

Managing Eye Safety PPE Compliance

For BC Employers+



What you will learn

What safety eyewear regulations apply

Which safety standards can be used

How to match eyewear to hazards

How to get people to wear their safety eyewear



Safety Eyewear Compliance Pyramid

BC	AB	SK	MB	ON	QC	NB	NS	PEI	NF
Province of BC	Province of Alberta	Province of Saskatchewan	Province of Manitoba	Province of Ontario	Province of Quebec	Province of New Brunswick	Province of Nova Scotia	Province of PEI	Province of Newfoundland
Workers Compensation Act	Alberta OHS Code Regulation 191/2021	Approved Standards and Practices	Workplace Safety and Health Act	Occupational Health and Safety Act R.S.O. 1990, c. O.1	Act respecting occupational health and safety	Regulation 91-191 under Occupational Health and Safety Act	Occupational Safety General Regulations	General Regulations EC180/87	Occupational Health and Safety Regulations, 2012
OHS Regulation Part 8: Personal Protective Clothing and Equipment	Part 18: Personal Protective Equipment	Part 7: Personal Protective Equipment	Part 6: Personal Protective Equipment	Part III: Duties of Employers and Other Persons	chapter S-2.1, r. 4	Part VIII: Protective Equipment	Part 3: Personal Protective Equipment	Part 45: Personal Protective Equipment	Part VII: Personal Protective Equipment
Section 8.14-8.16	Section 229	Section 7-8(2)	Section 6.13	Section 25	Section 2.10.5	Section 39	Section 10	Section 45.7-45.8	Section 75-76

Layer 1: Regulations – Who Makes the Rules?

BC	AB	SK	MB	ON
Properly Fitted		Fitted per: CSA Z94.3.1-16	Fitted per: CSA Z94.3.1-16	Properly Fitted
Appropriate to Hazards	Appropriate to Hazards		Appropriate to Hazards	Appropriate to Hazards
Meets CSA Z94.3-07, CSA Z94.3-15, or ANSI Z87.1-2015 w/ Side Protection	Meets CSA Z94.3-15 (Frame may meet ANSI Z87.1- 2003)	Meets CSA Z94.3-20 or ANSI Z87.1-2020	Meets CSA Z94.3-15	As Prescribed and Maintained in Good Condition

QC	NB	NS	PEI	NF
				Properly Fitted
	Appropriate to Hazards	Appropriate to Hazards	Appropriate to Hazards	Appropriate to Hazards
Latest version of CSA Z94.3 within 2 years of last update	CSA Z94.3-15 or Equivalent/Better	CSA Z94.3 (version not specified)	CSA Z94.3-15 or Equivalent	CSA Z94.3 (version not specified)

Layer 1: Regulations – Who Makes the Rules?



Canadian Standards Assoc.

Accredited by the Standards
Council of Canada

Serves Canada, USA, Asia,
and Europe



American National Standards Institute

Sets standards voluntarily
adopted by many
organizations and
government agencies

Primarily serves USA, with
international adoption of
some standards

2

Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 2: Standards – How do they compare?

	BC	AB	SK	MB	ON	QC	NB	NS	PEI	NF
CSA Z94.3:99	No	No	No	No	Yes	No	No	Yes	No	Yes
CSA Z94.3:07	Yes	No	No	No	Yes	No	No	Yes	No	Yes
CSA Z94.3:15	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes
CSA Z94.3:20	No*	No*	Yes	No*	Yes	No	No*	Yes	No*	Yes

*some elements of CSA Z94.3:20 may meet or exceed accepted requirements

Impact Resistance Test	CSA Z94.3:99	CSA Z94.3:07	CSA Z94.3:15	CSA Z94.3:20
Document Section	5.1.3.1	6.1.3.1	6.1.3.1	6.1.3.1
Steel Ball (1) Size	6.4 mm	6.4 mm	6.00 ± 0.05 mm	6.00 ± 0.05 mm
Steel Ball (1) Speed	46.5 ± 0.5 m/s	46.5 ± 0.5 m/s	46.5 ± 0.5 m/s	50.5 ± 0.5 m/s
Steel Ball (2) Size	n/a	n/a	n/a	6.35 ± 0.05 mm
Steel Ball (2) Speed	n/a	n/a	n/a	46.5 ± 0.5 m/s

2

Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 2: Standards – How do they compare?

Testing Headform	CSA Z94.3:99	CSA Z94.3:07	CSA Z94.3:15	CSA Z94.3:20
Document Section	11.2.1.1	12.2.1.1	12.2.1.1	12.2.1.1
Medium Headform	Alderson Model ATD-3215, Fiftieth-Percentile Male	CSA-Z262.6 Adult	EN 168 Medium	EN 168 Medium
Small Headform		CSA-Z262.6 Juvenile	EN 168 Small	EN 168 Small

Minimum Frontal Coverage	CSA Z94.3:99	CSA Z94.3:07	CSA Z94.3:15	CSA Z94.3:20
Document Section	6.1	7.1	7.1	6.8
Width of Lens Centred on Eye (Medium Headform)	≥ 40 mm	≥ 40 mm	≥ 40 mm	≥ 40 mm
Height of Lens Centred on Eye (Medium Headform)	≥ 33 mm	≥ 33 mm	≥ 33 mm	≥ 33 mm
Width of Lens Centred on Eye (Small Headform)	n/a	≥ 40 mm	≥ 40 mm	≥ 36 mm
Height of Lens Centred on Eye (Small Headform)	n/a	≥ 33 mm	≥ 33 mm	≥ 26 mm



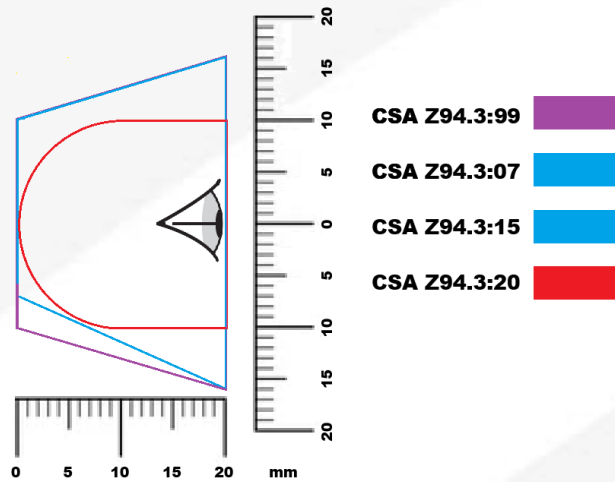
2

Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 2: Standards – How do they compare?



Side Protection	CSA Z94.3:99	CSA Z94.3:07	CSA Z94.3:15	CSA Z94.3:20
Document Section	11.2.1.1	7.2.2	7.2.2	6.9
Height Centred at Cornea	≥ 32 mm	≥ 32 mm	≥ 32 mm	≥ 20 mm
Length From Cornea Along Temple	≥ 20 mm	≥ 20 mm	≥ 20 mm	≥ 10 mm
Tapered End	≥ 20 mm	$\geq 10+7$ mm	$\geq 10+7$ mm	≥ 10 mm radius

2

Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 2: Standards – How do they compare?

Minimum Lens Requirements	CSA Z94.3:99	CSA Z94.3:07		CSA Z94.3:15		CSA Z94.3:20			
	Any Coating	Scratch	AR	Scratch	AR	Scratch	AR	Anti-fog	Blue Light
PLASTIC	3.0mm / 2.5mm	3.0mm	Failed	3.0mm	Failed	3.0mm	Failed	-	Failed
POLYCARBONATE	3.0mm / 2.5mm	2.0mm	2.0mm	2.0mm	2.0mm	2.0mm	2.0mm	2.0mm	2.0mm
TRIVEX	3.0mm / 2.5mm	2.5mm	2.5mm	2.5mm	2.5mm	2.5mm	2.5mm	2.5mm	2.5mm
HIVEX	-	-	-	3.0mm	3.0mm	3.0mm	3.0mm	-	-
HIGH INDEX 1.60	3.0mm / 2.5mm	-	-	-	-	-	-	-	-
HIGH INDEX 1.67	3.0mm / 2.5mm	-	-	-	-	-	-	-	-
HIGH INDEX 1.70	3.0mm / 2.5mm	-	-	-	-	-	-	-	-
HIGH INDEX 1.74	3.0mm / 2.5mm	-	-	-	-	-	-	-	-

- = Not Available

Failed = Minimum Impact Resistance Not Met

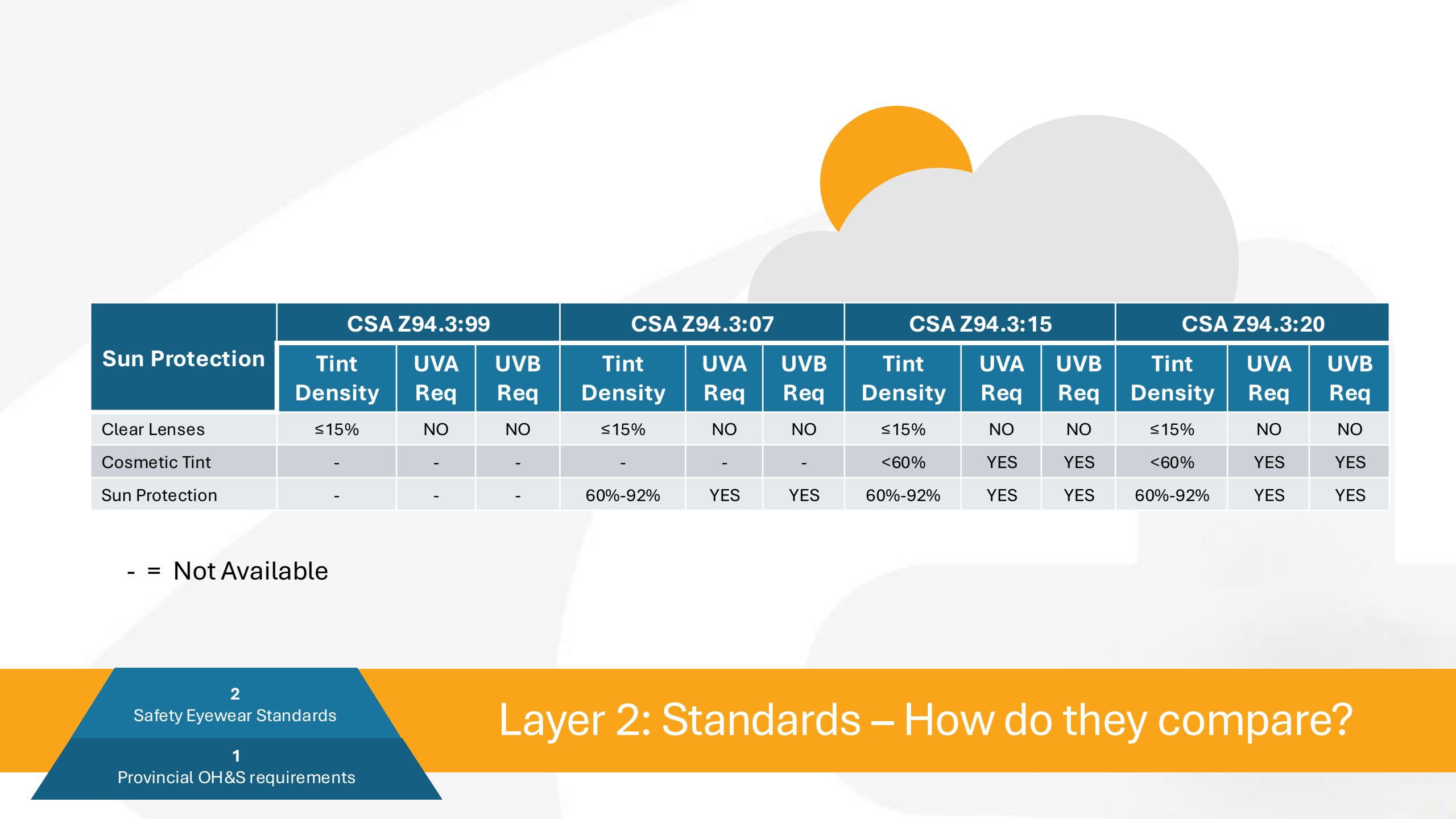
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Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 2: Standards – How do they compare?



Sun Protection	CSA Z94.3:99			CSA Z94.3:07			CSA Z94.3:15			CSA Z94.3:20		
	Tint Density	UVA Req	UVB Req	Tint Density	UVA Req	UVB Req	Tint Density	UVA Req	UVB Req	Tint Density	UVA Req	UVB Req
Clear Lenses	≤15%	NO	NO	≤15%	NO	NO	≤15%	NO	NO	≤15%	NO	NO
Cosmetic Tint	-	-	-	-	-	-	<60%	YES	YES	<60%	YES	YES
Sun Protection	-	-	-	60%-92%	YES	YES	60%-92%	YES	YES	60%-92%	YES	YES

- = Not Available

2

Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 2: Standards – How do they compare?



Safety lenses must....

- Be no less than 2mm thick
- Be firmly mounted into the frame
- Meet Table 5 requirements
- Carry a safety certification stamp



Safety frames must....

- Have CSA Z94.3 or ANSI Z87.1 printed on them
- Include side shields
- Be in good sturdy condition
- Be properly fitted to the wearer
- Be appropriate for workplace hazards

2

Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 2: Standards – How do they compare?



Flying Objects,
risk of impact



Dust, particulate,
and/or wind



Infectious or
chemical
droplets



Mist or fumes



Sparks or
electrical
current



Bright light or
glares



High heat



Laser



Radiation



Arc flashes

3

Hazard Checklist

2

Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 3: Hazards Checklist

Side shields and gaskets with indirect venting

D3 certification against droplets

D4 certification against dust

Partial, full, and rubberized seal gaskets

Non-Conductive certification

Specialized lens coatings

Welding clip-ons

High Pressure Sodium (HPS) clip-ons

Full face respirators with RX Inserts

Unobstructed peripheral vision

3

Hazard Checklist

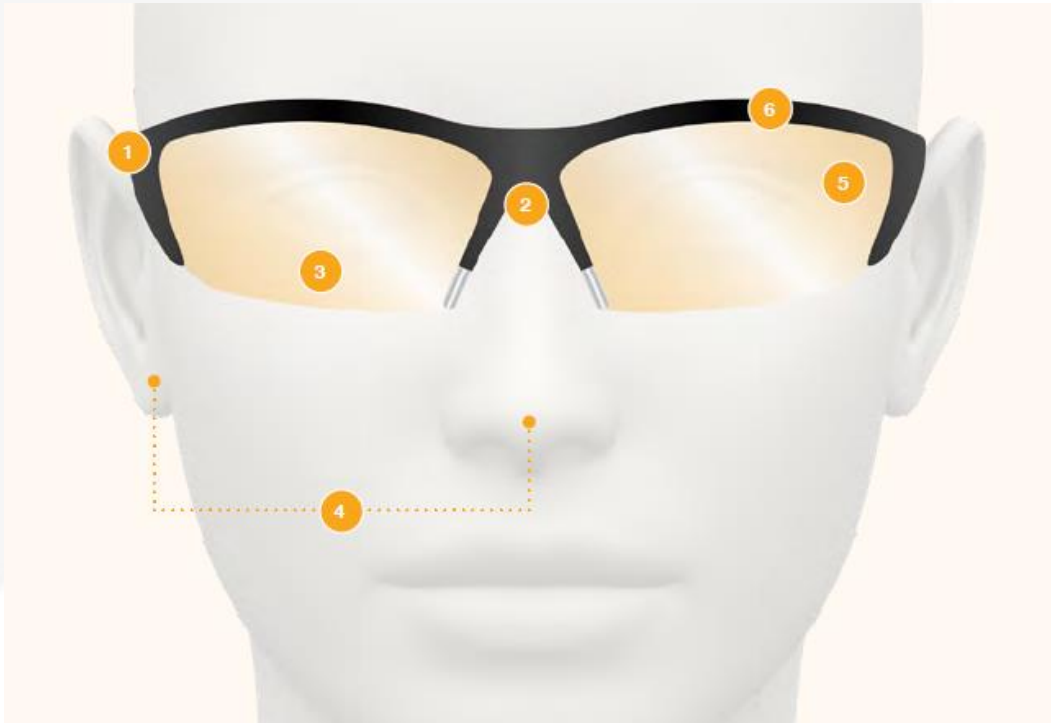
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Safety Eyewear Standards

1

Provincial OH&S requirements

Layer 3: Hazards Checklist



1. Are there pressure points on the side of the head or behind the ears?
2. Does the nose piece make contact without pinching?
3. Can you see clearly in all directions without major obstruction?
4. Is the overall weight of your safety eyewear evenly distributed between your ears?
5. Does your eyewear fit close to your face without hitting your eyelashes? Gaps should be less than or equal to 6-8mm, depending on your work environment.
6. Does your eyewear cover your eyebrow and any soft tissue around it?
7. Can you move your head front to back and tilt your head side to side without your eyewear shifting out of place?

4
Fitted
Properly

3
Hazard Checklist

2
Safety Eyewear Standards

1
Provincial OH&S requirements

Layer 4: A Perfect Fit

Do's and Don'ts

DON'T!

Let workers wear unfitted PPE

Assume that unknown PPE meets compliance

Forget that eyes should be tested every 2 years

Overlook the impact of sun or heat

Reuse impacted PPE



Do's and Don'ts DO!

Check in with workers about their PPE

Reassess workplace hazards regularly

Support your workers with eye prescriptions

Double check provincial regulations

Ask for help!

Consider using a provincial safety eyewear program



Resources

For a copy of this presentation,
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Contact:

Gregory Neher

EyeSafe Sr. Manager

BC Doctors of Optometry

gneher@optometrists.bc.ca

