

## **Permeability**

Permeability is a measure of the ease with which gases and liquids can pass through a mass of soil. The permeability of a soil profile is deduced from the permeability of the surface layer (A horizon) and the permeability of the subsoil (B horizon) and substratum (C horizon) as obtained from soil studies. The permeability of the profile is that of the most restrictive layer in it (the impedance layer). The three classes are determined in accordance with hydraulic conductivity values, representing the volume of mobile water per unit soil volume traversed by the liquid (Table 1).

**Table 1. Definition of permeability classes**

<b>Class</b>	<b>Hydraulic conductivity (cm/hr)</b>	<b>Percentage of area</b>
Slow	<0.5	24.7
Moderate	0.5 - 15.0	43.9
Rapid	≥15.0	31.4

Day and McMenamin 1983

Permeability represents an important datum for a number of interpretations, including subsurface drainage effectiveness, estimated surface layer erodibility, vulnerability to losses to groundwater, and locations of recreational facilities (campgrounds, trails), sanitary

landfill or disposal field sites, and so on.

Slowly permeable soils (24.7% of the study area) occur mainly in Verchères and Chambly Counties (e.g. Sabrevois series), while moderately permeable soils (43.9%) are predominant in Saint-Hyacinthe and Richelieu Counties (e.g. Saint-Aimé series). Rapidly permeable soils (31.4%) are distributed almost evenly over the four counties, especially on sandy materials and some highly permeable clay soils (e.g. Saint-Urbain series).