

## SELECTION CRITERIA

In order to make the right choice in a type and/or model of a personal protection product the user should make for himself selection criteria in order to come up with the best choice for his/her situation.

Weldas wants to help with that by giving you a number of selection criteria to start by making the right choice.

Please read for that the 2 following pages carefully.

### General selection criteria for leather products such as welding gloves and welding clothing

Choosing the right product is always important to make the workplace productive but also safe.

The factors to consider include one or more of the following arguments:

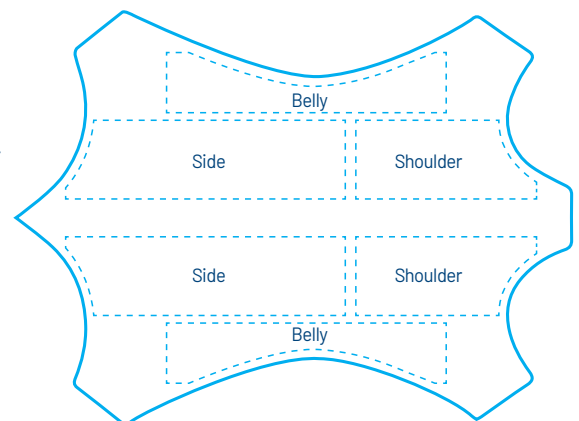
- Protection arguments: resistant to heat, flame, molten splashes, UV, electricity and punctures.
- Health arguments: values of pH, Chromium, PCP or other substances that needs to be within limits.
- Durability arguments: values of abrasion resistance, tensile strength, tear resistance, heat related dimensional change resistance, reinforced seams and stress points as well as thread strength and flame resistance.
- Comfort arguments: the right sizing and fit, dexterity, fingertip sensitivity, weight, sweat vapor transmission and absorption and climate and oil resistant.

### Type of leather selection criteria for leather products such as welding gloves and welding clothing:

Type of leather	Features
Split cow leather	Heat & flame resistant, material breaths because of open structure, also low priced
Grain cow leather	Pliable and strong, water and oil resistant
Suede (reversed) pig leather	Soft and comfortable and mostly lower priced than other leathers
Grain deer leather	Fit and dexterity and, with that, very good comfort as well as water and oil resistant
Grain goat leather	Fit and dexterity, light weight and very good comfort as well as water and oil resistant
Grain bison leather	Fit and dexterity, very good comfort, high mechanical value as well as water and oil resistant

### Leather grades and terminology:

Different portions of the hide of an animal have different characteristics: the side offers the best strength and most constant quality, the shoulder offers good strength and pliability, the belly is the lowest in quality but also the most economical.



### Choice of thumb design:

Straight thumb	Wing thumb	Keystone thumb
For extra sensitivity and/or extra welding gun grip	For seamless palm durability	For comfortable fit
<i>Note on thumb/palm design: extra durability and/or cut resistance can be achieved by adding an extra reinforcement around thumb and/or on palm of the glove.</i>		

**Remark:** the choice of materials and design for welding gloves and clothing but also for other products out of the Weldas product program always depend on what the applicable European norm desires. For that reason our products are tested and certified by a, by the European Union approved, test and certification laboratory. All test reports and certificates can be found on our special CE website:

[www.weldas-ce.com](http://www.weldas-ce.com)

Weldas offers a lot of information through it's catalog, website and other means of publication in order to help the user to make the right choice of product for it's personal protection but it is and will always be the responsibility of the user what product he/she does choose.

## INFORMATION ON EUROPEAN NORMS

As of April 21, 2018 the Regulation (EU) 2016/425 repealed the directive 89/686/EEC. The Regulation requires employers to use the appropriate personal protective equipment (PPE). All products used for personal protection must be marked with the appropriate basic CE marking and extended if the applicable norm does ask for it and according to its intended use. The regulation recognizes 3 levels of protection and the products to go with these levels:

### Category I

Category I includes exclusively the following minimal risks:  
 (a) superficial mechanical injury; (b) contact with cleaning materials of weak action or prolonged contact with water; (c) contact with hot surfaces not exceeding 50 °C;  
 (d) damage to the eyes due to exposure to sunlight (other than during observation of the sun);  
 (e) atmospheric conditions that are not of an extreme nature.

### Category II

Category II includes risks other than those listed in Categories I and III;

### Category III

Category III includes exclusively the risks that may cause very serious consequences such as death or irreversible damage to health relating to the following:  
 (a) substances and mixtures which are hazardous to health; (b) atmospheres with oxygen deficiency; (c) harmful biological agents; (d) ionising radiation; (e) high-temperature environments the effects of which are comparable to those of an air temperature of at least 100 °C;  
 (f) low-temperature environments the effects of which are comparable to those of an air temperature of - 50 °C or less;  
 (g) falling from a height; (h) electric shock and live working; (i) drowning; (j) cuts by hand-held chainsaws;  
 (k) high-pressure jets; (l) bullet wounds or knife stabs; (m) harmful noise.

## Basic norms and pictograms used for personal protection:

EN 420 norm on sizing of gloves: see page 7 of this catalogue.

EN 388 norm on mechanical risks for gloves:

Digit	Test Resistance	Level 1	Level 2	Level 3	Level 4	Level 5	
1st	Abrasion (# cycles)	100	500	2000	8000	-	
2nd	Blade Cut (index)	1,2	2,5	5,0	10,0	20,0	
3rd	Tear (Newton)	10	25	50	75	-	
4th	Puncture (Newton)	20	60	100	150	-	
5th	TDM Cut resistance (Newton)	A	B	C	D	E	F
		2	5	10	15	22	30

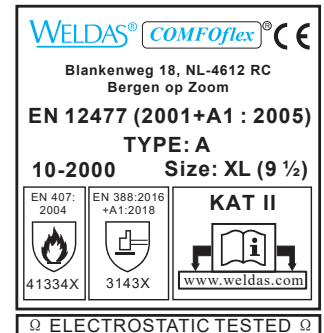
EN 407 norm thermal risks for gloves:

Digit	Test Resistance	Digit	Test Resistance
1st	Burning behaviour	5th	Small splashes of molten metal
2nd	Contact heat		
3rd	Convective heat	6th	Large quantities of molten metal
4th	Radiant heat		

EN 11611 norm on welding clothing and allied processes:

Requirement(s)	Class 1	Class 2
Tensile strength – woven outer textile material – leather		400 N 80 N
Tear strength		20 N
Dimensional change of woven textile materials Dimensional change of knitted textile materials		≤ ± 3 % ≤ ± 5 %
Flame spread * : For ISO 15025:2000, Procedure B, this requirement is not applicable.	ISO 15025:2000, Procedure A,(surface ignition) ; ISO 15025:2000, Procedure B, (edge ignition) No flaming to the top or either side edge; No hole formation a; No flaming or molten debris Mean afterflame ≤ 2 s; Mean afterglow ≤ 2 s	
Impact of spatter	15 drops	25 drops
Heat transfer (radiation)	RHTI 24 W 7	RHTI 24 W 16
Burst strength	200kPa	
Seam strength – textile material – leather	225 N 110 N	
Electrical resistance	>10 <sup>6</sup> Ω	
Innocuousness	See 6.11	
Leather	Fat content: ≤ 15 %	

Example of imprint of a Weldas® certified glove:



EN 12477 norm on welding gloves and allied processes:

Minimum requirements according to EN...	Type A Minimum Rating	Type B Minimum Rating
Electrical Insulation	pr1149-2	R <sub>z</sub> 10 <sup>6</sup> Ω
Abrasion Resistance	EN 388 2	500 cycles
Blade Cut Resistance	EN 388 1	Index 1,2
Tear Resistance	EN 388 2	25 N
Puncture Resistance	EN 388 2	60 N
Burning Behaviour	EN 407 3	2
Contact Heat Resistance	EN 407 1	100° C
Convective Heat Resistance	EN 407 2	HTI≥7
Small Molten Splash Resistance	EN 407 3	25 Droplets
Dexterity (pick up of rod dia.)	EN 420 1	≤11mm