Ear tag application force

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Current Guidelines: Application test

10.7.5.2 Phase 2: Preliminary assessment

To assess conformance of the ear tags with the information given in the application form and to also detect any major failure, e.g. damage of the tag at application, possible unlocking without deformation, inappropriate animal welfare design etc. the ear tags will be submitted to a Preliminary Assessment.

The Preliminary Assessment procedure is also applied to a device for which the manufacturer is requesting re-certification.

10.7.5.2.1 Manufacturer requirements

At the commencement of the Preliminary assessment the manufacturer must deliver:

1. A sample of 120 ear tags marked with the reference printing applied using the same technique and style as used (or intended to be used) in the commercially marketed tags. Note: Tags used in this phase are likely to be destroyed during testing
2. An additional 10 male components (pins) used to check reusability of broken and / or unfastened female ear tags.
3. Two pairs of tag applicators or equivalent devices supplied for the application of tags to animals.

10.7.5.2.2 Ear tag design

Ear tags shall have smooth, rounded corners and no sharp edges or protrusions specifically on the shaft of the piercing pin. The following measurements will be taken:

1. The weight of the complete locked ear tag.
2. The dimensions of the front and rear plate (height, width and thickness).
3. The pin (length and diameter).
4. The entrance hole of the cap.

Values and observations potentially impacting on animal welfare will be reported.

10.7.5.2.3 Locking mechanism checks

The primary purpose of these tests is to verify that the male to female locking mechanism, once correctly applied using the supplied applicator, cannot be subsequently dismantled in such a way that would allow the tag to be re-used. A locked ear tag should be tamperproof so tampering with the locked tag will render the tag unusable.

10.7.5.2.4 Application test

The application evaluation will be carried out using two groups of tags:

Group 1: 80 tags with the front and rear tag components locked together but without being inserted through ears

Group 2: 40 tags applied and locked into ears obtained post slaughter.

The performance level required for the 120 ear tags shall be:

- Successful locking of the front and rear tag components of all ear tags.

- No breakage of any tag component at locking.
- No deformation of any tag component after locking.
- No unlocking without breakage or irreparable damage to the ear tag.

The test centre will also check the rotation of the tag components on the locked tags. The following characterisation will be used:

- Tag components rotate freely.
- Tag components rotate but not freely.
- Tag components do not rotate.

10.7.5.2.5 Resistance of the locking system

The 80 ear tags of Group 1 will be divided into four groups of 20 tags. These four groups will be subjected to increasing forces to determine the force required to cause breakage or unfastening of the ear tag. The forces will be applied at a speed rate of 500 mm/min. The force applied to cause breakage or unfastening of each ear tag will be recorded. Broken or unfastened tags must not be re-useable.

- Group 1: axial test at ambient conditions (21°C ± 2°)
- Group 2: axial test at 55°C ± 2°, the forces will be applied immediately after the tags are removed from the heating or climatic chamber
- Group 3: transverse test at ambient conditions (21°C ± 2°)
- Group 4: transverse test at 55°C ± 2°, the forces will be applied immediately after the tags are removed from the heating or climatic chamber.

Requirements

- Broken or unfastened tags must not be re-useable.
- At ambient conditions, axially tested tags designed to be used in cattle shall not break or unfasten with the application of a force lower than 280 Newton.
- At ambient conditions, axially tested tags designed to be used in sheep and / or goats shall not break or unfasten with the application of a force lower than 200 Newton.
- The number of tags unlocked without breakage or sustaining permanent damage during the transverse test is recorded, and broken or unfastened tags must not be re-useable.

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10.7.5.2.6 Conclusion of the Preliminary assessment

The test centre will prepare a comprehensive report detailing the results of the submitted ear tag's performance in the Phase 2 Preliminary Assessment. This report will be submitted to ICAR who will then forward the test report to the manufacturer.

If the Phase 2 testing is successful, then the manufacturer will be asked to confirm their willingness to proceed to the Phase 3 Laboratory test.

If a device has not performed satisfactorily, ICAR will provide the manufacturer with the test report and indicate the reasons for the tag's failure.

Application test - Requirements

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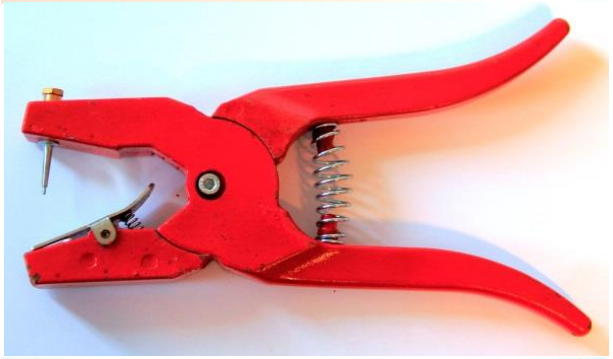
Ear tags and applicators



Coupling „dry“ and „wet“

Application test

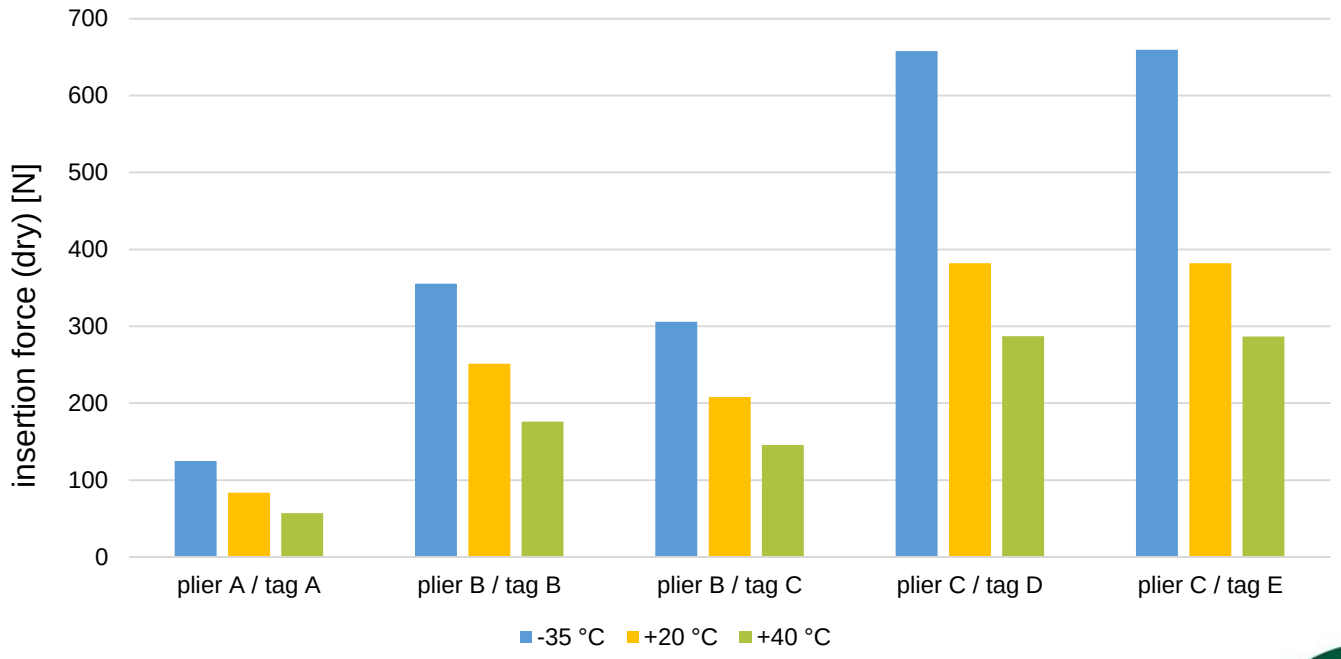
Current ICAR Guidelines 10.7 and 10.8:

- The test doesn´t contain any requirements for the “coupling force“
- Comments in test report – about practical observation when closing tags

Let´s do a small test of two different ear tags!

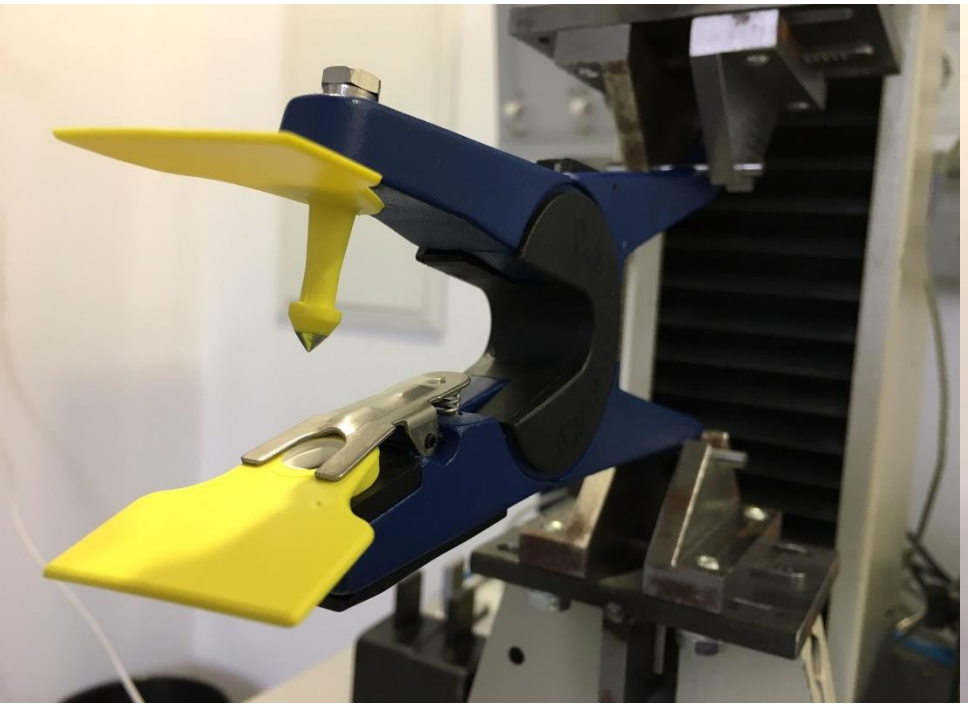
Application force

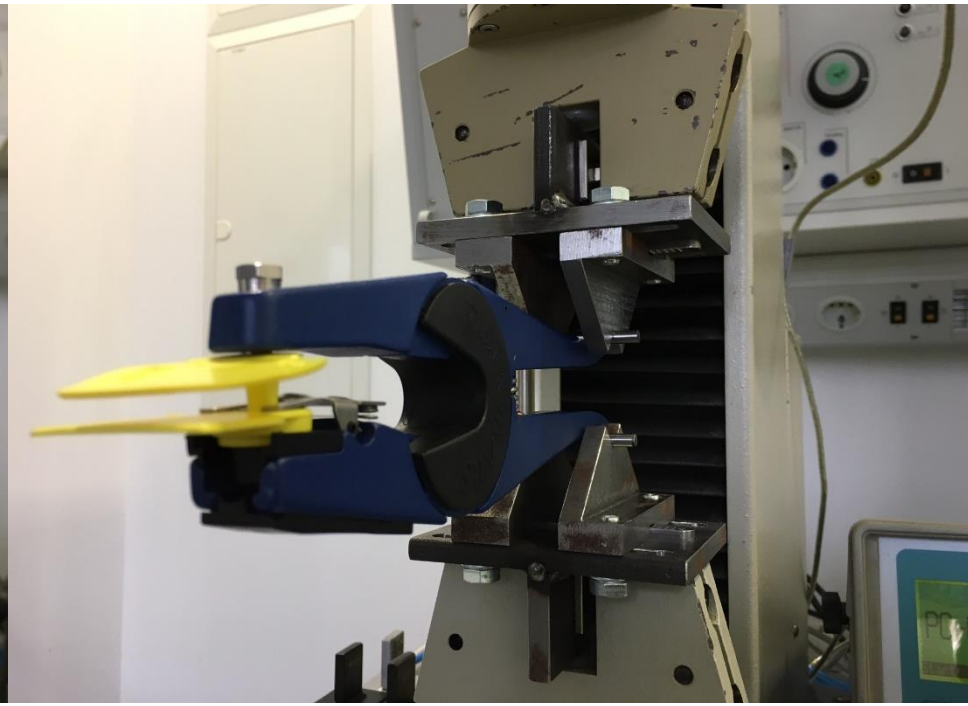
- Sometimes required by tenders or regulations, e.g. Canadian Indicator Framework
- Diverse handling experience during preliminary and lab tests
- according to manufacturers difference between dry and wet (in-ear) application



Application force test setup

- Test setup development by DLG
- Defined test conditions but individual test parameters for every combination
- Individual adaption of every applicator





Application force

Test to be included in the ICAR Guidelines?

If YES….., where?

- Preliminary assessment
  +: early removal of problematic combinations
  -: test fixture to be constructed at RYK
  -: operation not easy

- Laboratory test
  +: existing test fixture and operation experience
  -: validation point (thinkable: pre-ageing only)

If NO….., how to deal with this issue in the test report?

Application force test – text proposal

Application force test

10 new, untreated ear tags will be subjected to an application test using a compression testing machine to evaluate the force needed to couple male and female part of the ear tags. The manufacturer´s recommended applicator is fixed in a way that allows to apply the force at the deepest point of the handgrip.

The test is performed at +21 °C (± 2 °C) combined with 50 % RH. The forces will be applied at a speed rate of 500 mm/min immediately after the ear tags are removed from the climatic chamber and the ear tag´s pin is lubricated with vaseline. The maximum force applied to couple each ear tag will be recorded.

The average maximum insertion force must not extend 450 N while none of the ear tags tested must exceed the limit by more than 20 N.