

ISO 18526-3:2020-01 (E)

Eye and face protection - Test methods - Part 3: Physical and mechanical properties

Contents

| | Page |
|--|------|
| Foreword | vi |
| Introduction | vii |
| 1 Scope | 1 |
| 2 Normative references | 1 |
| 3 Terms and definitions | 1 |
| 4 Preparatory information | 1 |
| 5 General test requirements | 2 |
| 6 Physical test methods | 2 |
| 6.1 Physical inspection | 2 |
| 6.1.1 Principle | 2 |
| 6.1.2 Procedure | 2 |
| 6.1.3 Test report | 2 |
| 6.2 Field of view | 3 |
| 6.2.1 Principle | 3 |
| 6.2.2 Apparatus | 3 |
| 6.2.3 Procedure | 3 |
| 6.2.4 Test report | 3 |
| 6.3 Area to be protected — Assessment from the frontal direction | 4 |
| 6.3.1 Principle | 4 |
| 6.3.2 Apparatus | 4 |
| 6.3.3 Procedure | 4 |
| 6.3.4 Test report | 4 |
| 6.4 Area to be protected — Assessment from the lateral direction | 4 |
| 6.4.1 Principle | 4 |
| 6.4.2 Apparatus | 4 |
| 6.4.3 Procedure | 4 |
| 6.4.4 Test report | 5 |
| 6.5 Retention by headbands and harnesses (sit and fit) | 5 |
| 6.5.1 Principle | 5 |
| 6.5.2 Procedure | 5 |
| 6.5.3 Test report | 5 |
| 6.6 Visual assessment of material and surface quality of lenses | 5 |
| 6.6.1 Principle | 5 |
| 6.6.2 Apparatus | 5 |
| 6.6.3 Procedure | 6 |
| 6.6.4 Test report | 6 |
| 6.7 Resistance to thermal exposure | 6 |
| 6.7.1 Principle | 6 |
| 6.7.2 Procedure | 7 |
| 6.7.3 Test report | 7 |
| 6.8 Resistance to ultraviolet radiation | 7 |
| 6.8.1 Principle | 7 |
| 6.8.2 Solar ultraviolet radiation | 7 |
| 6.8.3 Ultraviolet radiation from artificial sources | 9 |
| 6.9 Resistance to corrosion | 9 |
| 6.9.1 Principle | 9 |
| 6.9.2 Reagents and materials | 10 |
| 6.9.3 Procedure | 10 |

| | | |
|--------------------------------|---|-----------|
| 6.9.4 | Test report | 10 |
| 6.10 | Resistance to ignition | 10 |
| 6.10.1 | Principle | 10 |
| 6.10.2 | Apparatus | 10 |
| 6.10.3 | Procedure | 10 |
| 6.10.4 | Test report | 11 |
| 6.11 | Resistance to fogging of lenses or filters | 11 |
| 6.11.1 | Principle | 11 |
| 6.11.2 | Apparatus | 11 |
| 6.11.3 | Conditioning | 12 |
| 6.11.4 | Procedure | 12 |
| 6.11.5 | Test report | 13 |
| 6.12 | Protection against droplets | 13 |
| 6.12.1 | Principle | 13 |
| 6.12.2 | Reagents, material and apparatus | 13 |
| 6.12.3 | Procedure | 13 |
| 6.12.4 | Test report | 14 |
| 6.13 | Protection against streams of liquids | 14 |
| 6.13.1 | Principle | 14 |
| 6.13.2 | Reagents, materials and apparatus | 14 |
| 6.13.3 | Procedure | 15 |
| 6.13.4 | Test report | 15 |
| 6.14 | Protection against large dust particles | 16 |
| 6.14.1 | Test principle | 16 |
| 6.14.2 | Material and apparatus | 16 |
| 6.14.3 | Procedure | 17 |
| 6.14.4 | Test report | 18 |
| 6.15 | Protection against gases and fine dust | 18 |
| 6.15.1 | Principle | 18 |
| 6.15.2 | Apparatus | 18 |
| 6.15.3 | Procedure | 19 |
| 6.15.4 | Test report | 19 |
| 6.16 | Protection against radiant heat | 19 |
| 6.16.1 | Principle | 19 |
| 6.16.2 | Test apparatus | 19 |
| 6.16.3 | Preparation of the test sample | 20 |
| 6.16.4 | Procedure | 20 |
| 6.16.5 | Test report | 21 |
| 6.17 | Chemical resistance | 21 |
| 6.17.1 | Principle | 21 |
| 6.17.2 | Procedure | 21 |
| 6.17.3 | Test report | 21 |
| Mechanical test methods | | 21 |
| 7.1 | General | 21 |
| 7.2 | Tests on unmounted lenses | 22 |
| 7.2.1 | Minimum robustness of unmounted lenses (static load test) | 22 |
| 7.2.2 | Drop ball test for unmounted lenses | 25 |
| 7.3 | Tests on complete eye protectors | 27 |
| 7.3.1 | Drop ball test for complete protectors | 27 |
| 7.3.2 | Ballistic impact test for complete protectors | 28 |
| 7.3.3 | High mass test for complete protectors | 29 |
| 7.4 | Resistance to surface damage due to flying fine particles | 31 |
| 7.4.1 | Principle | 31 |
| 7.4.2 | Material and apparatus | 31 |
| 7.4.3 | Preparation of reference samples for measurement of light scatter | 33 |
| 7.4.4 | Preparation of test samples | 34 |
| 7.4.5 | Procedure | 34 |
| 7.4.6 | Evaluation of narrow angle scatter of the test sample | 34 |
| 7.4.7 | Evaluation of wide angle scatter of the test sample | 34 |
| 7.4.8 | Test report | 35 |
| 7.5 | Penetration of vents and gaps | 35 |
| 7.5.1 | Principle | 35 |

| | | |
|---|---|-----------|
| 7.5.2 | Apparatus..... | 35 |
| 7.5.3 | Procedure..... | 36 |
| 7.5.4 | Test report..... | 36 |
| 7.6 | Protection against molten metals and hot solids | 36 |
| 7.6.1 | Adherence of molten metal..... | 36 |
| 7.6.2 | Resistance to penetration of protector by hot solids | 39 |
| 8 | Marking and packaging..... | 40 |
| 8.1 | Principle..... | 40 |
| 8.2 | Procedure | 40 |
| 8.3 | Test report..... | 40 |
| 9 | Information to be supplied by the manufacturer..... | 40 |
| 9.1 | Principle..... | 40 |
| 9.2 | Procedure | 40 |
| 9.3 | Test report..... | 40 |
| 10 | Additional test methods for protectors during welding and related techniques | 41 |
| 10.1 | Dimension measurements of welding hand shields..... | 41 |
| 10.1.1 | Procedure..... | 41 |
| 10.1.2 | Test report..... | 41 |
| 10.2 | Drop test of welding protectors | 41 |
| 10.2.1 | Principle | 41 |
| 10.2.2 | Apparatus..... | 41 |
| 10.2.3 | Preparation of test samples..... | 41 |
| 10.2.4 | Procedure..... | 41 |
| 10.2.5 | Test report..... | 41 |
| 10.3 | Light tightness of welding protectors | 42 |
| 10.3.1 | Principle | 42 |
| 10.3.2 | Procedure | 42 |
| 10.3.3 | Test report..... | 42 |
| 10.4 | Electrical insulation of welding helmets and welding hand shields..... | 42 |
| 10.4.1 | Principle | 42 |
| 10.4.2 | Procedure | 42 |
| 10.4.3 | Test report..... | 42 |
| 11 | Additional test methods for mesh protectors | 43 |
| 11.1 | Number of apertures in a mesh..... | 43 |
| 11.1.1 | Principle | 43 |
| 11.1.2 | Procedure | 43 |
| 11.1.3 | Test report..... | 43 |
| 11.2 | Contact with metal parts | 43 |
| 11.2.1 | Principle | 43 |
| 11.2.2 | Procedure | 43 |
| 11.2.3 | Test report..... | 43 |
| Annex A (normative) Application of uncertainty of measurement | 44 | |
| Annex B (normative) Long wavelength pass filter | 47 | |
| Annex C (informative) Full details of the apparatus for the streams of liquids test | 49 | |
| Bibliography | 51 | |