







# SAFETY AND HEALTH STANDARDS

## PERSONAL PROTECTIVE EQUIPMENT

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hearing protective devices. The Hearing Conservation training module meeting applicable MSHA / OSHA / Rio Tinto regulatory requirements is located in Prospect.

- 9.1.3.8 The use of hearing protective devices is mandatory during the installation of engineering controls or when engineering and administrative controls are not capable of reducing the noise to acceptable levels that will prevent harmful exposures that can cause hearing loss.
- o Appropriate hearing protective devices are selected and approved by Safety / Industrial Hygiene personnel based on the results of the surveys. Approved hearing protective devices are available through the PPE Catalog located on the KUC Intranet.
  - o Earmuffs - To be most effective, earmuffs must be properly fitted to the individual. If eyeglasses are worn, or heavy sideburns or other hair is present, care should be taken to ensure that the seal is not interfered with. Earmuffs should be checked, by a trained individual, for fit, conditions of seal, headband force, and general condition. Earmuffs should be assigned on an individual basis.
  - o Earplugs - Of the various hearing protective devices available, earplugs typically give the greatest protection. Earplugs come in several shapes and sizes, and, therefore, the correct size and shape must be chosen to fit the individual's ear canal. Since the fit of the plug is most important in obtaining good results, a trained individual should fit the plug.
  - o Supervisors will ensure that hearing protectors are readily available and that employees wear hearing protection as required.
  - o Since all areas of harmful noise should be identified and posted, and the wearing of hearing protection is mandatory, there shall be no reason for a threshold shift. If a threshold shift is confirmed, the employee must be re-trained and given an opportunity to select a hearing protection device that provides equal or greater protection. All non-conformances relating to the use of hearing protection should be documented. Failure to wear hearing protection in posted areas will be addressed by employee counseling, and if necessary, progressive discipline.
- 9.1.3.9 Area supervisors will ensure that areas where hearing protection is required are posted with appropriate warning signs stating, "Caution - Hearing Protection Required". These signs must be maintained visible and in good condition.











## Exhibit 9.1.1

## Filter Lenses for Protection Against Radiant Energy

OPERATIONS	ELECTRODE SIZE 1/32"	ARC CURRENT (AMPS)	MINIMUM * PROTECTIVE SHADE
Shielded metal arc welding	< 3	< 60	7
	3-5	60-160	8
	5-8	160-250	10
	> 8	250-550	11
Gas metal arc welding & flux cored arc welding	-----	< 60	7
	-----	60-160	10
	-----	160-250	10
	-----	250-500	10
Gas tungsten arc welding	-----	< 50	8
	-----	10-150	8
	-----	150-500	10
Air carbon arc cutting	(Light)	< 500	10
	(Medium)	500-1000	11
Plasma arc welding	-----	< 20	6
	-----	20-100	8
	-----	100-400	10
	-----	400-800	11
Plasma arc cutting	(Light)**	< 300	8
	(Med)**	300-400	9
	(Heavy)**	400-800	10
Torch brazing	-----	-----	3
Torch soldering	-----	-----	2
Carbon arc welding	-----	-----	14

- \* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.
- \* These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used where the arc is hidden by the work piece.

## Exhibit 9.1.2

## Filter Lenses for Protection Against Radiant Energy

OPERATIONS		METAL PLATE THICKNESS (inches)	METAL PLATE THICKNESS (mm)	MINIMUM * PROTECTIVE SHADE
Gas Welding:	Light	< 1/8	< 3.2	4
	Medium	1/8-1/2	3.2-12.7	5
	Heavy	> 1/2	> 12.7	6
Oxygen Cutting:	Light	< 1	< 25	3
	Medium	1-6	25-150	4
	Heavy	> 6	> 150	5

\* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.