

Young modulus – Porosity @model

$$(1) \quad E = E_0 \cdot \left(1 - \frac{\phi}{\phi_c}\right)^f$$

where

E_0	Young modulus of solid material	
ϕ	porosity	usually $\phi \in 0 \div 0.4$
ϕ_c	critical porosity	usually $\phi_c \approx 1$
f	characteristic exponent	usually $f \in 1.1 \div 1.7$

See Also

[Physics](#) / [Mechanics](#) / [Continuum mechanics](#) / [Young modulus \(E\)](#)

[[Porosity](#)]

Reference

1. K. K. PHANI and S. K. NIYOGI, J. Mater. Sci. 22 (1987) 257.