Irradiation with low-energy electrons (100–300 keV) results in dose gradients across the thickness of the dosimeters that are typically used for dose measurement at these energies. This leads to different doses being measured with different thickness dosimeters irradiated at the same electron beam, resulting in difficulties in providing traceable dose measurements using reference dosimeters. In order to overcome these problems a new concept is introduced of correcting all measured doses to the average dose in the first micrometer—Dμ. We have applied this concept to dose measurements with dosimeters of different thickness at two electron accelerators operating over a range of energies. The uncertainties of the dose measurements were evaluated, and it was shown that the dose in terms of Dμ was the same at each energy for all dosimeters within the measurement uncertainty. Using the concept of Dμ it is therefore possible to calibrate and measure doses from low-energy electron irradiations with measurement traceability to national standards.