
Pidilite
Building Bonds


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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

Indian Leather Technologists' Association is a premier organisation of its kind in India was established in 1950 by Late Prof. B.M.Das. It is a Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS).

The Journal of Indian Leather Technologists' Association (JILTA) is a monthly publication which encapsulates latest state of the art in processing technology of leather and its products, commerce and economics, research & development, news & views of the industry etc. It reaches to the Leather / Footwear Technologists and the decision makers all over the country and overseas.

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India's Export Potentials

Leather :

Leather is one of the most widely traded commodities globally. The growth in demand for leather is driven by the fashion industry, especially footwear. Apart from this, furniture and interior design industries, as well as the automotive industry also demand leather. The leather industry has a place of prominence in the Indian economy due to substantial export earnings and growth.

The Indian leather industry accounts for around 12.93 per cent of the world's leather production of hides/skins.

India's leather industry has grown drastically, transforming from a mere raw material supplier to a value-added product exporter.

- Total leather good exports from India stood at US$ 1.36 billion during 2017-18.
- During 2017-18, the major markets for Indian leather products were US (24.48 per cent), Germany (14.76 per cent), UK (10.94 per cent), Italy (5.82 per cent), Spain (5.87 per cent), France (5.07 per cent), Netherlands (4.86 per cent), Australia (3.41 per cent), UAE (3.10 per cent) and Denmark (2.59 per cent).
- In 2017-18, leather footwear component, leather garments and finished leather exports stood at US$ 340 million, US$ 519 million and US$ 874 million respectively

Total leather and leather good exports from India stood at US$ 4.72 billion during April 2016-January 2017.

Other valued exports from INDIA :

Pharmaceuticals :

The Indian pharmaceuticals market is the third-largest in terms of volume and thirteenth-largest in terms of value. It has established itself as a global manufacturing and research hub. A large raw material base and the availability of a skilled workforce give the industry a definite competitive advantage. The Indian pharmaceutical industry is expected to grow at a compound annual growth rate (CAGR) of 22.4 per cent to touch US$ 55 billion by 2020.

The Indian Pharmaceutical market is dominated by generic drugs which constitutes nearly 70 per cent of the market, whereas Over the Counter (OTC) medicines and patented drugs make up to 21 per cent and 9 per cent respectively.

- Pharmaceutical export from India stood at US$ 17.27 billion in 2017-18, and is expected to grow by 30 per cent to reach US$ 20 billion by the year 2020.
- Exports of Bulk Drugs, Drug Intermediates, Drug formulations and Biologicals together stood at US$ 16.45 billion in 2017-18
- India is expected to rank amongst the top three pharmaceutical markets in terms of incremental growth by 2020.
- Exports of Bulk Drugs, Drug Intermediates, Drug formulations and Biologicals together stood at US$ 16.45 billion in 2017-18
- India is the largest supplier of generic medicines globally (20 to 22 per cent of global export volume)
- India has one of the lowest manufacturing costs in the world. It is lower than that of USA and almost half of Europe.

Indian Plastic Industry :

The Indian plastics industry made a promising beginning in 1957 with the production of polystyrene. Thereafter, significant progress has been made, and the industry has grown and diversified rapidly. The industry spans the country and hosts more than 2,000 exporters. It employs about 4 million people and comprises more than 30,000 processing units, 85-90 percent of which are small and medium-sized enterprises.

- Export of plastic products from India increased by 17.1 per cent to US$ 8.85 billion in 2017-2018 as compared to US$ 7.56 billion in 2016-17.
- Exports of plastic raw materials stood at US$ 3.24 billion in 2017-18
- During 2017-18, major importers of Indian plastic products were US (US$ 1.11 billion), China (US$ 728.31 million), UAE (US$ 440.81 million), Italy (US$ 403.94 million), Germany (US$ 367.02 million), Turkey (US$ 334.18 million), UK (US$ 318.25 million), Bangladesh (US$ 257.14 million) and Nepal (US$ 205.82 million)
- The Indian plastics industry produces and exports a wide range of raw materials, plastic-moulded extruded goods, polyester films, moulded / soft luggage items, writing instruments, plastic woven sacks and bags, polyvinyl chloride (PVC), leather cloth and sheeting, packaging, consumer goods, sanitary fittings, electrical accessories, laboratory / medical surgical ware, tarpaulins, laminates, fishnets, travelware, and others.
- The Indian plastics industry offers excellent potential in terms of capacity, infrastructure and skilled manpower. It is supported by a large number of polymer producers, and plastic process machinery and mould manufacturers in the country.
- Among the industry's major strengths is the availability of raw materials in the country. Thus, plastic processors do not have to depend on imports. These raw materials, including polypropylene, high-density polyethylene, low-density polyethylene and PVC, are manufactured domestically.

India is ready to have 18 plastic parks and Government will be investing Rs 40 crore (US$ 6.2 million) to increase the domestic production of plastics. This will achieve environmentally sustainable growth and increase employment.

Indian Power loom industry :

The power loom industry has traditionally been a cornerstone of the Indian economy in terms of foreign exchange earnings and employment. Power looms contribute around 70 per cent of the total jobs in the textile industry, employing around 6.5 million people. The powerloom industry is equipped with approximately 2.701 million registered looms producing 54,000 sq. mtr fabrics, which are concentrated in clusters across Erode, Salem, Madurai, Ichalkarnaji, Solapur, Bhiwandi, Bhilwara and Malegaon, among others.

Apart from the US and the EU, which account for about two-thirds of India's textile exports, China, the UAE, Vietnam, Sri Lanka, Saudi Arabia, the Republic of Korea, Bangladesh, Turkey, Pakistan, and Brazil are some of the major markets for these exports. India's power loom production during April 2017 to August 2017 was 16,119 million square meters. Approximately 4.418 million people are employed in this industry. In India, Power loom sector contributes to 57 per cent of the total cloth production and more than 60 per cent of fabric meant for export is also sourced from this sector. The domestic textile and apparel market is witnessing strong growth due to a rapid increase in organised retail and disposable incomes; the market is estimated to reach US$ 141 billion by 2021.

The Power loom Development and Export Promotion Council (PDEXCIL) is the nodal agency for the development and promotion of exports of power loom products. The Council undertakes direct promotional activities such as participation in international trade shows, sending and hosting trade delegations, and sustained image-building exercises through advertisements abroad, publications and audio visuals.

As of October 2017, there are approximately 2.701 million registered power looms in the country.

Indian Shellac industry :

India produces a variety of non-timber forest/agricultural products (NTFPs), and has a global footprint in the export of such produce.

- Sesame seeds: Food applications, Ayurvedic health treatments. India exported sesame seeds worth US$ 463.90 million in 2017-18
- Guar gum: Emulsifier, thickener, stabilizer for a wide range of foods, cosmetics and pharmaceuticals. India exported guargum worth US$ 646.94 million in 2017-18.
- Shellac: Wood polish, food and drug coatings, cosmetics. Exports of Shellac from India stood at US$ 44.53 million in 2017-18.
- Tendu leaf: Bidi wrapping
- Tree-borne oil seeds: Biodiesel, medicines, dyes, tanning, fertilizers, pest control, varnish
- Medicinal plants: Cosmetics and medicines
- Bamboo, rattans and canes: Furniture, handicraft, housing, food, paper
- Isabgol:Purgative

India has been recording consistent growth in the export of NTFP over the last five years. It is the largest exporter of guar gum, sesame seeds and shellac, and the second largest exporter of medicinal plants in the world. India produces large volumes of NTFPs that are globally acknowledged for their quality. Moreover, NTFPs play a large role in contributing to the lives of millions of rural and forest-dependent poor people. Guar gum, vegetable saps and sesame seeds are some of the major export items. The main export destinations for guar gum are the US, China and Germany.

Indian Silk industry :

With sericulture activities spread across 52,360 villages, the Indian silk industry is one of the largest generators of employment and foreign exchange for the country. India enjoys a unique global position in terms of production of all commercially useful varieties of silk. India is the second largest producer of silk. The industry provides employment to over 8.25 million people in the country.

- Over April-February 2017-18, export of silk and silk products from India stood at US$ 198.96 million.
- The silk products exported include natural silk yarns, fabrics, made-ups, readymade garments, silk carpets and silk waste.
- Readymade Garments formed the largest segment generating 68 per cent of silk export earnings during April-February 2017-18, followed by Fabrics, Made-ups which accounts for 24 per cent of silk export earnings while silk carpets, silk waste, Raw Silk and Silk Yarn comprised 8 per cent of silk export earnings.
- In FY 2017-18 top five importers of silk carpet were US (US$ 1.40 million), UAE (US$ 0.95 million), Belgium (US$ 0.13 million), Germany (US$ 0.04 million) and Italy (US$ 0.03 million)
- Exports of silk waste stood at US$ 15.69 million in 2017-18.

We are thankful to the following Government Organizations whose relentless efforts have paved the way

1. Council for Leather Exports
2. The Pharmaceutical Export Promotion Council (PHARMEXCIL)
3. The Plastics Export Promotion Council (PLEXCONCIL)
4. Power loom Development & Export Promotion Council (PDEXCIL)
5. SHELLAC AND FOREST PRODUCTS EXPORT PROMOTION COUNCIL (SHEFEXIL)
6. The Indian Silk Promotion Council (ISEPC)

But, we do aspire and long to look deep further into by 1922!!

Goutam Mukherjee

Dr. Goutam Mukherjee
Hony. Editor, JILTA

From the desk of General Secretary

68th Foundation Day Celebration

Above has been arranged at 10.00 Hrs on Tuesday the 14th August, 2018 at the Auditorium of Freya Design Studio, Plot – 1647, Zone – 9, ILPA Leather Goods Park, Calcutta Leather Complex, Bantala, 24 Parganas (South).

Prof. Ajoy Kumar Ray, Padmashri IIT Kharagpur and Former Director, IIEST, Shibpur has kindly consented to deliver the prestigious B. M. Das Memorial Lecture titled **"A Brief History of Industrialization of India – Past, Present and Future"**.

Mr. Purnendu Basu, Hon'ble Minister – in – Charge, Technical Education, Training and Skill Development, Govt. of West Bengal has kindly consented to be present on the occasion as the Chief Guest.

A most cordial invitation is extended to all our Members to grace the occasion by their kind presence. The programme is as follows :-

- Registration : 10.00 Hrs.
- Welcome Address : Mr. Arnab Jha
- Garlanding of Portrait of Prof. B. M. Das
- Presentation of B. M. Das Memorial Medal
- Presentation of J. M. Dey Memorial Medal
- Presentation of J. Sinha Roy Memorial Award
- Presentation of Project Papers by the Recipients of the Awards
- Address : Mr. Purnendu Basu, Chief Guest
- Prof. B. M. Das Memorial Lecture : **Prof. Ajoy Kumar Ray, Padmashri**
- Vote of Thanks : Sri Susanta Mallick
- Lunch

Members wishing to avail on 14.08.2018 transport arranged by ILTA for to & fro journey from Parama Thana (near Science City) to Bantala must register their requests over telephone no. 2441-3429 / 2441-3459 latest by 08.00 PM on Thursday 9th August, 2018. The transport will leave Parama Thana sharp at 09.00 AM.

LEXPO Siliguri – XXV

The next LEXPO at Siliguri will be the 25th in series. We have already applied to the competent authority for allocation of Kanchanjungha Krirangan adjacent ground from around the middle of December, 2018 for organizing Silver Jubilee of LEXPO at Siliguri.

You are requested to :-

a) Kindly inform us your '**E-Mail ID**', '**Mobile No**', '**Land Line No**', through E-Mail ID : admin@iltaonleather.org or over Telephone Nos. : 24413429 / 3459 / 7320. This will help us to communicate you directly without help of any outsiders like Postal Department / Courier etc.

b) Kindly mention your **Membership No. (If any)** against your each and every communication, so that we can locate you easily in our record.

(Susanta Mallick)
General Secretary

Executive Committee Members of ILTA meet on
Every Thursday at 18-30 hrs. at ILTA Office.
Members willing to participate are most welcome.

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ISO 17708:2003(en) Footwear — Test methods for whole shoe — Upper sole adhesion

Dinker Bajpai

BUREAU VERITAS CONSUMER PRODUCTS SERVICES INDIA PRIVATE LIMITED, Ambedkar Nagar, Gujaini, Kanpur Nagar - 208 022 (U.P.), India

Foreword

ISO 17708 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/ TC 216, Footwear, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "…this European Standard…" to mean "…this International Standard…".

1. Scope

This standard describes a test method for the determination of the resistance to separation of the upper from the outsole or to separate adjacent layers of the outsole or to cause tear failure of the upper or the sole is measured. It also defines conditions of ageing that can be used for production control.

It applies to all types of footwear (cementing, vulcanization, injection molding, etc.) where the evaluation of sole adhesion on the upper is needed and where the upper is continuously assembled (closed shoe).

NOTE 1 : In all cases the objective should be to test the bond strength nearest to the edge of the assembly.

NOTE 2 :The test need not be carried out when the bond has been made by grindery (using, for example, nails or screws) or stitching.

2. Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

- EN 12222, Footwear — Standard atmospheres for conditioning and testing of footwear and components for footwear.
- EN ISO 7500-1, Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension / compression testing machines (ISO 7500-1:1999).

Term and definition

For the purposes of this European Standard, the following term and definition apply.

3. Upper-sole adhesion

Force required to separate the sole-upper interface.

What causes the failure ?

We first need to understand the type of failure. It is often assumed that failure in sole bonding is caused by the adhesive failing. Since the bond will only ever fail at the weakest point, it is therefore justifiable to ask whether it is a failure in the adhesive or in the material.

When inspecting footwear to determine the cause of the failure, we meticulously analyze the point of failure to determine the root cause of the problem. The most common forms of failure found are :

- Adhesive peeling from upper – identified by no adhesive remaining on the upper material and a solid coating of adhesive on the outsole
- Upper surface tear – upper material is the weak point and has torn away from the adhesive bond, leaving all adhesive and a small amount of upper material still attached to the outsole
- Adhesive non-coalescence – adhesive bond has completely failed, leaving adhesive on both the outsole and the upper material
- Adhesive peeling from outsole – adhesive has not bonded to the outsole, leaving the adhesive securely attached to the upper material, with little or no material remaining on the outsole material
- Sole surface tear – outsole material has torn away and the adhesive layer remains attached to the upper material

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- Adhesive breakdown – adhesive has failed to cross link and coagulate, leading to breakdown of the bond

How do we solve the problem ?

Good factory management, quality assurance and in-line inspections can all help to alleviate the problem. From the development stage, manufacturers should understand the performance of the materials they select and make sure the materials are appropriate for their minimum sole bonding requirements. Failure to do this will create future problems.

It cannot be over emphasized that perfect preparation is absolutely critical. Cutting corners and not following an analytical approach to preparation will cause sole bonding failures.

The following are some typical guidelines on how to prepare uppers and outsoles.

Upper materials :

- Leather: must be roughened to the corium layer and must not simply have its surface coating and grain layer removed
- Coated fabrics: the finishing layer can be removed either by roughening or by using a solvent wipe. Care must be taken to not damage the base substrate
- Textiles: materials with a smooth surface or a top finish will need a light scouring to remove the surface material and potential contaminants.

Outsole materials :

- Leather: normally split to provide a unifo _rm material for bonding. The surface should be roughened and any excess fibers removed
- Thermoplastic rubber (TR or TPR): treat with a halogenation primer
- Resin rubber and micro cellular rubber: scour, roughen or split the rubber and treat with a halogenation primer
- Molded rubber units: halogenation is required (may also roughen or scour prior to halogenation)
- PU: where possible roughen the surface. Alternatively apply a solvent wipe
- Microcellular EVA: lightly roughen the surface and apply an appropriate EVA primer
- PVC: remove surface contaminants with a solvent wipe. The cloth should be replaced, at least, after every ten uses to avoid contaminants being transferred from one outsole to the next

In production

During production there is always pressure to produce the maximum number of shoes per day. Brands and retailers want shorter lead times to meet ever increasing demands and reduce overall costs in the supply chain. Sole bonding can be a slow procedure but cutting corners is not the answer. Without correct preparation, issues may not become apparent until the product has left the factory and it becomes too late to make corrections.

Sole bonding operators need to be educated in the footwear technology of sole bonding, not just how the machine turns on and off, and how to present the shoe to the machine. Operators need to be supported in understanding the science behind adhesives and manufacturers must have the correct systems in place to ensure effective sole bonding. As an example, some factories use a conveyor belt system with the heat activation unit. This will produce three or four shoes at a time. Because the factory is hot, the operator will use a fan to cool themselves down. The ambient temperature of the factory and the effect of the fan will immediately cool the surface temperature of the adhesive. This is guaranteed to cause a sole bond issue on the shoes that have cooled the most – for example, the third or fourth shoe in each batch. The problem is not the fan, it is the bottle-neck of shoes coming out of the heat activation unit at a speed beyond the ability of a single operator to move all shoes to the next step in the same amount of time.

One way to solve the sole bonding failure problem is to add a UV component to the adhesive solution and then give the operator a UV or Black Light to check the adhesive coverage. Other points that need to be taken into consideration to ensure effective sole bonding are: checking the temperature of the heat activation unit, verifying the correct activation time and open time of the adhesive with the supplier and understanding the correct pressures on the sole attaching machine. A simple in-line test is the carbon paper test which can be used to see whether sufficient pressure is being applied in the correct areas. The carbon paper creates a clear image of the pressure areas.

Manufacturers need to make sure the dwell time on the sole attaching machine is correct and that the operator is not tripping the machine before the set dwell time, as the adhesive needs constant pressure and time to coagulate and start the cross-linking process. Early removal from the sole attaching machine will shorten that time and deactivate the process before it is finished.

Manufacturers also need to consider the machine being used for the application of the outsole. Flat, low-heeled, high-heeled, wedge-platform and walled outsoles will each require different machines to ensure effective application. Using one machine for all types will give inconsistent results.

Good sole bonding is critical in the footwear industry. It is the number one issue in shoe manufacturing. Customers returning broken shoes will damage the reputation of a retailer and a brand, translating into a loss in brand confidence and loss of sales. To avoid this, keep a close eye on production, train your operators to understand the science behind adhesion and then learn to identify the root cause of sole bonding failures. This will help solve the problem and help build consumer confidence.

SATRA STD 185 Sole adhesion tester

This well-proven instrument is designed to measure the strength of the adhesion of stuck-on and molded soles at the toe and heel of finished footwear in the shoe factory, but is equally useful in the testing laboratory.

The illustrations show the standard STD 185 with and without the heel attachment STD 185H. The sole of the footwear, still on its last, is positioned on the ridge shaped anvil or fulcrum so that the curved toe piece of the instrument fits in the feather-line groove between the sole and the upper.

A gradually increasing force is applied by hand to the backpart of the footwear and this effectively becomes a downward force applied by the toe piece to separate the sole from the upper. This force is shown by the load dial gauge on the instrument, which incorporates a maximum load pointer.

The actual load to cause separation can be measured or alternatively, a pass load can be applied to check that the sole adhesion is satisfactory and the sole does not come away. This second method of operation is the more useful one in the shoe factory since it can be applied to ordinary shoes from the production line.

If, as should happen, the sole attachment remains secure, the shoes can be returned to the rack or track quite undamaged. If soles pull away before the pass load is reached, a check on materials, technique or process is called for.

The measurement of adhesion at the heel (mainly for men's and industrial footwear) is carried out in a similar way, but the heel is supported in a cradle (STD 185H), which replaces the anvil.

Footwear: 10 essential quality assurance tests and checks

1. Size measurements check

Checking footwear dimensions typically involves measuring back height, quarter lateral height, medial quarter height, external toe cap length, and shoe length from heel to toe. Inspectors also measure the lengths of shoes laces, if any, and the dimensions of the shoe box against specifications.

2. Vulcanization test of rubber outsole

Vulcanized shoes contain polymers that are infused with sulfur to provide more durability, while maintaining the shoes' elasticity. Basic testing of vulcanized shoes consists of applying tensile stress to the rubber outsole. Many factories that produce this material are outfitted with a testing machine designed to produce data on strength, modulus, elongation, toughness and yield strength based on international standards.

3. Needle detection test

Like toys and many other goods manufactured in a factory, shoes need to be checked for needles and any other metal objects that might be hazardous to the consumer. Testing for needles is generally done by use of a machine that uses magnets to detect metal objects in the product. Such a machine should always be used at the factory that produces the shoes prior to shipment. One needle found in a single shoe of a unit sample is cause for rejecting an entire order.

4. Flex/torsion test

Footwear should be flexible, and shoe flexibility is particularly a concern for those purchasing running shoes. One should be able to twist, bend or otherwise contort a shoe to a certain extent with relatively little effort and without damaging the shoe. To conduct a flex, or torsion test, grip a shoe from the heel end and toe end and bend the shoe upward into itself, then twist the shoe slightly to simulate torque. Check for any gaps in the bond used to assemble the shoe. Are there any cracks or damage? These are a signs that shoe adhesive strength may be questionable.

5. Stitch density check

Stitch count is an important measure of quality and strength in textiles and, therefore, in many types of shoes that use fabric during their

production. Visually count the number of stitches per inch of fabric on a shoe to determine quality. As a general rule, an adult shoe should have at least 8-10 stitches per inch, while a child's shoe should have 10-12 stitches per inch for added strength.

6. Friction test

Certain shoes require more grip for friction than others. That's why it would be difficult to play basketball with shoes that have a smooth bottom surface. One can perform a simple friction test of footwear by setting a shoe on a flat surface and, without applying any pressure, gently attempting to slide the shoe across. If the shoe easily slides without much resistance, this is a very telling sign of a shoe's applications and limitations. For more detailed test results, a lab can determine the dynamic coefficient of friction between footwear and flooring under various conditions.

7. Rocking test

This test, normally used for inspecting high-heeled shoes, can be conducted as simply as tapping the back of the shoe to see if it rocks. Typically, if the shoe rocks more than 2mm in one direction or the other, the shoe is unstable and may be hazardous to the wearer.

8. Bonding tests

Bonding tests are used to determine the ability of an adhesive to maintain its integrity under a certain degree of stress. In the case of footwear, bonding tests can be used to determine adhesive strength between upper and midsole as well as midsole and outsole of a shoe. Special bond test equipment would be needed to measure specific adhesive strengths, which a factory may or may not have.

9. Rub test

A rub test consists of checking the color fastness of any fabric by rubbing the outside of the shoe with a dry or wet cloth. Similar to a crocking test used in testing fabrics, a rub test ensures that color will not bleed off from the shoe over time.

10. Marking tests

Marking tests assess if a shoe is non-marking. One way is to turn the shoe with the sole facing upward and attempt to press a fingernail into the sole. If the sole dents or yields then it is a soft shoe and non-marking. A second test involves rubbing the shoe against or drawing a line with the heel of the shoe on a sheet of white paper with just enough force as not to tear the paper. If a mark is left on the paper, the shoe is not non-marking and fails the test. A shoe that fails marking tests is one that will likely leave scuff marks on hard floors.

General Test Requirement :

2.1 Rubber Outsoles

Property	Test method	Minimum requirements
2.1.1 Hardness (Shore A) Minimum varies for specific designs QC/Division may give exemptions	ASTM D2240 SATRA TM 205	• Men's 65±5 • Women / Boys 60±5 • Children / Infant 55±5
2.1.2 Flexing endurance Ross flex method	SATRA TM 60 @ 25°C	• No cracking after 50,000 flexes
	SATRA TM 60 @ -10°C	• No cracking after 20,000 flexes
2.1.3 Flexing endurance – BATA Belt method (for cleated soles) (Secondary)	SATRA TM 133	• No cracking after 50,000 flexes
2.1.4 DIN Abrasion resistance	SATRA TM 174	• Every day 250mm3 maximum • Performance 150mm3 maximum • Indoor use 500mm3 maximum
2.1.4 Non-marking	PVC & WOOD TILE (1997)	• Every day: no worse than slight marking after cleaning (3 grade) • Labelled as non-marking no marking before cleaning (4 grade)
2.1.5 Anti-Yellowing	ASTM D1148 (12 Hours*50 °C*300 Watt sunlight	• ≥4-5 Grade For White Or Light Color
2.1.6 Static Skid Resistance	ASTM-F1677 (1996)	• Normal: Dry 0.5 Wet 0.3 • Skid Resistance: Dry 0.7 Wet 0.4 • TX Traction Dry: 0.7 Wet 0.4 • Careers for Wal-Mart Quarry tile Dry & Wet ≥0.68 Oily **low** contaminant or Oily + **wet low** contaminant ≥0.38 Oily **high** contaminant or Oily + wet **high** contaminant ≥0.38
2.1.7 NBS abrasion resistance	SATRA TM221/ASTM D 1670	• Indoor slippers ≥ 30 index • others ≥ 70 index

2.2 EVA Outsoles

Property	Test method	Minimum requirements
2.2.1 Hardness (Asker C) Minimum varies for specific designs QC/Division may give exemptions	ASTM D2240 SATRA TM 205	• Men & Women & Boys : 65±5, • Children & Infant: 55±5
2.2.2 Flexing endurance – Ross flex method	SATRA TM 60 @ 25°C Flexes?	• No cracking after 50,000 flexes
	SATRA TM 60 @ -10°C Flexes?	• No cracking after 20,000 flexes
2.2.3 Flexing endurance – BATA Belt method (for cleated soles) (Secondary)	SATRA TM 133	• No cracking after 50,000 flexes
2.2.4 DIN Abrasion resistance	SATRA TM 174	• Light use (e.g. beachwear) 400 mm^3 max. • Everyday 350mm^3 max. • Hiker 250mm^3 max
2.2.5 Non-marking	PVC & WOOD TILE (1997)	• Every day: no worse than slight marking after cleaning (3 grade) • Labelled as non-marking no marking before cleaning (4 grade)
2.2.6 Static Skid Resistance	ASTM-F609 (1996)	• Normal: dry 0.5 min., wet 0.3 min. • Skid Resistant: dry 0.7 min. wet 0.4 min.
2.2.7 NBS abrasion resistance	SATRA TM221/ASTM D 1630	• Every day > 30 index • Slipper > 15 index • Hiker > 50 index

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Collage Care and Cure

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Abstract :

It's hard to talk about the topic of anti-aging without mentioning telomeres. Each of our chromosomes has little collections of DNA at each end called telomeres, and they are unable to reproduce entirely every time a cell divides. The result is that our telomeres get shorter as we age, causing our cells to age too. The good news is that scientists have discovered some nutrients that can help protect our telomeres, which in turn can contribute to a longer life. These nutrients have an ability to affect the activity of an enzyme called telomerase, which helps lengthen telomeres. They also act on telomeres as antioxidants (important because telomeres are susceptible to oxidative stress) and anti-inflammatories.

Here are seven nutrients and nutritional factors that have a positive effect on telomeres or other effects on cell damage, and thus can help stop or reverse aging.

Introduction :

Collagen comes from the Greek word "kólla", meaning "glue" and the French -gène, meaning "something that produces". In other words, collagen is a "glue-producing" protein.

It's necessary to form and heal virtually every tissue in our body. That's why it's the most abundant protein you have — 30% of the total protein in our body is collagen.

Collagen is concentrated in one important structure: the extracellular matrix or ECM. The ECM is the layer that supports the cells in every single tissue of our body.

You can think of the ECM like a net that holds all our cells together and supports their function.

By dry weight, collagen makes up :

- æ 90% of the sclera (white part of our eye)
- æ 80% of tendons
- æ 70-80% of the skin
- æ 60% of cartilage
- æ 30% of bones
- æ 1–10% of muscle mass

We cannot get collagen directly from foods, but only from supplements, so our body has to make it.

Discussion :

Collagen is a fibrous protein that is found in our skin, tendons, bones, cartilage, and other connective tissues. It also helps heal and repair damaged cartilage and bone while also supporting the integrity of our joints and connective tissues. Therefore, collagen is critical for fighting the aging process. Collagen can be taken as a supplement and you support collagen production by drinking bone broth daily (from beef marrow bones). Eating foods can also support production of collagen with support from body. These include berries, lean meats, beans and legumes, and foods rich in vitamin C (e.g. citrus, leafy greens, broccoli, bell peppers, kiwi). Collagen supplements can help support the skin and connective tissues and support our body in making its own collagen (note: there are two types: type 2 for joints, and types 1&3 for everything else). Collagen is a fibrous, insoluble, hard protein most commonly present in the skin, bones, and connective tissue, where it provides structural support, elasticity, and strength. Although there are at least 16 different types of collagen, 80 to 90 percent of them are either types I, II, or III. Most collagen molecules form long thin fibrils (slender fibers) which, in the case of type I collagen, are stronger than steel, gram for gram. The collagen in the skin is the type we typically think about most because it is literally in front of our face—and in our face, too. The collagen in the dermis of the skin (the middle layer) is part of a network of fibers where new cells grow. Collagen also helps replace and restore dead skin cells. Collagen works with a substance called keratin to help keep the skin strong, smooth, resilient, and elastic. These qualities begin to change about the time production of collagen starts to decline, which occurs naturally around age 40. This is when we see a loss of elasticity to the skin and the appearance of wrinkles and sagging skin along with a weakening of cartilage in the joints. Although no one has yet found a way to prevent collagen levels from declining naturally with age, you can take steps to protect our collagen levels. Most of us are concerned about how our skin looks and feels, and providing the body with the right kind of collagen can help. You should be aware that topical products such as

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lotions and creams containing collagen that say they can rejuvenate our skin may provide moisturizing benefits but cannot increase collagen levels in our skin. Why? Because the molecules are too large to be absorbed by our skin. However, there are other ways to improve collagen in the skin. For example, you can choose laser therapy, which can stimulate collagen production. This requires a professional (e.g., a cosmetic dermatologist) to administer the treatments and can be costly. The two ways to promote collagen using laser are wounding the skin surface, which creates new collagen as it heals; and by stimulating production of collagen deep in the dermis. Foods that can help support collagen production include animal-based options, such as meat, fish, poultry, and dairy. However, considerable research has demonstrated that use of oral collagen supplements can be quite effective in improving collagen status.

Collagen supplements for the skin

Oral supplements of collagen hydrolysate, also referred to as collagen peptides, are available to support the skin, bones, and connective tissue. Collagen peptides are made from collagen (typically bovine) that has gone through an enzymatic hydrolysis process. These oral supplements have been studied extensively and the results have been positive as discussed below :

- In a double-blind, placebo-controlled trial, 69 women aged 35 to 55 took either 2.5 g or 5.0 g of collagen hydrolysate or a placebo once daily for 8 weeks. At 8 weeks, skin elasticity had significantly improved in both collagen groups when compared with placebo. Elderly women has significantly higher skin elasticity level four weeks after the end of the study.

- In another double-blind, placebo-controlled study, a collagen peptide supplement was tested on eye wrinkles and its stimulation of procollagen I, elastin, and fibrillin (2 more proteins in connective tissue). A total of 114 women aged 45 to 65 received either 2.5 g of the collagen supplement or placebo once daily for 8 weeks. Women in the collagen group showed a significant reduction in eye wrinkle volume at 4 and 8 weeks when compared with the placebo group. This benefit was still noted four weeks after supplementation ended. In addition, there was a significant increase in procollagen type 1 (65%) and in elastin (18%) at the end of the study.

- Photoaging (prematurely aged skin from ultraviolet radiation [sunlight mainly] exposure) is responsible for much of the fine lines, wrinkles, and other age-related changes to the skin. This study evaluated the use of a potent antioxidant called astaxanthin along with collagen hydrolysate in 44 healthy volunteers. They received either 3 g daily of the combination treatment or placebo for 12 weeks. Those in the supplement group had significant improvements in facial skin elasticity and water loss under the skin compared with the placebo group, as well as an improvement in factors involved with skin infrastructure.

Ways to reduce collagen damage in the skin

On the other side of the coin, you can help reduce damage to collagen production by :

- Avoiding too much sunlight. Ultraviolet (UV) rays increase the rate of collagen breakdown and damaging collagen fibers. The UV rays also contribute to an accumulation of too much elastin, a protein that provides elasticity to the skin. Abnormal amounts of elastin results in too much of an enzyme that destroys collagen.

- Limiting sugar intake. A high-sugar diet increases a process called glycation, which ultimately results in brittle, weak collagen.

- Not smoking. Tobacco smoke contains substances that damage collagen and elastin in the skin.

Collagen supplements for bones and connective tissue

- Recent (March 2015) research showed that taking collagen supplements can help in the treatment of osteoarthritis. In the double-blind, placebo-controlled, randomized trial, individuals with osteoarthritis of the knee were given collagen peptides from either pork skin or bovine bone or a placebo. After 13 weeks, patients who took the collagen supplements had experienced a significant improvement when compared with the placebo group.

- In a literature review, experts at the University of Illinois pointed out that oral collagen hydrolysate is absorbed via the intestine and accumulates in cartilage and that it prompts a significant increase in the production of substances that can benefit those suffering with joint disorders such as osteoarthritis. The authors' review of seven studies lead them to report that collagen hydrolysate is safe and can help improve pain and function in some individuals with arthritic conditions.

- In an animal study, researchers tested the absorption of collagen hydrolysate and its impact on osteoporosis in rats. They found that the collagen had a "beneficial effect on osteoporosis by increasing the organic substance content of bone."

Collagen is critical for our skin and for holding our body together. To help weather the passage of time on skin, bones, and connective tissue, use of collagen supplements, along with a healthy diet, good hydration, and following the tips on how to avoid collagen damage in the skin, may be beneficial.

Folate

This B vitamin has been shown to indirectly affect telomere length in both women and men. More specifically, folate has been shown to help maintain the integrity and development of DNA, which in turn impacts the length of telomeres. Folate is found primarily in leafy green vegetables and beans. The form of the vitamin used in supplements (folic acid) may not provide the same advantages.

If we're stressed and not getting enough sleep, it's easy to feel down, but there's another big contributor to our mood: what you're eating. With its refined sugar and trans fats, the Standard American Diet is throwing our bodies off, and if you feel like you're in a funk, a lot of it can be related back to the food that you're consuming. "The smallest choices each day can make a real difference in improving mental and emotional well-being, stabilizing our moods, and improving our focus," says Dr. Drew Ramsey, author of The Happiness Diet.

Swiss Chard - High in folate, also known as folic acid, swiss chard and other leafy greens are good for our mood. In fact, a study by the University of York and Hull York Medical School found a link between low folate levels and depression.

Dark Chocolate - If you needed another reason to indulge in dark chocolate, it's this one: dark chocolate can make you happier. A study in the Journal of Psychopharmacology found that consuming chocolate high in cocoa flavanols increased levels of calmness and contentedness.

Eggs - With their essential fatty acids, eggs help our body to naturally produce serotonin. Low serotonin levels are linked to depression, anxiety, insomnia and fatigue.

Almonds - Almonds pack a lot of nutrients, including folate and magnesium. Magnesium is essential to brain health, and studies have linked it to a reduction in depression, but is often deficient in modern diets. So eat more of those almonds!

Lentils - Lentils are a good source of folate which is essential for our mood, and a cup of cooked lentils provides 90 percent of the recommended daily allowance of folic acid. Lentils also have the amino acid L-tyrosine, which our brain uses to make the neurotransmitters norepinephrine and dopamine, therefore helping our brain to combat depression.

Pumpkin seeds - A zinc deficiency can trigger depressive moods, but fortunately pumpkin seeds are packed with the essential mineral. Pumpkin seeds also contain L-tryptophan, a natural mood booster.

Oatmeal - While some think oatmeal is one of the most boring foods on the planet, it's good for our mental state. That's thanks to a lot of things, including high levels of magnesium, which help our brain fight depression and anxiety. Since it's also a great source of soluble fiber, it helps stabilize blood sugar levels, which helps you avoid mood swings.

Honey - The nutrients in honey produce a calming effect, helpful if you're feeling anxious, which is why many mix it into a cup of tea in the evening. A natural sweetener, it's also a good natural energy booster, so if you feel like you're dragging, pop a spoonful in our mouth. Nature's energy gel.

Flaxseed oil - Our standard American Diet has left us very omega-3 deficient and that can be bad for our mental state: omega-3 has been shown to be an effective supplement for fighting depression. Flaxseed oil is an easy way to get a mega dose of omega-3 essential fatty acids, helping to improve our mood.

Asparagus - Feel like you've been having a lot of mood swings lately? Get some asparagus on our plate, because it is very high in folic acid — a deficiency that is common in people with depression.

Water - A glass of water may be the simplest thing you can ingest, but it's very helpful. Mild dehydration has been shown to dampen moods, which means if you want to feel mentally stronger, make sure you're getting enough H2O throughout the day.

Omega-3 fatty acids

If you are not getting essential omega-3 fatty acids from cold water fatty fish consumption several times a week, you may want to consider taking a fish or krill supplement or consider these vegan alternatives. Adequate amounts of omega-3 fatty acids have been associated with lower inflammation (by lowering levels of pro-inflammatory cytokines) and more robust telomere length. A study from Ohio State University College of Medicine noted that supplementation of omega-3 fatty acids for four months to healthy sedentary overweight middle-aged and older adults resulted in a more favorable omega-6 to omega-3 ratio, which in turn had a positive effect on immune cell aging.

A Mediterranean diet is chock full of food that is good for our body (and our taste buds). It may also help you live longer. A recent study on the Mediterranean diet associated with longer telomere length; the shorter the telomere the more aging and disease-prone. The study, which began in 1976, looked at over 100,000 female nurses in 11 U.S. states ranging in age from 30 to 55 years old. What researchers discovered is that women who had the highest Alternate Mediterranean diet score ate more vegetables, fruits, grains, fish, legumes, and nuts. They also had higher telomere lengths. In other words, women who stuck closest to the Mediterranean diet seemed to live longer. Perhaps the reason the women in the study had higher telomere lengths is that by eating a Mediterranean diet they consume more omega fats. The Mediterranean diet emphasizes eating mostly plant-based foods including nuts. It also emphasizes eating fish and replaces butter with healthy fats like olive oil. All of which are rich in omega-3 fatty acids. A few studies link living longer to consuming omega-3 fatty acids. A study published last fall found that taking omega-3 supplements might slow aging. The study looked at overweight middle-aged and older adults who took omega-3 supplements for four months. What researchers found is that they had longer telomeres.
"The telomere finding is provocative in that it suggests the possibility that a nutritional supplement might actually make a difference in aging," said lead author Jan Kiecolt-Glaser, professor of psychiatry and psychology at Ohio State. A 2013 study found that eating a diet rich in omega-3 fatty acids can help you live longer. The study looked at over 2,000 health older American adults from 1992 to 2008. The ones with

the ones who had the highest omega-3 levels lowered their risk of dying by 27 percent, and their risk of dying from heart disease by 35 percent. The participants in the study didn't take supplements but got omega-3s from the foods they ate.

Probiotics

The Standard American Diet (SAD) is characterized by refined, processed foods that play havoc with our intestinal microflora, our immune system, and the aging process. Providing our body with sufficient amounts of beneficial bacteria (probiotics) in the form of supplements or fermented and cultured foods can help halt premature aging. Include fermented vegetables, kefir, tempeh, or other foods with active beneficial bacteria in our diet on a daily basis or take a probiotic supplement (1 billion CFUs or more) containing at least four to five different strains.

Probiotics do the following favour to us :

Mitch Sirgent, probiotic expert extraordinaire and V.P. of Marketing for Bio-K+, joined Lisa Davis and Andrea Donsky had extensive works on the subject.

1. Probiotics help improve digestive health. Probiotics help the body digest food properly, manufacture vitamins, improve nutrient absorption, and help reduce gas and bloating. This is perhaps the most familiar effect of probiotic supplementation and is the likely reason most people are taking probiotics.

2. Probiotics help support natural defenses. Mitch points out that immune support is one of the most overlooked benefits of probiotics. Most of the body's immune cells are located in the intestinal tract (70-80 percent of them!) and they interact daily with the bacteria in our bodies. Known as Peyer's patches, these clusters of immune system cells tap into the gut looking for threats. Healthy bacterial flora help the body better discern what the real threats are and utilize its defenses more efficiently.

3. Probiotics help fight allergies. Allergies are tied to immune system function, and probiotics can help educate the immune system, modulating its overreaction to environmental triggers that are perceived as normal under most circumstances. Mitch points out, "tree pollen is not poison, so why is the body responding to it like it's poison?" Probiotics help the body better respond to environmental triggers.

4. Probiotics support women's vaginal health. Probiotics have a long history with treating vaginal yeast infections and maintaining a healthy balance of vaginal flora.

5. Probiotics help prevent Urinary Tract Infection's (UTI's). Though often lumped into women's health issues, many children suffer chronic urinary tract infections. Probiotics like Bio-K+ can help prevent these recurring infections in both children and adults alike. My kids love taking their probiotics and don't fight taking this 'medicine'

Taking probiotics daily is key because so much of what we do in our daily lives impacts the balance of intestinal bacteria. Antibiotics play a huge role in this. "As beneficial as they can be, they disrupt those friendly bacteria in our body which are our first line of defense," Mitch notes. Antibiotics are also present in our food chain, fed to farm animals at extraordinary rates. Stress is another big factor. When you are "stressed-out", the body produces more anxiety hormones and more free radicals circulate as a result. The body becomes run down and the immune system has to pick up the slack, eventually suffering its own exhaustion. I love the analogy Mitch uses to help explain the role of probiotics in daily life: they can be seen as our 'little warriors', our protectors - and this means reinforcements need to be sent in every so often.

Mitch points out that an ideal ratio is less important than protecting the diversity of the bacteria in our gut — the more strains of friendly bacteria in our system, the better. "Like any eco-system, it is the diversity and richness of different organisms that brings a balance to the environment," Mitch explains. "It's not as easy as saying we need 80% good and only 20% bad; you can be very, very sick with only 2% bad bacteria in the body if it's the wrong kind." When it comes to choosing probiotics, quantity is not the only thing to look out for. While the literature is quite clear that 10 billion CFU (colony forming units) per day and up has a measurable impact on the intestinal flora, you also want to look for a potency that has been supported by clinical studies. According to Mitch, "probiotics don't do anything if they are not made properly, if they are not manufactured with care and the strains aren't well documented. There is a lot of science involved in creating probiotics that deliver results." For all of the great reasons discussed by Mitch Sirgent above, I highly recommend including probiotics in our daily regimen. If you're worried you won't remember to take our probiotics daily, take Lisa Davis' advice - put a little sticky note on our fridge door. You'll know it's the right decision – we will feel it in our gut!

Vitamins C and E

Both of these antioxidants have demonstrated an ability to lengthen telomeres in women. In the laboratory, researchers have observed an increase in life span when concentrations of vitamin C & E are added to culture media, and both antioxidants have demonstrated an ability to limit cell damage that can cause shortening of telomeres. The best sources of vitamin C are citrus, bell peppers, berries, tomatoes, and leafy greens. Get our vitamin E from almonds, sweet potatoes, spinach, avocados, wheat germ, and butternut squash. You can also take a supplement but make sure it's from a reputable company that sources quality ingredients.

Vitamin C : With an abundance of fresh fruits and vegetables, we get more vitamin C that we need in the summer months. But as autumn sets in and

temperatures get cooler, families often get less of the vitamin while simultaneously being exposed to more germs – a recipe for colds and flu.

Vitamin C is well known as the get-well vitamin. Who doesn't reach for oranges and vitamin C supplements at the first sign of a scratchy throat or a cough? But getting enough vitamin C on a daily basis is vital for our overall health.

The vitamin is a building block of collagen, which is an essential component of skin, tendons, ligaments, and blood vessels, and it also helps develop scar tissue. Essentially, it helps our body grow tissues and repair them when there's damage.

Vitamin C is also an antioxidant, a group of nutrients that help prevent cellular damage caused by free radicals. Free radicals are responsible for aging and are a contributing factor in the development of cancer, heart disease, arthritis, and other inflammatory conditions. Antioxidants also play a key role in protecting the body against toxins, such as cigarette smoke and pollution.

If that weren't enough, a new study from researchers at Montreal's Jewish General Hospital and its affiliate, Lady Davis Institute for Medical Research, showed that vitamin C helped improve the emotional state of patients who are receiving acute care (i.e. short-term hospitalization). Previous studies indicated hospital patients suffer from low levels of vitamins C and D, so researchers wanted to see what sort of impact supplementation would have (a group of patients were also given vitamin D; they exhibited no significant changes). The statistically and clinically significant improvement exhibited by patients given vitamin C supplements shows us that vitamin C may very well play a role in our emotional well-being. Vitamin C deficiency has been associated with everything from Gingivitis and bleeding gums, to anaemia, nosebleeds, and weight gain resulting from slowed metabolism. So there are plenty of reasons we all need to make sure we're getting enough of the vitamin.

The body doesn't store vitamin C, so you need to get plenty of it each day. It's pretty difficult to overdose on vitamin C (because it can't be stored), but you shouldn't ingest more than 2,000 mg per day because excessive vitamin C consumption can lead to upset stomach and diarrhoea. Keep in mind that 2,000 mg is the recommended maximum from all sources, including food, juices, supplements, and fortified foods. Eating vitamin-C-rich foods is a simple way to load up on the antioxidant, and organic is always healthier since there is no pesticide residue. One orange offers about 116% of the recommended 60 mg for adults, but there are foods that offer even more vitamin C, including strawberries (136%), boiled Brussels sprouts (161%), steamed broccoli (205%), raw red bell peppers (291%), and papayas (313%). Falling a little short of oranges, but still high in vitamin C are cantaloupe, kiwi, boiled cauliflower, and boiled kale. Juices and fortified foods may seem like a great idea, but they usually aren't. The best nutrition comes from a food in its natural form, and nutrients begin to degrade as soon as foods are harvested – meaning that you're getting the best nutrition when you consume local foods. Throw in processing for juices, and there's a lot that you're just not getting from juices. As for fortified foods, few processed products contain an adequate amount of nutrients to really make a difference.

Sticking to whole, vitamin-C-rich foods might be more challenging in the winter (especially if you have picky eaters in the house), but a simple supplement can boost our intake when you need it. Whatever you do, just make sure you're loading up on the vitamin C – our body will thank you.

Vitamin E : Let me introduce you to the eight faces of vitamin E. Yes, vitamin E is really just an umbrella term to describe this multifaceted nutrient. To better understand vitamin E, you need to look at all eight forms, each of which has its own distinctive personality while also having some characteristics in common.

The eight naturally occurring forms of vitamin E are alpha-, beta-, delta-, and gamma-tocopherol and alpha-, beta-, delta- and gamma-tocotrienol. All of them share the fact that they are fat-soluble, which means they dissolve in fat. Once in the body, vitamin E hangs out in adipose (fat) tissue as well as muscle, with a small amount in the cell membranes. The body tends to eliminate fat-soluble vitamins more slowly than water-soluble vitamins, so vitamin E sticks around a bit longer than they do. Vitamin E is also an antioxidant that helps fight the nasty free radical molecules that play a role in aging as well as heart disease, arthritis, and many other diseases. This antioxidant typically works along with vitamin C and selenium in these efforts. Vitamin E includes assistance with immune system function and metabolism among its tasks.

Now let's look at the eight faces of vitamin E.

Alpha-tocopherol

Until recently, alpha-tocopherol was believed to be the only form of vitamin E to be active in the body. Continuing research has shown this is not the case. However, the government based the Recommended Daily Allowance (RDA) of vitamin E on alpha-tocopherol, and that amount is 15 mg or 22.4 International Units for everyone age 14 years and older. Alpha-tocopherol is the most common form of the vitamin found in supplements and along with gamma-tocopherol, the form present in food. Those foods include plant oils (e.g., canola, olive, sunflower, sesame), seeds, and nuts.

Beta-tocopherol

Little is known about this form of vitamin E except that it has antioxidant properties and works in sync with the other vitamin E forms.

Delta-tocopherol

Of all the tocopherols, the delta form is the least active in the human body. However, a study from Rutgers University recently noted that delta-tocopherol was more effective than gamma-tocopherol against colon cancer cells in the laboratory, while alpha-tocopherol was not effective at all.

Gamma-tocopherol

Aside from alpha-tocopherol, the gamma form has been the subject of a significant amount of research in recent years. It now appears that gamma-tocopherol has important roles in health, including the support of normal cell growth and a healthy immune system. A recent study in Nutrition and Cancer noted that gamma-tocopherol potentially reduces the risk of prostate cancer.

The 4 Tocotrienols

Less research has been performed regarding the four tocotrienol forms of vitamin E. Some experts have indicated tocotrienols can help lower lipids (cholesterols and triglycerides) in people who have type 2 diabetes. Tocotrienols also have antioxidant properties. It's possible the tocotrienols may help battle bone loss as well. Another recent study found that tocotrienols given to animals safely enhanced bone formation and reduced bone loss, thus fighting osteoporosis. Tocotrienols also have been shown to protect the heart and reduce the risk of cardiovascular disease. If you take a vitamin E supplement, be sure to use one that contains all four tocopherols at the very least, as these forms have a synergistic relationship. The preferred supplement, however, is one that contains all eight forms of vitamin E (full spectrum), which is how the vitamin occurs naturally.

Vitamin D

Telomeres decrease in length much faster in the presence of chronic inflammation. Vitamin D helps inhibit the body's inflammatory response and thus can reduce inflammation and deterioration of telomeres. For example, a National Institutes of Health study reported a significant association between vitamin D deficiency (blood level less than 30 nmol/L) and short telomere length. An earlier study from Harvard found that higher plasma levels of vitamin D may be associated with longer telomeres. Many people have low or deficient levels of vitamin D, so it's a good idea to have a blood test to identify our levels before beginning a supplement regimen. Although vitamin D can be found in some foods, supplementation and exposure to sunlight are the best ways to get this nutrient..

Vitamin D is extremely important, especially during the darker fall and winter months. While you may already know that Vitamin D helps us maintain healthy bones, it's responsible for so much more. Here are a few big things Vitamin D does for our body :

- æ It's a vitamin that acts like a hormone. In this way, it directly controls the expression of about 1,000 genes, including a number of genes linked to things like MS, Crohn's disease, systemic lupus, rheumatoid arthritis, and cancer.
- æ Vitamin D also plays a major role in aging. Telomeres, which are responsible for protecting the information stored in our genes and repairing our DNA, get shorter as we get older. Shorter telomeres aren't as effective at their jobs. Recent studies have shown a direct link between Vitamin D levels and telomere length.
- æ It makes sure our immune system functions properly—Mom was right to suggest it when you came down with a cold.
- æ It can help alleviate symptoms of depression.
- æ Some studies have shown Vitamin D to aid in weight loss and lower risk of heart disease.

Over half of all Americans don't get enough Vitamin D. It is readily available from the sun, but harder to find in food sources. Cereal, yogurt, orange juice, and non-dairy milks are a few foods that have been fortified in Vitamin D, but often supplementation is necessary to get the necessary amount. Make sure you talk to our doctor since it's a fat soluble vitamin, meaning there is too much of a good thing in this case.

Conclusion :

Whether or not taking additional collagen supplements will help our ails is up to our individual condition and lifestyle. Research appears to support collagen supplements for older people and people with conditions like arthritis, but an otherwise healthy person with a balanced diet may not see any benefits. That said, there are also plenty of natural ways to get in your daily dose of this superstar nutrient each day. If you want to consume collagen naturally, eat a well-balanced, high-protein diet that includes animal products. Collagen is in beef, chicken, fish, and egg whites. But you may not want to eat too much protein, either. Your body doesn't tell the collagen where to go. Instead, it distributes the collagen like it would any other nutrient. So taking collagen supplements works much like exercise — it is difficult to target a specific need, but increasing your intake could still have benefits.

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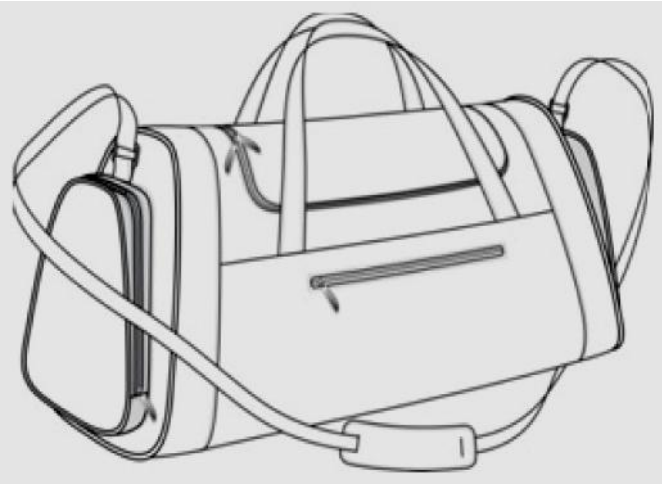
LESSON ON LEATHER GOODS – Part VIII

Shome Nath Ganguly
Former Principal of Karnataka Institute of Leather Technology

(The purpose of this article is to advise the students as well as artisans engaged in leather goods industry.

Shri Puranjan Mazumder of FREYA helped me to prepare this article)

DUFFEL BAG



What is a Duffel Bag ?

A duffel bag is a large cylindrical type bag. Originally it was made with heavy cloth or other fabric with a draw string closure at the top. Any typically large generic hold all or a bag made with heavy cloth or thick fabric is known as duffel bag.

The name Duffel comes from a town in Belgium where initially the thick clothes were used to make this bag. It is often used as luggage or to carry sports equipment by people who travel in the outdoors. Duffel bags are also often used by military personnel. When it is used by sailors or marines they are sometimes called sea bags.

Dispensing with the use of rope to pull the eyelets of the top together, this would simply hold the throat of the duffel bag.

How big is a duffel bag ?

This bag can be made as per your airline's guidelines on size for carry-on luggage. However the dimensions of duffel bags will not be larger than 10 inches by 16 inches by 24 inches. It has no weight limitation for carrying.

When the duffel bag was invented ?

The origins of duffel bag came in the mid 17th century from Duffel, the name of a town in Belgium where the cloth was originally made.

What is the material used for making a duffel bag ?

Water proof Canvas was the ideal material for this bag. However thick leather is now widely used for manufacturing the same. It is another popular material more suitable for travel bag in the world. Duffel bags are made out of other fabrics too such as a nylon and cotton.

Opening Ceremony of Centenary Year Celebration of Government College of Engineering and Leather Technology (GCELT), Kolkata – An Overview

Government College of Engineering and Leather Technology (GCELT), Government of West Bengal, has stepped into glorious 100th years of its odyssey and it will turn complete centenarian institute on 2019. With due conformance to the law of nature this institute has attained these physical numbers of existence. But the reason for existence of any organization is embedded in its quality and quantum of service that it renders to the targeted society. Government College of Engineering and Leather Technology under the administrative umbrella of the Government of West Bengal has tried to cater the society with its auspicious desire. Government College of Engineering and Leather Technology is one of the pioneering Engineering Colleges of our Country established by British era in the year 1919, just after the World War–I. The historical perspective has been dealt in the History section of our societal heritage. This Government Institute is under the administrative control of the Directorate of Technical education West Bengal and Department of Higher Education, Science & Technology and Biotechnology of the Government of West Bengal at present. Since the inception its focus was on the teaching & research in Leather Technology/Footwear & Leather goods making, assistance to Industries and also to provide training and organize seminar/ workshop to disseminate the knowledge to the stake holders. There has been a gradual change in morphology of this institute keeping harmony with law of nature.

Let us have quick look at the genesis of the institute since its inception before going to the event held on the occasion of its centenary celebration:

- The Govt. College of Engineering and Leather Technology (GCELT), pioneer in the field of education and research on Leather Technology originally started its maiden journey under the name of 'Calcutta Research Tannery' in the year 1919 on the recommendation of Munitions Board set up by the Government of India immediately after the first World war with the aim of exploiting indigenous resources of hides, skins and tanning materials for the purpose of production of leather and leather goods and development of leather industry in the country.

- The great thinker Prof. B.M. das was the founder Superintendent of the institute.

- The Institute was run up to 1926 under this name. In 1926, the name was changed to 'Bengal Tanning Institute' (B.T.I.) and its main function became training of students in Leather Technology, to train suitable technical personnel for leather and allied industries apart from the research work that was the motive in the original programme. During that time, B.T.I. used to conduct Two Years' Certificate Course in Tanning and One Year Certificate Course in Boot, Shoe and Leather Goods Making for the students passing out Honours graduation in Science. After the establishment of the 'Bengal Tanning Institute', there was a change in the leather industry and opportunities were available to the middle class educated youths to take training in leather technology and to start independent career in tanning and shoe business. Various schemes of training were introduced to cope with the greater needs of all State Governments and Central Government under the Second Five-Year Plan. Students passing out of this College had been absorbed in those schemes. Till the inception of the Institute, employment potentials in leather industries have been exploited to bolster the fact that India is one of the foremost producers of raw hides and skins in the world and our state also potentially contributes to the share of India. The prospect of technical and industrial careers in different leather industries has not so far been adequately recognized. This institute took a lead to train the people of our State so that they can create new avenues of employment and thus contribute to solve the unemployment crisis of Bengal. This College also undertook various programmes for the overall development of tanning and footwear industry of West Bengal by implementing several schemes from different departments of the State Government as well as Central Government too.

- In 1943, the Institute got affiliated to the Calcutta University with the introduction of a Three Years' Certificate Course in Tanning, admitting students who passed the Intermediate in Science examination.

- In August 1955, this institute got affiliation from the Calcutta University for imparting course in B.Sc. (Tech) course in Leather Technology and got recognized as a professional college under the University of Calcutta. The latest development and new schemes undertaken by this institute had turned it into a big organisation in the field of Leather Technology, with any likes in other parts of India.

- During the year 1958, January the Institute was renamed as College of Leather Technology and it has five different regular courses of training, namely –

  1. Three Years' B.Sc. (Tech) course in Leather Technology
  2. Two Years' certificate course in boot, shoe and leather goods manufacture
  3. One Year Artisan course in footwear and leather goods manufacture
  4. One Year Artisan course in tanning
  5. One Year Artisan course for girls in art leather works and taxidermy

  Beside these, there are refresher courses for training of boys sent by leather and footwear industry and casual training course in tanning footwear, flaying etc. After conversion into College of Leather Technology it has got three divisions, namely :-

1. Academic Division under a Vice-Principal,
2. Development and Production Division under an Assistant Director of Industries (Leather) ,
3. Statistical and Marketing Division under the Industrial Statistics and Marketing Officer During the First and Second Five-Year Plans many new departments of the Institute have been opened and many new schemes have been implemented for general development of footwear industry in the state of West Bengal.

- The Three Year B.Sc. (Tech) course ended in the year 1961 and from the year 1962, a Four-Year Integrated Degree course started in Leather Technology by the University of Calcutta.

- Originally, the Government of West Bengal through its Directorate of Industry and Agriculture used to administer the institute to furnish personnel trained in Leather Technology to the leather industry and leather research organizations etc. It was then transferred to the Commerce, Industries and Labour department and in August, 1968 it has been transferred to the department of Education, Govt. of West Bengal with the object of introducing higher technical education in Leather Science.

- The existing Four years' B. Sc. (Tech) degree Course in Leather Technology of the Calcutta University with an intake capacity of 15 students every year upto the year 1990 got changed into a B. Tech degree course in Leather Technology with an intake capacity of 30 students.

- The institute underwent paradigm shift with the change in location from Pagladanga to the prime location of Salt Lake on E. M. By Pass in the year 1994 after the celebration of Platinum Jubilee.

- The institute became multidisciplinary from its inherited mono-disciplinary stature with introduction of Information Technology as B-Tech Course in the year 2000 and Computer Science Engineering was introduced as B-Tech Course in 2001 thereafter.

- A long cherished Two Years' Master degree course in Leather Technology under the West Bengal University of Technology (WBUT) got the accreditation of the All India Council for Technical Education (AICTE) to start and run from the year of 2005 with an intake capacity of 25 students (both GATE qualified and Non-GATE as well). A modern range of quality analytical instruments and modern set up of a Biotechnology laboratory with a newly formed Polymer Technology laboratory amalgamated with experienced departmental faculty and Emeritus Professors from IIT, Kharagpur as visiting faculty are the key to run the nascent course of M. Tech in Leather Technology under the auspices of West Bengal University of Technology (WBUT), Salt Lake, Kolkata.

Now, let us come down to the saga of centenary celebration of GCELT.

A Centenary Celebration committee has been formed by the alumni of GCELT. The Centenary celebration Committee, GCELT decided to bank upon donation from different corners to celebrate the milestone of their almamater throughout the year. A separate bank account was opened for the said purpose. The modus operandie of the expenses was decided and met by the society of alumni of GCELT only. No official and financial involvement of GCELT have not been so far in organization of the event. The event was partnered by the following elite organisations:

1. Allumni Association, GCELT
2. Cemtral Leather Research Institute
3. Indian Leather Technologists' Association
4. Council for Leather Exports (CLE)
5. CLC Tanners' Association (CLCTA)
6. Indian Leather Products' Association (ILPA)

The following events have been held by the Centenary Celebration Committee, GCELT to mark the occasion:

1. The birthday i.e. 11th March 2018 was celebrated in the Government College of Engineering and Leather Technology campus. Alumni, students, members of Governing body and faculties and staff members joined hands together to mark the day with small indoor programme.

2. An event was organized in the GCELT seminar hall on 24th March 2018 to mark the occasion on a milder note as PRELUDE. The programme was attended by Hon'ble Vice Chancellor, Maulana Abul Kalam Azad University of Technology, West Bengal, Hon'ble Vice Chancellor, West Bengal State University and the Director of Technical Education, West Bengal. The programme resonated with valued speeches by the dignitaries accompanied by cultural vaganza of short duration by the students of GCELT.

3. The first outdoor programme was held on 7th July 2018 at the Eastern Zonal Cultural Centre, Salt Lake City.

    - The day started with inaugural song by alumni and students of GCELT.

    - After felicitation of the dignitaries, the programme was inaugurated by Dr. R.S. Shukla, IAS, Additional Chief Secretary, Department of Higher Education, Science & Technology and Biotechnology, Government of West Bengal. Prof. Saikat Maitra, Hon'ble Vice Chancellor, Maulana Abul Kalam Azad University of Technology, West Bengal chaired the occasion. Chief Guest of the occasion was Padmasree, Padmabhusan and former Secretary, Department of Science and Technology, Government

of India, Dr. T. Ramasami. Other dignitaries who graced the occasion as Guests of Honour were Sri Siladitya Basu Ray, Special Secretary to the Government of West Bengal, Department of Higher Education, Science & Technology and Biotechnology, Government of West Bengal. Dr. Amalendu Basu, Director of Technical Education, West Bengal, Dr. B. Chandrasekharan, Director, Central Leather Research Institute, Chennai, Sri S.S. Kumar, Chairman, Board of Governors, GCELT, Prof. Sanjoy Chakraborty, Officer –in-Charge, GCELT.

- Dr. R. S. Shukla and Dr. T. Ramasami solemnized the event by lighting the lamp.
- Thereafter, the dignitaries adored the event by their valued speeches.
- Apart from the dignitaries on the dais, the event was also graced by presence of numerous dignitaries off the dais.
- All the distinguished guest were given heartfelt gratitude and thanks by Dr. Sanjoy Chakraborty, OiC, GCELT.
- The first session ended with national anthem voiced by alumni and students of GCELT.
- The second phase of the programme centered on felicitation of few industrial stalwarts present on the day followed by the gala centenary speech by Dr. T. Ramasami. The audience was mesmerized by his scintillating presentation on the genesis of Science in last 100 years and contribution from Bengal. In this phase the dignitaries on the dais were
  - Mr. A. K. Jha, Working President, Centenary Committee
  - Dr. B. Chattopadhyay, Working President, Centenary Committee
  - Dr. B. Chandrasekaran, Director, CSIR – CLRI
  - Mr. Tapan Nandi, ILPA
  - Mr. Mukesh Jahar, ILCPA
  - Mr. Sahid Parvez, CLCTA
- All the distinguished guests was rendered note of panoramic thanks by Sri Susanta Mallick, General Secretary, ILTA.
- The second session ended with the song Vande Mataram, voiced by alumni and students of GCELT.
- The post lunch session became reverberant by the magnificent presentation by Mr. Debayan Ghosh, Chairman and Managing Director, Epygen Biotech Private Limited and alumnus of GCELT. His deliberation was centered around widespread use of biotechnology for our healthy sustenance and the correlation of the leather science and biotechnology.
- The session was followed by colourful and spirited renditions in the form cultural programme by alumni and students of GCELT followed by performance by professional singers as decided by the organizer of the programme.

The programme ended with sweet rosy note marking the august footstep of GCELT into its centenary year. All the programmes got it real dimension and justification due to patronage of the Directorate of Technical Education, West Bengal and Department of Higher Education, Science & Technology and Biotechnology of the Government of West Bengal. The approval, guidance and assistance from the Government of West Bengal made everyone feel a new era in the field of higher education.

Glimpses of the Ceremony


VIP'S

GOVT ASKS DEPARTMENTS, PSUs TO PREFER DOMESTIC LEATHER GOOD

Giving a boost to the leather and footwear sector, the government has asked ministries, departments, public sector units and defence forces to give preference to domestic products in the segment.

In the e-tenders, they have to give preferential treatment to domestic leather, footwear and accessories companies, an official said.

This is part of an initiative of the department of industrial policy and promotion (DIPP) to encourage 'make-in-India' campaign and promote manufacturing and production of goods and services India.

The official also said domestic manufacturers that will supply goods such as saddler, travel items, leather garments and high altitude footwear to the departments under the Public Procurement (Preference to Make in India), Order 2017, will have to use a certain percentage of local content in their production.

Up to 70 per cent minimum local content requirement is mandated for combat boot, safety shoes, footwear components, sports footwear with synthetic uppers and leather uppers.

Similarly 60 per cent minimum local content requirement was fixed for saddler, travel goods, leather garment and gloves. The minimum local content requirement will be reckoned with reference to ex-factory price on which the manufacturer has paid GST.

Further, DIPP will be the nodal ministry to monitor the implementation of this order. Several other department and ministries have already identified number of items for domestic content.

The department of defence production have identified as many as 90 such items and they will be notifying the domestic content for these products soon. Similarly, department of pharma will be notifying the norms for four major categories, including consumables and implants.

Government tenders worth about Rs 13,000 crore were either cancelled or withdrawn and re-issued after the Department of Industrial Policy and Promotion (DIPP) stepped in to change their conditions for promoting 'made in India' goods.

The government had issued the order on June 15,2017, to promote manufacturing and production of goods and services in the country to enhance income and employment.

Under the Public Procurement Order, it was envisaged that all central government departments, their attached or subordinate offices and autonomous bodies controlled by the Centre should ensure purchase preference be given to domestic suppliers in government procurement. Central Vigilance Commission too had issued directives to all central vigilance officers to exercise oversight on all contracts of over Rs 5 crore to ensure that restrictive and discriminatory clauses against domestic suppliers are not included in the tender documents for public procurement by central government agencies and that the tender conditions are in sync with the order.

(Source : Morung Express – 25/06/2018)

EXPORTER REFUNDS WORTH RS 25,000 CRORE STUCK FOR GSTN LACUNA, SAYS MITRA

"There have been three lakh applications from exporters of the country, involving Rs 25,000 crore, which are awaiting refunds," Mitra, also a GST Council member, said here during an exports conclave, a part of the Bengal Global Business Summit 2019 roadshow.

The GSTN auto verifies refund claims, but it is unable to do so, and therefore, manual verification is relied upon that leads to huge pileup of application and impacts the working capital of the exporters, the minister said.

He said an average of only 35-40 per cent of these applications have come to states for manual verification, and the situation remains grim for West Bengal as well. Mitra has been critical of the GST implementation in the past, too, accusing the Centre for its "hurried" introduction without adequate infrastructure, which has made the indirect tax system more "primitive" that the VAT regime.

He also said that he will raise the issue with the GSTN. Mitra had earlier assured the state's exporters of some advance credit to partially tide over their crisis. The Bengal minister said the state was aiming to double exports from the existing $9.15 billion, over the next three years. Towards this goal, it has decided to adopt measures to improve infrastructure for exporters at the district level.

The WBIDC and MSME will work together to set up export facilitation centres at district headquarters, he said. Mitra added that steel, foundry, garments and leather are among a few focus sectors to push exports from the state.

BENGAL PLANS TO DOUBLE EXPORTS KITTY TO RS 1.25 L CR IN 3 YRS : MITRA

The Mamata Banerjee government has set a target to double the export from the state to over Rs 1.25 lakh crore in the next three years.

This was disclosed by commerce and industries minister Amit Mitra on Mondal at a seminar, 'Accelerating Export' organized by WBIDC. The total export from the state in 2017-18 was at $9.15 billion (Rs 62,000 cr). A 11.17% jump from $8.23 billion in 2016-17.

Mitra pointed out that the country's compounded annual growth rate (CAGR) for export is 6.01% and the state has achieved a double digit growth for the last three years. Bengal account for around 4% of India's export basket.

In order to expedite the segment, the state government is setting up a centre in WBIDC, which would help MSME (medium, small medium enterprise) sector, the main exporters. The government is also sending 60 officials from the MSME department and 20 from the industry department for training in the Indian Institute of Foreign Trade (IITF), said Mitra. According to him, the export facilitation hub will also look into tariff and non tariff barier issues, which would shape up the export sector better than before.

Elaborating the sectoral strategy, he added that iron ore and steel, gold and jewellery, leather Marina products, readymade garments, fresh vegetables are the main areas of export from Bengal.

(Source : Times of India – 19/06/2018)

VIDARBHA FARMERS TO GAIN FROM SHEEP, GOAT EXPORT

In a move that could increase income opportunities for farmers in the Vidarbh region, export of live goats and sheep will start from the Nagpur airport for the first time this month end.

"To begin with, a shipment of about 1 lakh sheep and goat will be exported to Sharjah from the Nagpur airport over a two and a half month to three months."

(Source : Business Line – 26/06/2018)

GST BOOST FOR PAINT, FOOTWEAR COUNTERS

Rate cuts should help spur sales, particularly in the consumer durables segment, say analysts

PUNEET WADHWA & DEEPAK KORGAONKAR

Shares of paint, consumer durables and footwear companies have rallied by up to 10 per cent on the BSE, after the GST Council on Saturday reduced tax rates from 28 per cent to 18 per cent on a range of daily use products and appliances.

Among items on which the goods and services tax (GST) was reduced include footwear, small televisions, water heaters, electronic ironing machines, refrigerators, lithium ion batteries, hair dryers, vacuum cleaners, food appliances and ethanol.

The development triggered a rally in Bata India, Relaxo Footwears, Mirza International, Khadim India, Superhouse and Liberty Shoes from the footwear sector; Asian Paints and Shalimar Paints from the paint segment; and Havells India, IFB Industries and Butterfly Gandhimathi Appliances from the consumer durables space.

Asian Paints, Berger Paints, Havells India, Bata India and Relaxo Footwear hit their respective 52-week highs on the BSE on Monday.

Meanwhile, ITC (up 4 per cent at Rs. 284) and VST Industries (up 20 per cent at Rs. 2,993 in intra-day trade) from the cigarette sector have rallied up to 20 per cent over the past few months as the GST Council kept the tax rates unchanged. The recent move to cut rates, analysts say, should help boost sales, particularly in the consumer durables segment, over the next few months.

"The latest changes in the tax rate structure impacts positively a few companies (consumer appliances/durables space) under our active coverage such as Whirlpool of India, IFB Industries, Bajaj Electricals, V-Guard Industries, Havells India and Crompton Consumer. Footwear companies like Bata India are also positively impacted. The hospitality sector will also be positively impacted," say analysts at Nirmal Bang Securities. The new rates come into effect from July 27.

Companies plan to pass on the benefit of the rate cut to consumers to prop up sales, especially in the festive season.

"The rate cut will help consumer durables companies like us to pass on the benefit to consumers in the upcoming festive season. The 10 per cent cut in the television segment is of particular interest to us, as we have good acceptability in the 22-inch and 24-inch TV size segment. The move will make televisions more affordable for consumers in Tier 3 and 4 cities," says Nidhi Markanday, Director, Intex Technologies.

Among individual stocks, Bata India hit a new high of Rs. 878, up 4 per cent after India's largest footwear retailer reported 37 per cent growth in net profit in the June 2018 quarter over the corresponding period last year.

Though analysts at Motilal Oswal peg the revenue hit for the government at Rs. 60 billion to Rs. 70 billion, they too say that slashing GST rates across these products/segments will benefit consumers, and the electrical, hotels and textile industries.

"Asian Paints, Berger, Kansai Nerolac, Akzo Nobel, P&G, Bata, Relaxo, Whirlpool, Bajaj Electrical, Havells, V-Guard, Crompton Consumer, Siemens, Coromandel, Indian Hotels, EIH, Lemon Tree, ITC, Shree Renuka Sugars, Balrampur Chini, Bajaj Hinduthan and Arvind, among others, will benefit from the move," says Gautam Duggad, Head of Research, Motilal Oswal Securities.

(Source : Business Standard – New Delhi, 24/07/2018)

Leather and Leather Products for Safety Purpose

By

M. S. Datta

Bureau of Indian Standards, New Delhi

Introduction :

0.1 In looking for protection and safety from heat, cold, rain, dust, etc., the primitive man used animals hides/skins after killing them for food. Even today, the animals hides/skins are being largely used for safety/protection in the name of leather which is obtained after tanning the raw hides/skins. Some times leather is directly employed for protection and safety purpose and sometimes safety appliances/devices are fabricated out of leather. Now-a-days, a good number of non-leather materials are used for various purposes for personal safety and protection but still leather is dominating over the non-leather materials due to its unique property of porosity and elasticity through which leather can afford comfort to the user in all climates and adverse situations.

Leather is being used to fabricate various types of safety appliances and devices. It is also used to supplement with other synthetic materials in fabrication of some other safety devices.

In most of the cases either vegetable or mineral tanned leather or combination of both are applied for manufacture or construction of safety/protectlve equipments/devices. In some cases only a particular type of tanned leather is restricted depending on requirements and situation.

0.2 The following table (not intended to be exhaustive but only illustrative) summarises the uses of leather and leather products/articles for personal safety/protection purposes along with protection against hazards :

TABLE

Sl. No.	Name of the leather articles	Part of the body to be protected	Protection against Hazards
(1)	(2)	(3)	(4)
1.	Leather Aprons	Chest and Waist	Heat, splash, hot metal splashes, impact cut hazards, liquid splashes, heat radiation, corrosive substances, taking of hot chips, etc.
2.	Leather Sleeves	Upper Back, shoulders and arms extending over the chest	Cut sparks, hot molten metal and chemical splashes and sparks.

Continued

TABLE (*Continued*)

Sl. No,	Name of the leather articles	Part of the body to be protected	Protection against Hazards
(1)	(2)	(3)	(4)
3.	Leather Jackets	General Upper section covering the shoulder and extending to the hips	Cut sparks, hot molten metal and chemical splashes and sparks.
4.	Leather Cap	Head, Ear and Hair	Falling of molten slag during overhead welding and splashing of liquid chemicals, contact with machine parts.
5.	Leather Mask Goggles	Eye and Nose	Foreign bodies/particles, dusts, smokes, gases.
6.	Leather Protective Gaiter	Instep, Ankle and the foot	Splashes of molten metal, hot sand, entering of fire spark inside the safety boot/shoes, contact with hot object, impact risk.
7.	Leather Safety Sandal	Foot	Excessively heated/sharp material on the work shop floor.
8.	Leather Mittens	Finger, Palm and Wrist of the hand	Hot material, pointed, sharp, rough and uneven edges, gas/electric welding or cutting.
9.	Leather Gunlets	Finger, Palm and Arm of the hand	—do—
10.	Leather Gloves	Finger, whole hand wrist, arm	Corrosive, irritating articles or substances, hot material, pointed sharp rough and uneven edges, gas/electric welding, cut due to handling, abrasion.
11.	Leather Leg Guards	Leg	Entering of fire sparks inside the safety boots/shoes from the electrical gas welding, loading & unloading of curled metallic chips.

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TABLE (*Continued*)

Sl. No.	Name of the leather articles	Part of the body to be protected	Protection against Hazards
(1)	(2)	(3)	(4)
12.	Goat skin parchment for orthopaedic Lining	To cover artificial limbs	Any kind of physical damage, exposure to unfavourable weather condition
13.	Sheep skin leather for orthopaedic Lining	To avoid chafis of the human skin	Contact with any foreign material with the human body and sweat resisting
14.	Leather Safety Belt	Entire Body	Falling of a person from height
15.	Leather safety shoes	Foot	Stepping on sharp and hot object, striking against any object, dust. cold, heat, wet, impact risk.
16.	Leather Ankle Safety Boots	Foot and Ankle	—do—
17.	Leather Knee Boots/ Gum Boots	Foot, Ankle and Knee	Stepping on sharp and hot object, striking against any object. dust, cold, heat, wet. impact risk, splashing of liquid chemicals, racking and handling of the liquid chemicals
18.	Leather Elbow Pads	Parts of the Hand and Joint of the Arm	Abrasions due to handling of cold casting, forging, precast concrete, bags of cement, brieks, shot blasting
19.	Leather Hand Guards	Palm of the Hand	Abrasions due to sharp material /.object, glass / timber with splintered edges.

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Standardization and Quality Control of Leather and Leather based Safety Products

1. The following technical committees at present have been engaged under Chemical Division Council of Bureau of Indian Standards in formulation of leather and leather products articles for safety and protection purpose :

1) Leather Sectional Committee, CDC 16

2) Footwear Sectional Committee, CDC 40 ; and

3) Industrial Safety Advisory Committee.

The above mentioned committees have published a number of National Standards on the safety items to cater to the needs of the statutory authorities for voluntary implementation by all concerned. The National Standards which have been formulated through a general concensus of all concerned like manufacturers, consumers, organized purchasers, researchers, technologists, therefore, provide reasonable basis for judging and checking the quality and performance. Details of list of safety standards published by this Bureau on leather and leather products pertaining to the combined efforts cf the above committees are given below with their salient features :

1.1 **IS : 583-1981 Ankle Boots for General Purpose (second revision)**—This standard covers the quality requirements and methods of test for leather ankle boots meant for defence personnel and other paramilitary forces. The raw materials, grinderies/accessories used and their specifications, the shape and design, manufacturing practice, workmanship and finish have been prescribed in details in the standard.

IS : 1989 (Part I)—1986 Leather Safety Boots and Shoes for Miners (fourth revision)—The existing standard covers four categories of safety footwears as indicated below, with details of raw materials, grinderies, accessories, shape and design, workmanship and finish :

i) Leather safety boots with leather sole ;

ii) Leather safety shoes with leather sole ;

iii) Leather safety boots with rubber sole ;

iv) Leather safety shoes with rubber sole.

Since in most of the accidents, the toe damage is predominant, the specification provides that the toe of the boots/shoes shall be reinforced with protective steel toe caps.

The boots and shoes shall meet an impact test of a free falling weight and delivering a blow of 14 kgs at the point of impact clearance inside the boots/shoes shall be :

a) 15.0 mm or more in case of leather sole with hob nails :

b) 13.5 mm or more in case of leather sole without hob nails or rubber sole.

IS : 1989 (Part 2) —1986 Leather Safety Boots and Shoes for Heavy Metal Industries (fourth revision)—The details of raw materials, shape and design, grinderies, accessories. impact test. etc, are almost same as covered in IS : 1989 (part I)—1986 except the following requirements :

a) A layer of fire proof cloth of thickness 2mm minimum shall be used as bottom filling material from toe to heel of the boots and shoes ; and

b) A leather piece circular in shape and 38±2mm in diameter shall be used as a strengthening piece.

IS : 2472—1969 Protective Gaiters—The Standard mainly covers the requirements and test for protective gaiters made out of leather, used in conjunction with safety footwears for protection of leg portion of wearers of safety boots and shoes against splashes of molten metals while engaged in blast furnace, cast house of steel melting shop. The shape and design and dimensions of the gaiters are given in details in the standard in addition to the requirements of basic raw materials, grinderies and accessories with their various characteristics, manufacturing technique and finish.

IS : 2573—1986 Leather Gauntlets and Mittens (second revision)—The standard covers three types of product according to the use for safety, namely :

Type 1—Leather gauntletes for welders ;

Type 2—Leather gauntlets for workers in iron and steel industry; and

Type 3—Leather mittens for workers in iron and steel industry.

In the present standard chrome tanned/chrome retanned full grain leather or flesh splits manufactured from cow/buffalow hides have been allowed to fabricate the gauntlets and mittens. Keeping in view the gauntlets and mittens are fabricated by cottage and small scale industries, the requirements of raw materials like leather/splits, thread, canvas have been specified in details and as a result the standard has been widely accepted. The sizes, manufacturing practice, workmanship and finish of the final products have also been prescribed in length in the standard.

IS : 2954—1978 Vegetable Tanned Leather for Belting (first revision)—In the standard vegetable tanned leather used for manufacturing flat and round leather beltings have been mentioned. The various processes of manufacturing of such leather have been specified including the raw materials. For seasoning (Ageing), a time limit for a minimum period of eight weeks has been indicated in the standard. The standard specifies the chemical and physical requirements of the finished leather along with the protection against mildew.

IS : 3946—1966 Leather for Leg Guard—The standard specifies the following two types of leather used for leg guard :

Type 1—Full chrome tanned ; and

Type 2—Vegetable tanned

To produce the respective type of leather, the requirements of raw materials, tanning, fungicide additives, finishing, physical and chemical requirements have been prescribed in the standard. To assess the perspiration resistance of

leather used in leg guard which directly comes in contact with human perspiration a recommended method for determination of "perspiration resistance of leather" has also been prescribed.

IS : 3982—1966 Sheep Skin leather for Orthopaedic Linings—Orthopaedic leather should be reasonably strong, possess a smooth surface to avoid chafing human skin when in contact, durable and sweat resistant. In addition, leather should be soft and pliable so that lining leather can readily take to the shape and form of the appliances concerned. The standard lays down the following grades of lining leather :

Grade 1—shall be uniformly dyed in appearance and free from defects and holes, scratches, scars and other blemishes on the grain ;

Grade II—shall present similar defects as Grade I except that it might carry not more than two defects uuder the categories described in Grade I ; and Grade III—shall be the material less uniform dyed and carrying not more than 5 defects under the categories described in Grade I.

The requirements of raw materials, tanning, dyeing, fungicide additives, finishing, shape, physical and chemical requirements have also been prescribed in the standard. The test method for determination of "perspiration resistance" as given in the IS : 3946—1966 has also been mentioned in the standard.

IS : 3983—1986 Goat Skin Parchment for Orthopaedic Purposes—Goat skin parchment used in covering the artificial limbs in orthopaedic appliances, serves essentially to protect the limbs from physical damages, exposure to unfavourable weather condition, etc. The artificial limbs are often fragile and brittle and liable for easy damage and require to be protected against adverse climate. The parchment serves here as a protective sheath adequately as it is light, tough and lend itself readily to be moulded to the required shape or take the shape of the moulded material when covered.

The standard covers two grades of parchment as follows :

Grade I—shall present an uniform operation free from short hair and scud patches and also be free from defects, namely, holes and butchercuts ; and

Grade II—may carry not more than two defects as described in Grade I.

To assist the manufacturers and users the standard prescribes the requirements of raw materials, processing, resistance to fungi and insects and physical and chemical requirements and size and shape of the parchment.

IS : 4128-1980 Fireman's Leather Boots (first revision)—To ensure the quality and performance of the qoots. the relevant standard prescribes the raw materials with their limits, manufacturing technique. design (wellington), mass, finish and workmanship. Besides the standard specifies the use of chrome tanned wax sole leather for middle and insole as the chrome leather by nature is heat resistant.

A special type of antislip device has been recommended for rubber sole and

heel to increase the slip resistance while the firemen are engaged to fight against the fire. An important requirement "water proof test" which considerably effects the quality of boots has been given in the standard.

IS : 6153-1971 Protective Leather Clothing—In the standard following articles of leather clothing have been specified ;

i) Jackets
ii) Capes
iii) Sleeves
iv) Aprons
v) Spats
vi) Leg Guard

The requirements of raw materials, grinderies, accessories, design and construction with recommended minimum dimensions of approns and jackets have been specified in the standard. However, the minimum dimensions and the range of outside length in case of capes and sleeves, respectively. have been prescribed in the standard.

IS: 6994 (Part 1)-1973 Leather and Cotton Cloves—For guidance of users, the type or class of gloves. gauntlets, mittens, and hand guards have been considered most suitabie for certain industrial hazards as given in the table. The following types of leather based gloves, hand guards, etc. have been mentioned in standard alongwith the requirements of raw materials, components, pattern, design, size, dimensions and construction of each item :

Type 1—Chrome leather gloves :
Type 2—Chrome leather inseam mitts and one-finger mitts :
Type 3—Chrome leather gauntlet ;
Type 4—Chrome leather inseam gauntlet with canvas or leather cuffs, with or without reinforcemcnt between thumb and forefinger :
Type 5—Chrome leather stapled double-palm gloves :
Type 6—Chrome leather inseam gauntlet with vein patches and aprons covering palm to first joint of fingers :
Type 7—Chrome leather back and palm, inseam gloves :
Type 8—Chrome leather. felt-lined (thumb only), mitts with canvas or leather faced palms ; and
Type 14—Chrome leather hand guards.

IS : 10348-1982 Safety Footwears for Steel Plants—The type of leather safety footwears prescribed in the standard suitable for use in all departments of the steel plants except for cokeoven. cokeoven top, blooming and blast mills. Two types of safety footwears have been included in the standard :

Type 1—Safety footwears with leather (samber finish) upper and moulded rubber sole and heel ; and
Type 2—Safety footwears with leathers (samber finish) upper and moulded rubber sole and heel and covered with an additional upper flap.

The shape and design, raw material, eomponents, manufacturing technique, finish, ageing test for rubber components and mass of the footwears have been prescribed in the standard. The standard also specifies that the bottom with

rubber sole shall be vulcanized and footwear must withstand an impact test and shall be considered to have passed the test if clearance inside the footwear at moment of maximum depression, that is, 13.5 mm or more.

IS : 10667—1983 Guide for Selection of Industrial Safety Equipments for Protection of Foot and Leg—The standard is useful for both users and manufacturers of leather based safety equipments like safety boots, shoes, leg guards. The selection, fitting, inspection, use and care of above mentioned safety products have been prescribed in details in the standard. The safety departments of various industrial establishments may obtain guidance about their proper selection of safety products as indicated above for the protection of their workers.

IS : 11225—1985 Leather Safety shoes for Women Workers in Mines and Steel Plants—The standard lays down the shape, design of (pump shoe design) the shoes with raw materials, components, manufacturing technique, workmanship and finish. It has also been mentioned that the shoes shall be made by vulcanizing or moulding with rubber sole. To move with these shoes easily and comfortably by wearers, a maximum mass of a pair of shoes for size 8 has been specified as 1350 g and the mass per pair is increased or decreased by 50 g for each bigger or smaller size, respectively. An impact test similar to other safety footwears has also been given as an obligatory requirement.

IS : 11226—1985 Leather Safety Footwear having Direct Moulded Sole—Three designs, namely, ankie boots, derby shoes and jodhpuri shoes have been recommended in the standard. According to the specification, no stitches are necessary for bottom construction as rubber soles are directly vulcanized/moulded to the lasted upper on the automatic plant using hydraulic press and temperature. The standard also specifies the requirements of raw materials in details, components, method of manufacturing, mass, workmanship and finish. In additon the performance test and adhesion test for built up footwears on the vulcanized bottom have been stipulated in the standards as obligatory requirements.

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APRIL - JUNE FISCAL DEFICIT OF RS. 4.29 TRILLION AT 68.75% OF FY 2018 – 19 TARGET

India reported on Tuesday a fiscal deficit of Rs 4.29 trillion ($62.57 billion) for April-June, or 68.7 per cent of the budgeted target for the current fiscal year compared with 80.8 per cent a year ago.

Net tax receipts in the first quarter of 2018/19 fiscal year that ends in March 2019 were Rs 2.37 trillion, government data showed.

India expects to trim the deficit to 3.3 per cent of GDP this fiscal year, after meeting an upwardly revised fiscal deficit target of 3.5 per cent of GDP in 2017/18.

(Business Standard – 31/08/2018)

COMMERCE MINISTRY PROPOSES LIMITS ON ROYALTY PAYMENTS FOR TECH TRANSFER

The government is considering restrictions on royalty payments for technology transfer in view of excessive outflow of such funds to overseas companies, sources said.

The commerce and industry ministry has proposed limits on royalty payments in case of technology transfer or collaboration involving foreign entities either directly or indirectly through any firm in India. The proposal will be circulated for inter-ministerial views, the sources said.

As per the proposal, such payments should be capped at 4 per cent of domestic sales and 7 per cent of exports for the first four years; and for the next three years the limits should be 3 per cent of local sales and 6 per cent of exports.

For further three years, these payments should be capped at 2 per cent of domestic sales and 4 per cent of exports and thereafter at 1 per cent of local sales and 2 per cent of exports.

With regard to use of trade mark and brand names, the ministry has proposed to cap royalty payments at 1 per cent of sales and 2 per cent of exports of an entity.

The increase in outflow of these payments started after the government liberalized the FDI policy in 2009. It had removed the cap and permitted Indian companies to pay royalty to their technical collaborators without seeking prior government approval.Royalty is paid to a foreign collaborator for transfer of technology, usage of brand or trademarks.

IIn April last year, a surge in royalty outflow prompted the government to set up an inter-ministerial group to analyse payment norms and see whether there is excessive payout by Indian companies to foreign collaborators.

Proposing these restrictions, the ministry had argued that the curbs would help increase the profits of domestic companies, mainly in the automobile sector, prevent depletion of foreign exchange reserves, protect interest of minority shareholders and increase revenue for the government.

Before 2009, royalty payments were regulated by the government and capped at 8 per cent of exports and 5 per cent domestic sales in the case of technology transfer collaborations. They were fixed at 2 per cent of exports and 1 per cent of domestic sales for use of trademark or brand name.

Telecom companies too pay $15 royalty for every mobile line. A single line ideally supports a single call at a given point of time.

Similarly, Auto major Maruti Suzuki pays an average royalty of around 5.5 per cent of its net sales to its parent Suzuki.

(Business Standard – 30/08/2018)

INFRUSTRACTURE OUTPUT GROWTH HITS SEVEN MONTH HIGH OF 6.7% IN JUNE' 2018

The expansion in the electricity generation was 4 per cent in June compared to 2.2 per cent in the same month of the last fiscal

Growth of eight core sectors expanded to 7-month high of 6.7 per cent in June due to better performance by cement, refinery and coal segments, as per official data released on Tuesday.

The eight sectors, which also include fertilizers, steel, natural gas, electricity and crude oil, had expanded by 1 per cent in June last year.

The previous high rate of growth was recorded in November 2017 at 6.9 per cent. The growth rate in May was 4.3 per cent.

As per the data released by the commerce and industry ministry, the expansion in cement, refinery products and coal was 13.2 per cent, 12 per cent and 11.5 per cent respectively, year-on-year basis.

Crude oil and natural gas registered a negative growth of 3.4 per cent and 2.7 per cent respectively in June compared to the year-ago period.

The expansion in the electricity generation was 4 per cent in June compared to 2.2 per cent in the same month of the last fiscal.

Steel sector, however witnessed a slower growth of 4.4 per cent compared to 6 per cent in June 2017.

The data revealed that expansion rate in the fertilizer segment was 1 per cent, better than negative growth recorded in the year ago month.

(Business Standard – 30/08/2018)

THIS GST MOVE COULD DISCOURAGE HONEST TAXPAYERS AS GOVERNMENT MOVES TO SIMPLICITY IN GST RETURNS FILLING

New GST returns forms: Small taxpayers, with turnover up to Rs 5 crore in the last financial year, can file the quarterly return with monthly payment of taxes on the self-declaration basis.

As the Central government on Monday the 30th August' 2018 released the draft new GST returns forms, formulated with an aim to simplify the processes for filers, tax expert Parag Mehta says that there is a provision in the proposed system that will be deterrent for honest taxpayers. The tax department has put up draft returns forms — Sahaj and Sugam — for feedback from stakeholders.

The new GST returns filing process proposes that the Input Tax Credit (ITC) will be allowed only if the vendor uploads the invoice. "The company may upload the invoice but if the vendor fails to upload it before or within a specified time, ITC availed will be recovered from the company. This provision in the act is a deterrent for honest taxpayers from inception," Parag Mehta, Partner, NA Shah Associates LLP told FE Online.

However, there are many other provisions that are likely to help businesses, especially the small ones and nil filers. For nil filers, the tax authority has proposed an SMS system. Businesses, where there is no supply or purchase in a quarter, can file their quarterly returns through SMS.

Small taxpayers, with turnover up to Rs 5 crore in the last financial year, can file the quarterly return with monthly payment of taxes on the self-declaration basis. Experts have welcomed the decision to classify assesses between large taxpayers and small taxpayers. But even small taxpayers will have to upload their sales invoices on a monthly basis so that corresponding businesses could claim their ITCs.

The GST form Sahaj is for B2C businesses in which the taxpayers will provide details of outward supplies and inward supplies, attracting reverse charge along with the summary of inward supplies for claiming input tax credit (ITC).

The GST form Sugam is for both B2C and B2B businesses, where the summary of supplies made and tax liability, the summary of inward

supplies for claiming ITC, along with details of interest due and tax payment will be required. The new GST filing system is expected to replace the existing system of GSTR-1 and GSTR-2 from January 1, 2019.

(Financial Express – 31/08/2018)

HOW IS GST MAKING DIRECT TAX COLLECTIBILITY EFFECTIVE ?

After the implementation of GST, there has been an increase of 18% in the direct tax collections and 17% increase in the corporate tax collection. This indirect tax is easing in direct tax payments to the government vaults.

One of the biggest economic reforms in the Indian history has been the introduction of GST. Multiple steps and initiatives have been taken by the government to ensure smooth implementation of the reform ever since it has been rolled out on 1st July 2017. Despite multiple challenges and hindrances which came in the way during its implementation, the results seemed to be positive. One peculiar thing about GST is that despite being an indirect tax, it has been contributory in improving the direct taxation as well.

Essentially, it acts as an imperative tool which provides tax officials with data to calculate the income of people against the income tax paid by them. In the first quarter of its implementation, there has been an increase of 18% in the direct tax collections and 17% increase in the corporate tax collection.

But, what made this possible?

There are several factors which have contributed to the increasing direct taxes courtesy GST.

1) Reducing Frauds and Tax Evasion

Adoption of online and digital methods has reduced unilateral frauds where under-invoicing or over-invoicing was done only by one or two people transacting. Additionally, all GST registrations are PAN-based and basis that the value of total turnover for all GST returns is reported to the IT Department by GSTN. Taxpayers are required to reconcile the amount of total turnover from all returns under GST with the amount declared in the annual financial returns. It is essential to declare the GSTIN of taxpayers indirect taxes under the new ITR-3 format, which acts as a watchdog. In GST Returns, the taxpayer is required to provide the details of turnover and the same is being matched with the income tax returns filed. In some states, the IT department has already issued notices to taxpayers based on the turnovers filed in last year's GST and Income Tax Returns. This has also led to an increase in the number of new registrations taken under GST by 47,94,828 during the last one year.

2) Increasing Profitability of Corporate Businesses

There is an increase in the profit for businesses on account of the elimination of check posts after the elimination of the multiple-layer tax system to a single tax system. In 23rd GST Council meeting held on 10th November 2017, the tax rates for some of the products have been reduced on items like office furniture, equipment etc., from 28% to 18% resulting in capital expenditure and an increase in the Earnings before Interest Tax and Amortisation (EBITA) of corporates which has resulted in an increase in direct tax pay-out. Under the new tax regime, the number of taxpayers registered under the GST has increased from 64,000 to 1.1 crores. It's imperative for our Indian system to have a robust digital assistance infrastructure provided by the government which ensures compliance, making ITR filing process hassle-free and offers end-to-end technology solutions.

3) Digitization and Value of Information Sharing

To make tax-reforms like GST operational, it was vital to make technology adoption a reality. There were plenty of teething troubles which came up, but with time GST taxpayers started gaining an understanding of how this new GST system functions. Steadily the operations and adoption had become smoother. Talking about the earlier regime, information sharing was a bit difficult. The Income Tax (IT) Department didn't have any access to the data which is filed under Central Excise, Service Tax and various state VAT laws. With the advent of GST, the IT department can monitor information related to businesses. The system has brought a lot of transparency in the system. Now, tax evasion won't be a cake walk.

(Ankit Agarwal, Financial Express – 31/08/2018)

SBI RAISES DEPOSIT RATES AGAIN

The State Bank of India (SBI) has raised the term deposit rates on select maturities by 5-10 basis points. The move comes two days ahead of the Reserve Bank of India's monetary policy that may see the repo rate hiked by 25 basis points.

The revised rates will take immediate effect (July 30). For deposits of up to Rs 1 crore, the interest rates have been raised on those with maturities of over one year.

Deposits of one year to less than two years will fetch an interest rate of 6.70 per cent against 6.65 per cent earlier, while rates on Deposits between two years and less than three years have been raised to 6.75 per cent from 6.65 per cent.

Similarly, in the maturity buckets of three years to less than five years and five years up to 10 years, the rates have been revised to 6.80 per cent (6.70 per cent) and 6.85 per cent (6.75 per cent), respectively.

The country's largest lender also revised the rates on deposits of above Rs 1 crore. However, in some cases the rate was lowered up to 30 basis points, while they were raised by up to 15 basis points in certain maturities.

The SBI had previously raised deposit rates in March. The lender had then revised term deposit rates by 10-25 basis points on various tenures.

Its move comes at a time experts remain divided over whether the RBI will opt for another repo rate hike in the third bi-monthly monetary policy to be announced on August 1.

The six-member Monetary Policy Committee (MPC), headed by RBI governor Urjit Patel, begun its three-day deliberations to decide on the key interest rate on Monday. The RBI had increased the repo rate by 0.25 per cent to 6.25 per cent in its last policy review in June on inflationary concerns. A few analysts expect the central bank to hold fire this time around.

However, banks are likely to increase their benchmark lending rate or the marginal cost of funds-based lending rate (MCLR) in the event of an upward revision in the policy rate.

Among the lenders, the State Bank had raised its MCLR by 10 basis points in June. Banks review their MCLR every month and it is revised based on the prevailing market conditions.

Early this month, Bank of Baroda (BoB) had increased its MCLR by five basis points for various tenors of loans. An increase in the MCLR (against which various loans are priced) will make home, auto and other loans dearer.

(The Telegraph – 31/08/2018)

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