

## **SCIENCE** OF WARMTH 101:

Choosing the best insulation for winter gloves is a balancing act. You don't want a glove with so much insulation that you can't move your hands, but you also don't want a glove that's so thin your hands are cold.

## **MAJOR CONSIDERATIONS: WHAT TO LOOK FOR IN A WINTER GLOVE**













DEXTERITY

WIND RESISTANT

BREATHABILITY

At very low temperatures, your feet and hands feel cold before other parts of your body. This is because the body responds to cold temperatures by reducing blood flow so that the body's core temperature remains within the optimum range of 36.5°C to 37.5°C.



### **FOAM FLEECE:**

Fleece is a warm, fuzzy material that is very good at holding in heat and dries quickly. Fleece is loved by many as a comfortable alternative to pure wool. Fleece is made from a combination of wool and synthetic fiber and contains tiny air pockets that trap in heat.



### **COTTON FLANNEL:**

Cotton flannel is the most basic option for winter insulated gloves. This moderately good insulator is made of loosely intertwined fibers, between which air is trapped.

Cotton is the least desirable option because of its absorbency. Cotton absorbs 27 times its own weight, which will rapidly wick away body heat and can lead to serious complications in cold conditions.

## **HOW DOES INSULATION WORK?**

Air is a good insulator, so the insulation in winter gloves is designed to trap it. This way thermal energy can't easily escape, keeping you warm even when it's freezing. When looking for the best thermal insulation, you need an option that traps air but won't trap moisture.

Winter gloves can have up to four layers. Along with the two mentioned above, a second layer of insulation may be added for colder temperatures and a waterproof membrane for wet and slushy conditions.





## **BOA ACRYLIC:**

Boa acrylic is one of the warmest insulation options, but it's bulky. If you don't require good dexterity or you don't work in sub-zero climates, boa acrylic is a reliable, cost-efficient option.



## THINSULATE™:

The synthetic fiber Thinsulate™ is synonymous with thin work gloves for cold weather. It strikes a balance between providing good insulation and not adding excess bulk.

There are several varieties of Thinsulate™ and the right level for you will depend on your task, environmental climate and genetic makeup.



## **HOW MUCH THINSULATE™ DO YOU NEED IN WINTER GLOVES?**

- The best insulation for mild days: 80 to 100 grams of Thinsulate<sup>™</sup> is perfect for the average winter day above 20°F (-6°C)
- The best insulation for cold days: 100 to 200 grams will be best on cold days below 20°F
- The best insulation for extreme cold: In Arctic conditions, wear a glove with between 200 and 400 grams

# WARMTH BULK

COTTON FLANNEL

WARMTH

10 KM

20 KM

30 KM

40 KM

50 KM

**60 KM** 

BULK

BOA ACRYLIC

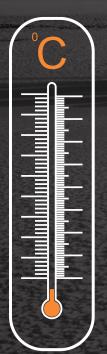
BULK

FOAM FLEECE

WARMTH

BULK

FROSTBITE TIMES AND WINDCHART



0°C to -27°C:

Low risk of frostbite

-28°C to -39°C:

Skin can freeze in 30 minutes

-40°C to -47°C:

Skin can freeze in 5-10 minutes

-48°C to -54°C:

Skin can freeze in 2-5 minutes!

-54°C

WARNING! STAY INDOORS!

TEMPERATURE (°C)

3	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
	1	TEMPERATURE WITH WINDCHILL (°C)									
Н	-3	-9	-15	-21	-27	-33	-39	-45	-51	-57	
H	-5	-12	-18	-24	-30	-37	-43	-49	-56	-62	
H	-6	-13	-20	-26	-33	-39	-46	-52	-59	-65	
H	-7	-14	-21	-27	-34	-41	-48	-54	-61	-68	
H	-8	-15	-22	-29	-35	-42	-49	-56	-63	-69	
H	-9	-16	-23	-30	-36	-43	-50	-57	-64	-71	

Enviroment Canada Wind Chill Chart

## PRODUCT TESTING:

"On-the-job" testing is expensive and time consuming. To help with this, Superior Glove has developed our own In-House Glove Testing Lab. Using state-of-the-art digital testing equipment, we can provide you with objective hard numbers on the abrasion resistance, cut resistance, thermal insulation, and puncture resistance data for any glove. We also use this valuable information to design advanced gloves that balance the most effective combination of protection and dexterity for any job.

## **HOW ARE WINTER GLOVES TESTED?**

- We use a glove testing temperature chamber where a metal hand form is wired with sensors and heated internally to 98.6°F (35°C) to mimic the human hand
- This replicates performance of winter gloves under humidity, wind chill, and extreme temperature
- Tiny pores on the metal hand can simulate "sweating" to control flow of moisture
- Extensive testing and rating systems enable us to minimize glove thickness and maximize warmth and dexterity to protect hands against the harshest of conditions



## THE GENERAL RULES OF INSULATION:

Before you can choose the best insulated gloves, consider these factors:







GENDER



**ACTIVITY LEVEL** 



BASAL METABOLIC RATE (BMR)

In general, men generate more heat than women, as do people in their 20s to 40s versus people over 50.

Your activity level and BMR determine how easily you break a sweat.

If you're prone to overheating, buying a glove with too much insulation can be as uncomfortable as buying a glove with insufficient insulation. That's because you're more likely to take your gloves off to let your hands breathe once you start sweating, which puts you at risk for winter-related injuries like hypothermia.









#### #304B0A | ONE SIZE (L)

- These gloves offer exceptional cold temperature protection in a mitt style
- Durable cowgrain leather is ideal for outdoor work
- Acrylic-pile full lining provides a cushiony layer of insulation
- · Elastic wrists keep warmth in and cold out
- Features metal clips to keep mitts together when not in use





#### **Applications & Industries:**

Agriculture, Construction, Ranching, General Purpose Outdoor

## **ENDURA®**



#### #361DLXWL | M-XL

- For protection in extreme cold weather, look to this mitt glove, which comes with a temperature rating of -45°C / -49°F
- Select heavyweight 31/2 oz. grain horsehide leather
- Removable washable wool liner
- Treated with Waterstop™ to repel oil and water
- 6" gauntlet cuffs feature retroreflective silver strips with hi-viz overlay for greater visibility
- Sewn with Kevlar® thread for extra seam strength







#### **Applications & Industries:**

Construction, Utilities

NDURA®



#### #304KGTL | L-2XL

- These gloves offer exceptional cold temperature protection in a mitt style, coupled with cut protection
- High tensile strength goatskin provides outstanding abrasion resistance
- Lined with Kevlar® and G200 Thinsulate<sup>™</sup> for excellent warmth and cut resistance without adding bulk
- Elasticized at front of wrist for snug fit, keeps warmth in and cold out
- Soft dark brown faux-fur BOA cuffs for added warmth







#### **Applications & Industries:**

Construction, Lumber Yards, Rail Yards, General Purpose Outdoor

NDURA®



#### #378GOBDTK | XS-3XL

- These gloves feature a turtleneck acrylic knitwrist to lock out the cold
- High tensile strength goatskin provides outstanding abrasion resistance
- $\bullet$   $\;$  Thinsulate  $^{\scriptscriptstyle\mathsf{TM}}$  lining for excellent warmth without the bulk
- Treated with Oilbloc<sup>™</sup> for oil and water repellency











#### **Applications & Industries:**

Automotive, Construction, Steel & Metal, Petroleum Industry, Utilities



#### #378G0TTL | XS-2XL

- An excellent cold temperature rating along with hi-viz orange fingertips makes this glove unique
- High tensile strength goatskin provides outstanding abrasion resistance
- 100-gram Thinsulate<sup>™</sup> lining for excellent warmth without the bulk
- Also available in non-winter version (#378GOT)







#### **Applications & Industries:**

Construction, Lumber Yards, Mining, Utilities



#### #SNOWD200L | ONE SIZE (L)

- An exceptional cold temperature rating with a removable BOA-pile wiper/cheek warmer ensures you're covered all winter long
- Deluxe calfskin mitts designed for cold arctic winters
- Easily removable Temperloc lining which velcros out of place for easy drying
- 6½" double-layer nylon gauntlet cuffs are extra wide to fit over a snowmobile suit or parka cuffs



#### **Applications & Industries:**

Construction, Ranching, Wildlife Management

#### #SNOW388V | M-XL

- The SNOW388V features Porelle Ski-Dri2™ waterproof and breathable inserts to lock out water and wind
- Kevlar® and stainless-steel covered foam-padded knuckle strap protects against knocks and bumps
- Anti-slip PVC patches on palm and fingertips provide excellent grip in wet and wintry conditions
- Three layers of insulation provide maximum warmth with minimum bulk







#### **Applications & Industries:**

Agriculture, Construction, Transportation









#### #378AFL | S-XL

- This is a great general purpose winter glove
- Grain cowhide offers great protection against abrasion while repelling water and conforming to hands over time
- Fully fleece-lined for excellent winter protection
- Backs are elasticized while leather conforms to the hand for the best comfort
- Also available in a non-winter version (#378A)



#### **Applications & Industries:**

Construction, Farming, Forklift Drivers, Material Handling, Truck Drivers



#### #378GKTTL | XS-2XL

- High tensile strength goatskin provides outstanding abrasion resistance
- Brushed jersey-fleece interior with 100-gram Thinsulate<sup>™</sup> lining
- Elasticized back for snug fit
- Also available in a non-winter version (#378GKTA)







#### **Applications & Industries:**

Agriculture, Construction, Material Handling

#### #378GKGTL | XS-3XL

- Great gloves with all-around protection, useful for many applications including construction and oil & gas
- High tensile strength goatskin provides outstanding abrasion resistance
- Fully Kevlar<sup>®</sup> lined for 360° cut protection and Thinsulate<sup>™</sup> lined for excellent protection in cold weather
- Keystone thumb for better durability and comfort
- Also available in a non-winter version (#378GKTFG)









#### **Applications & Industries:**

Construction, Metal Handling, Oil & Gas

## NDURA®



#### #378GHVTL | S-2XL

- These hi-viz gloves offer excellent puncture protection, rated at an ANSI Level 4
- High tensile strength goatskin provides outstanding abrasion resistance
- Lined with Thinsulate<sup>™</sup> for winter protection rated to -15°C / 5°F
- · Elasticized backs provide a snug fit
- Also available in a non-winter version (#378GAHVB)







#### **Applications & Industries:**

Agriculture, Construction, Material Handling



#### #378GKGDT | S-2XL

- For an excellent cold temperature rated glove with cut and puncture protection, this is the one
- High tensile strength goatskin provides outstanding abrasion resistance
- Fully Kevlar<sup>®</sup> lined for 360° cut protection and Thinsulate<sup>™</sup> lined for excellent protection in cold weather
- Keystone thumb for better durability and comfort
- Also available in a non-winter version (#378GKGE)









#### **Applications & Industries:**

Construction, Mining, Oil & Gas, Metal Handling

**ENDURA®** 



#### #378G0BTL | S-2XL

- Similar style to the #378GOBTKL, without the arc flash rating
- High tensile strength goatskin provides outstanding abrasion resistance
- Has 100-gram Thinsulate<sup>™</sup> lining for excellent warmth without the bulk
- Treated with Oilbloc<sup>™</sup> for oil and water repellency
- Also available in a non-winter version (#378GOB)







#### **Applications & Industries:**

Construction, Oil & Gas

**ENDURA®** 



#### #378G0BTKL | S-3XL

- These gloves are arc flash rated and also provide great protection against the cold weather
- High tensile strength goatskin provides outstanding abrasion resistance, treated with Oilbloc<sup>™</sup> for oil and water repellency
- Fully Kevlar<sup>®</sup> lined for 360° cut protection and Thinsulate<sup>™</sup> lined for excellent protection in cold weather
- Arc flash testing placed these gloves at level 4, with an Arc Thermal Performance Value (ATPV) of 52 cal/cm²
- Also available in a non-winter version (#378GOBKL)

-15°C (5°F)









#### **Applications & Industries:**

Construction, Mining, Oil & Gas, Metal Handling, Utilities





#### #399GKGTL5 | S-3XL

- This glove comes with an extended gauntlet cuff for added protection
- High tensile strength goatskin provides outstanding abrasion resistance
- Fully Kevlar<sup>®</sup> lined for 360° cut protection and Thinsulate<sup>™</sup> lined for excellent protection in cold weather
- Also available in a non-winter version (#399GKGL5)









#### Applications & Industries:

Construction, Oil & Gas, Welding, Metal Handling









#### #365DLX2TKG | S-2XL

- These gloves with 2" cuffs offer great cut and puncture protection in a driver style
- Select heavyweight 3½ oz. cowgrain leather
- Fully Kevlar® lined for 360° cut protection and Thinsulate™ lined for excellent protection in cold weather
- Excellent water, oil and stain repellency
- Also available in a non-winter version (#365DLX2KG)

-11°C







#### **Applications & Industries:**

Municipal Workers, Utilities



#### #365DLXTKG | S-XL

- These gloves' 6" gauntlet cuffs feature retroreflective silver strips with hi-viz overlay for greater visibility; additionally, these gloves offer cut and puncture protection
- Select heavyweight 3½ oz. cowgrain leather
- Fully Kevlar<sup>®</sup> lined for 360° cut protection and Thinsulate<sup>™</sup> lined for excellent protection in cold weather
- Gauntlet cuffs also feature high quality split-leather for stellar abrasion resistance
- Also available in a non-winter version (#365DLX6KG)







#### **Applications & Industries:**

Utilities



#### #365DLXFTL | M-2XL

- The 6" gauntlet cuffs on these gloves feature retroreflective silver strips with hi-viz overlay for greater visibility
- Select heavyweight 3 ½ oz. grain horsehide leather
- Thinsulate<sup>™</sup> lined for winter protection to -10°C / 14°F
- Excellent water, oil and stain repellency
- · Sewn with Kevlar® thread for extra seam integrity
- Also available with 2" cuff (#365DLX2TL) Also available in 6" non-winter version (#365DLX6)







#### **Applications & Industries:**

Construction, Material Handling, Oil & Gas, Utilities



#### #361DLXTKG | S-2XL

- These gloves offer great cut and puncture protection in a mitt style
- Select heavyweight 3½ oz. cowgrain leather Fully Kevlar® lined for 360° cut protection and Thinsulate™ lined for excellent protection in cold weather
- Reinforced performance double-leather palm patch in high-wear area
- Gauntlet cuffs feature retroreflective silver strips with hi-viz overlay for greater visibility
- Also available in a non-winter version (#361DLX6KG)









#### **Applications & Industries:**

Municipal Workers, Utilities



### #361DLXFTL | M-XL

- These gloves offer great puncture protection in a mitt style
   Select heavyweight 3½ oz. grain horsehide leather
   Fully Thinsulate™ lined
   Treated with Waterstop™ to repel water and oil
   6" gauntlet cuffs feature retroreflective silver strips with hi-viz overlay for greater visibility
   Sewn with Kevlar® thread for extra seam integrity







#### **Applications & Industries:**

Construction, Forestry, Oil & Gas, Utilities









#### #375GTVB | S-3XL

- These gloves feature double-weight Thinsulate™ on the back of hand
- High tensile strength goatskin provides outstanding abrasion resistance
- Treated with Oilbloc<sup>™</sup> for oil and water repellency
- Assortment of specially selected and positioned Thinsulate™ materials to provide exceptional warmth while maintaining mobility



#### **Applications & Industries:**

Construction, Oil & Gas, Mining

ENDUKA®



#### #378KGTVB | XS-3XL

- Offering an ANSI Level 2 impact rating coupled with an excellent cold temperature rating, these gloves have you covered all winter long
- High tensile strength goatskin provides outstanding abrasion resistance
- Fully Kevlar<sup>®</sup> lined for 360° cut protection and Thinsulate<sup>™</sup> lined for excellent protection in cold weather
- Also available in a non-winter version (#378GKGVB)













#### **Applications & Industries:**

Construction, Mining, Oil & Gas

**ENDURA®** 



#### #378GKGTVBE | XS-3XL

- · Economy impact-resistant gloves
- High tensile strength goatskin provides outstanding abrasion resistance
- Kevlar® and composite filament fiber lining
- Specially selected assortment of Thinsulate<sup>™</sup> linings for greater warmth
- Also available in a non-winter version (#378GKGVBE)











#### **Applications & Industries:**

Construction, Oil & Gas, Mining

NDURA®



#### #375KGTVB | S-2XL

- Featuring back-of-hand impact protection with Kevlar® and composite filament-fiber lining, these gloves are sure to please
- High tensile strength goatskin provides outstanding abrasion resistance
- Kevlar<sup>®</sup> lined for cut protection and 3M<sup>™</sup> C100 and G200 Thinsulate<sup>™</sup> for warmth up to -10°C / 14°F
- Leather is treated with Oilbloc<sup>™</sup> for exceptional oil and water repellency
- Also available in a non-winter version (#375KGVB)











#### Applications & Industries:

Construction, Oil & Gas, Mining, Metal Handling

#MXGKGHTVB | S-3XL

- Combine impact protection with hi-viz
- Goat-grain palms provide amazing abrasion resistance and added durability
- Leather wraps around finger tips to eliminate seam placement in traditional wear areas for increased lifespan
- 3M™ C100 Thinsulate™ lining for warmth











#### **Applications & Industries:**

Construction, Oil & Gas, Material Handling, Mining



#### #\$15KGVNFVB | 7-10

- These hi-viz gloves features PVC, which resists a wide variety of chemicals and solvents, plus it has back-of-hand protection for bumps and knocks
- Blend of aramid fibers provide excellent cut protection
- Fleece lining provides comfort and warmth
- Full nitrile coating with texturized surface provides excellent grip by displacing oil on slippery surfaces
- Also available in a non-winter version (#S15KGVNVB) and a version without back-of-hand protection (#S15KGV30N)







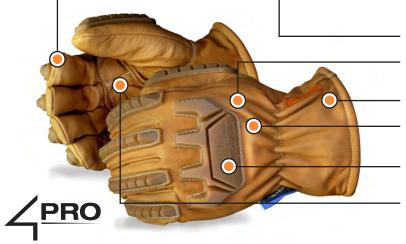




#### **Applications & Industries:**

Construction, Mining, Oil & Gas

#### #378KMT4P | XS-3XL



Thinsulate™ lining provides exceptional warmth wile maintaining mobility

Added insulation in fingertips

Kevlar® and composite filament fiber lining provides excellent ANSI Cut Level A6 protection

Treated with Oilbloc™ for oil and water repellency

Waterproof, breathable membrane keeps water out, while allowing your hands to breathe comfortably

4PRO™ back-of-hand protection does not stiffen or crack in cold temperatures

Padded palm inserts provide minor vibration dampening

Also available in non-winter version (#378GKG4P)

Regular











#### **Applications:**

Construction, Mining, Oil & Gas, Utilities









#### #76BFTL | ONE SIZE (L)

- These gloves are fully Thinsulate<sup>™</sup> lined for extra warmth
- Heavyweight cowhide exterior protects against scrapes and abrasions
- · Protective safety cuff for easy on and off
- Also available in a non-winter version (#76B)







#### **Applications & Industries:**

Construction, Farm Equipment, Industrial, Ranching, Truck Drivers

**ENDURA®** 



#### #66BFTL | ONE SIZE (L)

- These gloves are fully Thinsulate<sup>™</sup> lined for extra warmth
- Split cowhide leather for durable protection
- Features a 2.5" (7 cm) rubberized cuff
- Also available in a non-winter version (#66B)







#### **Applications & Industries:**

Agriculture, Construction, Forklift Drivers, Material Handling, Ranching, Truck Drivers

**ENDURA®** 



### #76B0A | ONE SIZE (L)

- The BOA lining in these gloves provides optimal warmth when working in colder environments
- Heavyweight cowhide exterior protects against scrapes and abrasions
- · Protective safety cuff for easy on and off
- Also available in a non-winter version (#76BOE)



#### **Applications & Industries:**

Construction, Farm Equipment, Industrial, Ranching, Truck Drivers





#### #N230FL | S-2XL

- Specially formulated nitrile stays ultrasoft, ensuring these gloves stay flexible even in cold conditions
- Full winter fleece lining
- · Sand-patch finish channels liquids away from surface for good wet/dry grip
- 11" gauntlet cuffs protect wrists, allow for ease of donning
- Also available with knitwrist turtleneck cuff (#N230FLK)

-15°C





#### **Applications & Industries:**

Commercial Fishing, Maintenance, Petro-Chemical



#### **#SNTAPVC | S-2XL**

- · With the micropore PVC coating on these gloves you'll get great flexibility in sub-zero temperatures
- PVC-coated palms for good wet and oily grip
- Fleece lining is soft and warm
- Treated with water repellent formula
- · Quick-drying and lightweight for all-day comfort









#### **Applications & Industries:**

Agriculture, Commercial Fishing, Construction, Utilities



#### **#SCXTAPVC | S-2XL**

- These winter gloves are touchscreen compatible and feature excellent cut protection
- Blended Kevlar®/Steel knit
- PVC-coated palms for good wet and oily grip
- · Acrylic fleece lining is soft and warm













#### **Applications & Industries:**

Agriculture, Construction, Utilities



#### **#SNTAPVCFB | S-2XL**

- Back of hand protection against wind, slush, snow
- Full PVC-coating for good wet and oily grip
- Fleece lining is soft and warm
- Treated with water repellent formula
- · Quick-drying and lightweight for all-day comfort







#### **Applications & Industries:**

Agriculture, Commercial Fishing, Construction, Utilities



#### #MXGKGHVTL | S-3XL

- Hi-viz back for improved visability on the job
- Goat-grain palms provide amazing abrasion resistance and added durability
- Leather wraps around finger tips to eliminate seam placement in traditional wear areas for increased lifespan

  • Lined with 3M™ C100 Thinsulate™ for warmth to -15°C / 5°F









#### **Applications & Industries:**

Construction, Lumber Yards, Rail Yards, Search and Rescue





#### #MXGCETFL | S-2XL

- Ergonomic shaping for all-day comfort
- Goatskin leather palm with split leather patches and thumb crotch are strong, durable and offer excellent abrasion resistance
- Foam laminated spandex backs stretch to allow full freedom of movement



#### **Applications & Industries:**

Construction, Lumber Yards, Material Handling





#### **#NWKVFR | ONE SIZE**

- Fire-resistant neck gaiter
- Two-layer Kermel®-viscose blend
- Kermel® is a very soft fiber that feels great next to skin
- Kermel®'s inherent FR properties will not wash out
- NFPA 70E compliant, CAT2; Ebt 16 cal/cm<sup>2</sup>

Note: This product does not provide respiratory protection against COVID-19 or other infectious diseases.



#### **Applications & Industries:**

Construction, Mining, Oil & Gas, Utilities

SUPERA<sup>™</sup>



#### **#WCKVFR | ONE SIZE**

- Fire-resistant watch-cap
- Two-layer Kermel®-viscose blend
- Kermel® is a very soft fiber that feels great next to skin
- Kermel®'s inherent FR properties will not wash out
- NFPA 70E compliant, CAT2; Ebt 16 cal/cm<sup>2</sup>



#### **Applications & Industries:**

Construction, Mining, Oil & Gas, Utilities

## **GLOVE SIZING GUIDE**

A proper fit is extremely important. An uncomfortable fit causes hand fatigue and ultimately could lead to a workplace hazard.

Measure the width of your hand from the base of your first finger and across your knuckles.

**5 / 2XS** 50 mm / 2 inches

**6 / XS** 63 mm / 2.5 inches

7 / S 75 mm / 3 inches

8 / M 88 mm / 3.5 inches

9 / L 101 mm / 4 inches

**10 / XL** 113 mm / 4.5 inches

**11 / 2XL** 126 mm / 5 inches

12 / 3XL 140 mm / 5.5 inches

