$$v_{\mathrm{ref}_{1000}} = \left(\frac{4.0 \cdot 500.0}{0.399} \cdot (0.955) - \left(11408 \cdot 9.81 \cdot 6.9 \cdot \cos\left(\operatorname{atan}(0.018)\right) + \frac{1.17 \cdot 5.4}{2} \cdot 20.0^2 \right) - 0 - 2014.1 \right) \cdot \frac{0.0100}{11408 + 340} + 20.0$$