The problem of effective boundary conditions for the flow of a viscous fluid across a type of permeable membrane is considered. The membrane is periodically perforated, with randomly shaped and sized holes, and on the solid part threshold leak conditions are considered: the normal velocity is zero unless the jump in the normal stress across the membrane reaches an yield. The effective conditions are of subgradient type with an effective yield limit, in the case of a densely distributed solid part, or of Navier type, in the case of dilute solid part; in the intermediate case the tangential slip cancels, whereas the normal velocity and stress are continuous. Unlike in the case of perforated walls (E. Sanchez-Palencia, C. Conca), no stress concentrations are present. (Received September 22, 2011)