

Sewing Needles and Threads for Technical Textiles

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Abstracts

Technical textiles are being used increasingly for the replacement of traditional materials in challenging applications, and their potential end uses are becoming more diverse. As a result, manufacturers of needles and threads have been faced with the need to develop highly specified products. In order to cater to the requirements of the industry, many manufacturers of sewing needles tailor the geometry of needles to the demands of the technical textile which is being sewn. This report features detailed insight and analysis into: the anatomy of a sewing needle; sewing needles for technical textiles; coatings for sewing needles; expanded polytetrafluoroethylene (ePTFE) sewing threads for technical textile applications; sewing threads for use in high temperature applications; steel and carbon sewing threads; and innovative sewing threads for technical textile applications. It also features a wealth of information on innovative needles and threads developed by the following companies: 3M, Amann, American & Efird (A&E), AVS Industries (AVS), Cristex Thermal, Coats, Groz-Beckert, G?termann, Organ Needle, Polux, SageZander, Schmetz, Tekstil, Threads India, TIBTECH innovations, W.F. Lake, WL Gore & Associates and Worthington Industrial Products.

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Shank
Shoulder
Blade
Groove
Scarf
Eye
Point
Tip

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NY2 series of sewing needles
Schmetz
Serv 7 sewing needle
Groz-Beckert
MR sewing needle
Loop position control (LPC) lockstitch needle
SAN 5 sewing needle

COATINGS FOR SEWING NEEDLES

Schmetz
NIT anti-adhesive coating

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WL Gore & Associates
Rastex sewing thread

Gore Tenara

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Nextel 312 and Nextel 440 sewing threads

GT-15 and GT-23 sewing threads

AVS Industries (AVS)

E Fiberglass and S2 Fiberglass sewing threads

Twisted S2 Fiberglass & Stainless Steel, Twisted S2 Fiberglass & Inconel Steel and Cotton

Cover Stainless Steel sewing threads

Cristex Thermal

CT-2560D sewing thread

W.F. Lake

Quartz sewing thread

Polux

PTFE Coated Glass Fibre sewing thread

STEEL AND CARBON SEWING THREADS

Polux

PTFE coated stainless steel sewing thread

SageZander

Kevlar/steel and Twaron/steel sewing threads

TIBTECH innovations

Thermosew sewing thread

Tenax Carbon and carbon/PBO Zylon

INNOVATIVE SEWING THREADS FOR TECHNICAL TEXTILE APPLICATIONS

Amann techX range of sewing threads

Worthington Industrial Products

T505 High Tenacity Polypropylene sewing thread

Kevlar sewing thread

Homopolymer acrylic sewing thread

Anti-static polyester sewing thread

Coats

Nylbond sewing thread

Gral sewing thread

Threads India
High temperature fire retardant steel core thread
G?termann

100% M-ARAMID RANGE OF SEWING THREADS

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American & Efird (A&E)
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About

Technical textiles are being used increasingly for the replacement of traditional materials in challenging applications, and their end uses are becoming increasingly diverse. As a result, manufacturers of needles and threads have been faced with the need to develop highly specified products, according to Issue No 93 of Technical Textile Markets from the global business information company Textiles Intelligence.

Needles must be able to withstand the physical demands of the stitching processes used to manufacture technical textile products, and threads must maintain their integrity in the extreme environments in which many technical textile products are used.

In order to cater to the requirements of the industry, many manufacturers of sewing needles tailor the geometry of the needles they produce to the demands of the technical textile which is being sewn. They are also applying special coatings to sewing needles in order to improve their performance and enhance production efficiency.

For instance, Organ Needle's NY2 series of sewing needles helps to counteract the problem of skipped stitching. And in Groz-Beckert's MR sewing needle, the risk of needle deflection has been reduced through the use of a special blade and scarf geometry. Schmetz's Serv 7 sewing needle has a blade with a conical reinforcement which increases needle stability and helps to prevent the needle from deflecting.

In addition, titanium nitride coatings are used to strengthen the needle, and anti-adhesive coatings are applied to prevent substances from adhering to the needle during sewing.

Sewing threads which are designed to be used in technical textile applications must possess a number of important characteristics in order to ensure that they maintain their integrity under extreme conditions. Such characteristics include high strength and flexibility, as well as resistance to chemicals, high temperatures, fungi and mildew.

One example of such threads is Amann's K-tech range of threads made from tow spun para-aramid fibres. Another is Gore Tenara sewing thread by WL Gore & Associates. This is made using ePTFE fibre, making it highly resistant to UV light, extreme weather conditions and chemicals. Also, glass fibre is increasingly being used to manufacture sewing threads in order to provide resistance to extremely high

temperatures.

In the future, the proliferation of technical textiles will give rise to further opportunities for introducing greater innovation, higher quality and added value to needles and threads used in the manufacture of such textiles.

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