



# **Capsule Course**

on

## **Agrotextiles**

**23 January 2025**

**at Mumbai Branch Office-I, BIS, Mumbai**



**Organized jointly by  
National Institute of Training for Standardization (NITS),  
Textiles Department (TXD) and Mumbai Branch Office-I (MUBO-I),  
Bureau of Indian Standards**

**Bureau of Indian Standards (BIS)** being the National Standards Body of the country discharges multitude of functions and services for enhancing the quality ecosystem in the country. The activities of BIS include standards formulation at national and international level, conformity assessment schemes (Product Certification, Systems Certification, Registration and Hallmarking), testing and training. All these activities are carried out through their network of offices at its headquarters, regional and branch offices and labs spread throughout the country.

In recent years, the fields of agriculture and horticulture have increasingly turned to advanced technologies to improve the quality and quantity of their yields. This shift is driven by the growing global population, which puts immense pressure on agricultural systems to produce more food with limited resources. As the demand for food continues to rise, the need to enhance both the yield and quality of agricultural products has become more critical than ever.

Agrotextiles are a specialized category of textile materials specifically designed to address these challenges. These materials, which include fabrics that are woven, non-woven, or knitted, as well as nets, crop covers, mulch mats etc are engineered to support various agricultural practices. They are integral not only to agriculture and horticulture but also to forestry, animal husbandry, and aquaculture.

#### Applications of Agrotextiles:

- 1. Crop Protection:** Agrotextiles play a vital role in crop protection by safeguarding plants from environmental stresses, pests, and external damage. Shade nets regulate sunlight and temperature, while insect nets protect crops from pest infestations, reducing the need for chemical pesticides. Windshield nets minimize wind damage, ensuring plant stability and reducing soil erosion. Fencing nets provide secure boundaries to prevent animal intrusion, protecting crops from grazing or trampling. Harvest nets utilized in the collection of fruits and vegetables, reducing damage during harvesting.
- 2. Soil Protection:** Agrotextiles have a significant role in soil protection by preventing degradation and improving soil health. Weed protection covers and mulch mats act as barriers to inhibit weed growth, reducing competition for nutrients, water, and sunlight without the need for chemical herbicides. They also help to conserve soil moisture by minimizing evaporation, regulate soil temperature, and protect the soil surface from erosion caused by wind and water. Additionally, these materials enhance soil fertility by preventing nutrient loss and promoting a stable microclimate for plant roots.
- 3. Efficient Water Conservation:** Agrotextiles are also used for efficient water conservation, helping farmers manage water resources effectively. Pond liners made from HPDE woven durable materials prevent water seepage in reservoirs and ponds, ensuring maximum water retention for irrigation. HPDE flexible water storage tanks provide a reliable solution for storing water in areas with limited infrastructure, enabling easy access during dry periods. Additionally, HDPE lay-flat tubes are widely used for efficient irrigation, delivering water directly to crops with minimal loss and ensuring uniform water distribution.

#### Significance of Agrotextiles:

- 1. Adaptation to climate change:** In the context of increasing climate variability, agrotextiles

provide resilience against extreme weather events. Frost protection fabrics, hail nets, shade nets safeguard crops from damage due to extreme weather events, ensuring agricultural continuity and stability in crop production.

- 2. Environmental Protection:** The use of agrotextiles contributes significantly to the protection of human health and the environment. By reducing the need for chemical inputs such as pesticides and fertilizers, agrotextiles help lower the environmental footprint of agriculture. Additionally, by preventing soil erosion and promoting sustainable farming practices, they contribute to long-term soil health and environmental conservation.
- 3. Economic Impact:** The widespread adoption of agrotextiles has a significant impact on the economy. By improving crop yields and reducing losses, agrotextiles contribute to higher productivity and profitability in the agricultural sector. This, in turn, influences a country's economy by promoting growth, and enhancing overall agricultural productivity. The benefits of agrotextiles extend beyond the farm, impacting the broader economy through increased food security, and sustainable development.

In conclusion, agrotextiles represent a vital technological advancement in modern agriculture, offering solutions to some of the most pressing challenges in food production today. Their applications and benefits underscore the importance of integrating innovative materials and practices into agricultural systems to meet the demands of a growing global population while protecting the environment and ensuring the long-term sustainability of our food supply.

BIS has published several standards pertaining to agrotextiles, some of which are mentioned below:

IS 16008: 2016 (P1 & P2)	Shade Nets for Agriculture and Horticulture Purposes — Specification
IS 15351: 2015	Agrotextiles — Laminated High Density Polyethylene (HDPE) Woven Geomembrane for Water Proof Lining — Specification
IS 17358: 2020 (P1 & P2)	Agrotextiles — Fencing Nets for Agriculture and Horticulture Purposes — Specification
IS 16513: 2016	Agrotextiles — Insect Nets for Agriculture and Horticulture Purposes — Specification
IS 16718: 2021	Textiles — Polypropylene Spun Bonded Non-Woven Crop Covers and Fruit Skirting Bags for Agricultural and Horticultural Applications — Specification
IS 17730: 2021 (P1 & P2)	Agrotextiles — Hail Protection Nets for Agriculture and Horticulture Purposes
IS 16089: 2013	Jute Agrotextile — Sapling Bags for Growth of Seedling/Sapling — Specification
IS 16390: 2015	Agrotextiles — Nylon Knitted Seamless Gloves for Tobacco Harvesters
IS 15907: 2010	Agrotextiles — High Density Polyethylene HDPE Woven Beds for Vermiculture — Specification
IS 17070: 2019	Jute Agrotextiles for Growth of Plants and Suppression of Weeds — Specification

IS 16202: 2014	Agrotextiles — Woven Ground Covers for Horticulture Application — Specification
IS 16190: 2014	High Density Polyethylene (HDPE) Laminated Woven Lay Flat Tube for Irrigation Purpose — Specification
IS 16627: 2017	Agrotextiles — High Density Polyethylene (HDPE) Laminated Woven Lay Flat Tube for Use in Mains and Submains of Drip Irrigation System — Specification
IS 17356: 2020	Windshield Nets for Agriculture and Horticulture Purposes — Specification
IS 17357: 2020	Harvest Nets for Agriculture and Horticulture Purposes — Specification
IS 17513: 2020	Plant Support Nets for Agriculture and Horticulture Purposes — Specification
IS 17728: 2021	Agrotextiles — High Density Polyethylene (HDPE) Laminated Woven Lay Flat Tube and Fittings for use in Rain Irrigation System — Specification
IS 17729: 2021	Agrotextiles — Flexible Water Storage Tank for Agriculture and Horticulture Purposes — Specification
IS 17731: 2021	Laminated Woven Orchard Protection Covers — Specification

## ***Learning Objectives***

- To aware the participants on the classification, specifications, performance requirements, and other criteria outlined in the Indian Standards for different types of agrotextiles.
- To enable participants with the knowledge required to make well-informed decisions regarding the design, testing, installation and use of agrotextiles.

## ***Training Methodology***

- Classroom based with combination of lectures and presentations, etc.

## ***Fee***

- **The course fee is Rs. 1000/- + 18% GST per participant.**
- Participants have to arrange transport and accommodation on their own.
- Accommodation and transportation charges have to be borne by the participants.
- **No training fee for Government Officials (Central/States/UTs) officially nominated by their department heads.**

## ***Who should attend?***

The course is designed for:

- Manufacturers, suppliers and users of agrotextiles
- Laboratory personnel involved in testing of agrotextiles
- Researchers and academicians in Textile Engineering

## ***Criteria for Selection***

- Selection on First Come First Serve basis

## ***Certification***

- Certificate will be awarded to all participants on completion of course

## ***Venue***

- The course will be held at **Mumbai Branch Office-I of BIS**
- Address: MUBO-I, 05th Floor,  
MTNL CETTM Building,  
Technology Street, Hiranandani Gardens,  
Powai, Mumbai-400076

## ***How to Apply?***

Application has to be made through BIS Training Portal by following the steps mentioned below:

- |   |
|---|
| • <b>VISIT</b> the e-BIS Website: <a href="http://www.manakonline.in">www.manakonline.in</a>  |
| • <b>CLICK</b> on the "Training" Head   |
| • <b>LOGIN</b> by clicking on the blue "LOGIN" button on the top right corner   |
| • <b>SIGNUP</b> by clicking on "SIGNUP" on the Member Login Page if you are not a member otherwise "SIGN IN" using your credentials |
| • <b>FILL OUT</b> all the fields and click on "REGISTER" and complete the registration process                                      |
| • <b>CHOOSE</b> the course you want to apply for, fill in the required information and "PAY" the requisite fee.                     |

In case you are unable to submit your nomination on the BIS Training Portal, the same may be done by emailing filled up nomination form to [nits@bis.gov.in](mailto:nits@bis.gov.in). In that case, payment of the requisite fee may be made via NEFT/UPI to the Bureau of Indian Standards Bank Account, details of which are mentioned in the nomination form.

## ***Contact***

For any further queries, you may contact:

**Shri Yajur Digvijay Singh Brar**

Management Executive and Course Coordinator,

Mobile – 9463049901

***Email:*** [nits@bis.gov.in](mailto:nits@bis.gov.in)



राष्ट्रीय मानकीकरण प्रशिक्षण संस्थान, नौएडा  
NATIONAL INSTITUTE OF TRAINING FOR STANDARDIZATION, NOIDA  
भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS

### Nomination Form

Name of the Programme			
Date of the Programme			Venue:
Sponsoring Organization (OR In Individual Capacity) with complete Address			
Telephone /Mobile Number			
Organization/Firm GST No.			
Email ID			

#### Participants Details

Sl. No.	Name (IN CAPITAL LETTERS)	Designation	Contact No.	Email
1.				
2.				
3.				
4.				
5.				

Will you stay in Hostel?		If yes, please mention the date and time					
Yes	No	Arrival	Date	Time	Departure	Date	Time

#### Details of Payment (in Rupees)

Training Fees *	Hostel Charges *	GST ##	Discount, if any	Total amount

#### Mode of Payment

Name of Bank	UTR No. & Date of transaction # (for NEFT/Net banking/ IMPS/UPI payment)	Amount (in Rs.)

\* For Training/hostel fees, see NITS Training Calendar at BIS website [www.bis.gov.in](http://www.bis.gov.in). (Stay in hostel is charged on Night stay basis).

# For payments by **NEFT**, Payment should be made to **Bureau of Indian Standards, Savings A/c No. 712210100000650, Bank of India, Sec-62 Noida, Branch Code 7122, IFSC Code BKID0007122.**

## NITS GST No. 09AAATB0431G2Z8, SAC Code: 999294 Applicable GST@ 18% on Training fee and Hostel fee.

Date: \_\_\_\_\_

Signature and Seal \_\_\_\_\_

The nomination form should preferably be scanned and e-mailed to [nits@bis.gov.in](mailto:nits@bis.gov.in), [hnits@bis.gov.in](mailto:hnits@bis.gov.in) and reach NITS at least one week before the programme date. For sending hard copy may be addressed to:

**Head, National Institute of Training for Standardization (NITS), Bureau of Indian Standards,  
A – 20 & 21, Institutional Area, Sector – 62, NOIDA - 201309, U.P.**

Phones: 0120 – 4670227, 4670232, Email: [nits@bis.gov.in](mailto:nits@bis.gov.in), [hnits@bis.gov.in](mailto:hnits@bis.gov.in), Website: <http://www.bis.gov.in>

#### Important:

1. Participants are requested to get the confirmation from NITS, whether, nomination has been accepted or not **before attending the programme.**

#### 2. Rules for Refund of Training & Hostel Fees:

- A refund of full fees shall be made when cancellation/withdrawal of nomination is made **at least 15 days** in advance of the date of the training.
- Cancellation/withdrawal of nomination is made **less than 15 days** in advance of the date of the training programme or is not informed, a **cancellation charge of 25%** of the training fees would be levied. The balance amount after deducting the cancellation charges would be returned.
- Hostel fees if any, paid in advance shall be returned in full.



राष्ट्रीय मानकीकरण प्रशिक्षण संस्थान  
National Institute of Training for Standardization



## Reach Us

National Institute of Training for Standardization  
Bureau of Indian Standards  
A 20&21, Institutional Area,  
Sector 62, NOIDA 201309, UP  
Phone: +91 120 4670227 / 232  
Email: nits@bis.gov.in, hnits@bis.gov.in



bis.gov.in