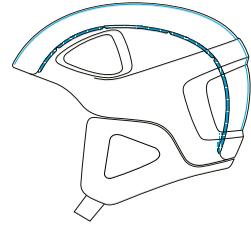


POC Helmet Concepts & Technologies

DIFFERENT HELMET CONCEPTS & TECHNOLOGIES FOR SEVERAL DIFFERENT NEEDS

ARAMID IN-MOLD HELMETS

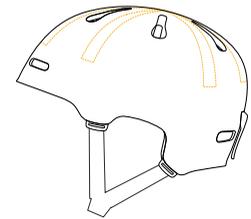


An **in-mold** helmet construction is very lightweight, but lacks penetration resistance due to the thin shell. By molding a sheet of aramid to the core, the low weight is maintained while the protection is radically improved.



SYNOPSIS

ARAMID BRIDGES



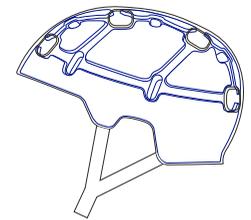
By molding **aramid bridges** to the core of the helmet, the impact forces are spread over a larger surface. At the same time the helmet gains structural stability through the bonding of the unbreakable aramid weave

and the **EPS liner**, which allows for a very lightweight helmet with a high level of protection.



FORNIX FORNIX BACKCOUNTRY MIPS FORNIX COMMUNICATION

VDSAP



POC's patented **VDSAP** system (**Ventilated Double Shell Anti-Penetration**) is built on two ventilated shells that are placed offset for maximum protection against penetration from sharp objects, while maintaining good

airflow and ventilation. The safety performance of this construction is amazing and represents a unique take on helmet design.



RECEPTOR BUG RECEPTOR BUG ADJUSTABLE RECEPTOR BACKCOUNTRY MIPS RECEPTOR + RECEPTOR COMMUNICATION

MIPS

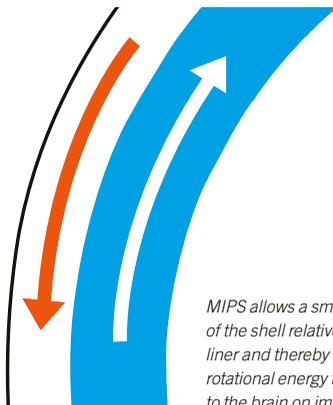
Protection system:



MIPS stands for **Multi-directional Impact Protection System** and is used to reduce the rotational forces to the brain in the case of an oblique impact. A normal helmet is created to absorb vertical impacts very efficiently, but is not as good at the rotational forces. When subjected to an oblique impact, the MIPS system absorbs these forces by allowing a small rotation of the outer shell relative to the liner.



FORNIX BACKCOUNTRY MIPS RECEPTOR BACKCOUNTRY MIPS CORTEX DH

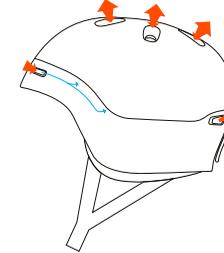


MIPS allows a small rotation of the shell relative to the liner and thereby reduces the rotational energy transmitted to the brain on impact.

POC Helmet Concepts & Technologies

DIFFERENT HELMET CONCEPTS & TECHNOLOGIES FOR SEVERAL DIFFERENT NEEDS

SUPER VENTILATED HELMETS



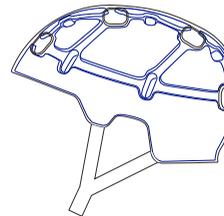
By studying the airflow inside the helmets, POC has been able to create super ventilated helmets with adjustable and optimized ventilation depending on the conditions. The combination of **goggle vents**, **chimney**

vents, **VDSAP** and **adjustable vents** makes the helmets very ventilated, with a maintained low weight and a high level of protection.



FORNIX FORNIX BACKCOUNTRY MIPS FORNIX COMMUNICATION FRONTAL

MULTI-IMPACT HELMETS



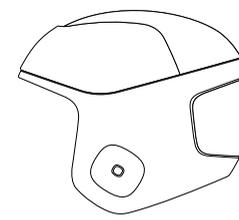
Most helmets today have liners made of EPS (Expanded Polystyrene), a great shock absorbing material, but it will be permanently compressed when absorbing an impact, even a minor one. Using

multi-impact **EPP (Expanded Polypropylene)** as core material creates a helmet that will protect your head over and over again.



ALL SKULL HELMETS RECEPTOR BACKCOUNTRY MIPS RECEPTOR + CORTEX DH SKULL ORBIC COMP SKULL ORBIC X SKULL ORBIC COMP H.I. MIPS

MULTI-IMPACT DEFLECTOR PANEL



Through examining helmets used by World Cup alpine racers, we identified that they were worn out in the front caused by repeated impacts from the gates. The violence was more severe than we had ever imagined and the discovery led us to developing the **Multi-Impact Deflector Panels**, featured in the new line of **Skull Orbic helmets**. Our deflector panels decrease the transmitted force of the impact, and increase the shock absorbing capacity of the helmets. This ensures that the helmet performance remains at the highest level when it's really needed: in a real crash. In the deflector panel of the **Skull Orbic Comp**, we integrated our patented **VPD 2.0** that has extreme impact absorbing properties, proven very efficient for repeated impacts in our body armor collection. The **Skull Orbic X** deflector panel is made of **multi-impact EPP material**.



SKULL ORBIC COMP SKULL ORBIC X SKULL ORBIC COMP H.I. MIPS



ICE stands for In Case of Emergency and is recognized all over the world. POC ICE is a proactive effort to provide emergency personnel with correct medical history such as blood group, allergies and basic information like name and emergency contact, even if the victim is unconscious.

Through POC's dedication and commitment in developing groundbreaking personal protection, we often end up in new areas of expertise depending on the challenge. Our collaboration with some of the best minds in science, health and technology has allowed us to push the boundaries and to be at the forefront of safety.

Unfortunately, accidents do happen, and with POC's mission to do everything we can to possibly save lives

and reduce the consequences of accidents, we have looked at new ways to promote safety.

Helmet, body armor and goggle constructions and design are critical elements in accident safety but studies has also shown that if we could minimize the time before the victim receives help and provide information needed for correct medical care, we could potentially limit the consequences of accidents.

This innovative approach has led to the two components of POC ICE, promoting the idea of digital safety. We have teamed up with ICEdot to provide a system composed of an identification tag and crash sensor, helping the rider to get immediate and necessary medical care in case of emergency.

ICE TAG

If an accident occurs and the rider is knocked unconscious, scanning the identification tag will allow emergency personnel, or passers-by, to identify the victim and get correct medical information such as blood group or allergies that can be vital for correct medical care.



ICEDOT CRASH SENSOR

When paired with the ICEdot smart phone app, the crash sensor is able to detect motion, changes in forces and impacts. In the event of critical forces, the device triggers the app to send a message with your GPS position to your pre-selected contacts, unless you stop it within a user defined time interval. This will let your family or friends know you might need help.



The H.I. Sensor monitors impacts and severe deformation of the liner and alerts when it's time to replace your helmet.

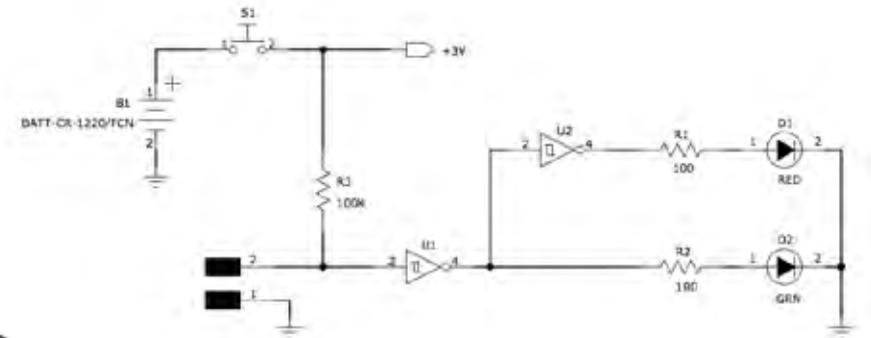
A traditional liner made of EPS (Expanded Polystyrene) absorbs energy by plastic deformation, which is permanent, meaning that the helmet must be replaced after the first impact.

A multi-impact liner made of EPP (Expanded Polypropylene) recovers its shape and most of the impact protection after a crash and can withstand numerous impacts without having to be replaced. The challenge with EPP is to know when the liner is worn out. Internal damage to a helmet may not be visible to the user but might compromise the helmets performance in a crash.

To take fully advantage of the multi-impact EPP we have integrated the H.I. Sensor, which is a digital device that monitors impacts and severe deformation of the liner. The sensor makes it possible to detect damage and ensure that the integrity of the helmet is maintained and that the helmet will provide sufficient protection in a crash.

The H.I. system consists of stress-strain sensors distributed over the helmet liner that record, collect and memorize any deformation. The severity and history of the impacts are calculated and stored in the device.

If one or a combination of impacts exceed the pre-defined level, an indicator light turns from green to red meaning that the helmet is not recommended to use and should be replaced.



The H.I. Sensor is featured in the Skull Orbic Comp H.I. MIPS. Read more on pages 24-25.