



## **MSA Cairns® FIRE HELMET PRODUCT SPECIFICATION**

### **PRODUCT TYPE:**

Structural Firefighting Helmet

### **PRODUCT MODEL(S):**

MSA Cairns Structural 360S™ Fire Helmet

### **PURPOSE:**

To supply a uniform, standard product specification for a thermoplastic structural fire helmet.

### **SCOPE:**

The scope of this product specification encompasses the performance criteria, design, construction and materials deemed necessary for helmets utilized for structural firefighting.

### **GENERAL:**

Helmets manufactured in accordance with this specification are designed to mitigate adverse environmental effects to the firefighter's head while providing the specifying authority with what are, in their opinion, essential requirements.

### **PERFORMANCE CRITERIA:**

MSA Cairns Structural 360S Fire Helmets shall meet the requirements of NFPA 1971:2013 (or the current edition); US-OSHA 1910.156, and CAL-OSHA.

All eye/face protection sold as part of the original helmet assembly shall be compliant with the impact requirements of the current versions of ANSI/ISEA Z87.1 and NFPA 1971:2013.

### **PERFORMANCE VERIFICATION DATA REQUIREMENT:**

Response to this specification shall include complete and current NFPA 1971 test report from a recognized, accredited test facility detailing all performance data for the helmet being offered and all compliant helmet components. Certificates of conformance and / or letters of certification alone shall not be acceptable. Component testing is not acceptable. Certification testing is conducted every year to a random lot size, as per NFPA requirements.

### **MANUFACTURER'S WARRANTY:**

MSA warrants MSA Cairns Fire Helmets manufactured on or after January 1, 2015, to be free from defects in materials and/or faulty workmanship for a period of ten (10) years from the date of manufacture by MSA. For warranty details, please see "10-Year Warranty and Terms of Sale" (ID 3600-72-MC / February 2015). For MSA Cairns Fire Helmets manufactured prior to January 1, 2015, please refer to ID 3600-09-MC / Jan 2005. All warranty documents can be found on the MSA website (MSAsafety.com).



## PRODUCT VISUAL:



MSA Cairns Structural 360S Fire Helmet

### HELMET SHELL:

The MSA Cairns Structural 360S Fire Helmet shell shall be of a low-profile European Fire Service style, molded in one solid color of high-temperature, high-performance thermoplastic.

The reinforcing rib which runs down the center of the helmet, and lugs for overhead strap assembly shall be molded into the helmet shell. The helmet consists of a crown section with a downward angled attached brim.

The overall length of the helmet from the front brim to the back of the rear brim shall be 12-1/2" and the width 9-1/2". The crown section shall be 5.4" deep.

The Structural 360S shell shall be available in the following colors: black, yellow, red, white, orange and blue.

The Structural 360S shell shall have black or white<sup>1</sup>, high-temperature, flame-resistant, flexible edge trim made of thermoplastic rubber (TPR) with an aluminum core. The edge-trim is secured around the entire brim of the helmet by crimping the aluminum core, and secured at the mating ends with a high temperature adhesive and clamped by the helmet hanger clip at the edge of the rear brim.

The shell shall have a helmet hanger comprised of a 3/4" nickel-plated "D" ring and a stainless steel clip. The helmet hanger shall be attached to the center rear of the brim.

### IMPACT CAP:

The impact cap is designed to help provide increased thermal, penetration and impact protection. The impact cap shall be a rigid cell, high temperature urethane foam cap that covers the entire inner crown of the helmet. This impact cap is held into the crown by the suspension clips. It is removable for inspection and replacement.

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<sup>1</sup> Available on white helmet shells only



#### **HEAD SUSPENSION:**

The MSA Cairns Structural 360S Fire Helmet suspension system shall be comprised of a four-way strap crown suspension. The crown suspension straps shall be firmly locked into the shell lugs and shall be made of 3/4" wide nylon webbing. A 1/4" cross linked polyethylene foam crown pad is attached to the overhead straps.

#### **SIZING ADJUSTMENT:**

Sizing adjustment shall be by means of a ratchet adjustable headband that is attached to the suspension system clips by four anchor clips. The ratchet arms shall be adjustable to three positions so that the angle of the ratchet may be set to accommodate the wearer's head. The headband height shall be adjustable at the front of the helmet via a hook and loop system to provide additional comfort to the wearer or to optimize the helmet's fit when wearing a Self-Contained Breathing Apparatus (SCBA) facepiece. The sizing adjustment range shall be size 6 3/8 through size 7 3/4.

#### **COMFORT LINER:**

The MSA Cairns Structural 360S Fire Helmet shall have a removable comfort liner, consisting of a headband cushion and a ratchet pad. Both components made of a foam-core laminate system, comprised of a soft black flame-resistant flannel material against the user's head backed by a soft loop material secured to the headband and ratchet with hook fastener. The comfort liner is machine-washable. It can easily be upgraded to a standard flannel or deluxe leather-lined version.

#### **CHINSTRAP:**

The chinstrap shall be constructed of two pieces of 3/4" wide black soft Nomex webbing which are connected by a quick release buckle system constructed of high temperature, durable nylon. Each end of the chinstrap assembly is attached directly to the helmet via two protrusions that are molded into the helmet on the lower side brims. An optional postman's slide shall be available. Extended length chinstraps shall be available.

#### **EAR/NECK PROTECTION:**

The MSA Cairns Structural 360S Fire Helmet provides for ear and neck protection with a 6.5" wide, 19.0" long, full-cut earlap. The double-layer earlap consists of a 4.5 oz. / yd., yellow or black colored Nomex outer layer, and a flame resistant black flannel inner layer. The earlap shall be secured to the shell by pieces of hook and pile fastener in no fewer than five (5) locations.

The earlap is machine washable and can be easily upgraded to a PBI/Kevlar or a blood-borne pathogen-resistant earlap. The ear and neck protector shall be removable without interfering with the overhead strap assembly in any way and without removing any part of the helmet suspension.

Earlaps with under-chin extensions shall be available.

#### **RETRO-REFLECTIVE TRIM:**

The helmet shall have three bar-shaped pieces of retro-reflective, fluorescent Reflexite trim around the exterior of the crown of the helmet shell. There shall be two additional pieces of bar-shaped Reflexite trim on the front of the top of the helmet for maximum daytime and nighttime visibility. Red-orange and lime-yellow retro-reflective, fluorescent Scotchlite bars is also available.



Blue or white Reflexite trim shall be available. (NOTE: Blue or white Reflexite trim is not compliant to NFPA 1971.)

**EYE PROTECTION OPTIONS:**

| <i>Name</i>             | <i>Description</i>   |
|-------------------------|--|
| Faceshield and Hardware | <p><i>Faceshield</i></p> <p>The faceshield shall be a wrap-around, high pivot design, 4.5” wide, 18.9” long and 0.150” thick. The lens material shall be high performance, high-temperature, impact-resistant thermoplastic. The lens shall be coated with a scratch resistant coating on both inner and outer surfaces to protect the lens from abrasions.</p> <p><i>Hardware</i></p> <p>The faceshield shall be mounted to the helmet shell by means of two (2) glass-reinforced, high-temperature and flame-resistant thermoplastic bracket assemblies, with adjustable thermoplastic knobs one (1) on either side of the helmet shell. The brackets allow the faceshield to be raised above the helmet shell when not in use.</p>              |
| Goggle System           | <p>The goggle system shall be comprised of a high-temperature, flame- and impact-resistant goggle lens and frame, a flame-resistant, elastic goggle strap, and a goggle retention system. This retention system will lock the goggle onto the helmet at the back brim, preventing loss of the goggle when either stowed or donned. Both inner and outer surfaces of the goggle lens will have an anti-scratch and anti-fog coating. Both ends of the lens will be reinforced with a fiberglass insulating label for extra durability at elevated temperatures. The lens will be low profile, optically correct with a nominal thickness of 1/16”. The goggle strap will require a one-time adjustment to facilitate donning if wearing gloves.</p> |

**OPTIONS:**

A full range of fire helmet accessories, such as customizable front pieces, is available. Please see the MSA Cairns Fire Helmet catalog and/or contact an MSA representative.

**MAINTENANCE, REPAIR and RETIREMENT:**

Proper maintenance, repair, and retirement of the helmet can be found in the MSA Cairns Fire Helmet Owner’s Guide and on our web site (MSASafety.com). Users should also refer to NFPA-1851 (current edition) regarding proper inspection, maintenance, repair schedules, and retirement requirements for structural firefighting helmets. Upon the customer’s request, an MSA representative will conduct training explaining the proper maintenance, repair and retirement of MSA Cairns Fire Helmets.

**CONTACT INFORMATION:**

For additional information on MSA Cairns products, please contact MSA Customer Service at 1-877-MSA-FIRE or visit us on MSAfire.com.