

AESCULAP Aicon® STERILE CONTAINER SYSTEM TEST RESULTS

Scientific Information

STACKABILITY AND STABILITY OF HANDLES / GRIPS

The tests investigated the capacity of the AESCULAP Aicon® Rigid Containers to withstand stack pressure and pressure change during sterilization, as well as the resilience of the container grips.

TEST DESCRIPTION

Containers have to be a) stackable, b) stable under pressure and c) have grips that allow safe transportation. The conducted tests to investigate these three issues were based on DIN 868-8 requirements (1).

Test 1, stacking: This test investigated stackability and stability of containers, container lids, and container bottoms.

Test 2, container stability after pressure change with and without stacking: Sterilization processes can be associated with large changes of pressure. Containers have to be able to withstand these pressure changes, even when they are stacked. The maximum allowed deformation according to DIN is <1 mm.

Test 3, stability of the recessed container grips: Grips that do not break or tear even when transporting heavy containers are crucial for safety reasons. The grips underwent testing with a tensile testing machine.

TEST DESIGN

Test 1, stacking was tested by applying a load of up to 5,700 N for ten minutes; the stability of container lids and bottoms against slipping and toppling over was tested by applying a tensile force of 50 N in longitudinal, transversal and diagonal direction five seconds (10 N more than the DIN requirement of 40 N).

Test 2, container stability after stacking and pressure change: A dummy container loaded with 64 kg was placed on a test container and subjected to the sterilization process.

Test 3, grip stability: A tensile testing machine using four times the maximum container load of 11.34 kg was applied over a duration of ten minutes.

TEST RESULT

Test 1, stacking: No slipping or sliding was observed, thereby confirming stackability. No deformations of the containers bottoms or lids were observed.

Test 2, container stability after pressure change: No optical transformation was observed and the measurements before and after mechanical loading differed <1 mm.

Test 3, grip stability: No deformations were observed.

Source: 1. Packaging for terminally sterilized medical devices, Part 8: re-usable sterilization containers for steam sterilizers conforming to EN 285 – requirements and test methods; German version EN 868-8:2009

AESCULAP® – a B. Braun brand

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