Conclusions

Changes in humidity of the test papers stored in different conditions have a significant impact on the value of breaking energy, both in the machine and cross direction. Both methods proposed for breaking energy calculation for papers conditioned at a given temperature and different humidity can be useful in certain practical applications. ***Equation (7)*** allows to calculate paper breaking energy on the basis of coordinates of two breaking points determined after paper conditioning at a given temperature and two different relative humidity values. However, first the method requires determining coefficient h for a given paper or a group of papers of the same type. It is possible to use ***Equation (12)*** when tensile curves of paper are known after its conditioning at a defined temperature and two different relative humidity values. Apart from that, this relationship allows to calculate the energy at any moment of the tensile test and not only at the moment of breaking. Determination of the values of breaking forces and strain at the moment of breaking with ***Equations (13)*** and ***(14)*** in the range of high humidity, above 80%, can involve serious error.

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