

IS 17216: 2019 Polyethylene mulch films for agriculture and horticulture - Specification

The practice of mulching in agriculture is very old. Crop residue, paper, soil, pebbles and synthetic materials have been used as mulches under diverse agro-climatic conditions. The polyethylene mulch application has gained popularity among farmers. The main objectives of polyethylene mulching have been water conservation, weed control and soil temperature control. However, pest control and carbon dioxide (CO₂) enrichment have also been observed as benefits of mulching. Polyethylene mulching has become very relevant for sustainable environment friendly agriculture, because it reduces the requirements of fertilizer and agro-chemicals by better utilization efficiency.

Indian Standard for Polyethylene mulch films for agriculture and horticulture was published in 2019 with the objective to guide prospective users to select appropriate polyethylene mulch films for the intended applications and use them correctly.

The standard has categorized Polyethylene mulch film into two types:

- a) Non-reflective polyethylene mulch films; and
- b) Reflective polyethylene mulch film.

The standard has prescribed various requirements for polyethylene resins and master batch which are used in manufacturing of Polyethylene mulch films.

The standard has specified that the polyethylene mulch films shall be uniform in colour, texture and finish and substantially free from pin-holes and foreign particles visible to unaided eye. Further, the films shall be free from any objectionable odour.

Other physical requirements like dimensions, impact strength, Tensile Strength at Break, Elongation at break, Coefficient of Friction, Elmendorf Tear Strength, and Opacity has also been specified in the standard. Additional requirements like carbon black dispersion, percentage of carbon black, and ash content has also been specified in the standard for black polyethylene mulch films. Further, a specific annex has also been included in the standard for determination of solar reflectance of reflective mulch films.