DLG Test Report 7234

CPS AGRO CO., LIMITED

Round bale winding net Optinet

www.DLG-Test.de

Overview

The DLG QUALITY SEAL for operating equipment and consumables encompasses products, which are subjected to extensive testing of their value-determining and advertised characteristics. The tested criteria and the requirements to be fulfilled are specified by independent commissions and are designed – over and above legal requirements – to prove the product's fitness for purpose, its advertised characteristics and practical requirements. Testing contents and requirements are developed further by the responsible specialist departments of the DLG e.V. in line with the applicable legislation, as well as with technical and scientific progress. Successful testing is concluded with the assignment of the DLG QUALITY SEAL. The approved products are then published.

The DLG quality seal test included technical measurements on test benches, in the laboratory and in operational tests. On the test benches, the network length was measured and in the laboratory the maximum tensile force, the elongation at maximum tensile force, weather resistance and change in measure after hot storage. The test basis was the DLG test frame for high-density polyethylene round bale winding nets (PE-HD), as of November 2016.

Assessment in brief

The round bale winding net Optinet tested here was tested in the DLG quality seal test on test benches and in the laboratory for mechanical, physical and aging properties and measured the running length. In the practical investigations, the handling was assessed.

The net is designed for the mechanical winding of bales made with round bales for silage preparation, hay and straw.

Table 1:
Assessment in brief

DLG QUALITY PROFILE	Requirement	Evaluation*
Net length	≥ nominal length at 5 % preload	✓
Meter weight	nominal meter weight ± 5 %	✓
Maximum traction force	≥ 300 N (measured on 7 threads)	✓
Maximum traction	mean ≥ 18.5 N/cm	✓
Maximum tensile force	minimum-value ≥ 17.5 N/cm	✓
Elongation at maximum tensile force	15 %-25 %	✓
Maximum pulling force after aging	mean ≥ 15.5 N/cm	✓
Elongation at maximum tensile force after aging	≤ 30 % reduction in relation to new condition	✓
Change in measure after hot storage	shrinkage ≤ 30 %	✓

* Evaluation range: requirements fulfilled (✓) / requirements not fulfilled (✗)

The Product

Applicant

CPS AGRO CO., LTD
Szosa Lubicka 34, 87-100 Torun, Polen

Product:
Round bale winding net Optinet

Contact:
Telephone +48 793512344
info@cpsagro.com

Description and technical data

Green round bale winding net with white and red high-density polyethylene edge strip (PE-HD) with red warning strips at the end of the roll. The winding net is UV-stabilized. It has a width of approx. 1.23 m and is available in the running length 2.000 m, 3.000 m, 3.600 m and 4.500 m.

Table 2:
Technical data (company information)

Main dimensions and weights	
Roller length	2.000/3.000/3.600/4.500 m
Roller width (+/- 10 mm)	1.23 m
Rollers diameter (+/- 10 mm)	max. 270 mm
Weight per meter (+/- 5%)	11.6 g
Sleeve length (+/- 2 mm)	1245 mm
Sleeve inner diameter	76 mm
Packaging	foil hose
UV stabilizer	yes
Red warning strip last 50 m	yes

Detailed account of the test results

Suitability

The round bale winding net Optinet is suitable for the mechanical winding of with round balers manufactured bales from good for silage preparation, hay and straw.

In practical use during the growing season in 2021, the winding net has proven.

The cover of the bales from edge to edge was good

Running length/meter weight

With the specified net length of 3,000 m, a running length of 3090 m was measured on a chassis dynamometer.

The meter weight is 11.6 g.

Strength

In new condition

The maximum tensile force measured by 7 threads was 424 N (minimum permissible value 300 N). Related to a network width of 1.23 m were used as an average 22.2 N/cm (minimum requirement 18.5 N/cm) and as Minimum value 21.7 N/cm (minimum requirement 20.2 N/cm).

The breaking strength at maximum tensile force was longitudinally 24.3 % in the permitted range from 15 % to 25 %.

The winding net met the DLG requirements.

After aging/weather resistance

After simulation of a one-year natural outdoor weathering in the UV climate chamber (for Germany 2,000 MJ/m^2) was the maximum tensile force measured on 7 threads 356 N and 17.8 N/cm based on a mains width of 1.23 m (minimum permissible value 15.5 N/cm). The elongation at break at maximum tensile force amounted to 18.7 % after artificial aging, i.e. it decreased by 23 % (maximum permitted 30 %).

The weather resistance was given.

Change in measure after hot storage

The change in measure after one hour of storage at 120 °C was 20.8 % (maximum permitted 30 %).

The Method

Suitability

The suitability as well as the possible use and the areas of application of the round bale winding net were assessed in a practical way.

Running length/meter weight

The barrel length is determined on a roller dynamometer without additional preload. The meter weight is on a 10 m long section.

Strength

The maximum tensile force and the elongation at maximum tensile force is determined in the new condition and after weathering of the material according to DIN EN ISO 527-3: 2003-07.

Aging behaviour/weather resistance

The weathering of the material is carried out in accordance with DIN EN ISO 4892-2, procedure A.

Change in measure after hot storage

The dimensional change is examined after one hour of storage at 120 °C in accordance with DIN 53377: 2007-10.

Summary

The criteria tested in this DLG quality seal test are evaluated on the basis of test bench, laboratory and practical tests on the mechanical, physical and aging properties of the round bale winding net Optinet.

The tested round bale winding net Optinet has met the requirements of the test frame with regard to of the criteria examined.

Further information

Testing agency

DLG TestService GmbH, Gross-Umstadt location

The tests are conducted on behalf of DLG e.V.

DLG test framework

Quality seal test „Round bale winding nets“ (current as of 11/2016)

Department

Operating resources

Head of Department

Dr. Ulrich Rubenschuh

Practical use

Stefan Wolf, 63110 Rodgau Weiskirchen

Tim Schachtschneider, 64853 Nieder Klingen

Willi Schüler, 64395 Brensbach Wallbach

Philipp Neubert, 64853 Otzberg

Lars Drewniok, 25926 Karlum

Test engineer(s)

Dr. Harald Reubold*

Special investigations

SKZ Testing GmbH, Friedrich-Bergius-Ring 22, 97076 Würzburg

Kunststoff-Zentrum in Leipzig gGmbH, Erich-Zeigner-Allee 44, 04229 Leipzig

DFLG Test commission

Stefan Wolf, 63110 Rodgau Weiskirchen

Christof Löffler, LAZBW Aulendorf, 88326 Aulendorf

Karsten Bommelmann, AG FUKO, 30916 Isernhagen

Willi Schüler, 64395 Brensbach Wallbach

Dr. Klaus Hünting, VBZL Haus Riswick, 47533 Kleve

Dipl.-Ing. Udo Dengel, SKZ Testing GmbH, 97076 Würzburg

* Author

DLG – the open network and professional voice

Founded in 1885 by the German engineer Max Eyth, DLG (Deutsche Landwirtschafts-Gesellschaft – German Agricultural Society) is an expert organisation in the fields of agriculture, agribusiness and the food sector. Its mission is to promote progress through the transfer of knowledge, quality standards and technology. As such, DLG is an open network and acts as the professional voice of the agricultural, agribusiness and food sectors.

As one of the leading organisations in the agricultural and food market, DLG organises international trade fairs and events in the specialist areas of crop production, animal husbandry, machinery and equipment for farming and forestry work as well as energy supply and food technology. DLG's quality tests for food, agricultural equipment and farm inputs are highly acclaimed around the world.

For more than 130 years, our mission has also been to promote dialogue between academia, farmers and the general public across disciplines and national borders. As an open and independent organisation, our network of experts collaborate with farmers, academics, consultants, policymakers and specialists in administration in the development of future-proof solutions for the challenges facing the agriculture and the food industry.

Leaders in the testing of agricultural equipment and input products

The DLG Test Center Technology and Farm Inputs and its test methods, test profiles and quality seals hold a leading position in testing and certifying equipment and inputs for the agricultural industry. Our test methods and test profiles are developed by an independent and impartial commission to simulate in-field applications of the products. All tests are carried out using state-of-the-art measuring and test methods applying also international standards.

Internal test code DLG: 2103-0057

DLG TestService GmbH
Groß-Umstadt location
Max-Eyth-Weg 1 • 64823 Groß-Umstadt • Germany
Phone: +49 69 24788-600 • Fax: +49 69 24788-690
Tech@DLG.org • www.DLG.org