



Brussels, 19 February 2013

TM 1005:2013

Determination of the Cutting Time of an OCF¹ Canister Foam

1. Scope

This test method describes how to determine the hardening time of a liquid OCF (froth) until it can be cut.

2. Short description of the procedure

The liquid foam is dispensed in defined strings on a horizontal surface. After a certain time for curing, the string is cut. The cutting time is reached when the cut surface is not sticky anymore, the knife remains clean without pre-polymer residues and the cells are not squeezed.

3. Background and purpose

The cutting time is the time after which the foam is still not entirely hardened (not to confuse with "load time"), but the time after which the foam is not liquid anymore and can be processed. The cutting time is linked to the curing time, which could be understood as another expression for the same property.

The measured value depends strongly on the dispensed string diameter as well as the humidity, temperature and the processing and tools. The cutting time gives an indication about the water transport inside the foam body, therefore about the foam quality. Basically the shorter the cutting time the better, as the foam structure suffers from long curing.

4. Equipment

- Sharp and clean cutter
- Stopwatch
- Paper or cardboard
- Controlled climate chamber
- Template with a window of 3 cm height and approximately 6 cm width. See Figure 1.

¹ OCF: Generic term for moisture-curing or physically drying foam as well as self-curing activatable foam extruded as a froth from single pressurised containers.

5. Procedure

5.1 Preparation

- a) Test conditions: 23 °C, 50 % r. h. (normal climate to DIN EN ISO 139). The test could also be performed under other conditions. The selected test conditions must be part of the report.
- b) Bring the test canister to the test temperature for at least 24 h.

5.2 Experimental procedure

- a) Shake the canister vigorously 20 times
- b) Discard the first 50 g of foam
- c) Spray a few strings of fresh foam on the cardboard and start the stopwatch. Try to keep distance between each string and do not spray strings higher than 2 - 3 cm (see Figure 2). Fresh strings should not be higher than 2 – 3 cm because foam is expanding further during curing.
- d) In order to avoid needless measurements, they could be started after a well defined time for each sort of OCF as follows:

	Start measurement after:
1 c straw foam	30 min
1 c gun foam	15 min
1,5c straw foam	5 min

- e) To check the cutting time use template and knife.
- f) Find 3 cm diameter string by template (see Fig. 3) and cut it in this place. Do not "saw" the foam, cut it in one or two steps at a fast pace.
- g) If fresh polymer remains on the knife, the foam cells are crushed or the cut surface is still sticky, the foam is still not cured. Wait for another five minutes and try to cut again, but in another string to avoid impact on the foam due to the cut surface.
- h) Repeat steps "e" to "g" with a clean knife, till the foam cells are not crushed through the blade and the cut surface is not sticky. Also the string should stay in shape. It is recommended to wait for five minutes between the measurements.
- i) Check time and write it down.

(Note: flexible foams could be difficult to assess)

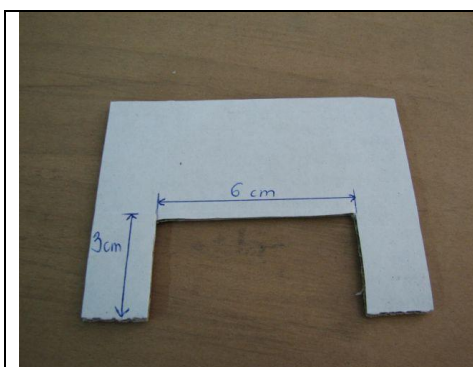


Figure 1: Template



Figure 2: strings on the cardboard

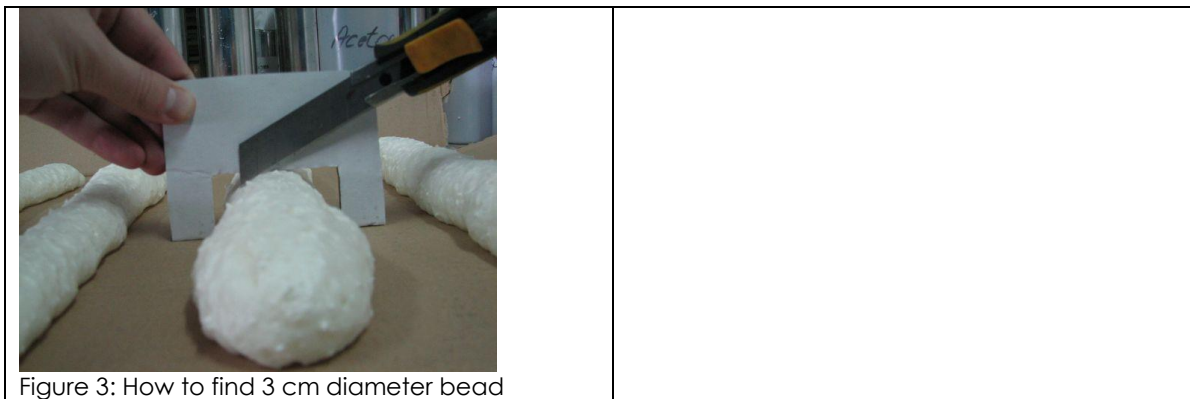


Figure 3: How to find 3 cm diameter bead

6. Revision

Version	Date	Remarks
2	19.02.2013	Released at the OCF TTF on 19 February 2013.

7. Contact

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Publication ref.: TM-1005-2013 v2

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