

## EGOLF RECOMMENDATION 004-2016

Subject of Recommendation	<b>Potential improvements concerning the brands used in test method 1 according to CEN TS 1187</b>
Related test standard	CEN/TS 1187:2012
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### Problem

One potential reason for the discrepancies in the test results of the EGOLF round robin for the test method 1 according to CEN/TS 1187 could be **in how the brand** was prepared.

In CEN/TS 1187 the clauses 4.1.2, 4.2, 4.5.1 and 4.7.1 has to be considered concerning the specification, the conditioning and the calibration of the wood wool and the preparing of the brand. It is in the responsibility of the test lab that these requirements are fulfilled.

Clause 4.1.2 gives requirements concerning the thickness and the width of the wooden fibres and that the wood wool shall be made out of softwood like spruce, fir or pine.

According to clause 4.5.1 the wood wool used for the brands shall have an equilibrium moisture content of 8 to 12 % and before using the wood wool it has to be conditioned for at least 12 hours in a climate of  $23 \pm 2$  °C and  $50 \pm 5$  % humidity. Proposed First Recommendation: **The test lab should prove before starting each series of regular tests that the conditions of 8 – 12% moisture content (clause 4.5.1) are still valid for the wood wool used in the brands for this test series.**

Clause 4.2 (together with clause 4.7.1) is dealing with the so called calibration of the wood wool. According to the described procedure each supply of wood wool (it does not matter if 10 kg was supplied or 1000 kg) has to be checked just once concerning the duration of burning. When the criteria given in clause 4.2 have been fulfilled the wood wool can be used for standard tests. Based on tests done at Pruefinstitut Hoch (see results in the table below) the duration of the burning of such a brand also depends on the “technique” how the basket is filled and therefore the experience of the technician is of importance.

<b>employee 1</b>	sample weight [g]	initial temperature [°C]	humidity [%]	burning time [min:sec]	final temperature [°C]
basket 1	601,3	19,1	52	04:32	20,8
basket 2	602,9	20,3	53	04:28	21,9
basket 3	605,9	20,9	52	05:15	22,8
basket 4	602,8	21,4	52	04:57	22,7
basket 5	602,3	22,1	51	04:39	24,0
<b>employee 2</b>	sample weight [g]	initial temperature [°C]	humidity [%]	burning time [min:sec]	final temperature [°C]

basket 1	600,2	22,0	52	05:08	23,9
basket 2	600,4	22,4	51	04:00	24,1
basket 3	600,8	22,8	50	06:06	24,6
basket 4	600,2	23,0	49	05:50	24,6
basket 5	602,0	23,0	48	04:16	24,5
<b>employee 3</b>	sample weight [g]	initial temperature [°C]	humidity [%]	burning time [min:sec]	final temperature [°C]
basket 1	600,7	20,2	52	07:55	22,4
basket 2	600,3	21,4	52	04:17	23,8
basket 3	600,1	22,3	51	05:20	24,5
basket 4	600,5	22,6	51	04:58	25,0
basket 5	600,3	23,1	49	05:43	25,2
<b>employee 4</b>	sample weight [g]	initial temperature [°C]	humidity [%]	burning time [min:sec]	final temperature [°C]
basket 1	600,5	23,9	56	06:27	24,4
basket 2	603,1	23,9	56	03:44	25,1
basket 3	600,9	24,3	55	05:40	25,7
basket 4	603,4	24,8	54	05:18	26,0
basket 5	601,3	24,9	54	03:45	26,2

Employee 3 and 4 never did a filling of the basket before. As the results show, the burning duration of their brands are not in compliance with the requested times given in clause 4.2 of CEN/TS 1187.

Therefore the second recommendation is as following:

The technician who is filling the basket used for a regular test has to prove that he/she is able to fill the basket in such a way that the requirements of clause 4.2 are fulfilled (“calibration of the technician”).

The “calibration of the wood wool” only once after reception of each batch of wood wool alone is not sufficient. The third recommendation is that this technician has to prove his/her competence by repeating the calibration (according to clause 4.2 of CEN/TS 1187) at least every 3 months. In this case it is assumed that this technician is well trained and the brands used for the tests fulfil with good probability the requirements.

Besides the characteristic of the used wood wool and the preparing of the brand there could be also of influence the draught close to the test specimen during the test. In clause 4.6 it is not specified what is meant by draught free ambience. Therefore the fourth recommendation is to check before positioning the brand that the air velocity measured by using a hot wire anemometer in a distance of 10 cm above the surface of the specimen at the place where the brand is positioned. The air velocity shall not be more than 0.3 m/s measured in all directions. This shall be kept constant as long as possible condition (e.g. do not open any door or window during the test). When using a smoke extraction system for health protection reasons this system shall be checked concerning its influence on the air velocity before the test.

#### **Recommendation:**

1. The test lab should prove before starting each series of regular tests that the conditions of 8 – 12% moisture content (clause 4.5.1) are still valid for the wood wool used in the brands for this test series.

2. The technician who is filling the basket used for a regular test has to prove that he/she is able to fill the basket in such a way that the requirements of clause 4.2 are fulfilled (“calibration of the technician”).
3. The “calibration of the wood wool” only once after reception of each batch of wood wool alone is not sufficient. It is recommended the technician has to prove his/her competence by repeating this calibration (according to clause 4.2 of CEN/TS 1187) at least every 3 months. In this case it is assumed that this technician is well trained and the brands used for the tests fulfil with good probability the requirements.
4. It is recommended to check before positioning the brand that the air velocity measured by using a hot wire anemometer in a distance of 10 cm above the surface of the specimen at the place where the brand is positioned. The air velocity shall not be more than 0.3 m/s measured in all directions. This shall be kept constant as long as possible condition (e.g. do not open any door or window during the test). When using a smoke extraction system for health protection reasons this system shall be checked concerning its influence on the air velocity before the test.