



Brussels, 19 February 2013

TM 1003:2013

Determination of the Foam Yield of an OCF¹ Canister Foam

1. Scope

This test method describes how to determine the total foam volume for the whole OCF canister.

2. Short description of the procedure

The full canister is emptied into a box with defined dimensions. The foam volume (yield) is determined by water displacement of the cured foam.

3. Background and purpose

The yield of canister PU-foam is often an important issue for customers buying the product. Information on labels concerning yield are often derived from laboratory tests that were completed under ideal circumstances, i.e. to deliver the highest possible yield. This test method was developed to be reproducible for measuring the free-foamed volumetric yield.

4. Equipment

- Wooden box, size depending of test canister:
For filling volume > 700 ml: 400 mm x 400 mm x 400 mm or
For filling volume 400 – 700 ml: 300 mm x 300 mm x 300 mm or
For filling volume < 400 ml: 250 mm x 250 mm x 250 mm
- Vaporizer with water
- Controlled climate chamber, providing norm climate
- Scales, accuracy 0,1 g
- Paper or uncoated carton

5. Procedure

5.1 Preparation

- a) Test conditions: 23 °C, 50 % r. h. (norm climate)
- b) Cover the inside of the box with wrapping paper
- c) Bring the test canister to the test temperature for at least 24 h
- d) Acclimatize the box and paper to the test climate for at least 24 h

5.2 Experimental procedure

¹ OCF: Generic for moisture curing One Component Foams dispensed from pressurised containers ("aerosol cans") as well as self curing two component foams dispensed from pressurised containers ("1,5 component foams")

- a) Moisten the inside covering of the box with a suitable quantity of water. The recommended quantity for standard OCFs is $10 \text{ g} \pm 1 \text{ g}$. In case 1.5 c foams or foams based on another technology are tested; the quantity may vary and should be enough to cure the foam completely. See manufacturer's instructions.
- b) Shake the canister vigorously 20 times
- c) Foam a layer of 10 -12 strings for adapter foam with ca. 1 cm space between the strings, and 12 – 14 strings for gun foam without space between the strings. Spray foam from a distance of circa 1 cm to the bottom of the box. Spraying time is 30 - 40 seconds per layer (for surface 400 mm x 400 mm, smaller boxes accordingly less - see also fig. 1). Spray with a maximum of one interruption to allow dispensing at the bottom of the box.
- d) Spray water immediately on to this layer (recommendation for standard OCFs: $10 \text{ g} \pm 1 \text{ g}$ for box type 1, $7 \text{ g} \pm 1 \text{ g}$ for box type 2 and $4 \text{ g} \pm 1 \text{ g}$ for the box type 3. For other foam types see the remark in 5.2 a).
- e) Wait 3 minutes.
- f) Shake the canister again.
- g) Foam the next layer perpendicular on top of the previous layer in the same manner as step 5.2 c. Don't spray the next layer into the froth of the former layer.
- h) Repeat steps 5.2 c to 5.2 g until the can is empty.
- i) Allow the foam to cure in the box for 24 hours.
- j) Take the foam out of the box (see also fig. 2).
- k) Remove as much paper as possible from the foam.
- l) Cut the foam top down and crosswise in four equal pieces.
- m) Measure the total volume of the foam pieces using water displacement test method (see TM 1007).

Figure 1: Test box and plant sprayer.

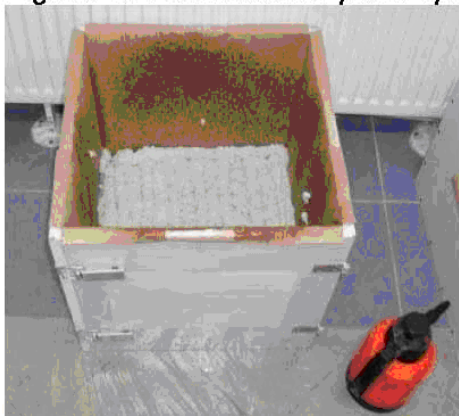


Figure 2: Cured foam in test box.



5.3 Evaluation

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6. Revision

Version	Date	Remarks
2	19.02.2013	Released by OCF TTF on 19 February 2013

7. Contact

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