REPORT

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Tensile strength test on clip-on eyelets

1 Introduction

By commission of Amicus Trade AB strength testing on Holdon Midi clip-on eyelets was performed.

Test place: Laboratory of SP Building Technology and Mechanics.

2 Test objects

Designation: Holdon Midi clip-on eyelets, see photo 1. The holding efficiency is tested on 180 g/sqm polyethene tarpaulin, see photo 2.

Photo 1. Holdon Midi.

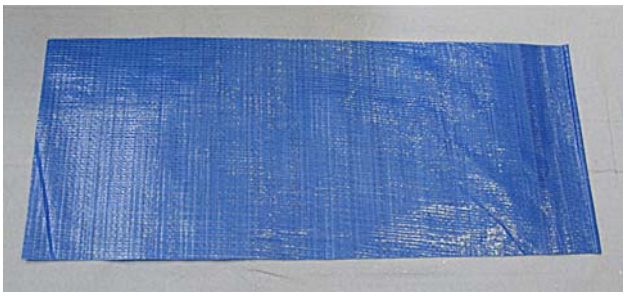

Photo 2. 180 g/sqm polyethene tarpaulin.

Selection of test objects: The test objects have been selected by the client without SP's assistance.

Arrival of test objects: 18 June, 2008.

Test date: 23 June - 24 June, 2008.

3 Test method and implement

Holdon Midi clip-on eyelets were tested on coated vinyl fabrics to see the holding efficiency. The test objects were mounted in the testing machine called Adamel, see photos 3, 4 and 5 for test setup. Photo 3 shows that Holdon Midi was mounted in the end with hemmed tarpaulin with cord in hem and the other end was mounted in tarpaulin with no hem. Photo 4 shows that Holdon Midi was mounted in the end with hemmed tarpaulin with cord in hem and the other end was mounted in folded tarpaulin with no hem. Photo 5 shows that Holdon Midi was mounted in the end with hemmed tarpaulin with cord in hem and in the other end the tarpaulin were wounded around flat bars. The test objects were then pulled to fracture with a constant speed of 20 mm/min.

Photo 3. Test setup 1.

Photo 4. Test setup 2.

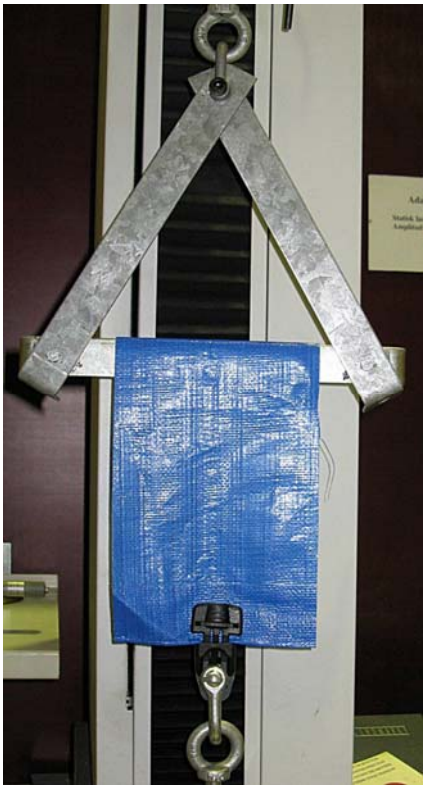

Photo 5. Test setup 3.

4 Test results

The test results are shown in tables 1-3. The test results shown in this report refer only to the tested objects.

Table 1. Results for test setup 1, see photo 3.

Marking	Maximum breaking load (N)	Remarks
Test setup 1	475	Holdon Midi slip from the tarpaulin with no hem, damages in tarpaulin.
Test setup 1	458	Holdon Midi slip from the tarpaulin with no hem, damages in tarpaulin.
Test setup 1	443	Holdon Midi slip from the tarpaulin with no hem, damages in tarpaulin.
Test setup 1	450	Holdon Midi slip from the tarpaulin with no hem, damages in tarpaulin.
Test setup 1	485	Holdon Midi slip from the tarpaulin with no hem, damages in tarpaulin.

Table 2. Results for test setup 2, see photo 4.

Marking	Maximum breaking load (N)	Remarks
Test setup 2	582	Fracture at the folded tarpaulin near Holdon Midi.
Test setup 2	516	Fracture at the folded tarpaulin near Holdon Midi.
Test setup 2	495	Fracture at the folded tarpaulin near Holdon Midi.
Test setup 2	539	Fracture at the folded tarpaulin near Holdon Midi.
Test setup 2	523	Fracture at the folded tarpaulin near Holdon Midi.

Table 3. Results for test setup 2, see photo 5.

Marking	Maximum breaking load (N)	Remarks
Test setup 3	784	Holdon Midi clip-on eyelet slip from the tarpaulin with hem, damages in tarpaulin.
Test setup 3	782	Holdon Midi clip-on eyelet slip from the tarpaulin with hem, damages in tarpaulin.
Test setup 3	896	Holdon Midi clip-on eyelet slip from the tarpaulin with hem, damages in tarpaulin.
Test setup 3	950	Holdon Midi clip-on eyelet slip from the tarpaulin with hem, damages in tarpaulin.
Test setup 3	908	Holdon Midi clip-on eyelet slip from the tarpaulin with hem, damages in tarpaulin.

5 Measurement uncertainty

The total calculated measurement uncertainty for the load is < 1 %. Reported uncertainty corresponds to an approximate 95 % confidence interval around the measured value. The interval has been calculated in accordance with GUM (The ISO guide to the expression of uncertainty in measurements), which is normally accomplished by quadratic addition of the actual standard uncertainties and multiplication of the resulting combined standard uncertainty by the coverage factor k=2

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