understand the protection level needed for your employees, pay attention to the details and demand that your hand protection supplier does the same. Protect those hardworking hands of America correctly — and see why the right glove for the right job is so important.

Matthew Piotrowski is the research and development manager for Worldwide Protective Products, Inc. (www.wwprotective.com). He has been in the hand protection industry for more than a decade and can be reached at 877-678-4568 or by email to mpiotrowski@wwprotective.com.
For those employed in industrial workplaces, the importance of proper hand protection can’t be overemphasized. The National Institute for Occupational Safety and Health (NIOSH) estimates that for every 10,000 full-time equivalent workers, 25 hand injuries occur on average per year. If you think of the millions of people who work in industrial settings, that number starts to climb dramatically.

Wearing gloves certainly lowers the risk of acute occupational hand injuries — by 60-70 percent, according to a study from the Liberty Mutual Research Institute for Safety. And lately, more and more regulators, employers and manufacturers are focusing on this serious issue. OSHA’s hand protection standard, 29 CFR 1910.138, mandates that employers select and require employees to use gloves when employees’ hands are exposed to certain hazards, and the International Glove Association agrees, having recently launched a new certification and standards program to decrease confusion over standard ratings.

It’s important to note, however, that not all gloves are created equal. A multitude of factors go into selecting the right glove, such as environment, durability, comfort, weight and, increasingly, dexterity. The construction of the glove can make all the difference when it comes to these factors, and there are many options to choose from.

So how are manufacturers addressing this evolving need for better gloves? We may find the answer by taking a look at the fire service industry. Reliable PPE, such as gloves, is critical for these first responders who deal with extreme heat and flame, cuts and tears, on a daily basis. More and more, manufacturers of fire and rescue PPE are seeking out new materials and techniques that offer the perfect combination of performance, durability, dexterity, etc.

Non-woven materials
From fire service to the military, automotive makers to mattress manufacturers, many industries are catching on to the value of non-wovens.

So how are manufacturers addressing this evolving need for better gloves? We may find the answer by taking a look at the fire service industry. Reliable PPE, such as gloves, is critical for these first responders who deal with extreme heat and flame, cuts and tears, on a daily basis. More and more, manufacturers of fire and rescue PPE are seeking out new materials and techniques that offer the perfect combination of performance, durability, dexterity, etc.
same level of heat protection as well as durability, breathability, water repellency and resistance to tears, punctures, chemicals and more. All at a light weight. Non-woven thermal barriers trap air inside. This adds insulation. Prices tend to be lower because the manufacturing process is less expensive. Stitch-bonded non-wovens, successful for the fire service industry, could be for the industrial workplace as well.

One feature of non-woven materials is enhanced dexterity. Dexterity can be sacrificed for increased durability or thickness. Dexterity is important where fine motor skills are required but can be hindered by stiff, oven mitt-like gloves. Stitch-bonded non-wovens can be the answer. Non-wovens traditionally have been used as liners, with additional layers between the body and the liner. This need for additional layers has been eliminated in some cases by addressing comfort issues, which reduce weight and improve dexterity. The stitch-bonding factor increases dexterity and performance. Abrasive resistance is provided. Doffing and donning is enhanced.

Another technique glove manufacturers are trying to reduce the weight of the glove is combining layers of material. Laminated composites can help here: the move from 2-D to 3-D construction in high-performance gloves, such as gloves in the fire service industry, is bringing more of a mechanics style to a traditionally bulky and low-dexterity product. The 3-D construction allows for an overall better fit and, ultimately, increased dexterity.

New options
According to the U.S. Bureau of Labor Statistics, 30 percent of injuries occur because the gloves are “inadequate, damaged or wrong for the type of hazard present.” Clearly, “one-size-fits-all” just doesn’t apply to the protective glove market anymore. Employers and employees expect more, and glove manufacturers are listening and responding, making new developments in PPE all the time. Just recently, international researchers have been experimenting with a nano fabric that acts like an artificial muscle, automatically sealing the PPE against a flash of heat. Just imagine how that could translate to protective gloves.

New fabrics and techniques differentiate products and help employers make sure their employees — and their businesses — are protected. Whether you work with chemicals or machinery, extreme heat or cold, reliable, durable and properly fitting gloves are critical.

Matt Smith is the vice president and general manager of Waubridge Specialty Fabrics, the makers of Kovenex® and Pavenex®. He has spent 27 years in the chemical, fiber and fabrics businesses with experience in product development, manufacturing and technology. He can be reached at matt.smith@kovenex.com.
Passing the test
Glove ratings should reflect real-world risks

By JENNY HOUSTON

Just because a glove tests high in one ANSI category, doesn’t mean it is the right glove for your specific application. Be sure you are looking at the right test — there are tests for cut, multiple tests for punctures, tests for abrasion and dexterity. To get the right glove, you need to be sure you evaluate the ratings that reflect your actual threats.

A quick review of old and new test standards for safety gloves will help you find the answers. For cut, puncture and abrasion, the American National Standards Institute (ANSI) uses ASTM and EN338 test methods to measure glove performance, and there are several dexterity standards.

For cut, the test arena is fairly straightforward — ANSI uses a sharp metal blade which moves across the glove material until it cuts through; if the glove scores less than 200 grams, it gets a 0 and if it goes over 3500 grams, it gets the highest Level 5.

For puncture, picking the right test is a little harder. There are three basic puncture tests with very different size probes: a very large nail, a small nail, and the smallest is a hypodermic needle. You need to pick the test that best reflects your safety requirement. ANSI puncture test has the largest penetrator, the EN338 5mm probe, which is about the size of a pencil, making it perfect to show the protection from large nails but irrelevant to needles. ANSI puncture highest rating, Level 5, is achieved at 150 Newtons or over 15,000 grams force, with Level 2 starting at 20N or >2000 grams force.

Smack in the middle is ASTM F1342, adopted by the National Institute of Justice (NIJ), which uses a 2mm probe that looks like a small nail. NIJ gives a LOW rating for a glove with values between 20 N to 59 N (2000 to 6000 grams force), the next level MODERATE if under 99 N (~1000 grams force) is achieved, and the HIGH is for over 100 N to 150 N (1500 grams force) or higher.

For abrasion, ANSI uses ASTM D3389 or the Taber test, which counts the number of cycles it takes an abrasive surface to wear through the glove material — the highest level is Level 6 with over 20,000 revolutions of wear on the glove material, while a glove passing Level 1 of this test must only make it through at least 100 cycles.

You should note that Level 0 to Level 3 have a lighter load of under 500g load on the abrasive test, while the highest levels of 4 to 6 have a load that is double that at 1000g to make the test harder.

For dexterity, there are three standardized tests available.

The first is the pin test, where the subject wears a glove to pick up five pins that are equal in length but vary in diameters from 11 mm to 5 mm, the smallest being slightly thinner than an average pencil. This pin test has been adopted by NIJ, ANSI and European Certification EN420. While gloves that allow the smallest pin to be picked up will achieve the highest rating, some gloves have a surface with just enough tack to pick up the smaller pins, even though the gloves may offer very
A second dexterity measure is the Minnesota Manual Dexterity Test, which involves the rapid placement of 60 individual discs in a series of prescribed test patterns. After establishing a baseline bare-hand result, a tester then performs the prescribed movements again while wearing gloves. A glove that preserves 85 percent of bare-hand dexterity is said to offer better comfort than a glove that preserves only 75 percent.

A third test, based on ASTM D4032-08 circular bend test, evaluates a material’s stiffness and thickness to measure dexterity. The palm section of a glove is used as a sample to test glove-bending stiffness using a constant rate compression-testing machine. The glove sample is placed over a 1-inch opening with a plunger mounted on the testing machine’s crosshead. The max load over the plunger is recorded as it is being pushed through the glove sample. Obviously the less force it takes to press the glove materials through the opening, the more supple and therefore higher dexterity.

Does the ability to touch and feel outweigh everything else?

Engineers of protective fabrics try to strike the perfect balance between cut, puncture and dexterity in safety gloves to protect the end user from hand injuries. Uninformed buyers, on the other hand, drive the market by demanding high rated gloves no matter what, and end users in turn demand safety gloves to minimize risks involved in performing their daily tasks, but not at the expense of flexibility, tactile sensitivity and ease of use. Simply put, cut and puncture need to make room for dexterity.

Many buyers of safety gloves fail to consider that standardized tests against which a high-rated glove has been evaluated might have nothing to do with the threats of real-world applications. They disregard the significant impact of the wrong glove on comfort and productivity. A mismatched glove and application can even result in repetitive strain injuries, swapping one type of injury for another.

In many industrial settings, from operating machinery to handling sharp, pointy objects, injuries and accidents are prone to happen due to the very nature of how diligently laborers have to work with their hands and fingers. Therefore, safety gloves are often used throughout the day to prevent accidental cuts and punctures on the job. But is it really just a matter of purchasing the highest cut rated glove on the market and call it a day? The answer is: no.

Manufacturers, noting buyers’ preference for higher ratings, are motivated to achieve such ratings at any cost and are inclined to market and sell based on little else. Manufacturers and the glove end user must work together to conduct honest and detailed analyses of identified risks, worker comfort and the product’s ability to address each protective performance category but include dexterity.

Jenny Houston is the executive vice president of Warwick Mills, a leading engineering and manufacturing company specializing in flexible composites and PPE. For the past 15 years, Jenny has been an active member of ASTM and the National Fire Protection Association (NFPA) participating in standards committees.
2013 Glove Symposium: Get a global grip
International Glove Association meets March 17-19 in Palm Coast, FL

The International Glove Association is the sole glove association designed to meet the expanding and interdependent global working relationships between glove suppliers, manufacturers and distributors. IGA’s 2013 meeting will be held March 17-19 at the Hammock Beach Resort on the Atlantic Ocean in sunny Palm Coast, FL.

The Hammock Beach Resort is located just south of St. Augustine, FL. It is a 30-minute drive up I-95 from Daytona Airport; a 75-minute drive down I-95 from Jacksonville Airport, and a 90-minute drive east across I-4 from the Orlando Airport.

This educational conference is for those who really desire to enhance sales, increase their business profile, augment their knowledge of cutting edge technology, as well as the future of gloves. IGA is proud to feature multiple experts to achieve these goals. Could you benefit from learning new management and accountability techniques to increase sales? Are you strategic in business, yielding 80 percent of your desired goals? These are only a few of the topics presented in 2013!

The focus of the 2013 meeting: how to increase your sales and profits in 2013 through sales management, incentives, and strategic thinking. Get a global grip on the cotton market. See what’s new in glove education.

Find out what is driving global cotton markets, how to motivate and strengthen your sales force, increase success in your life, your career and your business through strategic thinking, what new fibers and materials are being developed for hand & arm protection, and much more.

On Sunday, March 17, the meeting gets underway with the IGA Board of Directors meeting from 9-12 pm. Dr. John Robinson offers the global outlook on cotton from 1-2 pm. A glove education session takes place from 2:30-4 pm. The IGA has compiled a group of experts in their fields to present a comprehensive, in-depth program to promote glove knowledge for you and your sales staff to gain and protect customers. A total of eight sessions will be presented. The day winds up with a networking welcome reception from 6-7:30 pm.

On Monday the 18th, after a breakfast buffet from 8-9 am, Robert Bradford will delve into strategic thinking from 9-12 pm. After the 12-1 pm lunch buffet, the afternoon is reserved for the annual scramble golf tournament. The President’s reception and awards dinner will be held from 6:30-9 pm.

On Tuesday, the 19th, after the breakfast buffet, Dave Fellman will present on “Achieving the sales you want” from 9-12 pm. After the lunch buffet, the IGA general membership meeting will be held 1-3 pm, which closes the meeting.

About the IGA
With the dissolution of many smaller associations, the International Glove Association (IGA) offers a solution to your industry and networking connections. Do you want to belong to an organization where you are only a number, or do you want to take control and influence the direction of the industry. What percentage of your business is related to hand and arm protection? IGA offers a variety of benefits such as market surveys, an educational library for sales staff and end users, certification of gloves, an annual conference, and newsletters.

The IGA starts by enhancing working relationships between all industry facets, and its membership — which is made up of suppliers, manufacturers, distributors, manufacturers’ representatives, importers, exporters and end users — is proof.

As the glove industry continues to evolve to include more advanced materials and an increase in overseas manufacturing, the IGA is well braced to support not only its membership, but also anyone who buys, distributes or uses industrial gloves. By creating an informal, intimate and friendly environment where members and affiliates can share knowledge, learn and network, the IGA is teaching the world about the future of gloves, today.

To learn more, visit IGA online at www.iga-online.com.

Hammock Beach Resort
Hammock Beach Resort delivers an unsplashed haven overlooking two miles of pristine Atlantic shoreline. Presenting luxury nestled among nature, Hammock Beach Resort offers an upscale escape surrounded by scenes of old Florida. Amidst a relaxed pace, the natural habitats of manatees and otters, estuaries of ospreys, hawks and eagles, and undisturbed beaches, Hammock Beach provides premier accommodations, amenities and dining outlets. The resort includes two championship golf courses and a 6.5-acre multi-level pool complex, along with a 10,000 square-foot spa and coquina-laden beaches just a flip-flop stroll away.

A note about The Ocean Course, a Jack Nicklaus signature design: Facing players on the brink of the Atlantic Ocean, the award-winning Ocean Course is oceanfront golf at its finest. This top 100 golf course winds along wetlands and lakes, and also plays six holes directly on the Atlantic Ocean. The course concludes with “The Bear Claw” — a collection of four daunting holes edging the coastline. The Ocean Course received a ranking as one of Florida’s Top 5 courses.

IGA MEETING SPEAKERS
Robert Bradford
Robert Bradford was a whiz-kid manager and consultant in information technology and banking for eight years when he left Wall Street to build a one-person training business into a multimillion-dollar nationwide organization. Robert has more than 20 years of experience in professional speaking and training for audiences of all sizes. Bradford is CEO of the Center for Simplified Strategic Planning, a firm specializing in strategic management training and consulting since 1981. Robert is also the coauthor of the Simplified Strategic Planning Manual, and the best-selling Simplified Strategic Planning: A No-Nonsense Guide for Busy People Who Want Results Fast! from Chandler House Press. Robert actively leads strategic planning in dozens of companies in a wide variety of industries. His real-world management experience and Ivy-league MBA enable Robert to deliver real nuts-and-bolts strategic thinking in his presentations.

Dave Fellman
Dave Fellman has been a dishwasher, a line cook, a bartender and a restaurant manager. He has also been a salesman, a sales manager, and a sales & marketing executive. For 20+ years, he has consulted with a wide range of small (and some not-so-small) businesses. He has written for publications and presented seminars and keynotes across the United States, Canada, England, Ireland and Australia. He’s the author of “Listen To The Dinosaur,” which Selling Power magazine listed as one of its “Top 10 Books To Read in 2010.”

Dr. John Robinson
Dr. John Robinson is a Professor and Extension Specialist/Cotton Marketing. He received a B.S. and M.S. in Entomology and a Ph.D. in Agricultural Economics, all from Texas A&M University. His prior experience includes work within the Texas A&M University System (College Station, Thrall, Vernon, Weslaco) and at Mississippi State University. His educational programming emphasizes risk management issues related to cotton, including cash markets, hedging, contracting, insurance, and policy issues. He is a member of the American Agricultural Economics Association and the Southern Agricultural Economics Association. Dr. Robinson’s special focus: Cotton economics, marketing, and policy.
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Biodegradable nitrite glove
Showa Best Glove has introduced GREEN-DEX™, the world’s first biodegradable nitrite glove. With all the properties of its popular N-DEX™ nitrite glove, GREEN-DEX contains zero natural latex proteins, is low modulus, powder free and 100-percent nitrite. GREEN-DEX is manufactured using the patent-pending “Eco Best Technology™” and will biodegrade only when placed in a landfill. Showa Best Glove, www.showabestglove.com, (800) 241-0323. Circle 294

Cutting edge/cut resistance®
Banom specializes in cut-resistant gloves for the sheet metal, glass, paper and food industries. With 60 years experience in cut-resistant gloves we consistently reduce hand and arm lacerations as well as total dollars spent. Banom, 800-227-7694 or banom.com. Circle 276

Impact gloves
Arma Tuff and Sarco Impact, two of Southern Glove’s innovative impact gloves, have been approved for use by ExxonMobil drilling contractors. The gloves help prevent hand and finger injuries from pinch points and crushing blows in harsh oilfield environments. The patent-pending Sarco Impact glove’s dual layer of EVA impact-resistant foam provides unparalleled protection from blows to the back of the hand, while the Arma Tuff glove affords midrange impact protection with added comfort and high dexterity. Southern Glove, www.southernglove.com, (800) 222-1113. Circle 295

Flexibility, breathability & tactile sensitivity
Cestus, an ancient Roman battle glove, adorned many gladiators into the ring. Flexibility, breathability and tactile sensitivity are the cornerstones of our glove lines. Top materials and innovative designs unite to make gladi-ator-tough gloves for all your safety needs. Cestus... WORK IN COMFORT. Cestuslinie, Inc., www.cestuslinie.com. Circle 277

Kovenex fabrics
Inherently flame-resistant, heat-blocking thermal barrier Kovenex performance fabrics provide flame, heat and tear resistance to personal protective brands, including DragonFire, Southcombe Brothers, Lion and Firex, among others. Flexible and durable, Kovenex produces TPF levels per basis weight equal to or better than other more expensive thermal barriers. Kovenex, www.kovenex.com. Circle 281

Glove accessory
“Suit-Up” time is generally found to be one of the most time-consuming activities in hazmat services, and the Glove Rings® accessory helps reduce that time. Made from a strong, flexible plastic that resists cracking, the Glove Rings® accessory helps make a better, more consistent seal between glove and sleeve. Perfect for hydro-blasting, industrial cleaning, hazmat, asbestos abatement and much more. Glove Guard, www.gloveguard.com. Circle 292

Ultra lightweight nitrile grip

OGRE™ hand protection
Cordova Safety Products has expanded its line of OGRE™ hand protection to include new models made with seamless machine knit shells. The OGRE-EP™ (#7735) features a sandy nitrile palm coating with foam padding, Kevlar® reinforced thumb crotch and high-visibility lime shell. The OGRE-CDR™ (#7738) includes a cut-resistant UHMWPE shell and gray polyurethane palm coating. Both models include TPR reinforced fingers and back-of-hand protection. Please see our advertisement in this month’s issue. Cordova Safety Products, www.cordovaisc.com, (800) 68-8763. Circle 278

Nitrile foam coating
Ninja BNF — Breathable Nitrile Foam coating provides excellent breathability by preventing heat build up inside the glove. This technology allows air to flow more freely than traditional nitrile coatings. Athletic-grade gray nylonspandex shell for increased comfort. Treated with Actifresh to kill bacteria and promote freshness. Individually packed pairs with hang tag for point-of-purchase display. CE Score 4141. Call MCR Safety at 800-953-6887 or visit www.mcrsafety.com for all your safety gear needs. Circle 282

Remove tough soil gently
Introducing Griflix/FOAM™, the world’s first heavy-duty hand-cleansing foam with suspended bio-scrubbers™. This powerful cleaning combination gently removes the toughest grime while making hands feel great. Griflix/FOAM was created to address the most pressing issues facing health and safety managers, including improved effectiveness and safety, better cost efficiency and enhanced sustainability. Deb Group Ltd., www.griflix.com. Circle 279

New Taeki® impact protection glove

TouchScreen glove
With a focus on workplace hand safety, more people are required to wear gloves while working. This presents a problem when these workers need to use a touch screen device in order to do their job. The Ironclad TouchScreen glove, with its exclusive TS1™ palm material, solves this problem. It allows workers to stay connected while on the job, whether for analytic equipment, tracking progress on the jobsite, or simply getting that emergency phone call while working. Ironclad Performance Gloves, www.irongloves.com. Circle 280

Taeki® hi-vis gloves with cold & cut resistance
Cordova’s Taeki® Monarch Sub-Zero™ offers cold resistance, cut resistance, comfort, flexibility and visibility. Made with Taeki® Ice, it features a high-visibility shell with brushed interior and soft foam latex coating. This new addition keeps hands warm in cold environments, and the coating remains flexible in temperatures as low as -4 degrees F. With CE Level 5 and ANSI Level 3 cut resistance (1471 grams), it is ideal for construction, cold storage, warehousing and railroads. Cordova Safety Products, www.cordovaisc.com, (800) 68-8763. Circle 284

18-gauge glove with cut protection
Ansell HyFlex® 11-518 is the first-to-market 18-gauge glove with ANSI Level 2 cut protection and a breathable, bare hand-like feel. For precision handling and assembly of sharp, dry, ultra-fine parts, this glove provides unprecedented comfort, dexterity and protection. For more information visit Ansell at www.ansellhyflexus.com. Circle 299

High-impact hand protection
Mechanix Wear M-Pact® EXP-1™ was developed for high-impact jobs that require exceptional manual dexterity. The EXP-1™ incorporates hi-viz material for visual recognition in harsh environments, PORON® XRD palm padding, abrasion-resistant rubberized grip and critical top hand protection against pinching injuries and blunt impacts. Protect your hands with proven performance. MSRP: $45.95. Sizing: S-XXL. Mechanix Wear, Inc., 800-222-4296, www.mechanix.com. Circle 297
New Taeki 5® Samurai™ protective glove

Be Seen! Be Safe! With the Taeki 5® Samurai™ PUGS17 by Global Glove & Safety Mfg. Inc. The hi-vis and ASTM Level 4 cut resistance Taeki 5® Samurai™ PUGS17 is just what you need for handling sharp materials with the utmost in safety, comfort and visibility. The PUGS17 has a soft, polyurethane dip over a cut level 4 high-visibility Taeki 5® liner. For more info, visit Global Glove & Safety Mfg. Inc. at www.globalglove.com. Circle 285

Ideal for oil, gas and mining industries

The GX165 ToolHandz® gloves from Revco Industries (Black Stallion®) are perfect for Oil, Gas and Mining industries. These monstrous gloves offer extreme protection from bang-ups and falling debris, while the high contrast design makes it easy to spot fingers. Above all, the amazing flexibility and inner cushioning provide extra protection and comfort. Revco Industries, Inc., www.blackstallion.com. Circle 286

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