

Equilibrium moisture content

Definition

The equilibrium moisture content *EMC* is "the moisture content [%] of a fuel particle allowed sufficient time to reach equilibrium with its environment, i.e. no net moisture exchange" (Bradshaw et al. 1983).

Formula

Simard (1968) defined the *EMC* as follows:

$$EMC = \begin{cases} 0.03229 + 0.281073 \cdot H - 0.000578 \cdot H \cdot T, & \text{for } H < 10\% \\ 2.22749 + 0.160107 \cdot H - 0.01478 \cdot T, & \text{for } 10\% \leq H < 50\% \\ 21.0606 + 0.005565 \cdot H^2 - 0.00035 \cdot H \cdot T - 0.483199 \cdot H, & \text{for } H \geq 50\% \end{cases}$$

where *H* is relative air humidity [%] and *T*_{air} temperature [°F].

References

Literature:

Simard (1968)

Bradshaw et al. (1983)