

BFP TECHNICAL SPECIFICATION

Number: **PPE-TC-2017-01**

FIREFIGHTER'S HELMET

I. AUTHORITY/REFERENCES:

- A. Bureau Order Number COM 2017-069 dated 15 August 2017;
- B. Approved BFP Technical Specification No. PPE-2016-01; and
- C. National Fire Protection Agency (NFPA) 1971:2013 Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting.

II. GENERAL DESCRIPTION

A brand new FIREFIGHTER'S HELMET made of a high impact, electrically insulated, puncture resistant, heat resistant and chemical resistant materials, essentially consisting of a shell, an energy absorbing system, a retention system, a retractable faceshield, ear covers and fluorescent retroreflective markings.

The helmet shall have no openings penetrating the shell other than those provided by the manufacturer for mounting energy absorbing systems, retention systems, and other accessories. It shall be adaptable for SCBA application, Integrated Light System and Thermal Imaging Device retrofitting.

Over-all design and construction features shall be guided by latest applicable standards such as National Fire Protection Association (NFPA) and/or European Norms (EN) that ensure substantial equivalence for structural fire fighting purposes and passing the specified performance tests requirements in this specification.

III. TECHNICAL REQUIREMENTS

A. MATERIALS

A.1 Shell

Made of composite material of either thermoplastic or heat resistant synthetic-fiber materials and of smoothed finish.

A.2 Brim Guard

Composed of edge trim that will not melt, drip or burn at high temperature

A.3 Inner or Impact Liner

Made of Urethane Foam or Polycarbonate shell or high strength nylon material or of any equivalent system as per manufacturer's design.

A.4 Head Band

Made of plastic or equivalent materials

A.5 Crown Straps

Cradle strap assembly made of a Nylon or Nomex fabric or equivalent material shall be

A.6 Chin Strap

Made of Nomex or equivalent material.

A.7 Faceshield

Made of Polycarbonate material

A.8 Faceshield Retention System Hardware

Made of a high impact, fire retardant material that will not corrode, conduct heat or electricity.

A.9 Ear and Neck Cover

Made of heat or thermal resistant fabric material

A.10 Helmet Hanger

Made of stainless steel.

B. SHELL

B.1. BRIM

Ergonomically and circumferentially designed with a sharp downward angle at the rear approximately 50 - 75 millimeters (mm) long and 250 mm wide $\pm 10\%$.

B.2 BRIM GUARD

Providing extra durability to the helmet edge.

B.3 FACESHIELD PORT OR ATTACHMENT

Provided for holding/retaining the faceshield assembly as per manufacturer's design.

C. ENERGY ABSORBING AND RETENTION SYSTEM

C.1 INNER OR IMPACT LINER

Assist or address the impact force

C.2 HEAD RETENTION AND ADJUSTMENT SYSTEM

C.2.1 HEADBAND

Designed to receive, retain a hat size between six (6) to eight (8) with liner made of standard flannel for ease and comfortable fit.

C.2.2 NAPE DEVICE

Provided as part of the headband located below the "Bitragion Inion Arc" to aid in helmet retention.

C.2.3 RATCHET ADJUSTMENT SYSTEM

Provided and located at the nape device to allow proper adjustment for the headband to fit and prevents backing out or slipping during use.

C.3 CROWN STRAPS

Provided to serve as impact cap's overhead suspension.

C.4 CHIN STRAP

Minimum width of 19 mm or its equivalent as per manufacturer's design with quick-release buckle and a postman's slide that allows quick and easy adjustment for efficient performance, safety and fit.

D. FACESHIELD

At least 110 mm \pm 10% shape molded, optically correct, designed to fit over breathing apparatus face masks with anti-scratch lens coating.

D.1 RETENTION SYSTEM

Provided to safely secure on both sides the faceshield through a hardware

E. EAR AND NECK COVER

Sufficient to cover the ear and neck portion with a radiant reflective value of not less than 20 seconds.

E.1 RETENTION SYSTEM

Provided to securely attach the cover to the main shell by rip-stop (Velcro) attachment or its equivalent system.

F. COLOR AND RETROREFLECTIVE MARKINGS

Colors:

WHITE	-	CINSP RANKS and Above
RED	-	INSP to SINSP RANKS
YELLOW	-	NON OFFICER RANKS

Fluorescent and retroreflective lining/trim designs on the outer shell exterior.

G. MISCELLANEOUS

G.1 Helmet Hanger

Standard D-ring type securely fastened at the center of the rear brim.

G.2 Gross Weight

1.5 kg + 10% (maximum).

H. LABELS

H.1 Name of Manufacturer

H.2 Country of Origin

H.3 Type and/or Model

H.4 Month and Year of Manufacture

H.5 Lot Number

H.6 Head Size Range

I. MARKINGS

I.1 BFP Logo with the size of 64 mm (diameter) shall be in laser engrave or pad printed or any acceptable permanent marking technology to be installed in front of the outer layer of the helmet.

I.2 The word **"BFP PROPERTY NOT FOR SALE"** shall be imprinted underneath the portion of the rear brim.

I.3 Color, markings and design shall be submitted to the BFP for approval prior to mass production.

J. TESTING REQUIREMENTS

J.1 Test Samples

As part of the acceptance and to ensure compliance with the technical specification, the manufacturer/supplier shall provide six (6) pieces extra helmets (color may vary) or as per requirement of testing laboratory over and above the contracted quantity representing the delivered lot as specimen samples to be randomly sampled during delivery to be subjected to all of the specified performance tests cited in Item J.2.

J.2 Performance Test

J.2.1 Shell Performance Tests

- J.2.1.1 Impact Resistance (Force Transmission) Test
- J.2.1.2 Penetration Resistance Test
- J.2.1.3 Electrical Resistance (Electrical Insulation) Test
- J.2.1.4 Flammability (Flame Resistance) Test

J.2.2 Faceshield Performance Tests

- J.2.2.1 High Mass Impact Test
- J.2.2.2 Flammability Test

K. WARRANTY

Minimum one (1) year warranty

L. OTHER REQUIREMENTS

The Bidder/Supplier/Manufacturer shall provide the following during Post-qualification stage:

1. One (1) representative sample
2. Hard and soft copies in portable document format (pdf) of product brochures, test certificates and certifications

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