



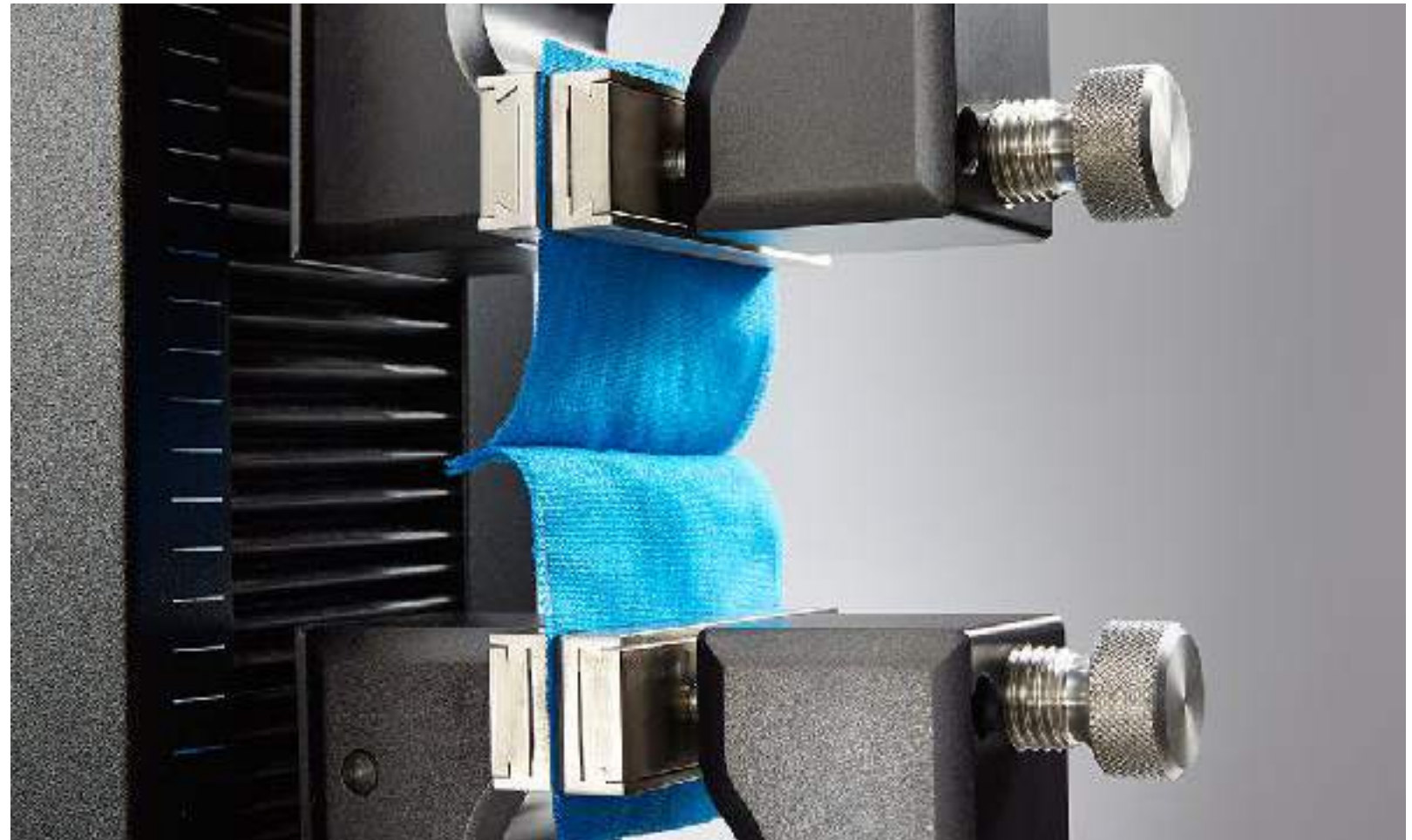
FUTURE SOLDIER TECHNOLOGIES

TURKCHEF SAVUNMA

DESIGN PHILOSOPHY

Soldier-centered design is the core of TURKCHEF SAVUNMA's engineered combat gears. One of the basic tenets of our design process is to "know the user". Usability engineering which entails closely integrating design and evaluation through incremental development and iterative refinement of a system based on soldier input and feedback, is another critical component of a soldier-centered design process.

Soldier survivability is a function of protection and other relevant operational factors, such as situational awareness, mobility, and lethality. Throughout history, helmets and body armor have protected soldiers from injury but often at the cost of increased weight, reduced mobility, and reduced situational awareness. These tradeoffs remain relevant today. TURKCHEF SAVUNMA's soldier centered design allowed us to improve soldier survivability by optimizing body armor and helmet design. This includes improving protection in key areas such as mitigating blast-induced brain injury, and reducing weight in other areas such as torso body armor, increasing mobility. TURKCHEF SAVUNMA is working also emerging technologies such as weight distribution systems, exoskeletons/exosuits, have the potential to dramatically improve soldier survivability. In some cases, these technologies have the potential to fundamentally change a 3,000-year-old dilemma for



All combat gear raw materials are rigorously tested at TURKCHEF SAVUNMA laboratories from development stage to final delivery.

foot soldiers in war: Their weapons and armor are limited by what they can carry into battle. Emerging technologies could potentially change this dynamic by:

- Reducing the weight of soldier equipment, increasing mobility;
- Increasing or augmenting soldier strength, allowing them to carry more weight without sacrificing mobility;
- Off-loading soldier weight; or

- Finding ways to improve soldier survivability and performance without adding additional weight.

TURKCHEF SAVUNMA combat gears have been tested by end users over a period of time to make corrections on the products during development stage. They are also tested at biomechanics laboratory to compare various biomechanics, physiological and cognitive variables that reflect the stress exerted by the system in a more controlled manner.

Product Range

Combat Platform



Combat Shirt, Combat Pant



Tactical Vest, Plate Carrier, Armor Carriers



Soft Armor



Hard Armor



Product Range

Combat Platform



Headborne Systems



Belt, Pouches, Holsters



Backpacks, Wheeled Carriers,
Hydration Systems



Joint Protection



Combat Shirt

- Full flame-resistance construction
- Ventilation zippers on the upper sleeve area
- Ergonomiz sleeves, easy to roll up
- Abrasion resistant and fast drying knit fabric in the torso area
- Anti-odour Cooling fabric in the armpit area
- 2X large upper arm pockets with Velcro and an additional strap for easy opening
- 2X lower arm pockets with elastic straps inside the pocket and Molle on top of the pocket
- Soft lined inside collar
- Sleeve with regulation
- Side in pockets for elbow pads



Combat Pant

- Pocket configuration:
 - 2X Front pockets
 - 2X Back pockets
 - 1X Safety pocket
 - 2X Multi-functional, two-way access side pocket with elastic retentions
 - 2X Thigh pocket with a tuck-lock retention system
 - 2X Mag / knife / marker pocket
 - 2X Large lower leg pockets
- Dynamic stretch fabric in the upper back and buttocks
- Stretch inserts in the waistband
- Ergonomic 3-layer knee protection system lined with moisture wicking material
- Knee width adjusters
- Width-adjustable lower leg area
- Double zipper pull fly
- Inner zipper for detachable WINDSTOPPER® lining
- Nylon 6,6 fabric reinforced instep and knees
- Boot hook



Armor Carriers

- Turkchef Savunma property composite fabric for outer vest
- Padded cushions made of breathable 3D airmesh fabric for optimal ventilation and comfort
- 4 way stretch durable fabrics for hard armor plate pockets
- Lighter weight less bulky laser cut vests
- Innovative Quick Release systems
- Padded plate backers with shape memory foam
- Integrated kangaroo pouches for magazines
- Weight distribution systems
- Hydration compatible systems
- Detachable D rings for weapon slings
- Removable collar, throat, groin and bicep protection parts
- Low profile drag strap



Armor Carriers



Armor Carriers



Soft Armor

Lightweight soft armor materials developed by TURKCHEF SAVUNMA independently are made from copolymer aramid fiber or UHMW Polyethylene fibers together with special nonmaterial filled resin. They are produced into sheetlike material in rolls by our proper technology. With lower areal density and better wearing comfort, the materials are mainly used in lightweight body armor solutions. TURKCHEF SAVUNMA has special spreading and impregnation technology that allows us evenly layered homogeneous fabrics at very low weights. This is significant because to stop fine fragments efficiently (here we refer to “areal density” mass {kgs or lbs} per area {m² or ft²} with low areal density systems (often referred to as higher performance systems) you need to wrap the fragment in fine filaments / yarns as its hitting the armour system to stop it cutting through whilst dissipating the energy as fast as possible across the armour system. The more filaments & greater their density combined with more yarns and & greater their density the lighter the armour system can be. However as the size of the



Depending on customer client, TURKCHEF SAVUNMA is able to develop hybrid soft armor solutions to meet target price, weight and ballistic protection requirements.

increases you also need to have thicker yarns to stop their penetration, so thicker yarns (higher tex) such as 30 tex are also used. This is a gross over simplification but it does enable you to see why asymmetric complex systems are more efficient / higher performance. Fabrics are given a water / solvent repellent treatment by nanotechnology so that they are minimally effected

ballistically by exposure to oils, hydraulic fluids and water.

- Off the shelf solutions for;
 - FQ-PD 07/05: 3,2 kg/m²
 - 40-42 layers of ArTx82

Soft Armor

TURKCHEF SAVUNMA has developed the worlds lightest body armour – providing resistance to bullet, fragment, spike & knife threats. TURKCHEF SAVUNMA has worked extensively with governments and major international brands to provide materials and develop protective systems. TURKCHEF SAVUNMA fabrics are now in service in a wide range of the lightest protective garments sold by the worlds leading body armour companies.

RFK/1 SOFT ARMOR PACKAGE

Ballistic Standard	NIJ 0101.06
Protection Level	IIIA
Areal Density (kg/m2)	4,2
17 gr. FSP V50 (m/s)	600

RFK/2 SOFT ARMOR PACKAGE

Ballistic Standard	NIJ 0101.06
Protection Level	IIIA
Areal Density (kg/m2)	5,2
17 gr. FSP V50 (m/s)	600

RFK/3 SOFT ARMOR PACKAGE

Ballistic Standard	NIJ 0101.06
Protection Level	II
Areal Density (kg/m2)	2,7
17 gr. FSP V50 (m/s)	550

RFK/4 SOFT ARMOR PACKAGE

Ballistic Standard	GOST R 5074495
Protection Level	BR1
Areal Density (kg/m2)	2,4
17 gr. FSP V50 (m/s)	500

RFK/4 SOFT ARMOR PACKAGE

Ballistic Standard	NIJ 0115.00 and NIJ 0101.06
Protection Level	KR1 + NIJII
Areal Density (kg/m2)	5,6
17 gr. FSP V50 (m/s)	500

Hard Armor

Using next generation UHMW polyethylene fabric together with carbon fiber reinforcement at the backing and state of art hot presses boron carbide ceramics at the strike face, TURKCHEF SAVUNMA has the lightest hard armor plates in the market.

SAPI CUT MULTICURVE LEVEL IV PLATES

Size	Dimension (mm)	Thikcness (mm)	Weight (kg)
S	222*298	27	1,9
M	241*318	27	2,2
L	260*337	27	2,6
XL	279*356	27	3

SAPI CUT MULTICURVE LEVEL III PLATES

Size	Dimension (mm)	Thikcness (mm)	Weight (kg)
S	222*298	27	0,9
M	241*318	27	1
L	260*337	27	1,2
XL	279*356	27	1,4

SAPI CUT MULTICURVE LEVEL III+ PLATES

Size	Dimension (mm)	Thikcness (mm)	Weight (kg)
S	222*298	27	1,4
M	241*318	27	1,6
L	260*337	27	1,9
XL	279*356	27	2,2



Headborne Systems

Helmet manufacturing has not evolved since the mid-80s with companies relying on material innovation to reduce helmet areal density. DMTC, has adopted a radically new automated manufacturing process which can produce helmets without splices in a single step. This enables dramatic improvements in weight, v50, backface deformation, structural performance and quality control. Furthermore, due to the high level of automation in the TURKCHEF process, TURKCHEF SAVUNMA is the only manufacturer in the world capable of producing a standardised product, significantly reducing potential defects and the potential for helmet failure. Spliceless shell construction enables a lighter, stronger, tougher and safer helmet

- World's Lightest UHMWPE combat helmet with an areal density of 6.1 kg/m². Large ACH weight of just 1kg
- World's safest UHMWPE helmet with an average backface of sub 13mm deformation.
- Automated manufacturing process with postprocessing X-Ray and build sheet offer industry leading quality control
- Weight and performance beyond what traditionally seen in UHMWPE, while improving cost efficiency



TURKCHEF SAVUNMA boltless helmet solution

- Ergonomically designed impact absorbing pads offer unparalleled levels of comfort and protection
- Exceeds NIJ IIIA specifications and BS EN 397 requirements. Compliant with AR/PD 10-02, ss 9: 1992 and MIL-DTL 64159B
- Designed for performance and comfort, the tactical high cut and mid cut offer an unrivalled level of protection against ballistic penetration and fragmentation for its weight, with a shell areal density of 6.1 kg/ m².

Our helmets are also designed to offer maximum manoeuvrability, an unobstructed view and uninhibited movement when wearing most ballistic vests and collars, all while allowing maximum coverage and protection. A world-class helmet, leading the industry for weight, performance and quality.

Helmets



TURKCHEF GEN III	
Material	Aramid
V50	680 m/s
Backface	< 9,8 mm
Areal Density	7,7 kg/m2
Coverage	1063 cm2
Weight	1,19 hg.



TURKCHEF GEN IV	
Material	UHMW PE
V50	700m/s
Backface	13 mm
Areal Density	6,1 kg/m2
Coverage	1063 cm2
Weight	0,9 kg.



TURKCHEF LW ACH	
Material	UHMW PE
V50	732m/s
Backface	13 mm
Areal Density	6,1 kg/m2
Coverage	ACH Medium Size
Weight	1,1 kg.



TURKCHEF ACH	
Material	ARAMID
V50	AR/PD 14-01
Backface	16 mm
Areal Density	9 kg/m2
Coverage	ACH Medium Size
Weight	1,35 kg.



TURKCHEF RPH (RIFLE PROTECTION)	
Material	UHMW PE
V50	< 1000 m/s
Backface	< 9 mm
Areal Density	10 kg/m2
Coverage	ACH Medium Size
Weight	1,5 kg.



TURKCHEF TACTICAL	
Material	PLASTIC/ COMPOSITE
V50	NON BALLISTIC
Impact Protection	AR/PD 10-02
Coverage	FAST
Weight	0,65 KG.

Helmet Accessories



7 PAD SUSPENSION AR/PD 10-02



DIAL LINER SUSPENSION



WORM LUX LINER SUSPENSION



EPIC AIR SUSPENSION



COMFORT PLUS SUSPENSION



H NAPE RETENTION



LWH RETENTION



RAIL KIT



3 HOLE SHROUD P/N



NIGHT VISION MOUNT



RAIL ADAPTER KT



TACTICAL HELMET LIGHT



EX262 MANTA STROBE



HD RAIL ADAPTER



COUNTERWEIGHT POUCH



BATTERY POUCH



EAR UPARMOR PART



AK47 RIFLE PROTECTION ADDON PART



HELMET MANDIBLE GUARD



HELMET VISOR



TACTICAL HEADSET



HELMET COVERS



HELMET BAGS

Belts, Pouches, Holsters



TURKCHEF TACTICAL BELT G1



TURKCHEF TACTICAL BELT G2



TURKCHEF TACTICAL BELT G3



TURKCHEF TACTICAL BELT G4



TURKCHEF TACTICAL BELT G4



MEDICAL POUCH



5.56 POUCH



HTI MAGAZINE POUCH



5.56 + 9 MMX2 POUCH



GRENADE POUCH



SMALL RADIO POUCH



BIG RADIO PUCH



DUMP POUCH



GENERAL PURPOSE POUCH



NOMAD PADDED POUCH

Belts, Pouches, Holsters



GENERAL PURPOSE POUCH



PISTOL MAGAZINE POUCH



M16 X3 MAGAZINE POUCH



X3 M4 MAGAZINE POUCH



X3 MP7 MAGAZINE POUCH



UIVERSAL MAGAZINE POUCH



TOURNIQUET HOLDER



SFD RESPONDER KIT POUCH



FLASHBANG POUCH



POLYMER MAG POUCH



HOLSTER



HOLSTER



HOLSTER



HOLSTER



HOLSTER

Backpack, Wheeled Carriers



EASY ACCESS BACKPACK



MODULAR PACK 45



ASSAULT PACK 12



MEDIC ASSAULT PACK



45 L. ASSAULT PACK



FAST PACK



VEST PACK



70 L BACKPACK



BELTSPINE FOR BACKPACK



DYNAMIC WEIGHT DISTRUBUTION



TRANSPORTER BAG WITH WHEEL



TRANSPORTER BAG WITH WHEEL



TRANSPORTER BAG WITH WHEEL



RIFLE BAG



RANGE BAG

HYDRATION SYSTEM

High performance 3L hydration reservoir system. Exclusive 3 layer coextruded Polyethylene construction with Taste-Free™, low maintenance, Glass-Like™ liner. Integrated Grunge-Guard™ antimicrobial

TASTE-FREE™ System

Co-extruded PE film retains pure liquid taste with no plastic flavor. BPA and phthalate free.

Grunge-Guard™ Technology

Inhibits bacteria growth on reservoir and drinking tube surfaces for the life of the system. Technology utilized FDA-approved and EPA-registered antimicrobial agent.

Easy Care & Low Maintenance

For use with water, clean by simply rinsing the system and hanging it opened until dry. For use with energy drinks or sweetened liquids, follow the cleaning instructions in the attached care and maintenance booklet.

Hi-Flow Storm-Valve™ No-bite, push-pull valve with integrated shut-off mechanism. Like drinking with a straw. Easy disassembly for cleaning

Angled Valve Turned 360 degrees for perfect valve/mouth orientation. Allows tube to be 25cm shorter. Less excess tube bouncing around the chest!

Dirt-Shield™ Protective Cover – No more dragging in the dirt! Keeps valve free of dirt and protected.

QMT™ Additional In line QMT™ Quick Connector at the tube extremity, allows connection of filter, UTA™ or other accessories with the push of a button.

CoolWeaveCoverTube Insulates and blocks UV-light. Water stays cool and Inhibits bacteria growth from first to last sip.





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SAVUNMA
