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Service & Customising of:

- * Harley Davidson
- * Motocross bikes
- * Suspension & Engine Tuning
- * Australia's No.1
- Dirt / Motocross engine builder
- * Hot up & servicing of all Japanese bikes



Our Product: Shark RS4 Pro Race Helmet

- **SHELL:** *The structure of the helmet is made from, Carbon/aramid (Kevlar) multidirectional composite fibres. To handle the toughest conditions in RACING.*
- **VISIOR:** *Dual treated Anti-fog/Anti-Scratch “TOTAL VISION” Formula 1, 3mm injected Race Visor.*
- *Very High Ventilation Flow*
- **NOMEX** *Fire Proof Inside Comfort Padding*
- *Quick Release Visor System using 4 Anchorage Points and Lock Mechanism.*
- *Multi Element Internal Shock-Absorber with Differentiated Density.*
- *Snell SA 2005 Approved also, Fia Hans Approved*
- **WEIGHT:** *1,200 g*
- *Double D-ring Aramid(Kevlar) Racing Chin Strap*
- **WARRANTY:** *5 years*

Sharks Research:

To minimize a potential injury to the brain the helmet must absorb the maximum amount of energy in the minimum amount of time during the first impact in one spot.

Shark has developed better ways to optimize absorption of impact energy. Through Sharks research they have found that speed at impact together with mass defines total energy, the angle of the impact defines the potential reach of energy to the head and the surfaces giving and receiving the impact will modify the angle.

Sharks concept is optimized rapid deceleration and impact absorption management to minimize potential brain injury.

Through Sharks racing experience and testing they have made their racing helmets to have - outstanding safety - excellence in comfort and venting - optimum optical performance across a range of conditions (night, rain, fog) - best possible weight and balance - aerodynamics and noise reduction.

Sharks Concept:

As opposed to a solid liner of Eps (Expanded Poly Styrene) foam or even one with variable densities, Sharks research has led to the development of the Fin-Shock structure EPS liner. The Fin-Shocks collapse, compress and flex during impact absorbing more energy with more precision than a solid piece. The Fin-Shocks absorb and distribute the impact energy through the controlled deformation and thus minimize the amount of impact energy reaching the brain.

Sharks internal shell is made in separate parts with different densities in order to be able to control by weight their hardness individually. Each area requires different density parts according the each position.

Shark has made a balance between the inner and outer shell. Where the outer shell is harder, the inner shock absorber must be softer. Where the shape makes the shell more flexible (eg. visor aperture) the inner shock absorber must be more rigid. Shark uses the right structure and combination to achieve this balance choosing between glass, carbon, aramid fibres (Hi-Tech line) and thermoplastic resins (performance line).

SIZING

XS - 53/54

SM - 55/56

MD - 57/58

LG - 59/60

XL - 61/62

XXL - 63/64



- * Highest CFM Gains in Record
- * Better Fuel / Air Delivery
- * Used By Factory Car / Race / Off-Road / MX Teams
- * Repeated Accuracy as No Hand Porting all Computerized



APL Performance Bikes
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HI-TEC: composite fibers



Fibres that hold and distribute impact energy:

PERFORMANCE: injection molding



Varied thickness improve performance:

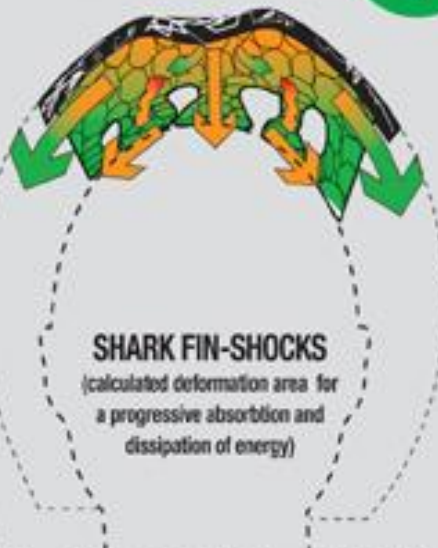
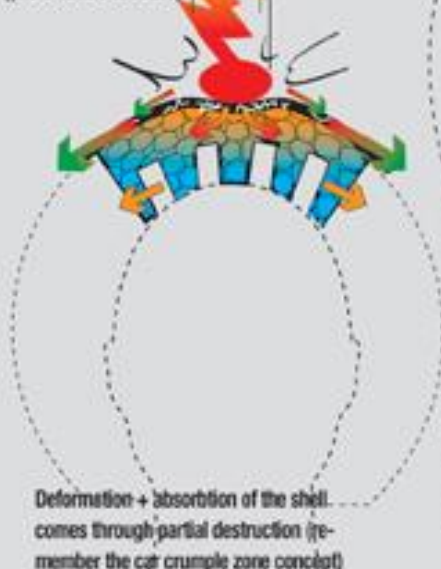
Shark uses a combination of long, short, and multi-axial fibers (for the Shark Hi-Tec range) to optimally spread energy over a larger surface area. Through greater flexibility of the entire shell, energy absorption is improved.

As a helmet shell does not react the same in all places (due to shape variation), SHARK uses variable thickness of shell material in different part of the shell.

SHARK HELMETS TEC-SHELL outside & FIN-SHOCKS® inside



SHARK TEC-SHELL
(more flexible structure)



The Shark Tec-Shell and Fin-Shocks, working like the crumple zones in automotive construction, absorb and distribute the impact energy through their controlled deformation and thus minimize the amount of impact energy reaching the brain.

Deformation + absorption of the shell comes through partial destruction (remember the car crumple zone concept)

SHARK HELMET CONCEPT

TEC SHELL OUTSIDE + FIN-SHOCK INSIDE

SIMPLE OUTSIDE, COMPLEX INSIDE:

3 TEC-SHELL

Different structure for different areas:

Shark is making a balance between outer and inner shell. Where the shape of the shell makes it harder, the inner shock absorber must be softer. Where the shape makes the shell more flexible (i.e. visor aperture), the inner shock absorber must be more rigid.

Shark uses the right structure & combination to achieve this balance, choosing between glass, carbon, aramid fibers, (Hi-Tec line) and thermoplastic resins (Performance line). Shark develops also new shapes of shock absorber to optimize their efficiency.



1 SHARK FIN-SHOCKS, a SHARK development

As opposed to a solid liner of EPS (Expanded Poly Styrene) foam, or even one with variable densities, SHARK's research has led to the development of the Fin-Shock structure EPS liner.

These innovative »FIN-SHOCKS« that differ from other helmets, collapse, compress and flex during impact, absorbing more energy with more progressivity, and more precision than a solid piece.

2 Multi-piece internal shock absorbing structure

SHARK chooses not to make the foam internal shell in one multi-density piece, but in separate parts of different densities in order to be able to control by weight their »hardness« individually. Each area requires different density parts according to each position.

This notion is given by two datas:

- The deceleration in «g» ($1g = \pm 9,8 \text{ m/s}^2$)
- The H.I.C. (Head Injury Criteria) integrating deceleration and duration

DECELERATION RECEIVED TOO HIGH



g LIMIT EXCEEDED



DURATION OF ABSORPTION TOO LONG



H.I.C. EXCEEDED



OPTIMISATION OF DECELERATION AND DURATION



OK



VERY RIGID OR MORE FLEXIBLE STRUCTURES?



Impact management involves dissipation of impact over a larger area coupled with flexible absorption of energy.



Recent development in automotive safety incorporate crumple zones to dramatically improve crash management. Rather than a rigid structure, an effective design takes the energy into the structure to reduce the deceleration energy reaching the body. Helmet safety works by following the same principle.