

Dow Corning introduced new active protection system product lines

Dow Corning Corporation, a leader in innovative silicone technology for the textile industry, has added two new product lines to its Dow Corning® brand Active Protection System family of impact protection materials. The S-Range is based on 3D spacer textile technology while the TP-Range is based on thermoplastic technology.

The two new lines were recently introduced at Techtexsil 2009 in Frankfurt, Germany. First launched in 2006, the patented silicone-based impact protection materials are comfortable and breathable.

"Since the successful introduction of the Active Protection System several years ago for motorcycling applications, our scientists have worked diligently to develop materials for additional applications based on feedback from our customers," says Liz Mallen, Dow Corning Active Protection System Program leader. The new products – seven in total – are flexible, breathable, washable and offer great impact protection. Overall, designers are getting far more choices.

Unlike bulky hard-armor systems, Dow Corning Active Protection System technologies are very comfortable to wear in terms of fit, freedom of movement and breathability. They can be incorporated directly into products to shield against high-energy impacts, delivering outstanding protection and, for apparel applications, comfort for the wearer.

The new platforms are very different product forms but both are based on the unique properties of silicone. Supplied on rolls, Dow Corning Active Protection System products can easily be cut into desired shapes and built up in layers to maximize protection where needed. The products also can be incorporated into garments and accessories easily.

"The focus of our research was to offer our customers more product options in the key areas of material comfort, protection, weight, thickness and washability," explains Mallen. Most of the new Dow Corning Active Protection System products can withstand more than 50 washes at 40°C (104°F) and more than 25 washes at 95°C (203°F) with no decrease in performance.

"Another important aspect of our work in developing these new platforms

was tailoring the materials' energy-absorbing properties to different types of impacts while maximizing comfort levels," adds Mallen. "The new product choices are softer, lighter and more aesthetically pleasing than first-generation materials and meet a variety of international impact protection testing standards."

S-Range fabrics can be cut into different shapes and sewn into garments or pockets. Three-dimensional shapes can be created to protect areas such as knees, elbows or shoulders. The S-Range features three new products:

- ❖ **Dow Corning® Active Protection System S7-005** is recommended for protection against high-impact collisions, like those experienced in motorcycling or snowboarding, as well as medium-energy collisions. With good breathability and washability, this material is well-suited for base-layer garments, especially in combination with COOLMAX® fabrics.
- ❖ **Dow Corning® Active Protection System S7-007** offers slightly lower levels of protection than S7-005, and is both lightweight and very soft. S7-007 is excellent for garments worn close to the skin for long periods of time or when the wearer exerts energy and builds body heat such as during extreme activity. Examples include base-layer apparel for sports, emergency services, medical and military applications.
- ❖ **Dow Corning® Active Protection System S5-004** is designed for garments or equipment exposed to low-level impacts like those from kicks or blows in sports such as soccer or martial arts. Light, breathable and washable, this product works well in products such as shin guards.

The **TP-Range** allows significant customization in regard to appearance, comfort and level of protection. Products are

currently available in two thicknesses either with or without perforations.

The nonperforated versions allow designers to customize hole patterns to achieve the desired appearance and level of performance. Different surface effects can be achieved, allowing for some very exciting-looking products.

Three-dimensional shapes with smooth, tapered edges can be created by post-thermoforming. The TP-Range features four base products:

- ❖ **Dow Corning® Active Protection System TP3-001** is 3 mm thick and weighs 1.2 kgm⁻². It comes perforated to allow airflow and to remove unnecessary weight.
- ❖ **Dow Corning® Active Protection System TP3-002** is the same as TP3-001 except without perforations.
- ❖ **Dow Corning® Active Protection System TP8-001** offers very high levels of protection. It is 8 mm thick, perforated and weighs approximately 3 kgm⁻².
- ❖ **Dow Corning® Active Protection System TP8-002** is the same as TP8-001 except without perforations.

The TP-Range products are well suited for body armor applications in sports and sport accessories such as soccer shin guards. The thinner TP-Range products like TP3-002 are ideal for use in protective cases and sleeves for sensitive equipment, and electronics such as laptop computers, cell phones, PDAs, MP3 players, cameras, etc. Other possible applications include personal protective equipment, footwear, luggage, medical devices, and military and civil defense.

For more information:
www.activeprotectionsystem.com ♦

