1 [...]

The determination of the volumetric water content w of test mixtures requires the precedent determination of the residual gravimetric moisture of the solid material before the test by drying the material for 24h at 105°C and weighting it before and after. The resulting mass difference Δm in relation to the initial solid mass is the gravimetric residual water content w_R . The necessary masses of solids m_S and water m_f for a given total Volume V and with the wished volumetric water content w of the mixtures are then determined according to

8
$$m_S = \frac{w}{1 - w_R} \rho_S V$$
 and (1)

9
$$m_f = w \rho_f V - w_R m_S, \tag{2}$$

- 10 with ρ_f and ρ_S being the densities of water and solids.
- 11 [...]