

# ISO 11999-5:2015-11 (E)

PPE for firefighters - Test methods and requirements for PPE used by firefighters who are at risk of exposure to high levels of heat and/or flame while fighting fires occurring in structures - Part 5: Helmets

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>2</b>
<b>4</b>	<b>Helmet requirements .....</b>	<b>2</b>
4.1	General .....	2
4.1.1	Fit .....	2
4.1.2	Protrusions and sharp edges .....	2
4.1.3	Reinforcement .....	3
4.1.4	Replacement components and accessories .....	3
4.1.5	Neck protector and ear covers .....	3
4.1.6	Shikoro .....	3
4.1.7	Optional components .....	3
4.1.8	Material selection .....	4
4.1.9	Resistance to cleaning agent .....	4
4.1.10	Protected area .....	4
4.1.11	Field of vision .....	5
4.1.12	Helmet mass .....	6
4.2	Samples and helmet adjustment .....	6
4.2.1	Samples .....	6
4.2.2	Helmet adjustment .....	6
4.3	Pre-conditioning .....	10
4.3.1	Pre-conditioning for Type 1 helmets .....	10
4.3.2	Pre-conditioning for Type 2 helmets .....	11
4.4	Performance requirements .....	12
4.4.1	Requirement table for Type 1 and Type 2 helmets .....	12
4.4.2	Radiant heat requirements for Type 1 helmets .....	14
4.4.3	Protection against molten metals for Type 1 helmets (optional) .....	14
4.4.4	Heat resistance .....	14
4.4.5	Flame resistance .....	15
4.4.6	Flame engulfment for Type 1 helmets (optional) .....	15
4.4.7	Thermal protective performance (TPP) for Type 2 helmets .....	15
4.4.8	Force impact resistance .....	16
4.4.9	Ballistic resistance for Type 1 helmets (optional) .....	16
4.4.10	Impact energy attenuation for Type 2 helmets .....	16
4.4.11	Penetration resistance .....	16
4.4.12	Lateral crushing for Type 1 helmets .....	16
4.4.13	Retention system effectiveness for Type 1 helmet (optional) .....	16
4.4.14	Retention system strength .....	17
4.4.15	Suspension system retention for Type 2 helmets .....	17
4.4.16	Shell retention for Type 2 helmets .....	17
4.4.17	Electrical properties .....	17
4.4.18	Hardware corrosion resistance for Type 2 helmets .....	18
4.5	Test methods .....	18
4.5.1	Radiant heat .....	18

4.5.2	Protection against molten metals for Type 1 helmets (optional) .....	18
4.5.3	Heat resistance .....	18
4.5.4	Flame resistance .....	19
4.5.5	Flame engulfment for Type 1 helmets (optional) .....	19
4.5.6	Thermal protective performance for Type 2 helmets ear covers .....	20
4.5.7	Force impact resistance .....	20
4.5.8	Ballistic resistance for Type 1 helmets (optional) .....	20
4.5.9	Impact energy attenuation for Type 2 helmets .....	21
4.5.10	Penetration resistance .....	21
4.5.11	Lateral crushing for Type 1 helmets .....	21
4.5.12	Retention system effectiveness for Type 1 helmets (optional) .....	21
4.5.13	Retention system strength .....	21
4.5.14	Suspension system retention for Type 2 helmets .....	22
4.5.15	Shell retention for Type 2 helmets .....	22
4.5.16	Electrical properties .....	22
4.5.17	Hardware corrosion resistance for Type 2 helmets .....	23
5	Marking .....	23
5.1	Marking for Type 1 helmets .....	23
5.2	Marking for Type 2 helmets .....	24