

Eye and Face Selection Guide

Hazard	Protectors	Limitations	Photo
IMPACT - Chipping, grinding, machining, masonry work, riveting, and sanding			
Flying fragments, objects, large chips, particles, sand, dirt, etc.	<ul style="list-style-type: none"> • Spectacles with side protection • Goggles with direct or indirect ventilation • Faceshield worn over spectacles or goggles • Welding helmet worn over spectacles or goggles • Loose-fitting respirator worn over spectacles or goggles • Full-face piece respirators 	<p>Caution should be exercised in the use of metal frame protective devices in electrical hazard areas. Metal frame protective devices could potentially cause electrical shock and electrical burn through contact with, or thermal burns from exposure to the hazards of electrical energy, which include radiation from accidental arcs.</p> <p>To provide adequate protection, ensure goggles fit tightly to the face.</p> <p>Atmospheric conditions and the restricted ventilation of a protector can cause lenses to fog. Frequent cleaning may be required.</p>	
CHEMICAL – Liquids, acid and chemical handling, degreasing, plating.			
Splash, droplets and sprays	<ul style="list-style-type: none"> • Goggles with indirect ventilation(eyecup or cover type) • Faceshield worn over goggles) 	<p>Atmospheric conditions and the restricted ventilation of a protector can cause lenses to fog. Frequent cleaning may be required.</p>	

	<ul style="list-style-type: none"> • Loose-fitting respirator worn over spectacles or goggles • Full-facepiece respirator 	To provide adequate protection, ensure goggles fit tightly to the face.	
Irritating Mist	<ul style="list-style-type: none"> • Goggle with no ventilation (cover type) • Faceshield worn over goggles • Loose-fitting respirator worn over spectacles or goggles • Full-facepiece respirator 	<p>Atmospheric conditions and the restricted ventilation of a protector can cause lenses to fog. Frequent cleaning may be required.</p> <p>To provide adequate protection, ensure goggles fit tightly to the face.</p>	
HEAT - Furnace operations - pouring, casting, hot dipping, gas cutting, and welding			
Hot sparks	<p>Spectacles with side protection</p> <p>Goggles with direct or indirect ventilation</p> <p>Faceshield worn over spectacles or goggles</p> <p>Loose-fitting respirator worn over spectacles</p> <p>Full-facepiece respirator</p>	<p>Spectacles, cup and cover type goggles do not provide unlimited facial protection.</p> <p>Operations involving heat may also involve optical radiation. Protection from both hazards shall be provided.</p>	
Splash from molten metal	<p>Faceshield worn over goggles</p> <p>Loose-fitting respirator worn over spectacles or goggles</p> <p>Full-facepiece respirator</p>		
High temperature exposure			

	<p>Screen faceshield over spectacles or goggles</p> <p>Reflective faceshield over spectacles or goggles</p>		
DUST - Woodworking, buffing, general dusty conditions			
Nuisance dust	<p>Goggles with direct or indirect ventilation (eyecup or cover type)</p> <p>Full-facepiece respirator</p>	<p>Atmospheric conditions and the restricted ventilation of a protector can cause lenses to fog. Frequent cleaning may be required.</p> <p>To provide adequate protection, ensure goggles fit tightly to the face.</p>	
Fine dust	<p>Goggles with indirect ventilation or no ventilation</p> <p>Full-facepiece respirator</p>	<p>To provide adequate protection, ensure goggles fit tightly to the face.</p>	
OPTICAL RADIATION			
Infrared Radiation (IR)	<p>Spectacles with side protection</p> <p>Goggles with direct or indirect ventilation</p> <p>Faceshield worn over spectacles or goggles</p> <p>Welding helmet worn over spectacles or goggles</p> <p>Loose-fitting respirator worn over spectacles or goggles</p> <p>Full-facepiece respirators</p>	<p>For proper fit of protector; there shall be no penetration of direct infrared spectra light in all non-lens areas.</p> <p>Side shields shall have filtering capability equal to or greater than the front lenses.</p>	

<p>Visible Light (Glare)</p>	<p>Spectacles with side protection</p> <p>Goggles with direct or indirect ventilation</p> <p>Faceshield worn over spectacles or goggles</p> <p>Welding helmet worn over spectacles or goggles</p> <p>Loose-fitting respirator worn over spectacles or goggles</p> <p>Full-facepiece respirators</p>	<p>For proper fit of protector; there shall be no penetration of direct visible light in all non-lens areas.</p> <p>Side shields shall have filtering capability equal to or greater than the front lenses.</p>	
<p>Ultraviolet Radiation (UV)</p>	<p>Spectacles with side protection</p> <p>Goggles with direct or indirect ventilation</p> <p>Faceshield worn over spectacles or goggles</p> <p>Welding helmet worn over spectacles or goggles</p> <p>Loose-fitting respirator worn over spectacles or goggles</p> <p>Full-facepiece respirators</p>	<p>For proper fit of protector; there shall be no penetration of direct ultraviolet light in all non-lens areas</p> <p>Side shields shall have filtering capability equal to or greater than the front lenses.</p>	
<p>Lasers</p>	<p>Refer to ANSI Z136.1-2014 "Safe Use of Lasers", for guidance in choosing the correct protective eyewear when working with lasers.</p>		

<p>Arc Welding: Arc</p> <p>Process Examples:</p> <p>Shielded Metal Arc Welding (SMAW)</p> <p>Gas Metal Arc Welding (GMAW)</p> <p>Gas Tungsten Arc Welding (GTAW)</p> <p>Air Carbon Arc Welding (CAC-A)</p> <p>Carbon Arc Welding (CAW)</p> <p>Plasma Arc Welding (PAW)</p> <p>Plasma Arc Cutting (PAC)</p> <p>Viewing electric arc furnaces and boilers.</p>	<p>Welding helmet over spectacles or goggles</p> <p>Handshield over spectacles or goggles</p> <p>Welding Respirator</p> <p>Typical filter lens shade: 10-14</p>	<p>Protection from optical radiation is directly related to filter lens density. Select the darkest shade that allows adequate task performance.</p> <p>For proper fit of protector; there shall be no penetration of direct visible light in all non-lens areas.</p> <p>Side shields shall have filtering capability equal to or greater than the front lenses. Welding helmets are intended to shield the eyes and face from optical radiation, heat, and impact. Welding helmets should not be used as a stand-alone protective devices and should be worn in conjunction with goggles or spectacles.</p> <p>Filter lens shade selection is to be made based on the welding process, arc current, electrode size and/or plate thickness. Use ANSI Z49.1:2012, Table 1, Guide for Shade Numbers, to select the proper filter lens shade for both protection and comfort (reduction in visible glare).</p> <p>Note: Filter lenses shall meet the requirements for shade</p>	
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		designations in table 6 of ANSI/ISEA Z87.1-2015.	
Oxyfuel Gas Welding: Process Examples: Oxyfuel Gas Welding (OFW) Viewing gas-fired furnaces and boilers	Welding goggles Welding helmet over spectacles or goggles Welding faceshield over spectacles or goggles Typical filter lens shade: 6 -8	Protection from optical radiation is directly related to filter lens density. Select the darkest shade that allows adequate task performance. For proper fit of protector; there shall be no penetration of direct visible light in all non-lens areas.	
Oxyfuel or Oxygen Cutting	Welding goggles Welding helmet over spectacles or goggles Welding faceshield over spectacles or goggles Typical filter lens SHADE:3-6	Side shields shall have filtering capability equal to or greater than the front lenses. Welding helmets are intended to shield the eyes and face from optical radiation, heat, and impact. Welding helmets should not be used as a stand-alone protective devices and should be worn in conjunction with goggles or spectacles Filter lens shade selection is to be made based on the welding process, arc current, electrode size and/or plate thickness. Use ANSI Z49.1:2012, Table 1, Guide for Shade Numbers, to select the proper filter lens shade for both protection and comfort (reduction in visible glare).	
Torch brazing	Welding goggles Welding helmet over spectacles or goggles Welding faceshield over spectacles or goggles Typical filter lens SHADE:3-4	Filter lens shade selection is to be made based on the welding process, arc current, electrode size and/or plate thickness. Use ANSI Z49.1:2012, Table 1, Guide for Shade Numbers, to select the proper filter lens shade for both protection and comfort (reduction in visible glare). Note: Filter lenses shall meet the requirements for shade	

		designations in table 6 of ANSI/ISEA Z87.1-2015.	
Torch soldering	Spectacles Welding faceshield over spectacles Typical filter lens shade: 2	Shade or special purpose lenses, as suitable.	
Glare	Spectacles with or without side protection Faceshield over spectacles or goggles.		

Note: this is just a guide and does not apply in all situations. Users must perform initial hazard assessment and/or contact EH&S to approve the right selection before use.
