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**TECHNICAL OPINION ON THE DETERMINATION OF THE SUSPENSIBILITY
TO BIOLOGICAL DEGRADATION OF A BIODEGRADABLE FASTENING TAPE
WITH THE NAME "NATURESTRAP"**

TAPE MANUFACTURER:

CONNECT Sp. z o.o.
36-050 Sokołów Małopolski
ul. Sienkiewicza 24

PRODUKT CHARACTERISTIC:

Biodegradable PP-BIO strapping tape with the trade name NATURESTRAP.
Tape width: 5 - 12 mm
Tape thickness: 0,5 – 0,8 mm

SUBJECT OF THE OPINION

Determination of susceptibility to biological degradation (biodegradation) of NATURESTRAP tape samples.

OPINION

As a result of the research carried out at the Rzeszów University of Technology in cooperation with the Connect Company, the biodegradability of NATURESTRAP tape was found.

The degradation time of the tape in a biological environment exceeds the periods defined by standards (EN 13432, DIN V54900), which allows the use of NATURESTRAP tape as an industrial packaging in the standard logistic cycle of packaged goods. Further research will be required to determine the exact actual time of biodegradation.



BASIS FOR ISSUING THE OPINION

Biological corrosion tests were carried out at the Rzeszów University of Technology under the contract of 3 January 2012 on the basis of NATURESTRAP tape samples provided by CONNECT.

Biological corrosion was carried out under aerobic conditions in the environment of compost soil containing spores of the mold fungus *Aspergillus Niger*. The environment simulated degradation similar to the composting conditions for this type of material in soil.

An accelerated aging test was also carried out using an aging chamber equipped with a xenon lamp and sprinkler system. Such an environment corresponds to the operating conditions of the tapes (resistance to weather conditions such as UV radiation or rain).

After the aging processes, the mechanical properties of the degraded samples and a control sample were tested.

Analyzing the obtained test results, it can be concluded that there is a clear deterioration of the strength parameters of the tapes subjected to biological corrosion. The greatest deterioration of the strength parameters was obtained for samples degraded both in the aging chamber with a UV lamp and spraying, and in compost, compared to the samples aged only in the soil environment.

Determining the time of biological degradation of NATURESTRAP tape requires further aging tests for many months in accordance with the recommendations of the subject standards EN 13432 and DIN V54900.

The research was supervised by:

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