STANDARDIZATION IN THE FIELD OF MEDICAL TEXTILES

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BUREAU OF INDIAN STANDARDS

MEDTECH SECTOR

Out of total Indian textile industry, only 13% contributes to technical textiles, and out of this 13%, the share of Meditech, in technical textiles market is in the range of 6-8%.

The main volume growth driver in Meditech is the Non-implantable segment which includes surgicals & healthcare/hygiene products.

Lack of basic infrastructure in terms of testing facilities,Skilled manpower, Research & Developement, and awareness among users are hindering the growth rate of Indian Meditech industry.

Classification of Medical Textiles

- **1.HEALTHCARE AND HYGIENE PRODUCTS**
- Healthcare and hygiene textiles materials are mainly used for protection from infections in hospital environment. They are used either in the operation theatre or in the hospital wards for hygiene care safety for the staff and patients.
- e.g. Surgical caps, masks, gowns, drapes and shoe covers, disposable bed sheets, Baby Diapers/Adult Diaper, Sanitary napkins, Under pads, Wipes etc.
- **2.NON-IMPLANTABLE MEDICAL TEXTILE:**
- This is used for external application on the body with or without skin contact. This is used for protection against infection, absorption, and exudation of blood & excess fluids, healing applications etc
- e.g. wound dressing, plaster, bandage, gauge, compression stocking etc.

Classification of Medical Textiles….

- **3. IMPLANTABLE MEDICAL TEXTILE:**
- Implantable medical textiles are partly or totally inserted into the human body. These materials are used in effecting repair to the body whether it is wound closure or replacement surgery.
- e.g. Suture, Vascular grafts , Artificial Heart Valve, Artificial ligament, Artificial joint etc.
- **4. EXTRA CORPOREAL**
- Extracorporeal mainly deals with artificial organ which are made from specialized textile implants that can function as a part of human body.
- e.g. Artificial kidney, Artificial lever, Artificial valves and Artificial Lungs etc.

TEXTILES DIVISION COUNCIL

SCOPE: Standardization in the field of textiles and apparel covering natural and man-made fibres and their products, dyestuffs, textile speciality chemicals, textile machinery and technical textiles.

- **26 Sectional Committees**
- **Total Standards Published under TXDC -1435**
- Product : 709 Code of Practices : 61
- Methods of Test : 492 Terminology : 60
- Safety Standard : 8 Dimensions : 24
- Others : 81
- **About 500 Indian Standards on technical textiles including its test methods, terminology, guidelines have been published**

STANDADISATION IN MEDICAL TEXTILES

- Standardization in the field of Medical Textiles has been undertaken by Technical Textiles for Medtech Application Sectional Committee, TXD 36 under Textiles Division Council at BIS:
- TECHNICAL TEXTILES FOR MEDTECH APPLICATION, TXD36
- Scope of TXD 36 : To formulate Indian Standards for terminology, testing and specifications for technical textiles for medtech applications such as healthcare and hygiene textile products, implantable and non-implantable and extra corporeal textile products.
- Number of standards formulated: 72
- Number of standards under development: 03
- Product Standards: 60
- Method of tests: 12

Important Product of Medical Textiles

- **SURGICAL FACE MASK**

COVERALL

WIPES

- **BABY DIAPER**

SANITARY NAPKIN

Important Products of Medtech

- **SURGICAL DRAPE/ GOWN**

BEDSHEET AND PILLOW COVER

CAPS

CREPE BANDAGE

ELASTIC BANDAGE

COTTON GAUZE

ABSORBENT COTTON

IMPORTANT STANDARDS FORMULATED ON MEDICAL TEXTILES

- **IS 16289 : 2014 'MEDICAL TEXTILES — SURGICAL FACE MASKS — SPECIFICATION**
- Surgical Face Mask — A medical device covering the mouth, nose and chin providing a barrier to minimize the direct transmission of infective agents between staff and patient
- 'Surgical masks are very important to protect the patients and medical professional from infective agents during surgical procedures in operating theatres and other medical settings.
- This standard specifies the performance requirements and test methods of surgical face masks intended to limit the transmission of infective agents from staff to patients and (in certain situations) vice-versa during surgical procedures in operating theatres and other healthcare services such as patient care, with similar requirements.

IS 16289 : 2014 'MEDICAL TEXTILES — SURGICAL FACE MASKS — SPECIFICATION Cont..

- **Design:** The surgical face mask shall have a means by which it can be fitted closely over the nose, mouth and chin of the wearer and which ensures that the mask fits closely at the sides.
- The surgical masks have been categorized into three classes based on performance, i.e. Class 1, Class 2 and Class 3.
- The key performance requirements specified in IS 16289 Surgical Facemask include Bacterial filtration efficiency and Sub-micron particulate filtration efficiency at 0.1 micron for safety, Differential pressure for comfort, splash resistance to protect from blood and body fluids during surgery.'

IS 16289 : 2014 'MEDICAL TEXTILES — SURGICAL FACE MASKS — SPECIFICATION Cont.....

- **PERFORMANCE REQUIREMENT FOR SURGICAL FACE MASK**

Sl. No.	Characteristic	Requirements		
		Class 1	Class 2	Class 3
i)	Bacterial Filtering Efficiency, Min	95	98	98
ii)	Differential Pressure, Pa, Max	29.4	29.4	49.0
iii)	Splash resistance, mm Hg Min	-	-	120
iv)	Sub-micron particulate filtration Efficiency at 0.1 μ, Percent, Min	-	-	99

IS 17423 : 2021, Medical Textiles — Bio-Protective Coveralls — Specification (First Revision)

- Coverall is a type of personal protective equipment (PPE) intended to be worn by healthcare personnel for the purpose of isolating all parts of the body from a potential hazard. The bio-protective coveralls provide protection against various biological agents due to their material sealing arrangement.
- This standard specifies the requirements for single use and reusable bio-protective coveralls intended for medical use.
- The bio-protective coveralls conforming to this standard may be supplied in sterile as well as unsterile condition, as per the agreement between the buyer and the seller.
- This standard does not address the overall construction and components, or interfaces of garments or other factors during actual use which can affect the overall protection offered by coverall.

IS 17423 : 2021, Medical Textiles — Bio-Protective Coveralls — Specification (First Revision) Cont….

- This standard was first published in June 2020 as an interim standard. During the revision of the standard, the following main changes have been made :
- To cover the requirement of multiple/reusable bio-protective coverall.
- Performance requirement such as resistance to viral penetration, breathability (water vapour transmission rate), tensile strength (dry and wet), seam strength (dry and wet), cleanliness – microbial, resistance to dry microbial penetration and biocompatibility have been specified.
- Four level of performances of coveralls have been specified.
- Guidelines for reprocessing, storage, handing, transportation, washing, disinfection of multiple use/reusable coveralls has been specified

IS 17423 : 2021, Medical Textiles — Bio-Protective Coveralls — Specification (First Revision) Cont….

The fabric used for the manufacturing of coverall shall be a single or multi-layered textile structure made of woven or non-woven (spunlace or spunbond or combination of spunbond and meltblown) or knitted structure with or without coating / lamination engineered to fulfil the functional requirements.

The bio-protective coveralls consists of an integrated hood with elastic around face opening. It shall be provided with suitable fastening arrangement which shall be covered with a storm flap provided with suitable self-adhesive sealing arrangement such as a double-sided tape etc.

Coverall may also be provided with elastic wrists and ankles for convenience and freedom for movement. It shall also be provided with thumb loop for better and secure fit during overhead work.

The seams shall be sealed with a tape of suitable material of medical grade of minimum 16 mm width or any other sealing arrangement.

Each coverall shall be provided with a pair of shoe covers with an elastic strip to tighten it with the coverall, so that there is no passage for air through it.

IS 17423 : 2021, Medical Textiles — Bio-Protective Coveralls — Specification (First Revision) Cont….

- Depending upon the **end use** the Bio-protective coveralls have been classified into **four performance levels** (level 1 to level 4)

Requirements	Level 1	Level 2	Level 3	Level 4	Test method
Synthetic blood penetration resistance	up to 1.75 kPa	up to 3.5 kPa	up to 7 kPa	up to 14 kPa	IS 16546/ISO 16603
Resistance to viral penetration	NA	NA	up to 3.5 kPa	up to 7 kPa	IS 16545/ISO 16604
Breathability (water vapour transmission rate), g/m2/day	1200	1200	800	800	Annex F of IS 16390
Tensile strength (dry and wet), N	≥ 20	≥ 20	≥ 40	≥ 40	Non woven IS 15891-3, Woven IS 1969 (Part 1)

IS 17423 : 2021, Medical Textiles — Bio-Protective Coveralls — Specification (First Revision) Cont….

Performance Requirement Cont..

Requirements	Level 1	Level 2	Level 3	Level 4	Test method
Seam strength (dry and wet) (N)	≥ 20	≥ 20	≥ 32	≥ 32	Nonwoven: IS 15891 (Part18), Woven: IS/ISO 13935 (Part 1)
Bursting strength (dry & wet) (kPa)	≥ 40	≥ 40	≥ 40	≥ 40	IS 1966 (Part 1)
Cleanliness – microbial (CFU/100 cm2)	≤ 300	≤ 300	≤ 300	≤ 300	ISO 11737 (Part 1)
Resistance to dry microbial penetration ,(log cfu)	NA	NA	≤ 1	≤ 1	IS 16548/ISO 22612

Biocompatibility evaluation (Cytotoxicity and Irritation and skin sensitization) shall also be carried out as per IS/ISO 10993-5 and IS/ISO 10993-10 on raw material stage.

IS 17334 : 2019 Surgical Gowns and Surgical Drapes

- Surgical Gown — Protective clothing that is intended to be worn by healthcare workers during surgical procedures to protect both the surgical patient and the operating room personnel from the transfer of microorganisms, body fluids and particulate matter
- Surgical Drape — A covering for the patient for the prevention of transfer of infective agents, such as microorganisms, body fluids and particulate material. "Surgical drapes are used during surgery to prevent contact with unprepared surfaces and to maintain the sterility of environmental surfaces, equipment and the patient's surroundings".

IS 17334 : 2019 Surgical Gowns and Surgical Drapes

- This standard addresses the performance requirements of surgical gowns and surgical drapes designed to protect against exposure of healthcare workers to blood, body fluids, and other potentially infectious materials during surgery and other healthcare procedures.
- This standard specifies requirements for single use and reusable surgical gowns and surgical drapes intended for medical use.
- Depending upon the various end uses, surgical gowns and surgical drapes have been categorized into four levels (Level 0, level 1, level 2 and level 3).
- The final performance requirement level shall be based on the performance of the **critical zone component**. The information for principle of critical area has been specified in the standard.

IS 17334 : 2019 Surgical Gowns and Surgical Drapes Cont…

- The following important performance requirements have been covered in this standard for surgical gowns and drapes:
- **Impact penetration** (g)
- **Hydrostatic resistance** (cmwc)
- **Blood resistance** and **viral resistance**
- **Particle release**
- **Tensile strength** and **bursting strength** (dry and wet)
- **Resistance to microbial penetration** – dry and wet
- **Biocompatibility** evaluation (cytotoxicity and irritation sensitization)
- To ensure the **comfort**, requirement for **moisture vapour transmission rate** has also been specified for **level 3 gowns**

IS 5405 : 2019, Sanitary napkins

- Sanitary napkin is an absorbent material used to absorb fluid discharged during menstruation. As compared to cloth and other materials (husks, ashes, etc.) used during menstruation, it provides better hygiene and protection against leakage.
- This standard covers the requirements for disposable (non-reusable) sanitary napkins for external use.
- Types and shapes of sanitary napkins have been specified in the standard.

IS 5405 : 2019, Sanitary napkins Cont….

- During revision of standard in 2019, the following main changes have been made : -
- a) Hygiene testing requirement has been specified. (Bacterial and fungal bioburden)
- b) Biocompatibility evaluation requirement has been specified. (Cytotoxicity, Irritation and Skin Sensitization)
- c) The procedure and requirement of ability to withstand pressure after absorption have been modified.
- d) The optional requirement of disposability has been modified.
- e) Optional requirement of biodegradability and compostability have been specified.

IS 5405 : 2019, Sanitary napkins Cont….

- All types of sanitary napkins basically consist of three major components:
- a) cover or the top sheet;
- b) absorbent core, and
- c) the barrier or bottom sheet.
- The recommended sizes specified in the standards are as follows

Size	*Pad length (mm) (Absorbent core only)*	*Pad width (mm) (Absorbent core only)*
Regular	≤ 210	Min 55
Large	211 to 240	
Extra-large	241 to 280	
XXL	≥ 281	

IS 5405 : 2019, Sanitary napkins Cont..

- **PERFORMANCE REQUIREMENT OF SANITARY PAD**
- pH : 5.5 – 8.0
- Ability to withstand pressure after absorption : No leakage after absorption of 30 ml coloured distilled water.
- Bacterial and Fungal Bioburden : Total viable count (total number of bacteria and fungi) shall not be more than 1 000 cfu/gm
- Test for Common Skin Pathogen — Staphylococcus Aureus : Shall be absent
- Biocompatibility Evaluation — Cytotoxicity, Irritation and Skin Sensitization : The material shall be 'Non-reactive, Non-irritant and Non-sensitizer' respectively.
- Optional requirement for Biodegradability and Compostability.
- Good manufacturing practice guidelines for hygiene requirement have been specified in the standard.

IS 17514 : 2021, Reusable Sanitary Pad / Sanitary Napkin / Period Panties

- Reusable sanitary pad/sanitary napkin/period panties are hygiene products that are worn by menstruators (children and adults) to absorb blood and other fluids during menstrual periods.
- This standard covers the requirements for reusable (multiple use) sanitary pad/sanitary napkin/period panties for external use.
- The manufacturer shall provide the washing, drying, handling and storage instruction on every packet of reusable sanitary pad/sanitary napkin/period panties to ensure proper use and care by the consumer.
- The raw material/fabric used for manufacturing the product shall meet the Colourfastness and Dimensional Stability Requirements after the declared wash cycles.

IS 17514 : 2021, Reusable Sanitary Pad / Sanitary Napkin / Period Panties

- The reusable sanitary pad/sanitary napkin/period panties generally consist of following major components:
- a) cover or the top sheet;
- b) absorbent core; and
- c) bottom layer
- The recommended sizes specified in the standards are as follows:

Size	Pad length (mm) (Absorbent core only)	Pad width (mm) (Absorbent core only)
Small	≤ 240	Min 60
Medium	241 to 260	
Large	261 to 280	
Extra Large	≥ 281	

Period Panty	Length (mm) (Absorbent Core only)	Width (mm) (Absorbent Core only)
	230-300	80-140

IS 17514 : 2021, Reusable Sanitary Pad / Sanitary Napkin / Period Panties

- The raw material/fabric used for manufacturing the product shall meet the following requirements (initially and after declared cycle washes)

Table 1 Colourfastness and Dimensional Stability Requirement of Raw Material/Fabric

(*Clauses* 8 *and* 11.2.4)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Colour fastness to rubbing		IS/ISO 105-X12
	a) Dry	4 or better	
	b) Wet	3 or better	
ii)	Colour fastness to perspiration (acidic and alkaline)		
	a) Colour change	4 or better	IS/ISO 105-E04
	b) Staining	4 or better	
iii)	Colour fastness to washing		
	a) Colour change	4 or better	IS/ISO 105-C06
	b) Staining	4 or better	
iv)	Dimensional stability to washing, percentage, *Max*		Annex C of IS 16394
	Length and width	± 5	

IS 17514 : 2021, Reusable Sanitary Pad / Sanitary Napkin / Period Panties Cont..

- **PERFORMANCE REQUIREMENT OF PRODUCT**
- pH : 5.5 – 8.0
- Ability to withstand pressure after absorption : No leakage after absorption of 10 ml coloured distilled water.
- Bacterial and Fungal Bioburden : Total viable count (total number of bacteria and fungi) shall not be more than 1 000 cfu/gm
- Test for Common Skin Pathogen — Staphylococcus Aureus : Shall be absent
- Biocompatibility Evaluation — Cytotoxicity, Irritation and Skin Sensitization : The material shall be 'Non-reactive, Non-irritant and Non-sensitizer' respectively.

IS 17514 : 2021, Reusable Sanitary Pad / Sanitary Napkin / Period Panties Cont…

- Anti-bacterial value (before and after declared wash cycles : Shall be greater than or equal to 2 when tested by the absorption method prescribed in IS/ISO 20743
- Good manufacturing practice guidelines for hygiene requirement have been specified in the standard.

IS 17509 : 2021, DISPOSABLE BABY DIAPER — SPECIFICATION

- Baby diapers are personal hygiene products that allows the baby to defecate or urinate without the use of a toilet, by absorbing or containing waste products to prevent soiling of outer clothing or the external environment.
- This standard covers the requirements for disposable (non-reusable) baby diaper for external use.
- This standard also covers the types and sizes and requirement for fastening and securing mechanism of the baby diaper.
- On the basis of the weight of infant and/or toddler the baby diapers are classified into new born, small, medium, large, extra-large.

IS 17509 : 2021, DISPOSABLE BABY DIAPER — SPECIFICATION Cont..

- **TYPES AND SIZES**
- On the basis on the weight of infant and/or toddler the baby diapers are classified in the following types:

Types	Weight of the infant and or toddler (for reference only)
New Born	2 – 5 kg
Small	3 – 8 kg
Medium	6 – 11 kg
Large	9- 11 kg
X Large	13 + kg

IS 17509 : 2021, DISPOSABLE BABY DIAPER — SPECIFICATION Cont..

- **FASTENING AND SECURING MECHANISM**
- Baby diaper shall have a suitable device (e.g. mechanical or adhesive) to ensure a good fit of the diaper at the waist and around the legs. The material used shall be safe under normal conditions of use and shall not provide a physical hazard.
- There shall be a device e.g. elastic band or elastic threads on both sides of the absorbentcore that are suitably stretched and fixed between top sheet and back sheet or fixed on topsheet or back sheet to keep the diaper fit on the user's waist and legs and prevent leakage of liquid.
- The adhesive used shall keep the diaper component together and shall not allow shifting of absorbent core or top sheet. The adhesive material used shall not be harmful to the skin of the baby.

IS 17509 : 2021, DISPOSABLE BABY DIAPER — SPECIFICATION Cont..

- **PERFORMANCE REQUIREMENTS**
- ***pH Value -*** 5.5 to 8.0 when tested by the method given in IS 1390.
- **Rate of Absorption, Rewet under Load and Minimum Absorption Capacity**

	Size	Number of Gushes	Requirement
Minimum Absorption Capacity	New Born	3	3 x 20 ml
	Small	3	3 x 35 ml
	Medium	3	3 x 50 ml
	Large	3	3 x 60 ml
	X Large	3	3 x 70 ml
Rate of absorption per gush (s), Max	All sizes	-	60
Rewet under load, (g), Max	All sizes	-	5

IS 17509 : 2021, DISPOSABLE BABY DIAPER — SPECIFICATION Cont...

PERFORMANCE REQUIREMENTS

- **Hygiene Testing Requirement**
- Total viable count (total number of bacteria and fungi) shall not be more than 1 000 cfu/g and *Staphylococcus aureus* shall be absent.
- **Phthalate Test** - The amount of phthalate present in baby diaper shall be < 0.1 percent (individual or in combination) when tested as per the method given in IS 9873 (Part 6).
-
- **Biocompatibility Evaluation** — Cytotoxicity, Irritation and Skin Sensitization
- The material shall be 'Non-reactive, Non-irritant and Non-sensitizer' respectively.
- **Biodegradability and Compostability (Optional)** - The product shall be biodegradable or compostable when tested as per IS/ISO 17088.
- **Anti-Bacterial Activity Value (Optional)** – Baby diaper shall have antibacterial activity value greater than or equal to 2 when tested by the absorption method prescribed in IS/ISO 20743.

IS 4605 : 2020, CREPE BANDAGE — SPECIFICATION (SECOND REVISION)

- Crepe bandage consists of characteristic fabric of plain weave or needle loom weave, in which the warp threads are crepe-twisted for ensuring maximum elasticity.
- Crepe bandage is used for dressing of varicose veins, weak ankles, legs, knees and wrists in case of sprains and other conditions in which light support is required.
- This standard covers requirements pertaining to material, construction and performance of crepe bandage.

IS 4605 : 2020, CREPE BANDAGE — SPECIFICATION (SECOND REVISION) Cont.

- This standard was originally published in 1968 and subsequently revised in 1981. The present revision the following major changes have been made:
- Requirement of material and tolerance for dimension have been modified.
- Requirement of manufacture, workmanship and finish have been modified.
- Requirement and test method of threads per stated length, weight per unit area and breaking load have been modified.
- Requirement of stretchability, recovery and loss of scouring have been excluded.
- Test method and requirement for elasticity, water soluble substances and ether soluble substances have been specified.

IS 4605 : 2020, CREPE BANDAGE — SPECIFICATION (SECOND REVISION) Cont.

- PERFORMANCE REQUIREMENTS
- Material - Cotton or mixture of rayon and cotton shall be used in the manufacture of crepe bandage.
- Threads per Stated Length - Ends: Not less than 170 per dm.
- Picks: Not less than 78 per dm, determined on the fully stretched bandage.
- Weight per Unit Area - The weight of the bandage in fully stretched conditions shall be not less than 160 g/m^2.
- Elasticity - The regain length shall not be more than 80 percent of the fully stretched length
- pH value - 6 to 8.5
- Breaking Load - minimum 150 N (15 kgf) on a test specimen of 20 cm test length and not greater than 5 cm in width
- The water-soluble and ether soluble substances shall not be more than 1 percent respectively.
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IS 17629: 2021, MEDICAL TEXTILES — CAPS — SPECIFICATION

- Caps are worn as personnel protective clothing for head covering by surgeon, operating room staff and other healthcare professional. Caps are helpful to prevent contamination of the operating field, patient and materials from microorganisms/particulates that originate in the personnel's hair or scalps.

- This standard specifies the requirements for caps intended to be worn by surgeon, operating room staff and other healthcare professional during the surgical and other invasive procedures to prevent contamination of the operating field, patient and materials from transfer of hair, microorganisms, particulates etc. They can be single use or re-useable. These caps are also known by other nomenclature, such as operation theatre cap, surgeon cap, surgeon hood, head cover, bouffant cap, nurse cap etc.

IS 17629: 2021, MEDICAL TEXTILES — CAPS — SPECIFICATION

- **PERFORMANCE REQUIREMENT OF CAP**

Sl No.	Characteristics	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Cleanliness – Microbial (CFU/100 cm^2)	≤ 300	ISO 11737-1
ii)	Tensile strength (Dry and wet) (N)	≥ 20	Nonwoven, IS 15891 (Part 3), Woven, IS 1969 (Part 1)
iii)	Bursting strength (Dry and wet) (kPa)	≥ 40	IS 1966 (Part 1)
iv)	Particle release [log10 (lint count)]	≤ 4.0	IS 15891 (Part 10)
v)	Resistance to microbial penetration — Dry (CFU)	≤ 300	IS 16548
vi)	Moisture vapour transmission rate (*Max.*) (*optional*) (*see note*)	40 m^2 Pa/W	IS 17376

NOTE — Moisture vapour transmission is the ability of water vapour to pass through a material. This attribute has a significant effect on comfort, because materials without the ability to allow moisture transmission are generally uncomfortable. This test is recommended to be performed for caps that are being used in high risk surgeries with prolonged duration where the doctors/healthcare personnel are subjected to heat stress due to which they may feel uncomfortable.

IS 17788 : 2021 NONWOVEN FABRIC FOR WIPES AND IS 17787 : 2021 NONWOVEN FIBRES

- **IS 17788 : 2021, MEDICAL TEXTILES — NONWOVEN FABRIC FOR WIPES — SPECIFICATION**
- THIS STANDARD SPECIFIES MINIMUM PERFORMANCE REQUIREMENTS FOR NON-WOVEN FABRIC FOR SINGLE USE DRY OR WET WIPES FOR BABY CARE AND PERSONAL HYGIENE (BABY, ADULT, FACIAL, SKIN ETC).
- THE KEY PERFORMANCE REQUIREMENTS SPECIFIED IN THE STANDARDS ARE FIBRE IDENTIFICATION, GSM, ABSORPTION, PH, DRY AND WET BREAKING STRENGTH.
- **IS 17787 : 2021, MEDICAL TEXTILES — NONWOVEN WIPES — SPECIFICATION**
- THIS STANDARD SPECIFIES MINIMUM PERFORMANCE REQUIREMENTS FOR SINGLE USE NONWOVEN DRY OR WET WIPES USED FOR BABY CARE AND PERSONAL HYGIENE (BABY, ADULT, FACIAL, SKIN ETC). THE KEY PERFORMANCE REQUIREMENTS SPECIFIED IN THE STANDARDS ARE LENGTH AND WIDTH, PH, SEAL LEAKAGE TEST, TOTAL VIABLE COUNT, MICROBIOLOGICAL REQUIREMENTS, ANTIBACTERIAL ACTIVITY.
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OTHER IMPORTANT STANDARDS ON MEDICAL TEXTILES

IS 674 : 1987	**Specification for flannel, hospital, grey (third revision)**
IS 757 : 1971	Specification for handloom cotton lint, absorbent, bleached, non-sterilized (first revision)
IS 758 : 1988	Specification for cotton gauze, absorbent, non-sterilized (fourth revision)
IS 863 : 1988	Specification for cotton bandage cloth, non-sterilized (second revision)
IS 1681 : 1998	Textiles – Hospital blankets, woollen, dyed – Specification (third revision)
IS 10829 : 1993	X-Ray detectable gauze swabs and laparotomy sponges – Specification (first revision)
IS 11046 : 1984	Specification for towel, operating
IS 11163 : 1985	Medical Textiles First Aid Dressings Specification First Revision of IS 11163
IS 12839 : 1989	Wool/polyamide blended flannel, hospital, grey - Specification
IS 16111 : 2013	Elastic bandage
IS 16302 : 2020	Medical Textiles — Orthopedic Stockinet — Specification (First Revision)
IS 16303 : 2014	Medical textiles - Cast padding for orthopaedic plaster - Specification

OTHER IMPORTANT STANDARDS ON MEDICAL TEXTILES

IS 16467 : 2016	**Medical textiles – Graduated medical compression stockings – Specification**
IS 16660 : 2017	Medical textiles - Nonwoven bandage rolls - Specification
IS 16949 : 2018	Medical textiles - Adhesive extension plaster - Specification
IS 16950 : 2018	Medical textiles - X - Ray detectable absorbent cotton gauze - Specification
IS 17350 : 2020	Medical textiles – Abdominal binder – Specification
IS 17351 : 2020	Medical textiles – Dressing, shell compressed – Specification
IS 17352 : 2020	Medical textiles – Foam dressing – Specification
IS 17353 : 2020	Medical textiles – Pressure garment – Specification
IS 17359 : 2020	Medical textiles – Anti-embolic stocking for Post op use upto thigh medium – Specification
IS 17506 : 2020	Medical Textiles - Hydrocolloid Dressing - Specification
IS 17507 : 2020	Medical Textiles - Cellulose Wading - Specification
IS 17508 : 2020	Disposable Adult Incontinence Diaper - Specification
IS 17528 : 2021	Medical Textiles Chlorhexidine Gauze Dressing Specification
IS 17628 : 2021	Medical Textiles - Eye Pad - Specification

THANK YOU

FOR FINER DETAILS PLEASE CONTACT

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