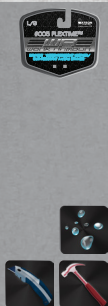


Impact Protection Guide Vol. 2



IMPACT RESISTANT GLOVES

NEW!



005TPC Flextime

Dryhide™ water-resistant full-grain goatskin leather palm, Cutshield™ ANSI A5 full-sock liner, heavy duty rubber on back of hand and fingers, conductive coating on palm and fingers can be used on all touchscreen devices, hooded fingertips and reinforced thumb, snug-fitting elastic wrist with secure Velcro® closure

Size S-XXL



RATINGS | TECHNOLOGIES



NEW!



005TPR Flextime

Dryhide™ water-resistant full-grain goatskin leather palm, heavy duty rubber on back of hand and fingers, conductive coating on palm and fingers can be used on all touchscreen devices, hooded fingertips and reinforced thumb, form-fitting spandex back, snug-fitting elastic wrist with secure Velcro® closure

Size S-XXL



RATINGS | TECHNOLOGIES



UPDATED



010R Extreme

Heavyweight Durafibre™ microfibre palm with D30® aero foam padded palm patches, polyurethane printed fingertip and thumb is compatible with all touchscreen devices, heavy duty rubber on back of hand and fingers, snug-fitting neoprene wrist with secure Velcro® closure

Size XS-XXL



RATINGS | TECHNOLOGIES



UPDATED



025 Over Time

D30® knuckle component, heavy duty microfibre palm with foam padding, air flow mesh on back, heavy duty rubber on fingers and thumb, snug-fitting neoprene wrist with secure Velcro® closure

Size M-XXL



RATINGS | TECHNOLOGIES



UPDATED



353TPR Stealth Hellcat

13gg HPPE shell seamless knit shell, foam nitrile coating, TPR on back, fingers and thumb, extended snug-fitting seamless knit wrist

Size S-XXL

RATINGS | TECHNOLOGIES



PUNCTURE

4X42BP

CUT

NEW!



357TPR Stealth Dog Fight

HPPE/glass/steel/nylon shell, heavy duty TPR on fingers, thumb, knuckles, and back of hand, *hi-vis* sandy nitrile finish coating, extended snug-fitting seamless knit wrist

Size S-XXL

RATINGS | TECHNOLOGIES



PUNCTURE

4X42EP

CUT

NEW!



360TPR Stealth Destroyer

13gg HPPE/steel/nylon fibre seamless knit shell, *sure-grip* sandy nitrile coating, touchscreen compatible coating can be used on all touchscreen devices, lightly padded palm, rubber on back, knuckle bar and fingers, reinforced thumb saddle, snug-fitting knit wrist

Size S-XXL

RATINGS | TECHNOLOGIES



PUNCTURE

4X44FP

CUT

NEW!



393TPR Stealth Slipstream

13gg nylon seamless knit shell, sandy nitrile coating, lightly padded palm, reinforced thumb saddle, rubber on back, knuckle bar and fingers, snug-fitting wrist

Size S-XXL

RATINGS | TECHNOLOGIES



4X31XP



IMPACT RESISTANT GLOVES



455 Triple Shot

ANSI A3 nylon/glass liner, *hi-vis* yellow fully coated PVC with sandy finish, proprietary rubber on back of hand, 30cm gauntlet style cuff

Size L-XXL

RATINGS | TECHNOLOGIES

EN388 4X32B

ANSI A3 CUT

EN374-3 JKL/264

ANSI 3 PUNCTURE

546TPR Scape Goat

Hard-wearing full-grain goatskin leather, heavy duty rubber on back of hand, fingers and wrist, stitched with Kevlar® thread, drivers style with ergonomic inset thumb, snug-fitting shirred elastic wrist

Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 2

KEVLAR

547TPR Van Goat

Cutshield™ premium P-aramid/steel/polyester liner, hard-wearing full-grain goatskin leather, flame resistant heavy duty rubber on back of hand, fingers and wrist, stitched with Kevlar® thread, drivers style with ergonomic inset thumb, snug-fitting shirred elastic wrist

Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 2

EN388 3X34EP

ANSI 5 PUNCTURE

CUTSHIELD A5 CUT

549TPR Van Goat

Cutshield™ premium P-aramid/steel/polyester liner, hard-wearing full-grain goatskin leather, flame resistant heavy duty rubber on back of hand, fingers and wrist, stitched with Kevlar® thread, gauntlet style cuff

Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 2

EN388 3X34EP

ANSI 5 PUNCTURE

CUTSHIELD A5 CUT

552TPR Warrior

Dryhide™ oil and water resistant goatskin leather, drivers style with inset thumb, rubber on back of hand, fingers and wrist, snug-fitting shirred elastic wrist, slip-on style cuff

Size S-XXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 3

EN388 2X22XP

ANSI 3 PUNCTURE

DRYHIDE

578 Drill Sergeant

Full-grain deerskin leather palm, *sure-grip* textured PVC in critical wear area, form-fitting spandex back, protective heavy duty rubber on fingers and knuckle bar, slip-on style cuff, shirred elastic wrist

EN388 2143XP

Size XS-XXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 2

ANSI 4 PUNCTURE

EN388 2143XP

585 Commander

Dryfibre™ water resistant synthetic leather palm, D30® IA components for enhanced impact protection, spandex stretch back, texturized PVC padded palm patches, hooded fingertips and thumb saddle provides a *sure-grip*, snug-fitting shirred elastic wrist

Donating \$0.50 per pair to Wounded Warriors Foundation

Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 3

EN388 3132XP

D30

IMPACT RESISTANT

FLAME RESISTANT

CUT RESISTANT

CHEMICAL RESISTANT

OIL RESISTANT

WATER RESISTANT

IMPACT RESISTANT GLOVES

UPDATED



1051 The Breakdown

Cutshield™ Para-aramid/steel/ polyester liner, **DuraFibre™** microfibre palm and hooded fingertips, silicone printed palm, texturized PVC thumb saddle, heavy duty rubber, conductive coating can be used on all touchscreen devices, neoprene cuff with secure Velcro® closure

Size S-XXL



RATINGS |
TECHNOLOGIES



RATINGS |
TECHNOLOGIES



5782CR Storm Trooper

Full-grain deerskin leather back with Dryhide™ oil and water resistant cowhide leather palm, stitched with Kevlar®, flame resistant rubber on back of hand and thumbs, Cut Shield™ ANSI A5 liner, shirred elastic wrist with reflective strip on 3" band cuff

Size XS-XXXL



RATINGS |
TECHNOLOGIES



RATINGS |
TECHNOLOGIES



5785G Shock Trooper

Cutshield™ liner made from P-aramid, steel and modacrylic fibres, Dryhide™ water and oil resistant goatskin leather, D30® iA components for impact protection, gel padded palm patch and pulse protector, stitched with Kevlar® thread, gauntlet style cuff

Donating \$0.50 per style to Wounded Warriors Foundation

Size XS-XXXL



RATINGS |
TECHNOLOGIES



RATINGS |
TECHNOLOGIES



9010W Extreme

3M Thinsulate™ C40 lining, microfibre palm with foam padded palm patches, spandex back, silicone printed fingertip and thumb with a PVC thumb saddle, heavy duty rubber on back of hand, fingers and knuckle bar, padded texturized PVC knuckle, snug-fitting neoprene wrist with secure Velcro® closure

Size S-XXL



IMPACT
RESISTANT



FLAME
RESISTANT



CHEMICAL
RESISTANT



OIL
RESISTANT



CUT
RESISTANT



WATER
RESISTANT



IMPACT RESISTANT GLOVES | WINTER

NEW!



9398TPR Stealth Triple Threat

Acrylic lining, 15gg glass/nylon/steel seamless knit shell, waterproof double dipped 3/4 dip flat nitrile/foam nitrile coating, heavy duty TPR on back of hand, snug-fitting knit wrist
Size S-XXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **2** PUNCTURE
ANSI **3** CUT
EN511 **X11**
ANSI **A5** CUT
EN388 **4X43EP**

STEALTH

NEW!



9456 Hammered

Acrylic lining, 13gg Aramid/steel/nylon cut resistant liner, "Be safe, be seen" with hi-vis orange PVC coating, sandy finish, heavy duty TPR on back of hand, 30cm gauntlet style cuff
Size M-XL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **2** PUNCTURE
EN388 **4X42EP**
ANSI **A5** CUT
EN374-1:2016 **AKLOPT - TYPE A**
EN511 **X11**

Li AND Co URAGE

NEW!



9545TPR Scape Goat

3M Thinsulate™ C100 lining, hard-wearing full-grain goatskin leather, heavy duty rubber on back of hand, fingers and wrist, drivers style with ergonomic inset thumb, snug-fitting shirred elastic wrist
Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **2** PUNCTURE

NEW!



9547TPR Van Goat

3M Thinsulate™ C100 lining, Cutshield™ premium P-aramid/steel/polyester liner, hard-wearing full-grain goatskin leather, flame resistant heavy duty rubber on back of hand, fingers and wrist, stitched with Kevlar® thread, drivers style with ergonomic inset thumb, snug-fitting shirred elastic wrist
Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **2** PUNCTURE
EN388 **3X34EP**
ANSI **5** PUNCTURE
ANSI **A5** CUT
ANSI **A5** CUT

KEVLAR

NEW!



9549TPR Van Goat

3M Thinsulate™ C100 lining, Cutshield™ premium P-aramid/steel/polyester liner, hard-wearing full-grain goatskin leather, flame resistant heavy duty rubber on back of hand, fingers and wrist, stitched with Kevlar® thread, gauntlet style cuff
Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **2** PUNCTURE
EN388 **3X34EP**
ANSI **5** PUNCTURE
ANSI **A5** CUT
ANSI **A5** CUT

KEVLAR

UPDATED



9578 Drill Sergeant

Cold MX™ CS 55G palm/ CS 115G back, full-grain deerskin leather palm, sure-grip textured PVC in critical wear area, form-fitting spandex back, protective heavy duty rubber on fingers and knuckle bar, slip-on style cuff, shirred elastic wrist
Size XS-XXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **2** PUNCTURE
ANSI **5** PUNCTURE
EN388 **2144XP**

WATSON

NEW!



9585 Commander

Cold MX 55 palm and 115 back of hand lining, Polariz reflective liner, Dryfibre™ water resistant synthetic leather palm, D3O® iA components on back of hand, spandex stretch back, Hy+Dry barrier, touchscreen conductive fingertips, hooded fingertips and thumb, neoprene shirred elastic wrist, slip-on style cuff
Size XS-XXXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **3** PUNCTURE
EN388 **3132XP**
ANSI **A5** CUT
ANSI **A5** CUT

D3O

UPDATED



91051 The Breakdown

Cold MX 55 palm and 115-back of hand lining, Cutshield™ ANSI A5 liner, Durafibre™ microfiber palm and hooded fingertips, touchscreen conductive fingertips, silicone printed palm, spandex back, Hy+Dry barrier, rubber on back of hand, neoprene cuff with secure Velcro® closure
Size M-XXL

RATINGS | TECHNOLOGIES

ANSI / ISEA 138 **3** PUNCTURE
EN388 **3X33EP**
ANSI **A5** CUT
ANSI **A5** CUT

WATSON

IMPACT RESISTANT GLOVES | WINTER



95782CR Storm Trooper

3M Thinsulate™ C100 lining, full-grain deerskin leather back with Dryhide™ oil and water resistant cowhide leather palm, stitched with Kevlar®, flame resistant rubber on back of hand, Cut Shield™ ANSI A5 liner, snug-fitting shirred elastic wrist, "be safe, be seen" with reflective strip on 3" band cuff

Size S-XXL

STORM TROOPER

RATINGS |
TECHNOLOGIES



95782GCR Storm Trooper

3M Thinsulate™ C100 lining, full-grain deerskin leather back with Dryhide™ oil and water resistant cowhide leather palm, stitched with Kevlar®, flame resistant rubber on back of hand, Cutshield™ ANSI A5 liner, gauntlet style cuff, "be safe, be seen" with reflective slip-on style gauntlet style cuff

Size S-XXL

STORM TROOPER

RATINGS |
TECHNOLOGIES



95785 Shock Trooper

3M Thinsulate™ C40 palm and C100 back lining, Cutshield™ liner made from P-aramid, steel/glass and polyester fibres, Dryhide™ water and oil resistant goatskin leather, D30® iA components, EVA padded palm and wrist patch, stitched with Kevlar® thread, snug-fitting shirred elastic wrist

Size XS-XXXL

RATINGS |
TECHNOLOGIES



95785G Shock Trooper

3M Thinsulate™ C40 palm and C100 back lining, Cutshield™ liner made from P-aramid, steel/glass and polyester fibres, Dryhide™ water and oil resistant goatskin leather, D30® iA components, EVA padded palm and wrist patch, stitched with Kevlar® thread, gauntlet style cuff, leather gore

Size XS-XXXL

RATINGS |
TECHNOLOGIES



Find Your Fit

Place your right palm on the size chart with your fingers closely together. Measure the width of your hand by aligning the knuckle of your index finger beside the red line. This is an approximate measurement; sizing can vary slightly from style to style.

Extra Extra Small 5
Extra Small 6
Small 7
Medium 8

Large 9
Extra Large 10
Extra Extra Large 11
One Size OS



6 Connect with Us



WATSON GLOVES
Quality since 1918

IMPACT STANDARDS

BACKGROUND

There are many gloves that claim they provide impact resistance and are viewed equally when realistically one glove could provide you with more protection than the other. The European market released an impact standard in 2016. It only includes knuckle testing (excludes the fingers) and is rated with a Pass or Fail.

The North American market does not currently have an impact standard, which is why the ISEA formed a committee to start building one that addressed the challenges with the EN388. The new ANSI/ ISEA 138 standard will help workers make an educated decision on which glove to choose, which will provide them with the best level of impact protection for the job.

ANSI/ ISEA 138 IMPACT STANDARDS

- Assessment of performance : Peak Transmitted force
- Testing is done by an independent ISA T7025 Lab
- Fingers and knuckles are tested (as shown in Figure 1)
- Lowest performing areas defines performance
- 3 performance levels (higher the level indicates a greater degree of protection)
(as shown in Figure 3)

TESTING METHODOLOGY

- Flat 80mm diameter striking face
- Palm side of glove removed
- Impact locations marked on glove
- Samples mounted centrally on hemispherical (100mm radius) anvil
- 2.5kg mass dropped with an impact energy of 5J
- Peak transmitted force recorded by force transducer beneath anvil
- Lower transmitted force = greater degree of protection and a higher performance level
- Impact test performed on knuckles and fingers separately

MARKING

Depending on the performance level the following pictogram will be shown on packaging and marketing material:



Figure 2

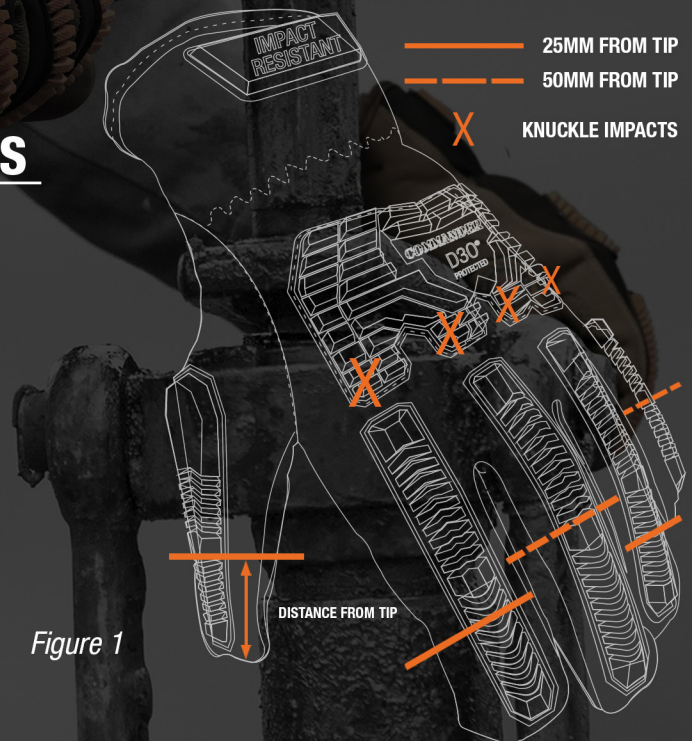


Figure 1

Performance Levels in Standard

Performance Level	Mean Transmitted Force	Increasing protection
ANSI / ISEA 138 	≤4 kN	
ANSI / ISEA 138 	≤6.5 kN	
ANSI / ISEA 138 	≤9 kN	

Figure 3

INTERPRETING ANSI/ISEA 138:2019



GLOVE IMPACT RESULTS

THE CHALLENGE

The ANSI/ISEA 138:2019 standard fills a critical gap in the industrial glove standards infrastructure. One question often asked by end-users is: what performance level is appropriate for application needs? This question is not unique to the dorsal impact glove standard. This article will discuss how impact is measured in order to provide context for end-users to determine the appropriate impact performance per the ANSI/ISEA 138:2019 dorsal impact glove standard. When assessing the appropriate dorsal impact glove is it critical to conduct a hazard assessment and obtain guidance from a certified industrial hygienist or safety engineer.

IMPACT CONSIDERATIONS

Consider this example: Shoot an armor piercing bullet at a brick wall and it will likely pass through. If a baseball was hurled at the same wall with the same kinetic energy of the bullet it would bounce off. The difference in outcomes in these two examples is due to the significant difference in impact areas of the ball vs. the bullet – where a smaller contact area translates into a much higher concentration of energy. And the fact that the bullet is several orders of magnitude harder than the ball.

This example highlights that, when evaluating impact forces, it is important to consider two important factors:

- 1) Contact area
- 2) Hardness of the materials involved in the impact

Not only do we need to consider the total energy of the projectile (5 Joules for the ANSI/ISEA 138:2019 impact test method), but the concentration of energy at the contact area.

In other example, a pro can throw a football (about 0.88 lbs) at about 70 mph generating about 190 joules of energy. That is about the same amount of energy from the firing of a .22 caliber round (0.006 lbs at 850 mph). But, would you rather be hit by the football or the bullet? Keep in mind that the ANSI/ISEA 138:2019 test method calls for a solid metal striker that has a 2.5kg (5.5 lb) mass (“weight”) with a contact area of 3.15 inches in diameter.

IMPACT MEASUREMENT UNITS

Another challenge in interpreting impact force results from the ANSI/ISEA 138:2019 impact standard is the, often, unfamiliar terms used. The SI system (International System of Units) - the modern metric system of measurement is the dominant system of international commerce, trade and science. The ANSI/ISEA 138:2019 impact standard utilizes SI system units for force and energy.

The force unit in the SI system is the newton (symbol: N). 1 newton (N) is equal to 0.22481pounds-force. Typical impact forces encountered in ANSI/ISEA 138: 2019 compliant testing are over 1,000 newtons. To simplify, in the SI system a thousand is abbreviated as “kilo” such that 1,000 newtons = 1 kilo newton (1 kN).

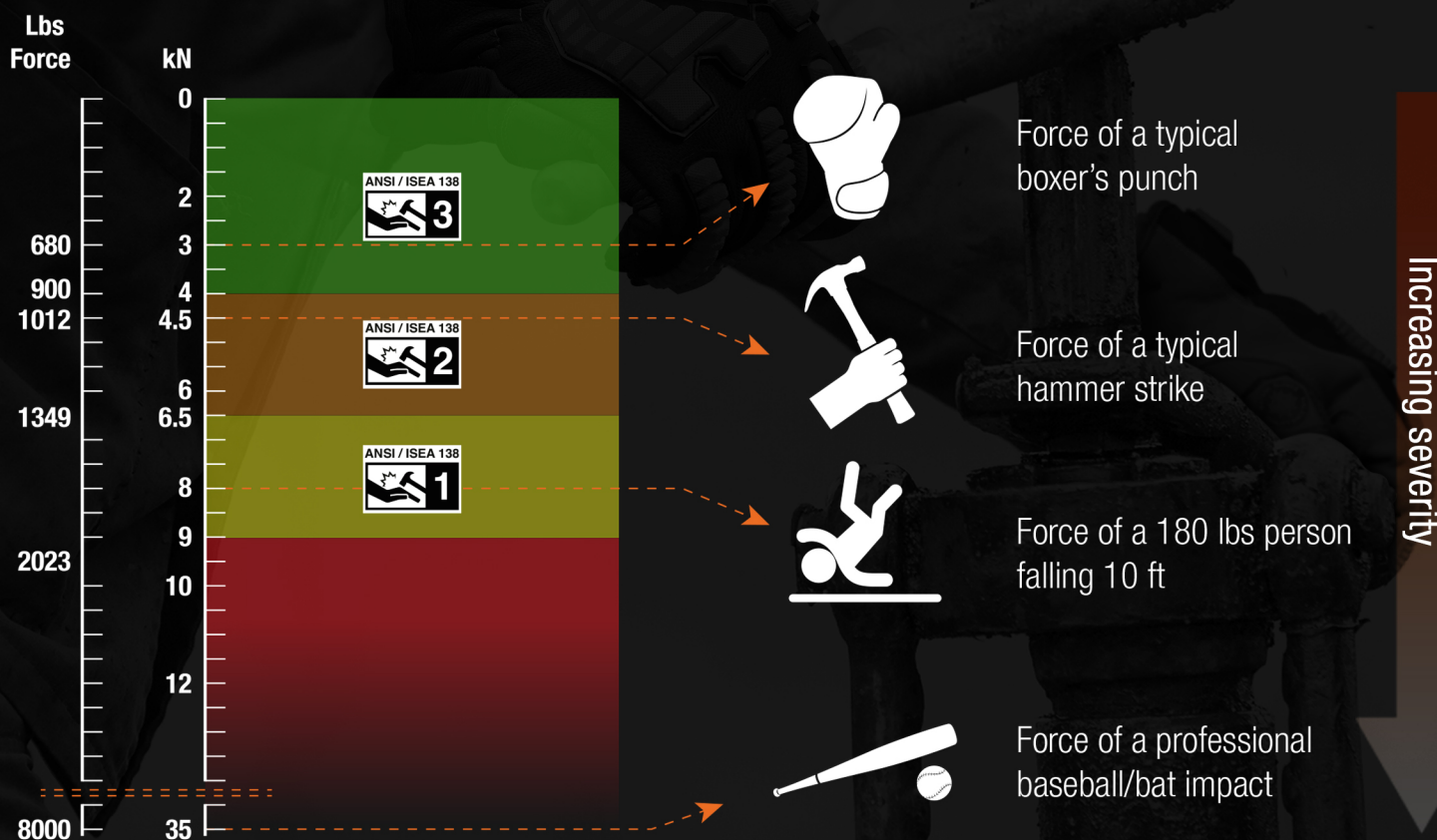
The corresponding energy unit in the SI system is the joule. It is an expression of the mechanical work done by pushing an object through a distance against a force. The English unit of energy is the foot-pound. 1 joule is equal to 0.737562 foot-pounds. The test method utilized in ANSI/ISEA 138:2019 is designed to generate 5 joules of energy.

The following table provides the transmitted forces for performance levels in the SI system as well as the corresponding English units.

Performance Level	Mean Transmitted Force	
	kN	Pounds-force
ANSI / ISEA 138 	≤4 kN	900
ANSI / ISEA 138 	≤6.5 kN	1,349
ANSI / ISEA 138 	≤9 kN	2,023

IMPACT EXAMPLES

The following graphic provides examples of impact scenarios. These examples are for illustrative purposes only. Keep in mind that the contact area and hardness of the materials involved are different for each example. The goal here is to provide general orders of magnitude to serve as a frame of reference for ANSI/ISEA 138:2019 performance levels.



Remember that the dorsal impact glove standard measures transmitted forces measured after a portion of impact energy has been absorbed by the glove material being tested. The maximum impact forces generated with a metal-to-metal (no glove sample) impact in a drop rig is around 45kN (10,116 lbs-force). The big question is: how much impact energy is required to break a bone in the hand? Another challenging question! First, you have to define a fracture – I won't get into that here. The ideal means of obtaining an answer to this question is to conduct laboratory experiments. The only laboratory option available is cadaver samples. Unfortunately, cadaver samples tend to come from older adults and are not generally representative of a young, healthy industrial worker. Varying factors like bone density, bone health, size and strength of surrounding muscles and connective tissues, etc. will significantly affect bone fracture potential. More research is required to adequately answer this question. Best guess (with many assumptions and caveats): minimum impact force to fracture phalangeal or metacarpal bones in an impact is between 3kN (680 lbs-force) and 5kN (1,124 lbs-force).

The ANSI/ISEA 138: 2019 dorsal glove impact standard can be a powerful tool to improve hand safety performance. End-users must carefully assess the appropriate impact performance level for their applications needs based on a hazard assessment and solicit the expertise of an industrial hygienist or safety engineer.

This image shows a full page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.



Our Story

Watson in a Nutshell

With a century of experience, Watson Gloves is Canada's single source for hand protection at work, at home, at play. Our team of glove specialists gets tremendous satisfaction from working with our customers to find the perfect hand protection for just about any task imaginable. Whether we source our gloves from the world's finest manufacturers, or hand-craft them in our local factory, every pair of gloves we sell has been selected for top-of-the-line materials, design and craftsmanship. Try on a pair of Watson gloves. Your hands will thank you!

2 Man Show to International Operation

In April 1918, John Watson and Wayne Stanley started a small business selling hand-crafted gloves to Vancouver's dock workers. Today, 102 years later, Watson Gloves has grown across Canada. We are among the country's leaders of distributing hand protection; offering the widest range of quality gloves for work, home and play.

How did we get here? We have stayed true to our founders' belief that quality materials and above-and-beyond customer service go hand-in-glove. We still make gloves. In fact, our artisans – with an average 20 years' experience – put the same level of dedication and craftsmanship into every pair of gloves we make, as did our founders.

Perhaps more importantly, we have expanded our horizons to keep up with our customers' changing needs. Our talented buyers travel the world over in search of the most innovative materials and designs so that we can offer the best gloves for any task: at work, at home, at play. From bustling cities to remote corners of our country and countries across the Atlantic, our team of sales reps and efficient distribution system make it easy to protect the hands of our customers.

At Watson Gloves, we do one thing, and we do it extremely well: we are the glove experts. Mr. Watson and Mr. Stanley would be proud to know that, even as we continue to grow, we continue to earn our reputation as Canada's single source for hand protection.

Our Commitment

At Watson Gloves, quality materials and above-and-beyond customer service go hand-in-glove. You can count on Watson for:

Quality Every pair of gloves we sell has been hand-selected for top-of-the-line materials, design, and craftsmanship.

Service with a Smile Our experienced team of specialists is committed to our customers' complete satisfaction with each and every pair of Watson gloves purchased.

Innovation We commit to staying one step ahead of our customers; anticipating their needs and bringing the most advanced gloves for just about any job imaginable.



Watson Gloves 1920's

Contact Us

Head Office - Burnaby

T 800.663.9509

F 604.875.9009

sales@watsongloves.com

Mississauga

T 888.715.4299

F 905.363.0730

toronto@watsongloves.com

Calgary

T 800.363.7462

F 403.236.7919

calgary@watsongloves.com