egolf The European Group of Organisations for Fire Testing, Inspection and Certification

# EGOLF POSITION PAPER 002-2012

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| Subject of Position Paper (max. 60 characters) | t1 test evidence contradicting published direct field of application "rules" |
| Related test standard | CEN TS 1187:2012<br>EN 13501-5:2005+ A1:2009 |
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| Previous publication number (if applicable) | |
| EGP for attention of (please state CEN TC/WG/TG) | WG5 Draft recommendation 15 May 2013; approved Position Paper 17/02/2015 |
| Keywords (max. 20) | Wood particle board deck, trapezoidal steel, expanded polystyrene insulation |

**Problem**

Prüfinstitut Hoch have presented to EGOLF (N524) a "short report" summarizing the results of a "round robin" study by 7 German test laboratories to the method "t1" of CEN TS 1187:2012 for external roof fire testing.

A key finding of the study is that, for the particular roof construction assessed (flexible polyolefin roof cover, glass non-woven, expanded polystyrene insulation), when tested on "standard substrates" (as defined in clause 4.4.2.2 of CEN TS 1187), testing on a standard profiled trapezoidal steel deck gave a "worse" result than when testing on a standard wood particle board deck consisting of planks of minimum thickness of 16mm and with gaps of 5 (+/- 0.5mm).

This finding is in **contradiction** of the Direct Field of Application statement in clause 4.10.2.1 b) of CEN TS 1187:2012 and also in Table B.1 of classification standard EN 13501-5:2005+A1:2009 (see next page).

The matter has been brought to the attention of CEN TC 127 WG5 (15 May 2013) but the Chairman has decided it needs to be discussed at the next meeting of WG5 (scheduled for April 2014) prior to any further action being decided.

In the meantime, EGOLF members need an agreed position when requested to perform testing on standard wood particle board deck and to then extend the result to application onto trapezoidal steel deck.

**Extract from the affected standards:**

From TS 1187:2012:

**4.10.2.1 Test with standard supporting decks**

Test results obtained with standard supporting decks shall apply to all systems with the same components (including the thicknesses) installed in the same way, but with different decks as follows.

a) Test results obtained with a wood particle board deck as defined in 4.4.2.2, b) with gaps between planks not exceeding 0,5 mm shall apply to:

   1) any wooden continuous deck with a minimum thickness of 16 mm and with gaps not exceeding 0,5 mm;

   2) any non-combustible continuous deck with a minimum thickness of 10 mm.

b) Test results obtained with a wood particle board deck as defined in 4.4.2.2, b) with gaps of (5,0 ± 0,5) mm between planks, shall apply to:

   1) any wooden continuous deck (see 3.7);

   2) any non-combustible deck with gaps not exceeding 5 mm (including non-perforated steel deck).

From TS 1187:2012

**Table B.1 – Field of direct application of test results**

**related to the choice of deck and pitch for Test 1**

| FIELD OF APPLICATION | | Choice of deck for test 1 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Standard supporting deck | | | | | |
| | | Actual intended deck | Deck a Wood particle boards 16 mm thick with gaps < 0,5 mm | Deck b Wood particle boards 16 mm thick with gaps of 5 mm | Deck c Continuous non combustible board of 10 mm thickness without gaps | Deck d Trapezoidal profiled steel deck | Deck e Without any continuous deck |
| ACTUAL TESTED DECK | | X | | | | | |
| NON PROFILED CONTINUOUS DECK | Wooden continuous deck (>= 16 mm) with gap not exceeding 0,5 mm | | X | X | | | |
| | Wooden continuous deck with gap not exceeding 5 mm | | | X | | | |
| | Continuous non combustible board of minimum 10 mm thickness without gaps | | X | X | X | X | |
| | Non combustible board of minimum 10 mm thickness with gaps not exceeding 5 mm | | | X | | | |
| AC Trapezoidal profiled not perforated steel deck | | | | X | | X | AC |
| Roof without a continuous deck | | | | | | | X |

**EGOLF position:**

Until such time as CEN TC 127 reach a decision to revise TS 1187 and EN 13501-5 to take account of the findings of the Prüfinstitut Hoch reported results, the recommendation to EGOLF members is as follows:

a) For the method “t1” of TS 1187:2012, when requested to test roof constructions which contain EPS, XPS or other insulation of a “melting” type, the laboratory should advise the customer that the Direct Field of Application statement [see clause 4.10.2.1 b) of CEN TS 1187:2012 and also in Table B.1 of classification standard EN 13501-5:2005+A1:2009], that testing on a “standard” wood particle deck is a “worst case” and can therefore be extended to testing on a trapezoidal steel deck has been shown not to be always correct. This finding is from the results reported to EGOLF TC1 from a German “round robin” test program.

b) In the situation described in a) above, the EGOLF laboratory should test one "t1" specimen type on both a "standard" wood particle board deck and a trapezoidal steel deck in order to try to identify the "worst case" deck to proceed with for testing the required four "t1" specimens.

c) If the EGOLF laboratory cannot determine the "worst case" deck type by following point b) above, then it may be necessary to test all four "t1" specimens in order to prepare a Classification Report for both deck types.