

STRATEGIC ROAD MAP

TEXTILES DIVISION COUNCIL

0 EXECUTIVE SUMMARY

0.1 Textiles are one of the most important and versatile commodities in the Indian economy. Textile sector plays a major role in the Indian economy as it currently contributes 2.2 percent to GDP, 7 percent of the industrial output in value terms and 11 percent to the export earnings of India. In 2018-19, India exported textiles and apparels worth \$36.8 billion to the world.

0.2 The textile industries involve provision of raw materials, preparation of fiber production, manufacture of yarns and fibres, manufacture of fabric formation, finishing processing including bleaching, dyeing, printing, coating, special chemical treatments, transformation of the fabric into clothing, upholstery, or industrial/technical textiles, smart textiles and rope and netting formation. Therefore, the textile industry concerns a variety of entities such as suppliers of raw materials, processors, manufacturers, traders, distributors, retailers, associated industries such as the laundry industry, government and educational establishments as well as consumers.

0.3 There is also extensive movement among countries as companies take steps to become more innovative and competitive. Fabrics designed and manufactured in one country may be cut to design in another, machined in a third and finished in the originating country. In addition, retailing of garments is now common across national boundaries.

0.4 Standards are now the international language for communicating the buyer's requirement to his suppliers. To ensure a textile product meets the desired requirements, the supplier in turn shall ensure the whole of the textile supply chain, from spinner through to garment manufacturer, knows what is required. Each part of the supply chain may in turn be specifically responsible for certain aspects of the desired standards.

0.5 The objective of this road map is to provide a strategy for strengthening the standardization process in the field of textiles in the country in view of fast changing economic and social scenario. This road map conceptualizes one standard and lays stress on the elimination of multiplicity of standards. It also gives emphasis on the preparedness of various stake holders to increase their involvement. This road map will be reviewed from time to time to evaluate the progress as well to formulate new strategies to deal with new challenges. This will enable India to establish itself as a major player in the field of textiles.

0.6 The main objectives and priorities in the work of the Textiles Division Council (TXDC), are to develop and publish Standards in the field of fibres, yarns, threads, cordage, fabrics, technical textiles and other fabricated textile materials; methods of test, terminology and

definitions relating to the textile industries, raw materials, auxiliaries and chemical products required for processing and testing; and methods of tests and specifications for textile products with respect to safety, health, environmental protection, material and product safety and quality. The need for Global relevance is highly considered.

0.7 The benefits to the market from publication of these standards are explicit for the stake holders stated above. The most standards published are methods of test and specifications, which enable objective assessment of products or processes. Some standards are developed to provide products consistency and harmonization that meet consumer's expectation.

0.8 The global environment protection policy is going to be implemented in practice. The priority is given to the microplastics from textile sources (i.e. fine fibre wastes coming out during textile production processes - such as dyeing, finishing, etc. - and textile care process, such as domestic washing, professional cleaning or industrial laundering, etc.), as well as the animal welfare in the textile chain supply as soon as fibres are collected from animals (with the implications of the chain of custody). Both topics would be covered by new working groups. The sustainability is another significant topic and required to watch carefully and to collaborate with the emerging projects across the TCs.

0.9 Our technical committee liaises for cooperation with other technical fields, such as nanotechnologies and electronic textiles (known as "e-textiles") and will be involved for standardization in such fields when textiles are concerned.

1 INTRODUCTION

1.1 The Strategic Road Map of the Council has been developed as a document which would reflect its vision of national standardization in the field of textiles and provide a broad standardization roadmap with a five-year perspective. The aim is to align the standardization work with expressed business environment needs and trends and to allow sectional committees to prioritize among different projects, to identify the benefits expected from the availability of Indian Standards, and to ensure adequate resources for their development. It covers an up-to-date overview of the Division Council's work that would form the basis for the Sectional Committees working under the Division Council to in turn develop their respective standardization plan and can be shared with all interested stakeholders.

1.2 An Indian Standard embodies the essential principles of national openness and transparency, consensus and technical coherence. These are safeguarded through its development in the sectional committees, representative of all interested parties, supported by a public comment phase.

1.3 The Road Map covers the main objectives and current strategies taking into consideration the economic, social, regulatory or other environment in which the Division Council operates.

1. To provide a national framework for the development of unambiguous and reliable market/society driven standards in the areas of economic and social activity.
2. To review the standards for their efficacy and relevance to market / societal needs for their continuance or revision / amendment.
3. To emphasize safeguards in the areas affecting environment, health and safety for overall community benefit.

2 BUSINESS ENVIRONMENT OF THE DIVISION COUNCIL

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of TXDC, and they may influence how the relevant standards development processes are conducted and the content of the resulting standards:

2.1 Textile Policy of India

2.1.1 The new Textiles Policy 2020 being formulated by the Government of India is aimed at developing in the country a competitive textile sector which is modern, sustainable and inclusive. This new policy will have a special focus on manufacturing of apparel and garment, technical textiles, man-made fibre products and exports, which will envisage positioning India as a fully integrated, globally-competitive manufacturing and exporting hub.

2.1.2 The policy will entail the strategy and action plan for the country's textile and apparel segments, while maintaining pre-eminent position in handicraft and handloom sectors. The entire effort is being made to realise the Prime Minister's vision of 'Make in India' for the country and for identifying one strong product with export potential from every district and cluster.

2.2 Domestic Scenario

2.2.1 Textile sector plays a major role in the Indian economy as it currently contributes 2.2 percent to GDP and 12.22 percent to GDP of manufacturing sector (at basic prices)*, 7% of the industry output (in value terms) and 11% to the export earnings of India. In 2018-19, India exported textiles and apparel worth \$ 36.8 billion to the world. India's share in world exports of textiles and apparel was about 4-5%. The imports of textiles and apparels have risen at a CAGR of 8% for 2015-18. India's imports have risen by 6% in 2018-19 vis-à-vis last year to \$ 6.7 billion. Growth of yarn and fabric, whether in Man Made or Cotton sector, remains subdued or negative in certain case in terms of volumes (see table below).

* Source – National Accounts Statistics, 2018

2.2.2 Textile industry is a highly labour-intensive sector and generates huge employment both for skilled and unskilled labour. With over 45 million people, the industry is one of the

largest sources of employment generation in the country. For every rupee invested, the employment created is much higher as compared to any other industry because textile is a labour-oriented industry. This angle needs to be appreciated because textile is the only industry which can create huge employment much faster with much less investment.

2.3 International Scenario

2.3.1 Traditionally the Textile and Clothing (T&C) industries had been well protected. Major importers such as Europe and the USA had applied a wide range of quantitative restrictions or quotas on imported goods. Similarly, major exporters such as Asia have protected their own markets by applying high import tariffs and/or numerous non-tariff barriers.

2.3.2 Since 1995 global trade in T&C had been governed by the WTO Agreement on Textiles and Clothing (ATC). The Textiles and Clothing quotas of ATC were abolished on January 1, 2005. This abolishment of quotas strongly affected the large textile supplying countries, especially China and India, who can export freely to Europe or the USA without any quantitative restrictions. The fact of the matter was that China - the USA, and China - EU made quantitative agreements until the end of 2008, to avoid the exploding expansion of imports from China on the immediate aftermath of the quota abolishment. In January 1, 2009 ended the both agreements, and after the date, any agreements were not concluded for the quantities of the T&C trade.

2.3.3 Although the dismantling of the quota system has posed both challenges and benefits, the net result has been positive for those countries where there are inexpensive, abundant and skilled work force suited for labour intensive apparel industries, accompanied by sufficient raw materials.

2.3.4 The USA and EU industry have been exposed to increasing competition from numerous low-labour cost countries, particularly from Asia, for which the sector constitutes one of the most important sources of income and employment. Many developing countries have become very competitive combining low wages with high-quality textile equipment and expertise imported from the more industrialized countries.

2.3.5 The higher labour costs of North America, Europe and Japan have resulted in increased imports into these areas. For the T&C industries in these areas to maintain their position in the global market, they should to develop more value-added products and remain competitive by innovation, quality, creativity and design.

2.3.6 In the field of textiles and clothing, EC introduced the following legal and binding directives to cover areas where safety of the consumer might be at risk;

- a) Fibre content labelling directive; EC Directive 2008/121/CE.

Two other general safety legislations that can apply to textiles and clothing are,

- b) REACH (Regulation, Evaluation, Authorisation and Restriction of Chemicals), the regulatory framework for the safety of chemicals (Regulation 1907/2006 which came into force on 1st June 2007) (e.g. azo colourants), and
- c) The General Products Safety Directive (GPSD); EC Directive 2001/95/EC.

2.3.6.1 These regulations are important to ensure the safety for the consumers and to enhance the fair worldwide trade and the confident supply chain activities. The relevant standards are developed and maintained in ISO and CEN, in some cases under the Vienna Agreement.

2.4 Quantitative Indicators of the Business Environment

The following facts and figures of quantitative indicators describe the business environment in latest in order to provide adequate information to support actions of TXDC.

2.4.1 *Cotton Textiles*

India is currently the second largest cotton producing country in the world, however, during 2015-16 to 2017-18, India was the largest cotton producer. Despite having advantage of raw cotton, India has missed the opportunity to be a large exporter of fabrics, made-ups and garments. India is also losing its share of cotton yarn to Vietnam and Pakistan due to lower cost.

2.4.2 *Man Made Fibres & Textiles*

There is a need to focus on Synthetic textiles to Achieve the Desired Growth. For instance, Polyester demand will be almost three times to that of Cotton in 2040. Global textile markets are swiftly shifting from cotton to manmade fibres. India's per capita consumption of Man-made Fibre is around 3.0 kg, whereas the world per capita consumption 12 kg. There is a wide gap and tremendous opportunity for enhancing the consumption of MMF based textiles and clothing in India. Hence, India must take urgent steps to keep pace with the global markets by increasing production and exports of MMF based products.

2.4.3 *Exports*

Taking a look at the Indian Textile & Apparel exports the stagnation of Indian exports is clearly established with just 2.3% growth last year. Exports of Readymade Garments of MMF, which is one of the largest segments globally, had declined by over 18% last year.

Production of man-made fibre, filament yarn, spun yarn and cloth
(Fig. in million)

Period	Man-made fibre	Man-made filament yarn	Cotton yarn	Blended & 100% Non-cotton yarn	Total Spun Yarn	Cloth		
						Mill sector *	Decentralized sector **	Grand Total (Exc. Khadi, Wool & Silk)
	kg	kg	kg	kg	kg	Sq. mtr	Sq. mtr	Sq. mtr
2015-16	1347	1164	4138	1527	5665	2315	62269	64584
2016-17	1364	1159	4055	1604	5659	2264	61216	63480
2017-18	1319	1187	4064	1616	5680	2157	64688	66845
2018-19 (P)	1443	1155	4182	1680	5862	2012	68034	70046
% Variation 2018-19 over 2017-18	9.4	-2.7	2.9	4.0	3.2	-6.7	5.2	4.8

P- Provisional

*- Based on statistical data received from units

** - Based on set of conversion ratio of yarn to fabric

Source: Office of Textile Commissioner, Mumbai

India's Exports in US \$ Million

	Apr-Mar 2018	Apr-Mar 2019	%Growth
Textiles & Allied Products	36,048.77	36,886.00	2.32
RMG Cotton incl Accessories	8,510.76	8,694.73	2.16
Cotton Fabrics, Made-ups Etc.	5,482.87	5,947.20	8.47
Manmade Yarn, Fabrics, Made-ups	4,826.33	4,980.51	3.19
Cotton Yarn	3,424.92	3,895.52	13.74
RMG Man-made Fibres	4,746.97	3,852.96	-18.83
RMG of other Textile Material	3,122.15	3,222.69	3.22
Cotton Raw Including Waste	1,894.25	2,104.41	11.09
Carpet (Excl. Silk) Handmade	1,427.14	1,465.74	2.7
Manmade Staple Fibre	586.82	570.81	-2.73
Other Textile Yarn, Fabric Made-up Article	409.81	457.93	11.74
Handloom Products	355.94	343.69	-3.44
Coir and Coir Manufactures	325.77	327.38	0.49
Woollen Yarn, Fabrics, Made-ups etc.	186.09	220.56	18.52
RMG Wool	169.14	197.65	16.85
RMG Silk	157.92	170.26	7.81

Other Jute Manufactures	127.17	142.53	12.08
Jute Hessian	141.23	113.81	-19.41
Natural Silk Yarn, Fabrics, Made-up	52.85	57.72	9.22
Floor Covering of Jute	46.48	53.01	14.04
Silk Waste	15.69	18.57	18.34
Silk Carpet	2.68	16.11	501.95
Jute Yarn	20.20	15.58	-22.89
Jute, Raw	14.81	15.30	3.35
Wool, Raw	0.77	1.14	48.54
Silk, Raw		0.19	

2.4.4 Imports

Rising garment imports from Bangladesh: Garment imports from Bangladesh have increased almost by 82% in 2018-19 vis-à-vis 2017-18 (from US \$ 200 million to US \$365 million). Imported garments have got 12-15% advantage vis-à-vis domestic garments in the post GST period. Garments and made ups will ultimately drive the entire value chain.

India's Imports in US \$ Million

	Apr-Mar 2018	Apr-Mar 2019	%Growth
Textiles & Allied Products	6,401.90	6,759.84	5.59
Manmade Yarn, Fabrics, Made-ups	1,896.25	2,202.13	16.13
Other Textile Yarn, Fabric Made-up Article.	964.4	913.62	-5.27
Cotton Raw Incl. Waste	979.32	633.05	-35.36
RMG Cotton incl Accessories	350.94	547.74	56.08
Cotton Fabrics, Made-ups etc.	472.11	497.94	5.47
Manmade Staple Fibre	368.91	467.38	26.69
RMG, Man-made Fibres	233.64	323.98	38.67
Wool, Raw	292.4	310.3	6.12
RMG of other Textile Material	170.3	208.63	22.51
Silk, Raw	188.99	148.38	-21.49
Woollen Yarn, Fabrics, Made-ups etc.	79.25	114.63	44.65
Carpet (Excl. Silk) Handmade	93.78	101.05	7.76
Other Jute Manufactures	68.29	66.69	-2.34
Natural Silk Yarn, Fabrics, Made-up	59.79	48.86	-18.27
Jute Yarn	48.26	41.82	-13.35
Jute, Raw	44.75	33.94	-24.16

Jute Hessian	18.99	26.37	38.85
Cotton Yarn	31.88	21.05	-33.95
RMG Wool	13.11	15.66	19.44
Handloom Products	10.88	15.38	41.36
RMG Silk	5.16	10.44	102.22
Silk Waste	1.86	5.22	180.42
Coir and Coir Manufactures	7.55	4.28	-43.26
Floor Covering of Jute	1.06	1.29	21.21
Silk Carpet	0.04	0	-87.47

2.4.5 *Technical Textiles*

2.4.5.1 According to the recently published Resolution of the Ministry of Textiles published in the Gazette of India, Extraordinary Part II Section 3 Sub-section (ii) No. 1030 Dated 19 March 2020, National Technical Textile Mission has been approved for creation at a total outlay of 1480 Crore; with a four year implementation period from FY 2020-21 to 2023-24 with a view to position the country as a global leader in Technical Textiles.

2.4.5.2 India shares nearly 6 percent of world market size of 250 billion USD. However, the annual average growth of the segment is 12 percent, as compared to 4 percent world average growth. Penetration level of technical textiles is low in India at 5 to 10 percent against 30 to 70 percent in advanced countries.

2.4.5.3 The National Technical Textile Mission focuses on usage of technical textiles in various flagship missions, programmes of the country including strategic sectors. The use of technical textiles in agriculture, aquaculture, dairy, poultry etc. Jal Jivan Mission; Swatchh Bharat Mission, Ayushman Bharat will bring an overall improvement in cost. economy, water and soil conversation, better agricultural productivity and higher income to farmers per acre of land holding in addition to promotion of manufacturing and exports activities in India. The use of geotextiles in highways, railways and ports will result in robust infrastructure, reduced maintenance cost and higher life cycle of the infrastructure assets.

2.4.5.4 A subcomponent of the Mission will focus on development of biodegradable technical textile materials, particularly for agro-textiles, geotextiles and medical textiles. It will also develop suitable equipment for environmentally sustainable disposal of used technical textiles, with emphasis on safe disposal of medical and hygiene wastes.

2.4.5.5 There is a need for a roadmap/strategy for the sector for the coming years that would continue and hasten the process of standardisation in all the areas of technical textiles, by prioritising standards from the point of view of health, hygiene, environment, safety and security. As far as technical textiles are concerned, mandation of certain items has been done and some more are under consideration by the government.

3 BENEFITS EXPECTED FROM THE WORK OF DIVISION COUNCIL

3.1 Standards developed by TXDC are primarily specifications and test methods which provide the means to enable objective assessment of process and product. The standards assist the liberalization of trade in textile commodities.

3.2 Standards impose exacting demands on industry in terms of quality, environmental management, fire safety, consumer protection, metrology, the accurate calibration of measuring equipment and the performance of the newly developed products. The results from the testing used those standards give the requisite information to the consumers as well. The diversity of the published standards on textiles include these demands and all the indications are relevant to the continued prosperity of the market.

3.3 Sectional Committees under Textiles Division Council are structured to develop the specifications and test methods for the variety of textiles and textile products that the market generates. In recognition of this responsibility, the work programme includes standards that pertain to practically the whole supply chain from fibre through fabric to final product. In addition to end-use standards for evaluating finished products for important basic aspects such as colour fastness, burning behaviour, dimensional stability, strength and hygiene or amenity finishing such as antibacterial activity, the Textiles Division has also developed important standards relevant to the processing of textile materials and standards for evaluating raw materials used in their manufacture.

3.4 Standardized test procedures for evaluation of product, process and performance are tools used to enable the development of international trade and increase market access. Although in-house specifications may be set by brands, the use of harmonised national test protocols reduces the need for duplicate testing in a world where fabric suppliers service European and say, US consumers. These procedures also assist in obviating the occurrence of flammability problem and surface burning in textile products and so reduce the consequential losses of human life or properties due to fire.

3.5 A good example of the problems that Indian standards are seeking to obviate is in home laundering. Most apparel garments are subjected to home laundering and most materials sold in commercial outlets are based on their conforming to specific wash fastness criteria. Unfortunately, domestic procedures for home laundering vary around the world and with consumer expectation. The detergent formulations, water temperatures, degree of agitation, cycle times for washing and rinsing and bleaching systems, all play significant roles in evaluating colour change and staining or durability of applied finishes as well as the dimensional change and mechanical damage of the textile. Without universally accepted test methods for evaluating the parameters, the difficulties will continue to obstruct increased global trading both for raw materials and finished product.

3.6 To solve these difficulties, IS 14452:2014/ISO 3758 :2012 Textiles – Care labelling code using symbols, based on the GINETEX care labelling system and IS 15370:2020/

ISO 6330:2012 Textiles – Domestic washing and drying procedures for textiles testing (*first revision*) had been published identical to the International standards. These two adoptions make both standards more consistent and coherent to global relevance.

4 STAKEHOLDER REPRESENTATION

4.1 The Textiles Division Council (TXDC) and all its Sectional Committees are adequately represented by all important stakeholders in a balanced way. They include manufacturers, consumers, organized buyers, scientific and technical organizations, academic and research institutions, government and regulatory bodies etc. In some cases, eminent scientific persons with established credentials have also been given representation in personal capacities. The composition of each sectional committee is reviewed every three years by the Division Council based on their participation in the work of the committee. The recommendations of the sectional committees on co-options and withdrawals are also considered and approved by the Division Council.

4.2 Each sectional committee works in close liaison with its liaison committees and in line with the relevant ISO technical committees. The list of such committees are given in Annex A.

4.3 In order to encourage participation in the committee meetings, it is ensured that meetings are organized at a place that would ensure maximum participation. The meetings are also organized through video conferencing to avoid travel by the members.

5 OBJECTIVES OF THE STRATEGIES

5.1 Defined Objectives of Textiles Division Council (TXDC)

- a) To elaborate standards within the scope of committee.
- b) To develop Indian Standards on performance requirements, test methods for textile and its products for the industries as well as for the consumers and concerned parties.
- c) To adjust the existing programme of work to be relevant to the stated needs of the industries as well as the consumers and concerned parties and elaborate a coherent library of standards.
- d) To make standards more relevant to the needs of the industries as well as of the consumers and concerned parties by ensuring timely delivery.
- e) To continue working in close liaison with ISO/TC 38 and the other liaison committees to avoid repetition and conflict.

5.2 Identified Strategies to Achieve the Defined Objectives of TXDC

TXDC will employ the following strategies to satisfy the preceding objectives.

- a) Continually monitor the structure of the Division Council to accurately reflect the changing work programme and the needs of the industries as well as the consumers and the concerned parties.
- b) Establish the priority of work items within Sectional Committees and Panels.
- c) Give priority to the timely circulation of documents and adherence to target dates.
- d) Limit meetings to when necessary and encourage further use of virtual meetings and the electronic distribution of documents.
- e) Continue close liaison with ISO/TC 38 and other liaison committees.

5.3 Strategic Objectives

5.3.1 Sustainable Textile Value Chain

One of the key objectives of the road map shall be to ensure development of sustainable textile value chain. Also, most of the global and big brands pay a lot of attention on the sustainability aspect while buying any product. It is crucial that we start working on this aspect as well, to be able to achieve a competitive textile value chain. Standards are required for textiles value chain to promote sustainability. A national platform on private sustainability standards has been set up to facilitate a dialogue between core public and private stakeholders on how to maximize the sustainable development benefits and market access opportunities of private sustainability standards (PSS), whilst addressing potential challenges and cost of PSS implementation, in particular for small-scale producers. Formulating a standard on organic textiles which will cover all the intermediate products from yarn to fabrics is a good example of this. This standard will reduce the compliance cost for the industry and would help in ensuring a sustainable textiles value chain.

5.3.2 Raw Materials

Unless good quality raw materials whether cotton or man-made textiles value chain is available it would not be possible to have downstream competitive value-added sector. The grading of natural fibres and quality specifications for man-made fibres will play a important role in this.

5.3.3 Widening the Product Base for Exports:

5.3.3.1 Currently, our export share majorly consists of cotton garments, casual wear, etc in low to medium price category. There is a need to diversify our product base else we will not be able to grow further with a limited product mix. We should look at having specifications for performance-based clothing, winter clothing, sportswear, designer clothing, etc. Quality Council of India emphasised that there are so many garments and yarns for which standards are required and is difficult to deal with multiple standards. This issue can be addressed by creating an umbrella standard for the value chain in line with the HS codes.

5.3.3.2 Textiles sector in India is also facing a challenge of import of used and degraded fabrics from outside. This largely happens because we do not have mandatory standard regulations applicable on these products.

5.3.4 *Holistic Approach for Growth of Complete Textile Value Chain*

The change in the global retailers sourcing pattern from large numbers of small suppliers to small number of large suppliers is also putting integrated global suppliers in advantageous positions. This is happening through nominating business model in which garment manufacturing may take place anywhere but textile intermediaries like yarns and fabrics have to be sourced from nominated suppliers. In such situation, if we fail to offer competitive textile intermediate products, it is less likely to win garment orders. Therefore, integrated and holistic approach for the growth of complete textile value chain will be sine-qua-non for our country, which aspire to gain from growth of textile and clothing industry and exports.

5.3.5 *Standards as Technical Barriers to Trade*

Technical Barriers to Trade (for short TBT) means that in order to maintain national security, guarantee human beings' health and safety, protect ecological environment, prevent trick and ensure product quality, one country adopts various compulsory or non-compulsory technical limited measures, such as technical regulations, standards and eligible evaluation procedure to authenticate import products on their technology, sanitation quarantine, product packing and label, which can improve products' technical demand, increase importing difficulty and limit import finally. These measures become the barriers for other countries' products to enter this country's market freely.

5.3.6 Our competing partners are making use of non-tariff barriers to restrict flow of goods from India. We should also work on identifying standards as suitable non-tariff barriers for restricting imports in large quantities.

5.3.7 Developed countries have stipulated rigorous technical standard for many finished products. Labels are extremely important for exporting apparel. For example, European Union countries stick ecological labels on import textile products. The ecological label "OKO-Tex Standard 100" is the passport for textile products enter the textile products market of EU; Australia stipulates that on the labels of import apparel, there must be components of raw-materials, age and stature explanation, washing method and production country; Canada stipulates that lobes of import apparel must be printed in English and French.

5.3.8 *Integration of Indian Standards in Curricula of Technical Courses*

Integration of standards into different levels of technology education has surfaced as a critical issue BIS proposes to promote integration of Indian Standards in curricula of technical courses. Presently, engineering students use few of the basic standards like drawing codes, concrete and steel design codes, etc. in their studies. In order to make the student fraternity

aware of the importance of standards in their profession standards, particularly related to glossaries and test methods for textiles including technical textiles may be designed for possible integration in the curricula of technical courses.

6 IMPLEMENTATION OF THE STRATEGIC ROAD MAP

The strategic road map of Textiles Division Council shall be implemented in the next five years and the progress to be monitored periodically in terms of measurable parameter identifiable against each item. Keeping in view the above broad objectives, it is necessary to give emphasis on its implementation strategy that will enable to work out plans, programmes, projects etc with clearly defined tasks, resources and time targets for arriving at the desired benefits. The implementation of this Road Map should address the following points to achieve the targeted benefits. This will enable India to establish itself as a major international player.

6.1 One Standard

6.1.1 There should be one standard for a product or service including its method of test and/or conformity assessment. Standards in India are developed by a variety of organizations. This diversity is welcome and it is not desirable to force every organization into a single mould. This will also strengthen the standardization needs by allowing these organizations to pull their talent for working towards common national objectives. Standards developed by other Standard Developing Organizations may be adopted as Indian Standards following due process. Good coordination and exchange of information are also necessary for better standards.

6.1.2 The Standard can have a built-in gradation of the product or service to enable one to choose from as per requirement. The standard may also contain, as a separate clause, the provisions of statutory/regulatory requirements and/or guidelines for characteristics such as performance, measurement etc. The statutory/regulatory bodies will work out the modalities to keep such requirements/guidelines in the public domain for easy accessibility.

6.2 Minimize Duplication of Work and Eliminate Multiplicity of Standards

Suitable mechanism to be developed to minimize duplication of work and eliminate multiplicity of standards on the same product/service by other sectional committees under various Division Councils. One way to go ahead with this is by putting all relevant information on the status of current standards and ongoing projects on the net (web). In addition, there should be exchange of information among various bodies to eliminate duplicity of work.

6.3 Harmonization of Standards

6.3.1 The adoption of standards is theoretically voluntary, but in order to stay relevant in the global market place, the adoption of a standard that is meaningful in all countries fosters voluntary support of one standard as a basic necessity of trade.

6.3.2 Harmonization may be defined as standards on the same subject approved by different standardizing bodies, that establish interchangeability of products and services or mutual understanding of test results or information provided according to these standards. The harmonized standards might have differences in presentation. Sometimes, the term equivalent standards are used to cover the same concept as harmonized standards.

6.3.3 Total harmonization may be possible in certain cases. Such as glossaries, symbols, codes, basic standards, test methods, etc. In case of Product standards it may not be always possible to have complete harmonization as the requirement under Indian conditions may differ say more stringent requirements for certain parameters.

6.3.4 In cases, where total harmonization is not possible, the aim should be to see that the Indian standard incorporates the requirements of international/regional or other standards without giving rise to any conflict. Suitable steps may be followed for complete harmonization or alignment so that there does not arise any conflict with the requirements of the International/regional/overseas standard. The steps of harmonization may include the following:

- Identify the subject (extreme focus on thrust areas)
- Identify International standards in the above areas (i.e. ISO, CEN etc)
- Identify other regional standards
- Identify overseas standards of countries with whom India has large volume of trade or expects larger volume.

6.4 Compliance to Code of Good Practice for the Preparation, Adoption and Application of Standards

India is a member on the WTO and therefore, it has become obligatory for all standardizing bodies within the country to abide by the code of good practice for the preparation, adoption and application of standards. The general and substantive provisions in this regard has been as an **Annex A** to this document.

6.5 Alert System for Standardization

An effective national alert system will be required to gear up the preparedness of various economic sectors towards any change in trade or technical requirements. This will enable them to retain their competitiveness and at the same time allow India to maintain/improve its position in the world market. This system will also consider the implications on environment, health and safety aspects. The Textiles Division Council may develop suitable mechanism for effective monitoring and will be in constant touch with industry/associations, chambers of commerce, NGOs, union/state governments etc. Broadly, this alert system will

- a) Identify economic sectors on the implications of trade and technical changes for future trade in order to retain the competitive edge;

- b) forewarn the rapid technological obsolescence; and
- c) avoid delay leveraging the current opportunities.

6.6 New Subjects

The Division Council should identify the broad areas of priority in which standardization work need to take place, linking this to the trends in business, technologies, innovations, government policies, environmental and social aspects and the market needs and the need for involvement in international/regional standardization. Some of the potential areas where new subjects can be identified are listed in **Annex B**.

6.7 Human Resource Development

There is a need to progressively increase the rate of generation of high quality skilled human resource at all levels of standardization. For building up the human resource base in relevant areas, the technical committee members be encouraged to undergo specialized trainings being organized by BIS. They must be provided significantly greater opportunities in international participation as well as for higher education. The officers of BIS involved in standardization may also be encouraged to skill enhancement programmes organized by outside organizations in various technological sectors. Schemes for training towards enhancement in skills should be a continuous process.

6.8 Review of Standards

6.8.1 The large existing library of over 1300 standards under the responsibility of TXDC and its Sectional Committees needs regular review/confirmation/amendment/revision, to ensure currency. Together with a current programme in development of new standards, this is having the cumulative effect of creating an overflow. This situation may well create a few competing priorities, displace essential planning and disrupt the planned and orderly progress of standards development but may keep pace with the rapid technological developments.

6.8.2 The Road Map would form the basis for the Sectional Committees under the Textiles Division Council to frame their individual Standardization Plans. The list of existing sectional committees under TXDC along with their scope is given in Annex C.

7 REVIEW OF PLAN

The Strategic Road Map of the Textiles Division Council shall be approved by the Council. The plan be reviewed from time to time to evaluate the progress as well to formulate new strategies to deal with new challenges. It shall also be reviewed in every meeting of the Textiles Division Council which is normally held once in a year. Any changes proposed shall be discussed in the meeting and approval of the Council shall be obtained before incorporation. All stakeholders shall also recommend appropriate actions required for further progress and to analyze whether new situations call for any strategic revision for treading on new opportunities.

ANNEX A

CODE OF GOOD PRACTICE FOR THE PREPARATION, ADOPTION AND APPLICATION OF STANDARDS

A-1 The standardizing body shall ensure that standards are not prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade.

A-2 Where international standards exist or their completion is imminent, the standardizing body shall use them, or the relevant parts of them, as a basis for the standards it develops, except where such international standards or relevant parts would be ineffective or inappropriate, for instance, because of an insufficient level of protection or fundamental climatic or geographical factors or fundamental technological problems.

A-3 With a view to harmonizing standards on as wide a basis as possible, the standardizing body shall, in an appropriate way, play a full part, within the limits of its resources, in the preparation by relevant international standardizing bodies of international standards regarding subject matter for which it either has adopted, or expects to adopt, standards. For standardizing bodies within the territory of a Member, participation in a particular international standardization activity shall, whenever possible, take place through one delegation representing all standardizing bodies in the territory that have adopted, or expect to adopt, standards for the subject matter to which the international standardization activity relates.

A-4 The standardizing body within the territory of a Member shall make every effort to avoid duplication of, or overlap with, the work of other standardizing bodies in the national territory or with the work of relevant international or regional standardizing bodies. They shall also make every effort to achieve a national consensus on the standards they develop. Likewise the regional standardizing body shall make every effort to avoid duplication of, or overlap with, the work of relevant international standardizing bodies.

A-5 Wherever appropriate, the standardizing body shall specify standards based on product requirements in terms of performance rather than design or descriptive characteristics.

A-6 The work programme shall for each standard indicate, in accordance with any ISONET rules, the classification relevant to the subject matter, the stage attained in the standard's development, and the references of any international standards taken as a basis. No later than at the time of publication of its work programme, the standardizing body shall notify the existence thereof to the ISO/IEC Information Centre in Geneva.

ANNEX B

POTENTIAL AREAS OF NEW SUBJECTS

1. Products consumed by organized buyers like railways and Central Armed Police Forces etc. in large quantities.
2. Standards on ready-made garments/apparels having large export potential.
3. Natural dyes
4. Textile materials for defence and aerospace
5. Organic textiles
6. Advanced textile materials and textile components of composites
7. Medical textiles (Medtech)
8. Agrotexiles (Agrotech)
9. Protective textiles (Protech)
10. Industrial textiles (Indutech)
11. Home textiles (Hometech)
12. Geosynthetics (Geotech)
13. Sports Textiles (Sportech)
14. Clothtech
15. Mobiltech
16. Buildtech
17. Packaging textiles (Packtech)
18. Composites

ANNEX C

LIST OF SECTIONAL COMMITTEES UNDER TXDC

Sectional Committee	Scope
TXD 01 Physical Methods of Test	To formulate Indian Standards for terminology and methods of physical test for all types of textiles; for example, fibres, yarns and fabrics (woven, nonwoven, knitted or felted) made from natural or man-made fibres.
TXD 03 Jute and Jute Products	To formulate Indian Standards for terminology, grading, specifications and packaging for jute, Mesta and other related bast fibres and their products.
TXD 04 Wool, Wool Products & Textile Floor Coverings	To formulate Indian Standards for terminology, grading, packaging and specifications for wool, wool products and textile floor coverings.
TXD 05 Chemical Methods of Test	To formulate Indian Standards for (a) Terminology and methods of chemical and physico-chemical tests for textile auxiliaries and pertaining to textile wet- processing (excluding dyestuffs) (b) Specification requirements for colour fastness of all kinds of Textile materials.
TXD 07 Textiles Speciality Chemicals & Dyestuffs	To formulate Indian Standards on identification, terminology, packaging methods of test and specifications for textile speciality chemicals and dyestuffs on textile materials and in substance.
TXD 08 Handloom & Khadi	To formulate Indian Standards for terminology, grading and specifications for handloom and khadi fabrics.
TXD 09 Cordage	To formulate Indian Standards for terminology, specifications and packaging for textile cordage (ropes, lines, nets or such like items excluding fish nets and items used for power transmission).
TXD 10 Hosiery	To formulate Indian Standards for terminology, specifications and packaging relating to all types of hosiery goods.
TXD 13 Textile Materials for Aeronautical and Related Products	To formulate Indian standards for terminology and specifications for textile materials for aeronautical and related products.

TXD 14 Textile Machinery and Accessories	To Standardization of textile machinery, parts thereof and of accessories; machinery for dry-cleaning and industrial laundering and parts thereof and of accessories.
TXD 18 Textile Materials for Marine/Fishing Purposes	a) To formulate Indian Standards for terminology, methods of test and specifications and for textile materials and accessories used for fishing/aquaculture purposes. b) To formulate guidelines for fishing gear.
TXD 20 Made-up Textiles (Including Ready-made Garments)	To formulate Indian Standards for terminology and specifications for made-up textiles including ready-made garments.
TXD 23 Textile Materials Made from Polyolefins (Excluding Cordage)	To formulate Indian Standard specifications and methods of tests for textile materials made from polyolefins (excluding cordage).
TXD 25 Coir and Coir Products	To formulate Indian Standards on coir fibres and coir products like coir yarn, mats, mattings, mourzouks carpets and rubberized coir cushioning.
TXD 28 Silk and Silk Products	To formulate Indian Standards on terminology, methods of test, grading, specifications and packaging of all varieties of raw silk, degummed silk, silk byproducts and weighted silk including silk yarns and fabrics.
TXD 30 Geosynthetics	a) To formulate Indian standards on terminology, testing, specifications and codes of practices for identification, handling, storage and installation, etc. of all geo-synthetic products including geo-textiles, geo-membranes, geo-grids, geo-foams, geo-composites, clay liners and other geo-synthetic related products. b) To liaise with the work of ISO/TC 221 Geo-synthetics Technical Committee as a participating member.
TXD 31 Man-made Fibres, Cotton and their Products	a) To formulate Indian Standards for terminology, grading, packaging and specifications for kapok, cotton, mill-made cotton fabrics and yarns spun on cotton system. b) To formulate Indian standards for terminology, grading, packaging and specifications for man-made fibres and their products.

TXD 32	Textile Protective Clothing	To formulate Indian Standards for testing and specifications for textile protective clothing for protection from fire and other health/life hazards.
TXD 33	Industrial Fabrics	To formulate Indian standards for terminology, testing and specifications for industrial fabrics including non-woven textiles made from natural and man-made fibres/filaments and blends thereof.
TXD 34	Technical Textiles for Buildtech Applications	To formulate Indian Standards for terminology, testing and specification for technical textiles for build-tech applications such as building infrastructure, landscaping, decoration, hoardings etc.
TXD 35	Technical Textiles for Agrotech Applications	To formulate Indian Standards for terminology, testing and specifications for technical textiles for agrotech applications such as horticulture, agriculture, forestry and animal husbandry etc.
TXD 36	Technical Textiles for Medtech Applications	To formulate Indian Standards for terminology, testing and specifications for technical textiles for medtech applications such as healthcare and hygiene textile products, implantable and non-implantable and extra corporeal textile products.
TXD 37	Technical Textiles for Sportech Applications	To formulate Indian standards for terminology, testing, code of practice and specifications for technical textiles for sportech applications such as indoor and outdoor sports, recreational facilities and equipment.
TXD 38	Technical Textiles for Mobiltech Applications	To formulate Indian standards for terminology, testing, code of practice and specifications for technical textiles for mobiltech applications such as automobiles, railways, ships and aircraft.
TXD 39	Technical Textiles for Clothtech Applications including Narrow Fabrics and Braids	To formulate Indian standards for terminology, testing, code of practice and specifications for technical textiles for clothtech applications including all types of narrow fabrics and braids excluding those meant for aeronautical purposes.
TXD 40	Composites and Speciality Fibres	To formulate Indian standards for terminology, testing, code of practice and specifications for technical textile components of composites and other speciality fibres.

