

ISO 19734:2021-02 (E)

Eye and face protection - Guidance on selection, use and maintenance

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	General	2
4.1	Structure of the human eye	2
4.2	Hazards and risks to the eye and face	3
4.2.1	Surrounding structures of the eye	3
4.2.2	Peri-orbital skin	4
4.2.3	Tears	4
4.2.4	Cornea and conjunctiva	4
4.2.5	Iris and lens	4
4.2.6	Retina	5
4.2.7	Optic nerve	5
4.2.8	Choroid and retinal pigment epithelium	5
4.3	The eye's defence system	5
4.4	Colour perception	7
5	Hazards and their consequences	8
5.1	General hazards	8
5.1.1	Mechanical hazards	8
5.1.2	Chemical hazards	9
5.1.3	Radiation hazards	10
5.1.4	Biological hazards	11
5.1.5	Convection heat	12
5.2	Application specific hazards	12
5.2.1	Laser hazards	12
5.2.2	Welding hazards	13
5.2.3	Electric arc hazards	14
5.2.4	Glass blowing hazards	14
6	Control of eye and face hazards	15
6.1	General	15
6.2	Screens	16
6.2.1	General	16
6.2.2	Recommended materials for screens	17
6.2.3	Selection of light-transmitting screens and curtains for arc welding operations	17
6.2.4	Illumination of the work area	17
6.3	Exhaust systems	17
6.4	Other methods	17
7	Selection and use of personal protective equipment (PPE)	18
7.1	General	18
7.2	Types of eye and face protectors	18
7.2.1	General	18
7.2.2	Selection process	20
7.2.3	Eye and face protection for those requiring vision correction	26
7.2.4	Material choice	27

7.2.5	Comfort, vision and fit.....	28
7.2.6	Application based selection.....	29
7.3	Checking the fit.....	39
7.3.1	Fit, comfort and compliance.....	39
7.3.2	Ensuring compliance with an eye protection programme.....	40
8	Care and maintenance.....	40
8.1	Hygiene and cleaning.....	40
8.2	Replacement of eye protectors.....	41
9	Compatibility.....	41
9.1	General.....	41
9.2	Eye protectors and respirators.....	42
9.3	Eye protectors and protective earmuffs.....	42
9.4	Helmet mounted face shields.....	42
9.5	Face shields and respirators.....	42
9.6	Eyewear with half-mask respirators.....	42
10	Eye and face protector marking.....	42
11	Special requirements for working conditions (e.g. hot, humid, dusty, fog, abrasion).....	43
Annex A (informative) Electric arc protective equipment combinations.....		45
Annex B (informative) Marking of laser eye protectors.....		47
Bibliography.....		49