



INDIAN TECHNICAL TEXTILE ASSOCIATION

Report on

***2nd DEFENCE-ITTA JOINT
EXHIBITION CUM SEMINAR ON
TECHNICAL TEXTILE***

15th and 16th JUNE 2016

At

Ashoka Convention Hall,

Manekshaw Center,

Parade Road, Delhi Cantt- 110010

2nd DEFENCE-ITTA JOINT EXHIBITION CUM SEMINAR ON TECHNICAL TEXTILE held on 15th and 16th JUNE 2016 in DELHI.

The Indian Technical Textile Association (ITTA) in association with Indian Defence organized a two day Exhibition cum Seminar on Technical Textile on 15th and 16th JUNE 2016 at Ashoka Convention Hall at Manekshaw Center, Delhi. This is the second edition of the Defence-ITTA joint Exhibition cum Seminar on Technical Textile was attended by more than 250 delegates from both the Indian Army and the Technical Textiles and footwear Industry.

The exhibition showcased the entire technical textile and Footwear products developed by various manufacturers showing the possible improvements of the different products used by the Indian Army. Some of the prominent exhibitors are- Shiva Texyarn, Raymond, Garware, Kusumgar, Euro safety, Ardmel Group-UK, NTC, NITRA, CTM, Strata Geosystem, Prosafe, RSWM, Renfro India, Ferretero, etc. In addition, Indian Army, DRDO, BRO, OEF, OPF and other Departments displayed their entire range of products currently used by them.

SEMINAR

Session 1 – INAUGURAL SESSION

The two day seminar cum exhibition was inaugurated by Lt Gen Ravi Thodge, PVSM, AVSM, SM, VSM, Master General of Ordinance.



The initiation of the first event in Feb 2015 was his brain child along with the Indian Technical Textile Association (ITTA), which resulted into more Transparency, entry of new vendors with latest technology into defence supply. He expressed his happiness on

the achievements of the earlier interaction and wanting the scope to be widened with inclusion of Buildtech, Collective Protection, Meditech & footwear this year.

Smt. Anu Garg (IAS), Joint Secretary, Ministry of Textile, was the “Guest of Honour” She congratulated Lt. Gen. Thodge and the entire Defence Team for seizing this opportunity and to ITTA for organising the event. She informed that “Technical Textiles is a huge priority for the Govt. as on emerging sunrise sector, we want Technical textiles to get their rightful place in the overall basket. At present India represents only 3% of the global Technical Textiles Industry, less than 5% of the global



technical textiles production, 4% of the exports of technical textiles world over, Imports \$1.4bn worth of Technical Textiles, our per capita consumption of technical textiles is 1.7 kg viz-a-viz 10-12 kg in developed countries and Technical Textiles comprises only 11% of Indian textile industry as compared to 27% globally and 50% in some developed countries. Having said that, One can see possibilities for Make in

India, for import substitution, for export promotion & for increased consumption.” Govt. of India has taken several initiatives to harness this potential, such as in the recently launched Amended TUFs, Technical Textile has been identified as one of the four priority segment & 15% capital subsidy is being provided, schemes for promoting Agro-textiles & Geotextiles in the North East, recently duty rationalization for select specially fibres was announced.

Mr. Pramod Khosla, Chairman, ITTA, welcomed the delegates and highlighted that the 1st Defence ITTA Seminar had been highly successful resulting in close cooperation and indigination of large number if products. He also narrated the ITTA’s contributions during the last couple of years to the growth of various segments of Indian Technical Textile Industry and the objective of this seminar.



Dr. S. K. Sundararaman, Vice Chairman, ITTA, spoke about Defence-ITTA relationship. He also talked about ITTA being a group of more than 300 Technical Textile Companies has the capability to provide the required solutions to the Defence

Sector, the Joint Seminar cum Exhibition provided the necessary for a successful partnership between the Defence forces and the Technical Textile Industry.

Dr. Anup Rakshit, Executive Director, ITTA, said that with the support of the Ministry of Textiles and its members, ITTA has attained a new height. ITTA created a platform to connect the technical textile industry with defence sector by organising three seminars- cum- exhibitions during the last one year with Indian Army and Navy. He also extended a vote of thanks to all dignitaries, speakers, exhibitors and delegates who have participated the 2nd Defence-ITTA Joint Exhibition cum Seminar.



Session 2 – “ARMY REQUIREMENTS OF CLOTHING SCME & FOOTWEAR”

The Second technical session was chaired by Maj Gen BV Rao, Additional Director General, Equipment Management. The following presentations were made during this session.



1. Budget Outlay by Lt Col Sandeep Sharma spoke about the army budget for the FY 2016-17. He informed that the budget for GS&C is Rs.2857 Cr out of which the DGOF got Rs.2100 Cr and EX-Trade got Rs. 757 Cr budget. But a large proportion of the cloth and accessories are purchased by DGOF from the industry.

2. Defence procurement procedure by Brig GS Shan, Deputy Director General OS (GS&C) briefed about the objective, types of procurement i.e. Revenue procurement and Capital procurement, procurement setup, sources of supply, DGQA, revenue procurement, manner of depositing bids and payment terms for sellers.

[For further query contact: Director Gen Stores & Clothing, HQ, New Delhi

Tel: 011-23092256, Website: <https://www.eprocure.gov.in>]

3. Special Clothing & Mountain Equipment and Extreme Cold Climate Clothing Items

by Col AS Chonker, VSM. He highlighted that the requirement of special clothing and mountaineering equipments will increase to 38,229 sets for Indian army and SCME entitled areas are Northern command, Western command and Eastern command. He said that SCME items- Each sets comprises of 55 items and those items are divided into two categories i.e. Cat I- personal use (20 items) and Cat II- general purpose items (35 items). Cat I consist of Jacket and trousers down, ECWCS (TLSS / Goretex suit), Gloves- inner & outer, sleeping bag, snow goggles, rucksack, etc. Cat II consist of Hyperbaric Chamber, Rope climbing, Combination harness, Cord avalanche, Survival blanket, Oxygen cylinder, Avalanche rod, Ladder ice wall, etc. He spoke on the procurement procedure for SCME EX Import and added some indigenized items like rucksack, hapo bag and two layered socks woollen special. He highlighted some products improvement, introduction of new products i.e. Avalanche airbag, Tugger shoes, etc.

[For further query contact: Director EM (Special Clothing & ECC), HQ, New Delhi

Tel: 011-23015934, Email Id- diremgsc-mod@nic.in]

4. Outsourcing of Products, Product Improvements, Purchase of Raw Material, Entry into Ordnance factories and Expectations from Industry

by Mr. Prakash Agrawal, Jt GM, OFB emphasized about the OFB represents the areas of production, testing, research & development and trade in defence manufacturing and as per Stockholm International Peace Research Institute (SIPRI), OFB is the one amongst the first fifty defence contractors of the world. Its operations are training, safety, development and marketing. OFB has 41 manufacturing units divided into following divisions such as Ammunition & Explosive, Weapon, Vehicle & Equipment, Material & components Armoured vehicles and Ordnance equipment. He explained about the OEF HQ (Ordnance Equipment Factories, Headquarters), Kanpur with its product profile which consist of Garment i.e. parade and combat uniform, Equipment such as tent extendable and tank canvas, Leather items, Knit wear, Parachutes, Rubberized items and Protective clothing and also informed that they will achieve a projected growth of 18.39% in FY. 2016-17. He also talked about the purchase procedure and vendor registration in details.

5. Latest Trends in Footwear applicable for Defence Forces

by Mr. Jeetesh Gidwani, GM, Euro Safety Footwear spoke on the global trends in footwear construction such as midsole, outsole, upper, liner, sock and other i.e. padded tongue, ankle protection, etc. and explained about the safety shoes used in Terrains such as Hilly / Mountainous, Jungle, Swamps – Leech/ Snake infested, Desert and Icy terrain with different technology. He highlighted some of the challenges occurred in different terrains like Undulated area, Poisonous flora / Fauna, Insects & leech infested, Hot sand, Highly cold weather: -30°C, etc. and recommended shoe specifications used in this terrains and also said about the Occupational shoes i.e. Uniform & formal shoes, sandals and different weather shoes.

Session 3 – “COLLECTIVE PROTECTION, TENTAGE, LOAD CARRYING FABRICS & INDUCTION OF PRODUCTS INTO CSD”

The third session was chaired by Brig SC Tandi, Commandant C O D, Kanpur and four papers were presented.



1. Requirements of Collective Protection & Load Carrying Fabrics by Col Sanjay Sinha, Director OS (GS&C) highlighted about the inventory management function which involves Provisioning, Procurement, Receipt, Accounting, Storage, Issue, Transport, Disposal of all that are issued to the Indian Army. There are different types of stores such as Armament, Fire Fighting Vehicles & Equipments, Ammunition, Aviation Stores, Mechanical Transport Stores viz Tyres, Tubes, Batteries and Spares, General Stores & Clothing, etc. which maintains an inventory of 4.5 lakh items. In General stores & clothing, the clothing consist of Life Cycle Clothing Extreme Cold Clothing & Equipment, Special Clothing & Mountaineering Equipment, etc. and general stores consist of tentage, ECSG & Nets, parachutes, ropes, etc. He also spoke on DGOF items such as trouser & jacket combat, overall combination, Life cycle clothing (LCC), Trade items i.e. sports footwear, hat gorkha, jersey khaki and boot leather and product improvements like Boot Ankle Leather Gp, Jersey Men's Woollen 'V' Neck Dark Og, Shoes Canvas Brown Rubber Sole, etc.

2. Recommendation for Collective Protection & Load Carrying Fabrics by Mr. S. J. Rao, Sr. VP, Garware Wall Ropes highlighted that the fabric used for covering a set of object/people to ensure their protection without affecting their respective functional characteristics are called as collective protection. The fabrics used for collective protection & load carrying are woven and knitted. Their desired properties are breaking and tear strength, breathability, fire retardant, etc. and its criteria for selection are type of item /object to be protected/carried, prevailing working condition, ease of operation, flexibility, weight, etc. Different types of material are used such as Jute, nylon, polyester, aramid, carbon and its different application like Temporary Bridges, Helimat, Shelters, Synthetic Tarpaulin/Truck Covers, etc. for Indian Army.

3. Assistance from Industry to ensure Quality and Quick Clearances by Mr. Arunabh Chawdhury, Jt. Controller, DGQA. He explained that Quality Assurance for Defence Textiles involves Womb to Tomb responsibility. He also spoke on Technological advancements in the areas like protective textiles, non-detectable concealments etc. He

highlighted indigenization of specialty products like Clothing of Extreme Cold Climate at High Altitudes, Areal Delivery Textiles, NBC Protective, Anti-Mine & Anti Ballistic. And also about Industry assistance and DGQA had well equipped and accredited labs with controllerate and regional units throughout the country.

4. Procedure for inducting Products into the CSD by CSD Adelphi, Mumbai briefed about the CSD (Canteen Services Directorate) and CSD consist of following items such as Toilet Requisites, Household Requisites, General Use Items, Food & Medicine, etc. He told that Army get 90% of its benefit and also highlighted the process of introduction of CSD, eligibility for registration as vendor in CSD- Applicant firm must be either Manufacturer, Brand Owner, All India Sole Distributor or Importer and guidelines for submission of introduction application by vendor. And also mandatory documents required & additional documents in case of liquor items and quality control are done by factory inspection, lab testing, and hygiene inspection in CSD.

[For further query contact: Asst. Gen Manager (Secy), CSD, Mumbai

Tel: 022 2505 1505, Email ID: agmsecy@csdindia.gov.in]

Session 4 – “MEDICAL TEXTILES AND PROTECTIVE CLOTHING”

The fourth session was chaired by Brig Subodh Mulgund, Dy DGAFMS (Standardisation) and five papers were presented.



1. Medical Textile by Lt Col Rishi Raj, Jt. Director, Armed Forces Medical Services Directorate highlighted about the First Tri Service Organisation of the Armed Forces i.e. Armed Forces Medical Services which provides comprehensive Healthcare Service to all 03 Services of the Armed Forces. Their clients are Service Personnel, Dependents, AF Veterans and their families and Paramilitary personnel. He spoke on the medical procurement of AFMS whose major procurement agencies are DGAFMS/DG-2Gp &

DDOs and dressing materials are procured in a large extent by DDOs. Issues occurred in procurement are quality, supply chain management, money, etc. He talked about the importance of Medical Textile- its challenges such as technologically intensive, scalable, cost-effective production and multidisciplinary approach. Future requirements like smart textiles , Embedded monitors for vital signs & location i.e. innovative products , embedded technology for various functions, protection, monitoring, comfort, etc. and global smart textile market estimated to be USD 289.5 million in 2012 and expected to exceed USD 1,500 million by 2020.

2. Recommended Medical Textiles for Defence Forces by Mr. Alan D'Abreo, KOB Medical emphasized about the compression therapy by the advance wound management. He explained about the chronic venous insufficiency (CVI) which occurs when the vein valves become dysfunctional and affects up to 20% of adults. Chronic venous insufficiency causes Ligamentous laxity (eg, hernia, flat feet), Lower extremity trauma, Prior venous thrombosis (superficial or deep), etc. That's why the compression bandage is used upon the insufficient veins due to which compression superficial veins will be narrowed. Compression are of two types i.e. Therapy (inelastic-short stretch) and Maintenance (medical compression stockings). He also talked different medical textiles products which can be used for defence such as compression bandage for trauma, modern wound care assortment such as Impregnated dressing, Silver dressing, Special wound dressing, absorbent wound dressing pads, Foam dressings, Hydrogel dressings, Hydrocolloid dressings, calcium alginate dressings and Hydro therapy. Hydro therapy is the convincing treatment concept especially for the treatment of chronic and poorly healing wounds.

3. Protective Textiles by Dr. Arindam Basu, Director General, NITRA briefed about the need for Protective textiles for the extreme heat and fire, extreme cold, wind and rain, harmful chemicals and gases, mechanical hazard, electrical hazard, radiation, etc. He told that extreme cold weather clothing has various layers such as outer layer (tough waterproof & breathable barrier), mid insulation layer (lightweight and traps body heat) and base core layer (fibres that insulate and wick moisture). He highlighted the detailed description about the electrically heated garments which is made from carbon and is called as carbon fibre heated jacket,, Flame retardant/proof garments, Interactive Camouflage, military shelters, Sensor and Energy-storage Fabrics, Smart Uniforms and Ballistic Protection which are used for Defence purpose.

4. Latest on Protective Clothing by Dr. T. H. Goswami, DMSRDE (DRDO), Kanpur. He emphasized about the products developed by DMSRDE i.e. NBC Protective Textile Items, Tent glacier (10-12 MEN), Synthetic camouflage nets, Functional Shelters/ Tents for Army, Synthetic Life Jacket, Blast protection suit, Boot antimine infantry and Anti riot helmet with visor. He also highlighted the Textile Items for Glacier Region– Developed and manufactured by DMSRDE such as Poncho Glacier, Cap Glacier, Jacket Wind Cheater, Bag Waterproof, Bag Carrying Rescue, Splint inflatable, Thermal Vest & Drawers, Mattress Glacier, Rope Climbing, Cord Avalanche, etc.

5. Formation of Condensation in Breathable Performance Clothing System and Latest Concepts by Ms. Arlene Kidd, Group Director, ARDMEL GROUP, UK. He explained the two different concept for clothing system i.e. the Breathability concept in which the fabric works by equalising the pressure and heat between the inside and outside of the jacket which allows perspiration to move through the fabric unlike impermeable materials such as PVC and its results can vary wildly based on test, temperature, humidity and pressure. The breathability test is an ISO test method. He also highlighted on Double Glazing concept i.e. System Dual Protection. To manage the inside condensation of the garment, system dual protection is used because of which the garment becomes 100% waterproof & breathable. He spoke on the future of smart clothing in the Defence like printed textiles, development of nano-technology, Printed batteries, printed electronics and colour sensitive materials and Combatants. It is foreseeable that a wide range of electronic devices and sensors currently used by the police or military can be deconstructed and redesigned.

6. Initiatives and Latest Trends in Fire Protective Clothing by Mahipal Meena CFEES, Delhi highlighted the importance of CFEES (Centre for Fire, Explosive & Environment Safety) (DIFR) which works mainly on fire safety and has test & evaluation of fire suppression chemicals, foams and fire appliances & equipment. He talked about the textile products developed by CFEES such as Reflective Aluminised suits, reflective aluminized fire proximity suits, Non-reflective fire protective suits, etc. and also spoke on the current ongoing projects related to textile at CFEES are development of multifunctional moisture barrier for fire protective suits and waterproof breathable fabrics. And CFEES has taken efforts towards indigenization with the development of microporous membrane and lamination of ePTFE & ACF (Activated Carbon Fabric). The latest trends in fire protective clothing are fabrics for outer shell, moisture barrier and self-cooling fire protective clothing.

Session 5 – “GEOTEXTILES AND BUILDING TEXTILES”

The fifth technical session was chaired by Maj Gen S. P. S. Kohli, ADGW (Army). The following presentations were made during this session.



1. Geotextile Requirements by Col Rajeev Kumar, Engineers (BRO). He talked that BRO (Border Roads Organization) has grown with 18 projects till now. BRO is transferred to

ministry of Defence. The role of BRO is to develop and maintain operational road infrastructure and its tasks are to construct the road, bridges, tunnelling, road maintenance, etc. He highlighted recent initiatives of BRO are policy on expeditious induction of new technology, structured interaction with state government, raising of ADGBR east & west respectively, etc. Design and Specification Section at HQ DGBR responsible for introduction of new technology or construction material in BRO. ADGBR (East) Functional at Guwahati to monitor works in North East. He also briefed about some of the geotextile projects such as BRAHMANK, UDAYAK, SEWAK, DEEPAK, VARTAK, PUSHPAK, SHIVALIK, etc.

[For further query contact: 1. HQ DGBR (Design and Specification Section), New Delhi

Tel: 011-25687115, Email ID: bro-ds@nic.in,

2. HQ ADGBR (East) Functional, Guwahati

Tel: 0361-2700230, Email ID: bro-hqeast@gov.in]

2. Geotextiles Recommended for BRO by Mr. Shahrokh Bagli, Chief Technology Officer, Strata Geosystem. He highlighted the importance of Geosynthetics which are flexible, semi-flexible polymeric materials in two & three dimension form i.e. Geotextiles, Geogrids, Geocells, Geonets, Geomembranes, etc. and its general applications are roads, railways, ports and harbours, rockfall & landslide mitigation, landfills, riverbanks, etc.. He also presented the whole range of products produced by Strata i.e. Geocells and added their clients names such as Indian Army Rajasthan, Defence, Gujarat, etc. And other innovative applications of geocells are RS walls, roads on expansive soils, roads on soft soils, emergency roads, haul roads, slope protection canals, typical reinforced soil slope structure, blast-proof wall, Gabion rockfall protection and shore & bank protection.

3. Buildtech Requirements by Mr. M. A. Ruperee, Director Arch, E in C Branch presented the buildtech products currently being used by various departments of defence, difficulties faced by them in this sector and invited solutions of these problems from the industry.

4. Buildtech Recommended for Defence by Mr. Sheelam Seth, Sr. VP, SRF Ltd. He explained about the Buildtech products used for Defence. He highlighted that globally Technical textiles is 140 B USD business and briefed about the coated fabrics which are substrate fabrics that have been coated and laminated with Polymeric or Elastomeric Coatings or Films. He spoke on different coating technology used in India such as Knife coating, Melt roll, Reverse roll, SolutionTransfer coating, etc. He talked about different products made from coated fabrics are Tarpaulins, Exhibition Hangers, Static Covers, Architectural fabrics, disaster tents, Auto canopies, Ventilation Ducting, Bouncees, Tensile Structures etc. and the recent developments in India are Truck Tarpaulins, Awnings, Modular Exhibition & Event Hangers, Tents & Canopies, Green Energy- Bio gas covers, etc. The new developments are Fire retardant Striped awnings, "Easy to

clean” fabrics, cool fabrics which can maintain lower internal temperature compared to regular coated fabrics.

Session 6 – “CONCLUDING SESSION”

The seminar ended with summing up the proceedings by Lt Gen Ravi Thodge, PVSM, AVSM, SM, VSM, Master General of Ordinance.

Mr. Amit Agarwal, Hon Secretary, ITTA, extend a vote of thanks to all Defence sector officials, the participants from the Indian technical industry, Speakers of the seminar and all exhibitors displaying their innovative products in the exhibition.



EXHIBITION

Exhibition was inaugurated by Lt Gen Ravi Thodge, PVSM, AVSM, SM, VSM, Master General of Ordinance and Smt. Anu Garg (IAS), Joint Secretary, Ministry of Textile. Exhibition is to create the awareness on the requirements of the Indian Defence sector of technical textiles, their innovation for product up-gradation and industry will get opportunities to showcase their products and capabilities.

List of Exhibitors:

COMPANY NAME	
GARWARE-WALL ROPES LTD	STAR AEROSPACE INDUSTRIES
SHIVA TEXYARN	SECURITY INSTRUMENTS
CTM TECHNICAL TEXTILES LTD.	VIJAY SABRE SAFETY PVT.LTD.
EURO SAFETY FOOTWEAR (INDIA) PVT.LTD	PROSAFE INTERNATIONAL PVT. LTD.
STRATA GEOSYSTEMS - INDIA	SHUBH SWASAN
BARRACUDA CAMOUFLAGE PVT. LTD.	RSWM LIMITED
RENFRO INDIA PVT LTD	NITRA, COE (PROTECH)
RAYMOND	FERRETERRO INDIA PVT. LTD
SAI SYNERGY LLP	UNIFAB INDUSTRIES
KUSUMGAR CORPORATES PVT. LTD.	AUREOLE INSPECS (INDIA) PVT. LTD.
RADNIK	ARDMEL GROUP
INDIAN DEFENCE [ALL MAJOR DIVISIONS]	

EXHIBITION AREA:

