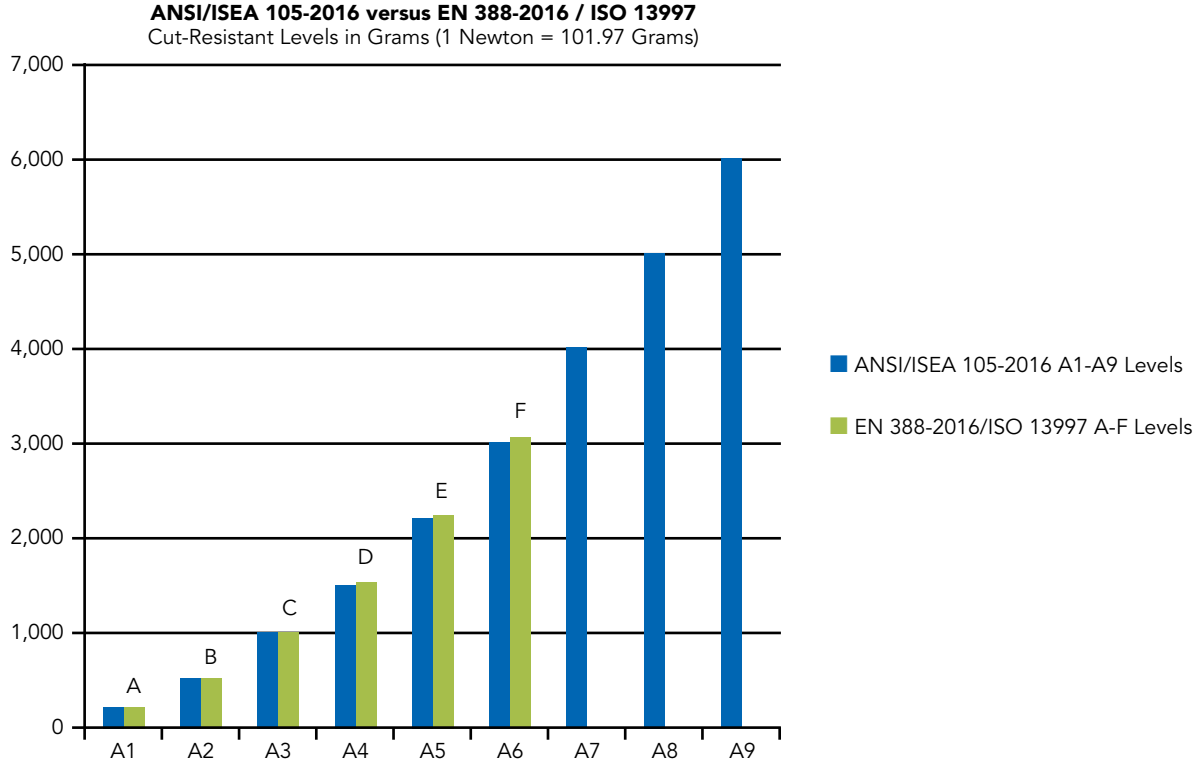
HAND in Glove

BY SALLY J. SMART

Hands are clearly important to steel fabrication and construction work—and are also one of the most likely body parts to become injured. Their safety should be a top priority.

OUR HANDS ARE UNIQUE and one of the most complex parts of our body. The coordination between tendon, bones, tissues and nerves allows us to grip, hold, move and manipulate objects and do a variety of complex tasks—until an injury happens.

Hand injuries are the most common type of injury in the workplace and one of many hazards faced by steel workers. While great strides have been made in workplace safety in the past few decades, strains, sprains, burns, cuts, lacerations, punctures, fractures and even amputations continue to be a problem. As such, a heightened awareness of and emphasis on hand safety should be a top priority, especially in construction professions, both in the shop and field.



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In an effort to better understand the contributing factors to workplace hand injuries, a survey of more than 400 safety professionals, co-partnered by the American Society of Safety Engineers (ASSE), was conducted in late 2015. Survey respondents were asked several questions, one of which was to rank what they saw as the most common hand injury; 41% ranked cuts or punctures as the most common. Another asked why these injuries occurred, with the top reason cited (by more than 40%) being a lack of personal protective equipment (PPE) or cut-resistant gloves.

Levels of Cut Resistance

Although there are no OSHA standards that specifically address cut-resistant gloves, *29 Code of Federal Regulations* 1910.138 does apply to hand protection. It states that employers must select and require employees to use appropriate hand protection when necessary, and the selection must be based on an evaluation of the various performance characteristics of the gloves.

In addition, two consensus standards come into play when evaluating cut-resistance performance characteristics. American National Standards Institute/International Safety Equipment Association (ANSI/ISEA) 105 *American National Standard for Hand Protection* is the U.S. voluntary consensus standard for glove testing. EN388 *Protective Gloves against Mechanical Risks* is the European Union's (EU) standard for glove testing and is also referenced globally. Both ANSI/ISEA 105 and EN388 are used to test gloves for mechanical risks—abrasion, cut, tear and puncture. And as both were revised in 2016, comparisons of cut-resistant levels in grams are now possible for the first time.

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Grams to Cut Requirements for Various Applications		
ANSI/ISEA 105-2016* Cut Levels	"Grams to Cut" Requirements	Suggested Applications
A1	200 – 499 grams	Light cut hazards – Automotive maintenance, parts assembly and material handling
A2	500 – 999 grams	Light to medium cut hazards – Construction, automotive assembly, packaging and maintenance
A3	1,000 – 1,499 grams	Light to medium cut hazards – Light metal stamping and light-duty glass handling
A4	1,500 – 2,199 grams	Medium cut hazards – Metal stamping, sheet metal handling and glass handling.
A5	2,200 – 2,999 grams	Medium to high cut hazards – Heavy metal stamping, plate glass handling and pulp/paper production
A6	3,000 – 3,999 grams	High cut hazards – Heavy metal stamping, plate glass handling and pulp/paper production
A7	4,000 – 4,999 grams	High cut – Heavy metal stamping, plate glass handling, pulp/paper production, assembly or movement of large, bulky or heavy objects with sharp edges and assembly or movement of items that are difficult to grip
A8	5,000 – 5,999 grams	High cut hazards – Heavy metal stamping, plate glass handling, pulp/paper production, assembly or movement of large, bulky or heavy objects with sharp edges and assembly or movement of items that are difficult to grip
A9	6,000+	High cut hazards – Heavy metal stamping, plate glass handling, pulp/paper production, assembly or movement of large, bulky or heavy objects with sharp edges and assembly or movement of items that are difficult to grip

*Current U.S. voluntary consensus standard.

Parts of the Protection Puzzle

It is important to clarify the terminology. Cut *resistance* is the ability of a material to resist damage when challenged with a moving sharp-edged object. It is only one component of cut *protection*, which also encompasses properties such as durability, abrasion resistance, grip, dexterity and comfort.

Gloves are generally used for extended periods of time, and it is important that they provide the same level of abrasion resistance and durability at the end of a worker's shift as at the beginning. Considering that sharp-edged objects pose a much greater threat when they are in motion, a secure grip can significantly reduce the chance of an injury by preventing slipping and providing the worker with more control. When small sharp objects must be handled, dexterity and comfort become very important. Comfortable gloves that do not hinder touch are much more likely to be worn.

Which "Level" to Choose?

To ensure that the correct cut-resistant gloves are being selected, a thorough understanding of the current industry standards, test methods, "grams to cut" requirements and suggested applications is a must.

A hand injury is the most common type of injury in the workplace, and hand safety must be a priority. When engineering and administrative controls are not enough, PPE such as cut-resistant gloves can help prevent hand injuries. Protect your hands by using the proper level of protection; they are the most important tools you will ever work with. ■

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