

## Abstract Details

**Title:** Impact of Mass per Unit Area on the Mechanical Properties of Needle Punched Nonwoven Geotextile

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**Abstract:** The application of nonwoven geotextile is determined by its performance, which is governed by its properties. Mass per unit area is the basic physical property used for quality control to determine material conformance. It is directly proportional to fiber packing density. Higher the value tightest is the structure matrix and more is the density. Such types of structures show the highest resistance to mechanical deformation. Therefore behavior of mechanical properties with respect to its mass per unit area is important to understand geotextile resistance to tensile stresses mobilized from applied load and installation condition. In this study, experimental work is performed in the laboratory to know the impact of mass per unit area on mechanical properties of needle punched nonwoven geotextile produced from 100 % polypropylene (PP) fibers. The results show that increase in the mass per unit area leads to an improvement in the mechanical properties i.e., tensile strength, CBR puncture resistance, penetration resistance (cone drop) and trapezoidal tear strength.

**Keywords:** Nonwoven Geotextiles, Needle Punched, Laboratory Tests, Tensile Strength.