



**RADIANS®**

**LEATHER GLOVE**

**FAST  
FACTS**



w w w . r a d i a n s . c o m

## SPEAKING OF SAFETY:

## A Few Fun Facts About Hands

## DID YOU KNOW EACH HAND CONTAINS:

- 29 major and minor bones (*many people have a few more*)
- 29 major joints
- At least 123 named ligaments
- 35 muscles which move the fingers and thumb (*17 in the palm of the hand, & 18 in the forearm*)
- 48 named nerves
- 3 major nerves
- 24 named sensory branches
- 21 named muscular branches
- 30 named arteries and nearly as many smaller named branches
- The bones in your fingers are no stronger than a lead pencil



## THE COST OF UNSAFE HANDS

## Here are some hand statistics from the CDC &amp; OSHA:

*If all workers, from medical to industrial and everything in between, would just wear gloves, then more than 1 million hospital emergency visits by U.S. workers per year could be avoided (according to the Centers for Disease Control and Prevention).*



- Hand Injuries have cost employers over **\$740 MILLION** dollars in the US last year (lost time, settlements, etc).
- Non-compliance of PPE hand protection is among one of the most common OSHA citations to date, costing employers on average **\$6,000** per citation.

*OSHA 1910.132(h)(1) requires that protective equipment, including PPE, shall be provided by the employer at no cost to the employees. It's not a one shot deal- as a business owner, you have to be compliant every hour of every day. Safety has to be top of mind, comfort leads to compliance. Don't let your workers become a statistic!*

# LEATHER GLOVES – A Workplace Staple

Leather has a long history. Wall paintings and artifacts in Egyptian tombs indicate that leather was used for gloves dating back to 5000 B.C. Today, leather work gloves are a workplace staple and remain a high-demand favorite among workers and safety managers. And for good reason.

Considered one of the world's greatest natural materials, leather protects hands from exposure to cold, heat, abrasion, punctures, and impact. Plus, it resists sparks and is naturally resistant to temperatures of up to 430 degrees Fahrenheit without charring or cracking.



## LEATHER GLOVE APPLICATIONS

Leather work gloves are used in many industrial applications, including ranching, farming, landscaping, gardening, carpentry, oil and gas, utility, welding, and more. But how do you choose the right leather glove when there are so many choices?

This Leather Glove Fast Facts will help you navigate the world of leather hand protection. You'll learn about:

- The 20 Steps Before Leather Glove Production Begins
- Leather Tanning and the Different Grades of Leather
- Cuts of Leather
- Top Grain Leather Versus Split Leather
- Types of Leather
- Glove Construction
- What is a Leather Palm Style?
- Do Leather Gloves Offer Natural Cut Protection?
- What type of Leather Glove is Required for Welding?
- The 3 P's of Choosing Hand Protection—Protection, Performance, and Price



# The 20 Steps BEFORE Leather Glove Production Begins

Producing a finished hide so glove production can begin, is a time-consuming, multi-step process. Below are the 20 steps necessary to produce a hide. Each step is important, and leading glove manufacturers work very closely with their factories to ensure the proper steps and methods are used to create quality leather work gloves.

1. Fleshing
2. Curing
3. Soaking
4. Hair Removal
5. Baiting
6. Pickling
7. Tanning
8. Wringing/Sorting
9. Trimming/Siding
10. Splitting/Shaving
11. Coloring/Re-tanning
12. Setting Out (Stretching)
13. Drying
14. Conditioning
15. Staking
16. Buffing
17. Finishing
18. Plating
19. Grading
20. Measuring



# LEATHER TANNING & THE DIFFERENT GRADES OF LEATHER

Despite mechanization, leather tanning consists of a complex series of treatments that require considerable time and energy. The purpose of the tanning process is to alter the protein structure of the skin to increase its durability, texture, and appearance. All natural hides are sorted at the tannery and are ranked by quality using a very basic system: A, B, C, D or Economy

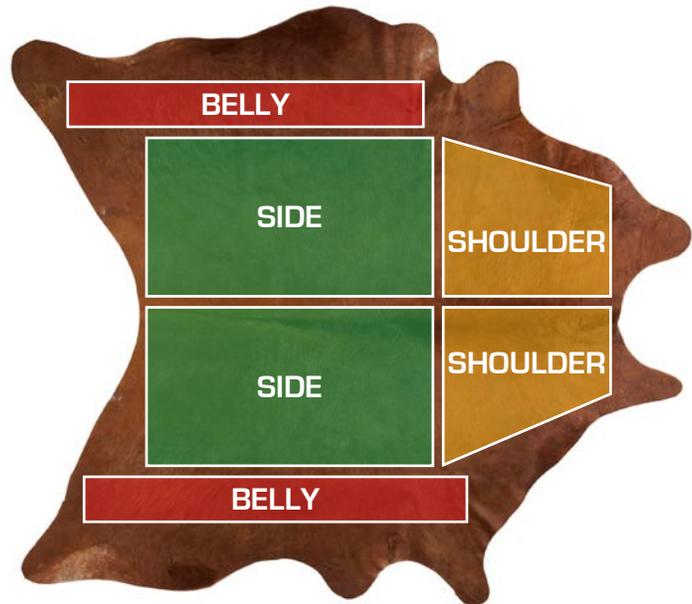
- A GRADE LEATHER: Has zero blemishes or scar tissue damage
- B GRADE LEATHER: May have slight blemishes
- C GRADE LEATHER: Visible blemishes and heavy scar tissue damage
- D OR ECONOMY GRADE LEATHER: Heavy blemishes, heavy scar tissue, very coarse or stiff, and normally gray in color



## Cuts Of Leather

When choosing leather—especially split leather—the location and cut must be considered as they affect both price and durability:

- BELLY: Most economical, but not consistent in texture or appearance. Least durable.
- SHOULDER: Makes up most B/C grades.
- SELECT SHOULDER: Makes up most B grade. Better leather on the shoulder area is selected in grading process.
- SIDE: Best quality, most consistent, and durable. About four times more expensive than belly leather but has longer lifespan.



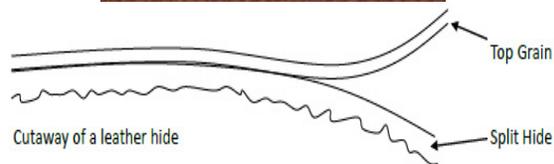
## Grain Leather Versus Split Leather

Grain leather comes from the top portion of the hide where the hair follicles have been removed. It is smooth to the touch.

Split leather is created by “splitting” the grain leather away from the underside of the hide. Turning one hide into two hides allows for more gloves per square meter to be produced. Split leather is rough to the touch.

Split leather is associated with the thicker hides of larger animals like cows. Smaller animals such as goat or sheep produce top-grain leather only as their hides are not thick enough to split.

If you want longevity, then specify grain leather gloves. If you are trying to outfit or protect temporary workers for intermittent jobs, then split leather gloves offer you cost savings and the necessary hand protection.



# TYPES OF LEATHER

## COWHIDE:

- Most common & popular type of leather used for gloves
- Moderately priced
- Durable glove with good abrasion resistance
- Warmer than pigskin or goatskin
- Stiffens when it gets wet
- More heat resistant

## PIGSKIN:

- Offers greatest breathability due to the porous texture of the hide
- Becomes softer with use
- Withstands moisture without becoming stiff
- Dries soft and stays flexible
- Doesn't lose its shape or function when laundered

## GOATSKIN:

- Strongest and most durable type of leather
- Excellent abrasion resistance
- Great for tasks that require dexterity
- One of the softest leathers available because of its high lanolin content

## DEERSKIN:

- Soft, supple, and luxurious hide
- Offers excellent dexterity, durability, and comfort
- Has high tensile strength



FEATURE	GRAIN COWHIDE	GRAIN PIGSKIN	GRAIN GOATSKIN	GRAIN DEERSKIN
Abrasion Resistance	FAIR	GOOD	GOOD	VERY GOOD
Breathability	FAIR	VERY GOOD	FAIR	FAIR
Durability	VERY GOOD	GOOD	VERY GOOD	VERY GOOD
Flexibility	GOOD	VERY GOOD	VERY GOOD	VERY GOOD
Insulation	VERY GOOD	GOOD	VERY GOOD	VERY GOOD
Puncture Resistance	GOOD	FAIR	VERY GOOD	VERY GOOD

## What Is a Leather Palm Style?

Both the shape and the materials used in the glove help to identify it as a leather palm. If the glove is 100% leather on the palm but the top of hand is fabric, it is likely a "leather palm." Safety cuffs are also common features on leather palm gloves.

*NOTE: There have been advances in glove design recently that combine features and benefits from drivers, leather palms, and performance gloves. This category is recognized as a hybrid style. To determine a leather palm from a hybrid, look for a "rubberized or starched safety cuff." If the glove has a rubberized or starched safety cuff, then it is a leather palm.*

### FORM FACTOR

90% of leather palms are made from split cowhide. Wearing split cowhide leather palm gloves is popular at large jobsites that require employees to wear hand protection but have limited budgets. It is a general purpose, low cost glove used in applications that don't require good dexterity. Pigskin has a greater resistance to water and abrasion and is used mostly in cold weather climates.



## What Is a Leather Driver Style?

The driver style is most often defined by the material compositions. If the glove is 100% leather on the palm and the backside, it is likely to be considered a driver style.

# GLOVE CONSTRUCTION

## Understanding Gunn Cut & Clute Cut

There are two primary ways to make a leather glove, also known as "cuts." The way the glove is cut contributes to the glove's comfort and dexterity.

- **GUNN CUT: FOR DEXTERITY, BETTER WEAR, & GREATER COMFORT**  
The ring and middle fingers are sewn into the glove from a separate piece of leather. This helps minimize bulk in those two fingers, increasing dexterity. Gunn cut gloves have a smooth and seamless back side. This design, which reduces stress on the glove for longer wear, provides greater comfort and gripping action for handling tools.
- **CLUTE CUT: ROOMER FIT & MORE ECONOMICAL**  
This style features a one-piece palm without any seams at the base of the fingers. However, there are seams along the inside of each finger and on the back side of the glove. The thumb is straight.



## The Three Major Leather Glove Thumb Designs



### STRAIGHT THUMB

Least effective as it does not allow for natural thumb motion.



### WING THUMB

Allows for greater flexibility and efficiency than straight thumbs.



### KEYSTONE THUMB

Designed for superior movement and maximum comfort.

◀ The set-in thumb is sewn in as a separate piece, which improves dexterity. Ideal for applications where there is extreme wear in the thumb webbing area. Most expensive option due to extensive sewing.

## Cuff Styles



### STARCHED

Two layers of fabric laminated & stiffened with starch



### DUCK CUFF

Launderable single ply cotton material



### RUBBERIZED

Bonding of cuff layers with rubber cement. Standard safety cuff 2.5"



### GAUNTLET

4 - 4.5" longer cuff to provide extra protection up the wrist & arm



### KNIT

Elastic around wrist to keep dust & debris from entering glove



### SHIRRED

Helps gather the material at the wrist providing a more comfortable fit

# Are Leather Gloves Available as a Cut Glove?

Yes, leather gloves can be made available as a cut glove. Modern technological advancements in cut-resistant fibers allow leather gloves to be engineered with liners made of Kevlar® or Aramid for excellent cut protection.

However, just like our skin is not naturally cut resistant, nor are animal skins. So leather gloves without a liner only offer minor protection from cuts and scrapes.



## Linings:

- COTTON/JERSEY: Helps with comfort and helps prevent chaffing
- FLEECE: More durable than cotton and helps with warmth
- THINSULATE/THERMAL: Best choice for low temperatures
- ARAMID OR KEVLAR FIBERS: Add cut resistant protection



# What Type Of Glove Is Required For Welding?

The answer is dependent upon whether the welding environment is high heat or low heat. The higher the heat, the more insulating the glove needs to be. However, thicker gloves that protect from heat often compromise control.

- STICK WELDING: Produces the most heat, sparks, & splatter resulting in the need for more heat insulation. This process requires less dexterity; therefore, gloves are thicker to offer more protection from heat.
- MIG/TIG WELDING: Lower heat welding involves more precise types of hand motion & requires gloves with more dexterity.



## PROTECTION PERFORMANCE & PRICE

### The 3 P's of Choosing Hand Protection

Since there are many different types of gloves in the marketplace, it is important you have a good strategy for selecting the right pair for the job. Considering the glove's protective features, performance, and price will help you evaluate your selection. Plus, leading manufacturers have hand protection managers, champions, and safety experts to help you make the right choice.

## Need Help Choosing Your Leather Glove?

For more information about leather hand protection, visit [www.radians.com](http://www.radians.com), email [sales@radians.com](mailto:sales@radians.com), or call toll-free 1-877-723-4267. Radians' hand protection specialists make choosing the right glove easy.



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