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

EGOLF TC2 N816rev2
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SUMMARY REPORT OF THE EGOLF ROUND ROBIN No. TC2 13-1 IN FIRE RESISTANCE TESTING

PART 1 – INTRODUCTION

1-1 SCOPE

In 2013, EGOLF organized a round robin (RR) on classification and extended field of application of a glazed partition with 27 participating labs. This round robin enables participating laboratories to demonstrate their ability to process the exact and complete field of direct application and field of extended application and the associated classes (classification) from a test report.

The present document is a summary of the full report of the round robin (TC2 13-1 round-robin).

1-2 CONTEXT

1-2.1 TEST REPORT IN SUPPORT

A test report was provided in English by an EGOLF member and sent to the participating labs. It is an original test report issued from a real fire resistance test and therefore has not been especially created for the RR. The test specimen consisted in an asymmetrical non-loadbearing glazed partition in a wooden frame. The test was performed in conformity with the test method EN 1364-1:1999.

1-2.2 INSTRUCTIONS

The main instruction was to produce the complete classification report based on the test report supplied, including the field of direct application and the field of extended application according to the appropriate standards.

1-2.3 LABORATORIES' EXPERIENCE

All participating laboratories were EGOLF members and are ISO 17025 accredited for the test standard.

1-2.4 SCHEME OF THE EXPERIMENT

32 laboratories initially joined this RR. Since no more than about fifty laboratories use this test method, it was assumed that the number of laboratories participating in this RR was large enough to be considered a representative sample of the population of qualified laboratories. 27 classification reports were received.

1-2.5 SUBMISSION OF RESULTS

A Word template was submitted to each participant. It just gave the structure from EN 13501-2 Annex A.3 ("Classification report format"). The main purpose of this template was to facilitate analysis of the information in the classification reports which were received.

1-3 PARTICULAR NATURE OF THIS ROUND ROBIN

The nature of the results issued from the classification is of two types (see definitions in ISO 17043 annex A.1):

- one part of the results consists of qualitative (semi-quantitative) information: the expression of classes (e.g. EI 30),
- another part of the results consists of interpretive information: the description of the field of application (range of products to which these classes apply).

1-3.1 DETERMINATION OF THE "ACCEPTED REFERENCE VALUE"

As a reminder, ISO 5725-1 "Accuracy (trueness and precision) of measurement methods and results – Part 1 : General principles and definitions" defines:

3.5 *Accepted reference value: A value that serves as an agreed-upon reference for comparison, and which is derived as:*
a) a theoretical or established value, based on scientific principles;
b) an assigned or certified value, based on experimental work of some national or international organization;
c) a consensus or certified value, based on collaborative experimental work under the auspices of a scientific or engineering group;
d) when a), b) and c) are not available, the expectation of the (measurable) quantity, i.e. the mean of a specified population of measurements.

It was assumed that a RR on classification largely falls under case c), while RR on tests falls entirely under case d). Assigned values therefore needed to be determined by expert judgement when dealing with non-quantitative data. For this purpose, a Steering Group was formed of five volunteers from different EGOLF lab. members in order to work out an "accepted reference value" i.e. an accepted reference classification report in the present case (content of the field of application and associated classes).

PART 2 – EVALUATION OF THE CONTENTS (answers)

2-1 ITEMS SUBMITTED TO EVALUATION

For the purpose of the present RR, it was found relevant to focus on the classification (expressed as classes), the EXAP field and DIAP field, and also on main other requirements of prime importance.

2-2 EVALUATION OF THE CONTENTS

In accordance with § 1-3.1, the Steering Group had to work out the expected content ("accepted reference value") for each item under evaluation.

In preparation for the analyses to be carried out in part 3 of this report, a pre-defined 3-level grading was used. The grading was defined as follows:
o **Correct answer** : complete and totally correct answer
o **Partly correct answer** : incomplete answer, but not containing any incorrect information
o **Incorrect answer** : all other cases, i.e.

- incomplete answer, and containing at least one piece of incorrect information (even if it also contains other correct information)
- no answer (nothing is mentioned)

PART 3 – ANALYSIS OF THE REPORTS

3-1 PURPOSE

In this third part "Analyses of the reports" were implemented some graphical and numerical basic processing to present the individual abilities of labs., as well as the level of understanding of each evaluated item. These simple charts and statistics allowed us to deduce a clear picture of the performances of the laboratories.

3-2 HANDLING OF "NOT RECEIVED REPORTS"

The labs which did not perform any classification report were excluded from the following analyses.

3-3 SCORES

3-3.1 SCORE DEFINITION

The first step to allow the performing of a graphical and numerical processing is to assign numerical scores to the answer of each lab for each evaluated item.
The following definitions are adopted:
o **Score = 1** : correct answer
o **Score = 0,5** : partly correct answer
o **Score = 0** : incorrect answer

3-3.2 SCORING PHASE

An in-depth reading of each report received was conducted by two different members. This double checking ensured strong confidence in the scoring by eliminating dependency on one grader and by establishing a consensual approach for scoring.
No grading was allocated to the questions, meaning that a correct answer to a simple question had the same value as a correct answer given to a complex question

3-3.3 Score overview

For reasons of confidentiality, the table detailing the result for each lab. is not shown.
The average score derived from all labs. was 74%.

The following can be inferred from a normal distribution modelling:

Proportion of labs.	Score greater than…
99%	50%
97%	55%
91%	60%
80%	65%
64%	70%
45%	75%
27%	80%
14%	85%
6%	90%
2%	95%

This table should be read as follows:
"When a lab. edits such a classification report, we can expect that this report would obtain at least the score given in the second column with the probability given in the first column"

PART 4 – OBSERVATIONS AND RECOMMENDATIONS

The main observations are the following ones:

- 33 items were studied. Among these 33 items, it was not possible to grade 10 items because no ”correct answer” was found by the Steering Group.
- No lab. was able to find all correct answers.
- 5 labs. were not able to provide answers to the exercise.
- The average score among the participants was 74%
- 45% of the labs obtained more than 75% correct answers
- After a meeting between the labs and the Steering Group, it was not possible to find all correct answers

Nine recommendations were then issued to EGOLF labs., as well as eight observations for the attention of the standard writers at TC 127. Several items remain unclear and it was not possible to find a harmonized answer for them.

Furthermore, several requirements in the standards were difficult to interpret or use. For example, EXAP rules are sometimes more restrictive than the DIAP rules in the corresponding test standard, and contain some unmanageable requirements or state contradicting rules.

FOLLOWING STEPS

Since the round robin highlighted difficulties in interpreting standards, an EGOLF workshop was organised in November 2014, which led to a detailed analysis of the outcome and following actions:

- several requests for clarification were submitted to CEN TC127;
- several proposals were submitted to CEN TC127;
- recommendations were issued for EGOLF members

Some answers were addressed by CEN TC 129 WG11 (manufacturers of glass) during a joint meeting in August 2015 with an EGOLF representative, leading to a revision of the EXAP standard.

In April 2016 another EGOLF workshop took place on the same topic.

Three main points came out of this:
- "Historical data and how to use it?" This is not clear and may be a topic for helpdesk item
- "Several changes can be made as long as it can be proven that the structural stability is maintained". The manufacturer shall show this, but it is unclear on which level. Is it enough for the manufacturer to simply say that the structural stability is maintained, or is some type of proof needed; and, if yes, shall the lab. carry out any checks on this proof?
- "How to introduce tolerances (with reference to minus tolerances)?"

It was agreed that these three items, together with all questions raised at the workshop, must be forwarded to TC 127/WG1.

EGOLF should request CEN TC 127 to redraft this EXAP and extend such an approach to other EXAP standards, to check whether they present major difficulties or not.