VerpakkingsCentrum
Packaging Technology Center
With modern analysing techniques and a scientific interpretation of test results, the ‘VerpakkingsCentrum’ conducts scientific research and provides services to industry.

In strong collaboration with other research groups, institutions and companies, the center, with its knowledge and expertise, contributes to investigate/to solve research questions that can lead to innovations in the industrial chain.

In its complementary cooperation with the unique Master’s program in Packaging Engineering Technology (University Hasselt), it supports the education of young people into skilled and dedicated engineers, that are able to work with integrity and a clear vision in today’s society.

**Gas permeability** for oxygen, carbon dioxide, water vapor and non-corrosive/non-explosive gases (e.g. helium, nitrogen, ...) of materials and packages is measured under standardized conditions by various devices, 18 modules such as MOCON and Brügger, according to three different measurement principles: equal pressure, different pressure and on the basis of fluorescence. Bursting strength and gas compositions of MAP– packaging are supporting analyses.

**Material characterization of paper, flat cardboard, corrugated cardboard and plastics** is executed according to national and international standards with equipment of Lorentzen & Wettre, MTS, PAAR ...

Properties of paper and cardboard as a material and also as a box are measurable: puncture resistance, air permeability, static and dynamic friction, thickness, compression resistance of material and box, crack resistance, total and component grammage, Cobb value, moisture content, 4-point bending, crease strength, ...

Properties of plastic materials are quantifiable: puncture resistance, tensile strength, seal behavior, friction coefficients, microscopic layer thickness and total material thickness, tear resistance, dart value, compostability, puncture resistance, ...

To avoid transport damage on packaging during handling, storage and transport by train, truck or plane, **transport simulations** can be performed with a drop table, compression testing and two vibrating tables, with one varying up to pallet size. Mobile measuring equipment (Saver), data recorders for temperature and relative humidity,... can monitor other real transport loads.

**Influences of climatic factors**, such as temperature, relative humidity/moisture and exposure (UV/daylight), can be examined in the various climate chambers and by use of specific testing devices. Color intensity and opacity changes can be monitored, as well as other material characteristics.

**Packaging innovation and packaging diagnostics** regard packaging materials, packaging concepts and the packaging process in the company with special attention for innovation, prevention and sustainability. Eco-indicators, Artioscad, Inventor, CAPE,... are supporting tools.

Taking into account the expertise in the physical-mechanical testing of materials and packages, company-specific training programs can be provided by engineers of the ‘VerpakkingsCentrum’. Content and execution are determined in interaction with the company.

With regard to education, collaborations with the industry are desirable in Bachelor’s and Master’s theses, logistics case studies conducted by teams of Master’s students, as guest speakers with specific packaging knowledge and expertise, for opportunities to visit companies, for cooperation in PhD research projects through a Baeklandscholarship,...
DIENSTVERLENING

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