

# SAFE WORK PRACTICES

## WELDING - PPE *Page 1 of 2*

*\*This information does not take precedence over OH&S. All employees should be familiar with the Saskatchewan Employment Act and the OH&S Regulations.*

### **Protective Clothing:**

1. Wear 100% wool or flame retardant cotton clothing. Wear long sleeved shirts with buttoned cuffs and a collar to protect the neck. Dark colors prevent light reflection. Remove shirt pockets or have flaps with buttons. Fall protection harnesses and lanyards must be flame and spark resistant/retardant (ask your supplier).
2. Pant legs without cuffs should cover the tops of boots. Cuffs can collect sparks.
3. Repair all frayed edges, tears or holes in clothing.
4. Wear high top boots to prevent sparks from going into the boots. The top of the toe of the boot should be smooth so that sparks will not get caught in seams.
5. Boot protectors or spats can be strapped around the pant legs and boot tops to prevent sparks from bouncing in the top of boots.
6. Remove matches and lighters from pockets. The hot welding sparks may light the matches or burn a hole through a plastic lighter causing serious injury.
7. Leather is a good insulator. Wear gauntlet type cuff leather gloves or protective sleeves of similar material which protect wrists and forearms. Arrange seams inside to prevent burning of stitches and trapping of hot metal particles. Unseamed gloves with reinforcement between thumb and forefinger are preferred.
8. Wear leather aprons to protect your chest and lap when standing or sitting. Leather jackets with full sleeves, back and a high neck are good for out-of-position work.
9. Wear a flame resistant skull cap under your helmet to prevent head burns.
10. Keep clothing free of oil or grease to avoid fire or slipping. Keep dry to reduce electrical risk.

### **Eye & Face Protection:**

1. Use gaskets provided with the helmets or goggles.
2. Wear arc welding helmets for all arc welding and darkened face shields for cutting operations. Always wear safety glasses or goggles as a second line of defense.
3. Do not use gas welding goggles for arc welding.
4. Wear safety glasses with side shields at all times, even under welding helmets.
5. Replace pitted or cracked lenses.

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6. Protect eyes from flying pieces of slag when chipping the weld.
7. Do not substitute modified glasses, sunglasses, smoked plastic or other materials for proper welding lenses.
8. Replace loose or damaged helmets. Invisible and dangerous light rays (ultraviolet) can get in undetected.
9. Contact lens users should prevent dust and particles from getting in their eyes. Foreign particles can collect behind the lens and cause severe discomfort and possibly eye damage.

<b>SELECTION OF SHADE NUMBERS</b>			
<b>WELDING OPERATIONS</b>	<b>SHADE NUMBER SUGGESTED</b>	<b>WELDING OPERATIONS</b>	<b>SHADE NUMBER SUGGESTED</b>
Torch Soldering	2	Shielded Metal-Arc Welding:	
Torch Brazing	3 or 4	2.5 to 4 mm (3/32 to 5/32") Electrodes	10
Oxygen Cutting:		4 to 6.4 mm (5/32 to 1/4") Electrodes	12
- Under 25 mm (1")	3 or 4	Over 6.4 mm (1/4") Electrodes	14
- 25 to 150 mm (1" to 6")	4 or 5	Gas Tungsten-Arc Welding	
- Over 150 mm (6")	6 or 8	Under 50A	10
Gas Welding:		50 to 150A	12
- Under 3.2 mm (1/8")	4 or 5	150 to 500A	14
- 3.2 to 12.7 mm (1/8 to 1/2")	5 or 6	Gas Metal-Arc Welding:	
- Over 12.7 mm (1/2")	6 or 8	60 to 160A	10
Carbon-Arc Welding	14	160 – 250A	12
		250 – 500A	14

For further information on shade numbers refer to CSA-W117.2

#### **Screens:**

1. Screen electric welding operations to prevent the welding arc from affecting other workers.
2. Ensure all screens are constructed of sturdy opaque or translucent materials. Permit at least 50 cm (20") bottom clearance for ventilation. Post warnings to alert other workers. Use verbal communication as well.