Hail Impact Protection Register

ACFI Test Specifications No. 14 Pool covers

The most up-to-date version of this document can be found on the internet at:www.hagelregister.ch

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14.1 General

The test specifications for the “pool covers” component category include additional, component-specific provisions for the standard test, which are not governed by the general test specifications.

These test specifications apply to slatted, floating pool covers made of plastic, which sit directly on the water; they cover components that are used to cover the surface of the water in a swimming pool.

This document does not apply to free-standing structures or building-like constructions; it also does not apply to covers made from coated fabrics and technical textiles. These are tested in accordance with component-specific test specifications.

14.2 Test specimen

The test specimen is a sample cover at least 600 mm long and 800 mm wide. The test specimen must be designed for standard use as a pool cover. If a lateral guide at the edge of the pool is planned, this must be taken into account in the design. However, the lateral guide is not part of the test.

The test specimen can consist of slats of different colours and gloss levels as well as different materials and material thicknesses, provided that this is permitted by the manufacturer.

14.3 Test set-up

The test specimen is unrolled and placed on the surface of a tank filled with water. Lateral sliding and guiding elements must be mounted such that they do not impact on the cover floating freely.

The water tank must be dimensioned such that it allows the full width of the test specimen to float on the water at all times during the test. The roll end of the pool cover specimen may project beyond the length of the tank. At least two slats must always protrude at the start and end of the test specimen. These will not be impacted but must sit entirely on the water.

The water depth must be at least 60 mm (Figure 1).

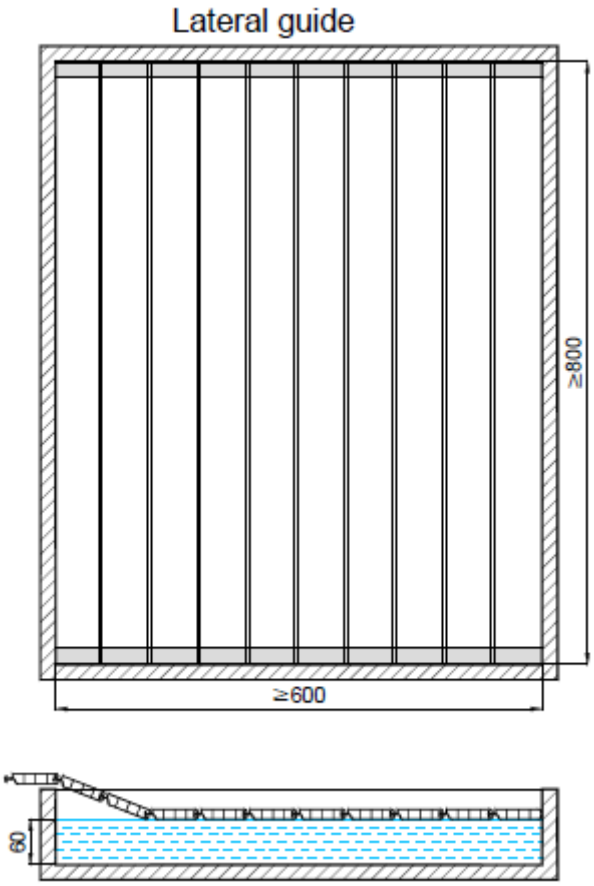

Figure 1 Lay-out of the test specimen for pool covers

14.4 Specimen storage prior to testing

None.

14.5 Specimen treatment before testing

None.

14.6 Target area

The pool cover is to be tested at the following points as a minimum (Figure 2):

1. Centre of each slat chamber at a distance of at least 75 mm from the end cap (≥ 75 mm from the end of the slat)
2. At a point directly alongside each inner strip (≥ 75 mm from the end of the slat)
3. At a point directly above each inner strip (≥ 75 mm from the end cap)

4. Slot between two slats. The two adjacent slats must be produced from the same material; the respective material must be of the same thickness.
5. The end caps of the slats if they are durably bonded to the slat and can only be removed with a tool (edge of pool to target centre > x/2)
6. Intersection between the bonded end caps and the middle of the profile

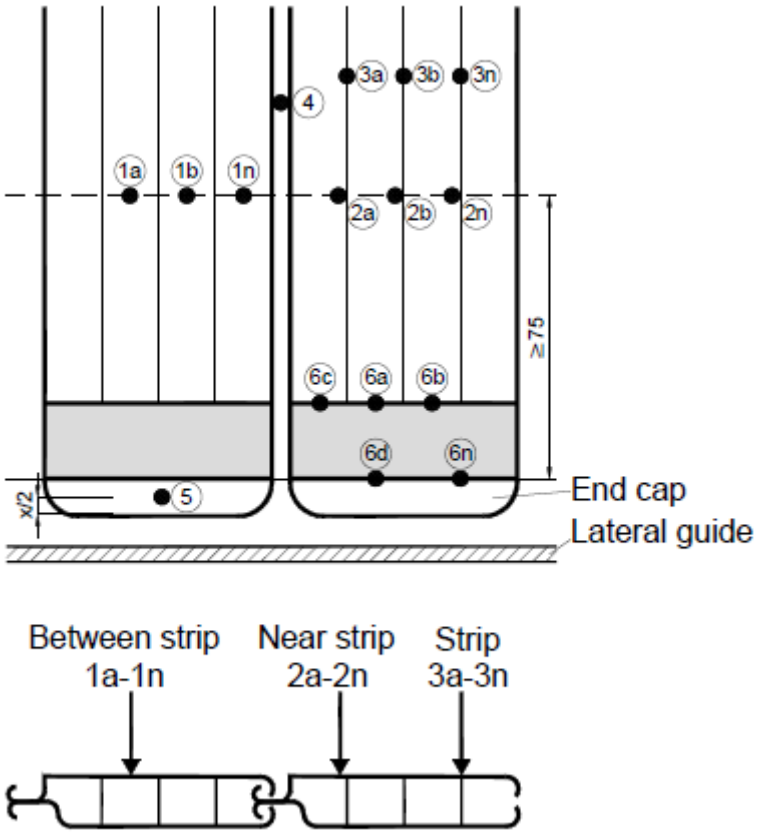

Figure 2 Target areas of pool cover (x = projectile diameter)

Several tests can be performed on a slat, provided that the distance between the target areas is at least 150 mm.

If the design of the test specimens is not uniform, an impact with a projectile of a smaller diameter can cause damage while a projectile with a larger diameter may cause no damage. Therefore, the surface of the slats between the strips (shot no. 1) is to be additionally impacted with the next smaller projectile.

14.7 Component function

The pool cover is tested for watertightness (to guarantee floating), mechanical performance and appearance. With regard to pool covers, the appearance cannot achieve a higher

degree of hail impact resistance than the level of hail impact resistance determined for the watertightness component function.

14.8 Damage criterion

Watertightness: The pool cover is considered to be damaged if cracks, perforations or material stretching are detected.

Mechanics: The pool cover is considered to be damaged if it is no longer possible to roll up and unroll the cover or fold the cover without any problems. If there are fractures in any of the materials (e.g. perforated slats), the pool cover is also considered to be damaged.

Appearance: The pool cover is considered to be damaged if indents or other changes to the surface are visible.

14.9 Measuring method

Watertightness: The test specimen is checked visually for cracks, perforations and material stretching (distance between test specimen and tester = 0.5 m). The rear side of the test specimen is to be checked at the same time.

Mechanics: The pool cover is rolled up and unrolled five times.

Appearance: The appearance of the pool covers is visually inspected under all possible lighting conditions and from different angles to the test specimen at a distance of 5 m from the test specimen.

14.10 Additional specifications

The nominal and measured material thickness values are to be indicated in the test report (upper and lower cover layer, strips). The average measurement must be indicated in the ACFI hail protection approval report. The thickness of the slat components is determined in the centre and at the edge near the target areas. At least three measurements must be made in each case (total of at least six measurements).

If the end caps are treated as spare parts, this must be indicated in the test report. This is also to be indicated in the ACFI hail protection approval report.

If the test is to apply to the different colours available, the test must be carried out on one slat in each of the following colours, whereby the weakest point as a minimum must be tested for each assessment criterion:

- Lightest colour offered
- The average colour or most popular colour offered
- Darkest colour offered

Different gloss levels are to be assessed separately.

The test centre must indicate in the report the designs and associated colours and gloss levels to which the results apply.

Each test report must record the mass (= weight) in grams/slat of several different slats.