



## Weekly Safety Briefings

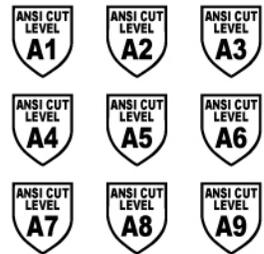
Week 37: September 2 - 6, 2019

### *Safety Gloves – Wearing the Good Ones*

Personal Protective Equipment (PPE) is like a last-resort shield from injury hazards. However, PPE does not mean invincibility. While there are many different types of PPE for breathing or eyes, gloves are the only protection your hands get. Gloves may not completely prevent all hand lacerations but they do a good job in reducing severity. Different gloves have different purposes and protect against different hazards. This week we will discuss glove signage to ensure all employees are able to recognize the right protection against abrasions, cuts, chemicals, and heat.

#### **Monday – Cut Resistance: ANSI/ISEA 105**

Two major standards exist to define the resistance level of a glove against cuts. The first one, ANSI/ISEA 105, is applicable in North America. This norm defines a cut resistance level from A1, which is least resistant, to A9, which is most resistant. Higher levels of protection are required for sharper objects as cut resistance levels are determined by the force required on a blade to cut the glove. For example, a force of 500g is enough to cut a level A2 glove, whereas level A9 gloves can handle 6000g or more.



#### **Tuesday – Cut Resistance: EN388**

In South America, Asia, and Europe the standard EN388 is employed for gloves' cut resistance. Each letter in the logo represents a resistance characteristic:

- **A** is for abrasion resistance (scale 1-4, where 4 is highest)
- **B** is for circular cut resistance (scale 1-5) or X if not tested
- **C** is for tear resistance (scale 1-4)
- **D** is for puncture resistance (scale 1-4)



In 2016, ISO 13997 added 2 new letters to the standards logo: Y and Z. **Y** is for the new straight blade cut resistance methodology on a scale of A – F. The last digit **Z** is for impact protection. This classification is rated P, F or X. Therefore, an EN388 glove might have a marking example of 4-4-4-2-C-X

The ISO cut test method for the 2 new letters is called the TDM-100 test, where a flat straight blade is dropped on a fabric with weighted vertical force and then sliced with horizontal liner movement. Previous cut resistance tests used a circular saw disc that proved to be inconsistent and unreliable.

It is important to make sure that each associate uses a glove with better cut resistance, such as B or Y, to avoid workplace incidents as much as possible.



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### Wednesday – Chemical risk: be aware of the permeation time

Chemical resistant gloves are one of the more difficult PPE to select. With that in mind, two elements must always be checked for:

- **The chemical in use at the workplace.** The material of the glove must be suitable for whatever chemical is used. For example, latex gloves are not suitable for alcohol and keton.
- **The length of time we are using the chemical.** Depending on the strength and type, certain chemicals may permeate through the glove and cause injury. Establish the **permeation rate** of the glove before beginning any task to give workers a window of time where they can use the glove before it is affected by chemicals.

Before beginning to work, ensure the glove you are using is intended for chemical protection. If you are not sure, contact your EHS services or PPE supplier.

Following EN374/ ISO 374 standards, the resistance level of the glove against chemicals is stated on the glove with the logo type and followed by a letter. Most reusable chemical protective gloves are Type A, while disposable gloves are Type B or Type C:

NEW			OLD
ISO 374-1:2016/Type A	ISO 374-1:2016/Type B	ISO 374-1:2016/Type C	EN 374:2003
			
JKLMNO	JKL		AKL

- **Type A:** permeation resistance of at least 30 minutes each for at least 6 test chemicals.
- **Type B:** permeation resistance of at least 30 minutes each for at least 3 test chemicals.
- **Type C:** permeation resistance of at least 10 minutes for at least 1 test chemical.

The letters below the logo represent the category of chemical that the glove protects against (A for methanol, B for ketone, C for nitrile compounds, etc.). EN374/ISO374 tests for 18 different types of chemicals.

ISO 374 takes into account the effect of glove material degradation caused by the chemicals. Over time chemical degradation can cause the gloves' polymer material to become brittle, swell or shrink. As a result the chemical barrier changes, and the gloves may not be suitable for protection.

Check your work areas to make sure anyone who is exposed to chemical hazards uses approved chemical resistance gloves.

### Thursday – Thermic resistant gloves

The standard EN407 defines the criteria for the thermic protection level of gloves. Similar to the cut resistance and chemical resistance definitions, you can check that associates are wearing the correct glove for the task by checking the number under the logo (all on scale 1-4, with 4 being the highest):



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- **A** is for resistance to burning fire
- **B** is for contact heat (scale 1-5)
- **C** is for convective heat
- **D** is for radiant heat
- **E** is for small projection of metal melt
- **F** is for high projection of metal melt



ABCDEF

Make sure heat resistant gloves not only cover the hand. In high temperature conditions such as metal melt, the gloves should protect the forearm as well.

### **Friday – Other Hand Risks and Discussion**

Gloves protect your hands against many hazards. For every hazard that exists, there are a number of protective tools to counteract it. On any given day, we can encounter many different hazards, such as electrical, fire, electrostatic, or cold, and we must be adequately prepared to deal with them.

Be aware of the differences between gloves, and which gloves to use when. Take any doubts to your organization's safety department or to the PPE supplier. The PPE you use must lessen the effects of the risks you face.

Has anyone had any incidents where a glove kept you from injury? Have you ever used the wrong glove for a task and been injured because of it? Discuss within the group.

Additional resources for information use only, not for product endorsement:

Protective Industrial Products

<https://us.pipglobal.com/en/updated-en-388-standard/>

UVEX

<https://www.uvex-safety.com/en/product-group/uvex-cut-protection/>

<https://www.uvex-safety.com/blog/2017-03-14/en-374-modified-standard-chemical-protective-gloves/>