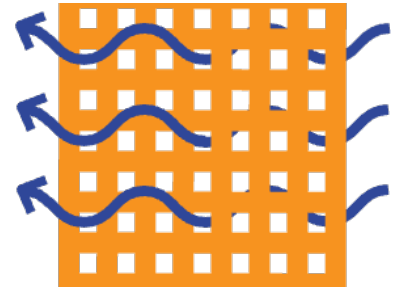


WHAT IS AIR PERMIABILITY?

Air permeability measures if and how air flows through a fabric. Even air flow across plants helps ensure even growth rate and yield across a planted row or inside a greenhouse. For example, shade cloth or insect netting helps achieve even crop growth.



Crop Applications



Is air flow ALWAYS a concern?

When crop is outside: Not Always

- When is it a concern outside? Depends on the specific crop:
 - Needs higher CO₂ in air than others for photosynthesis
 - Water coalesces on plants due to high moisture content in air and possibly causes discoloration
- Inside Greenhouse: Yes, Always
 - Insect netting without adequate air permeability can cause drag on the fans and blower system; Drag can lead to premature burn out on the vent system
 - Sides are open- same concerns as outside

Will a specific fabric allow necessary air flow? How to know.

ASTM: D737-18: Standard Test Method for Air Permeability of Textile Fabrics

- Measured cm³/s/cm² or cf/m/ft²
- Porosity: % of air flow that passes through the fabric.
- Windbreak: % of air flow blocked by the fabric
- Air Velocity Reduction: % air change caused by fabric

If the fabric spec doesn't measure Air Permeability, how can you evaluate it?

- Manufacturer's quality program to deliver consistent construction
 - Consistent pore size
 - Yarn width (denier same throughout the fabric)
 - Supports even air flow across an entire piece of material
- Weave details
 - Wide yarns with tight construction may reduce even flow
 - Smaller pore sizes can reduce air flow
 - Twisted yarns increase air flow
- Coatings or Calendering: Generally restrict air flow

Construction Applications

Air Flow Preferred / Needed:

Workers outside on a construction site

- Fabric placed overhead to provide shade
- Debris netting around construction site; small particulate passing through is acceptable in exchange for air flowing to workers

Air Flow needs to be Blocked:

- Spread of particulate matter is unacceptable
- Workers are provided safety equipment sufficient for the conditions



Containment Fabric