



SAFE TO THRIVE



Understanding the ANSI Standard for
HAND PROTECTION





UNDERSTANDING THE ANSI STANDARD FOR HAND PROTECTION

Hands and fingers are essential tools for workers in many environments, and adequate protection is necessary to ensure their safety.

Since there are no institutional standards for hand protection in Canada, it can be difficult for companies and individuals to protect themselves from the most common types of mutilation in the workplace.

However, many Canadian companies choose to follow the American National Standards Institute (ANSI) standard providing hand protection guidelines. With the many changes in standards and the different institutes, such as the European Equivalent (EN), there can be confusion across different markets and industries.

The ANSI standard has undergone recent changes and it's important to fully understand the nuances and implications of these revisions.

Hand protection isn't just about choosing the right glove for the user. In essence, it's specifically about choosing the right glove for the individual while taking into account its use to reduce the risk of injury.

An appropriate protection must be resistant to all of these elements »

Unfortunately, in 2018, there were 54,075 cases of injuries to arms, wrists, hands or fingers recorded in Canada.*

* ASSOCIATION OF WORKERS' COMPENSATION BOARDS OF CANADA (AWCBC). 2018 LOST TIME CLAIMS IN CANADA. [HTTP://AWCBC.ORG/?PAGE_ID=14](http://awcbc.org/?PAGE_ID=14)

CUTS

ABRASION

PUNCTURE

HEAT

IMPACT

CUT RESISTANCE

In the 2016 revision of the ANSI standard, **nine new levels of protection have been added to the cut resistance classification.**

The force required to cut through the material is still calculated in grams - and a new blade is used for each new test

Protection level A1 is ideal for light cutting hazards, offering protection ranging from 200 to 499 grams. An A1 glove is perfect for material handling, warehouse work or general use.

Gloves with a protection level A2 and A3 against light/medium cut risks offer protection from 500 to 1,499 grams. They are suitable for tasks such as handling small parts, assembly or construction.

If the worker faces a moderate cut risk and requires protection against cuts of 1,500 to 2,199 grams, an A4 glove should be worn. Tasks often associated with this level of protection are handling bottles and glass, plastering, or assembling vehicles parts.

Workers will be required to wear level A5 and A6 gloves for high cutting hazards that meet the cutting hazard requirements of 2,200 to 3,999 grams when performing tasks such as: stamping sharp metal parts, metal recycling, pulp and paper or automotive industries.

In case of extreme cutting risks, the worker must make sure to work with a hand protection that varies from class A7 to A9. These ANSI cut levels will protect workers in the meat, pulp and paper, energy, and power industries, as well as anyone who is engaged in tasks that bring them into contact with sheet metal, steel cables, or industrial piping.

A1	GRAMS \geq 200 201 - 499 LIGHT
-----------	--

A2	GRAMS \geq 500 500 - 999 LIGHT - MEDIUM
-----------	---

A3	GRAMS \geq 1,000 1,000 - 1,499 MEDIUM
-----------	---

A4	GRAMS \geq 1,500 1,500 - 2,199 MEDIUM - HEAVY
-----------	---

A5	GRAMS \geq 2,200 2,200 - 2,999 HEAVY
-----------	--

A6	GRAMS \geq 3,000 3,000 - 3,999 EXTRA HEAVY
-----------	--

A7	GRAMS \geq 4,000 4,000 - 4,999 EXTRA HEAVY
-----------	--

A8	GRAMS \geq 5,000 5,000 - 5,999 EXTREME
-----------	--

A9	GRAMS \geq 6,000 6,000 + EXTREME
-----------	--

ABRASION RESISTANCE

Abrasion resistance is measured in 6 levels, ranging from 1 to 6. Levels 1 to 3 are tested with a force of 500 grams, while levels 4 to 6 are tested with a force of 1000 grams.

The level of abrasion resistance is also measured in terms of rotations - while level 1 abrasion resistance resists about 100 rotations, level 6 resists about 20,000 rotations.

1	RESISTANCE 100 rotations
----------	------------------------------------

6	RESISTANCE 20,000 rotations
----------	---------------------------------------

PUNCTURE RESISTANCE

There are two main types of perforation: perforation by thin objects and perforation by wider objects.

The ANSI standard measures the resistance level of the glove to perforation on a scale of 1 to 5 and this measurement is in newtons. Level 1 gloves offer approximately 10 newtons of puncture protection, while level 5 gloves offer approximately 150 newtons of protection.

1	RESISTANCE 10 newtons
----------	---------------------------------

5	RESISTANCE 150 newtons
----------	----------------------------------

HEAT RESISTANCE

Heat resistance is measured in degrees and evaluates the thermal conductivity of a material in order to determine its insulating properties when in contact with hot surfaces.

The level of the glove - between 0 and 5, is determined by the highest contact temperature (°C) at which the burning time per degree is greater than or equal to 15 seconds and when the time to feel pain is greater than 4 seconds.

While level 1 provides a resistance of 80°, level 5 provides a minimum thermal protection of 320°.

1	PROTECTION 80°C
----------	---------------------------

5	PROTECTION more than 320°C
----------	--------------------------------------

IMPACT RESISTANCE

ANSI/ISEA 138 is the first-ever standard to address impact resistance in the North American market. According to the revision of the standard that was published in February 2019, joints and fingers are tested at different impact points. The level of protection is then determined by the lowest score obtained on all the impact points tested - each glove is tested on 9 impact points (5 fingers and 4 joints).



TEST IMPACT ZONE

25 MM
FROM TIP

55 MM
FROM TIP

+

KNUCKLE
IMPACT

All tests to determine the level of protection against glove impacts must be carried out by external laboratories that comply with ISO/IEC 17205.

The level of impact protection is measured on a scale of 1 to 3. Level 1 transmits to the user an average force of approximately 9 kilonewtons (kN) during an impact. The level 2 glove transmits a force of approximately 6.5 kN, while the most efficient glove, level 3, transmits an average force of 4 kN.

In order to obtain maximum and adequate protection for their needs, Canadian workers and businesses will be able to rely on the ANSI standard guidelines, making sure to take into account protection against cuts, abrasion, perforation, heat and impact.

ANSI/ISEA 138

1	TRANSMITS ≤ 9 kN
2	TRANSMITS ≤ 6.5 kN
3	TRANSMITS ≤ 4 kN

The above information is for educational purposes only. For the most accurate and up-to-date information, please consult your respective governing bodies (ANSI/ISEA 138-2019).



“ The protection of every worker against occupational injuries is at the core of our priorities. ”

ABOUT BOB DALE GLOVES AND IMPORTS LTD.

Bob Dale Gloves and Imports Ltd. is a solution-focused manufacturer and supplier of high-quality hand protection products to the North American markets.

This Canadian based company is the innovator and engineer of experience in the glove industry. With over 35 years in providing solutions for their clients' specific needs, Bob Dale Gloves has grown to be a sought after, glove manufacturer and distributor across the United States of America, Canada and, International markets.



[SHOP BOB DALE GLOVES
HERE >](#)

ABOUT SPI HEALTH AND SAFETY

Founded in 1972, SPI Health and Safety is a growing company. Canadian leader in products and services related to occupational health and safety, SPI Health and Safety offers both complete and specialized solutions such as product distribution, fire protection services, technical services, consulting services and, training.

SAFE TO THRIVE

SPI HEALTH AND SAFETY INC.
Quebec, Maritimes and Atlantic: 1 877 544.0911
Ontario: 1 866 862.7770
Western Canada: 1 888 425.9505

spi-s.com

