

GOOD WORKING PRACTICE

IEC/TC 112: Evaluation and qualification of electrical insulating materials and systems

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TC 112 Good Working Practice (GWP)

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TC 112 Good Working Practice (GWP)

INTRODUCTION

This Good Working Practice document contains agreed working practices within TC 112 "Evaluation and Qualification of Insulating Materials and Systems", for Working Groups, Maintenance Teams and Project Teams, for the organization, communication and the drafting of standards.

It is intended to clarify the structure of TC 112, its organization and communication, the role of Working Groups, Maintenance Teams, Convenors and Project Leaders to promote a common approach to the working practices and to the drafting of standards.

This document explains the specific tasks and duties of experts and some specific administrative tasks within TC 112 as well as some basics of the technical management of projects.

TC 112 is organized in consideration of the limited resources in TC 112 and is structured in order to keep together the experts who otherwise would be dispersed after a project is finished and would be difficult to recruit at the inception of any subsequent projects. This was one of the ideas of leading experts of TC 112 when the committee was established. Moreover this structure will enable the Chairman and the Secretary to perform their duties more efficiently.

Members of TC 112 should inform the Chairman or the Secretary of any ideas they have regarding items that should be included in the good working practice document.

1 TC 112 Scope

To prepare International Standards covering methods of evaluation and qualification for electrical and electronic insulating materials, and electrical insulation systems.

Horizontal Safety Function:
Test methods for resistance to tracking.

NOTE: An electrical insulating material has negligibly low electric conductivity, used to separate conducting parts at different electrical potentials. An electrical insulating system is an insulating structure containing one or more electrical insulating materials together with associated conducting parts employed in an electrotechnical device.

2 Terms and Definitions

2.1 Working Group

is responsible for developing new work and shall report to its parent technical committee through a Convenor.

NOTE in TC 112 maintenance work is done for most of the publications in TC 112 Working Groups which are permanent bodies.

2.2 Maintenance Team

is a Working Group which is not disbanded on completion of the work. It is a permanent body within the committee and responsible for the maintenance of standards.

1 **2.3 Project Team**

2 is responsible for one project related to new work (first edition) or a complete revision which
3 could either be developed inside or outside of the TC 112 WG structure.

4 **2.4 Convenor**

5 is heading a Working Group or Maintenance Team

6 **2.5 Project Leader**

7 is responsible for a project (preliminary work, new work, maintenance work)

8 **2.6 Expert**

9 is an active participating member delegated from a NC (P-member of either TC 112 or a
10 TC/SC in liaison with TC 112) into a Working Group, Maintenance Team or Project Team.

11 **3 Structure and policy of TC 112**

12 **3.1 Working Groups**

13 TC 112 is structured corresponding to its task into 8 Working Groups which are permanent
14 bodies (see Annex B). The Convenors of the Working Groups have been approved by vote of
15 the P-members in the Plenary Meeting. These are:

- 16 • WG 1 Thermal Endurance
- 17 • WG 2 Radiation
- 18 • WG 3 Electric Strength
- 19 • WG 4 Dielectric / Resistive Properties
- 20 • WG 5 Tracking
- 21 • WG 6 General Methods of Endurance of Electrical Insulation
- 22 • WG 7 Statistics
- 23 • WG 8 Various Material Properties.

24 Working Groups handle all projects (new work and maintenance work) belonging to their field
25 of activities. The work is usually organized as a project.

26 **3.2 Maintenance and projects**

27 Convenors of Working Groups and Maintenance Teams have the technical overview and
28 background on the subjects dealt with. On completion of its task(s), normally at the end of the
29 enquiry stage, the Working Group status will be reviewed. The Convenor will be retained.

30 The maintenance work or project work in TC 112 is designated and assigned from the
31 Working Group internally. A reference number should be given to the maintenance work,
32 preferably using the IEC publication number e.g. "WG 6 MT 60085" but the precise form may
33 be chosen by the experts. Externally the project work is an output of the Working Group.

34 NOTE 1 In addition to the definition of Project Teams by the CO, which define Project Teams to work on the
35 development of one new project (in other words, the first edition of a new publication), TC 112 has extended the
36 definition to any project within a Working Group of TC 112 (new projects and maintenance work) and to projects
37 outside the Working Groups. If a project belongs to one of the 8 working areas it will be developed within a
38 Working Group

39 NOTE 2 The internal infrastructure of a WG in TC 112 is not recorded in the IEC EMS data base.

40 If a project does not belong to one of the 8 areas it will be developed in a new Working Group,
41 a Maintenance Team or a new Project Team, e.g. Electrotechnical Vocabulary.

1 New Working Groups and Maintenance Teams outside the 8 permanent Working Groups may
2 also develop more than one new project (e.g. a series of standards). Working Groups and
3 Maintenance Teams are numbered in sequence in the order in which they are established. On
4 completion of the projects, the status of the Working Group responsible for the new work will
5 be reviewed and if necessary a Maintenance Team will be established.

6 The initiation of projects is the responsibility of the P-members or of the Plenary Meeting.

7 New projects are designated by a project number assigned to the project concerned. Each
8 project team should normally have only one project in its work programme.

9 Progress in projects or maintenance work which is developed in one of the 8 permanent
10 bodies is reported to the WG Convenor. Progress in projects which are developed
11 independent of this WG structure is reported directly to the committee. An independent project
12 team is disbanded once the project has been completed.

13 **4 PT and MT meetings**

14 **4.1 Role of the Convenor**

15 The [Convenor](#) of a Working Group has the overview on the field of work and on projects
16 running. The Convenor arranges meetings to discuss the projects and upcoming duties within
17 the Working Group and manages the communication between the experts of the Working
18 Group, the Secretary, and the Chairman of TC 112. The Working Group Convenor reports to
19 the Plenary Meeting of TC 112 about the projects and their progress. The Convenor may
20 delegate this task to the Project Leaders.

21 **4.2 Role of the Project Leader**

22 The [Project Leader](#) cooperates with other members of the Working Group and forms a Project
23 Team. The Project Leader is responsible for the project and is listed as Project Leader on the
24 IEC Web page in the work programme of TC 112. The project appears outwards as workload
25 of the Working Group. The Working Group is responsible for how to proceed within a project.
26 The Project Leader should circulate a developed draft of the project team within the Working
27 Group before the draft is submitted to the secretary. There should be a close cooperation
28 between the Project Leader and the Convenor of the Working Group. The WG Convenor shall
29 have an overview on the schedule of the projects and if necessary shall remind the Project
30 Leader to proceed with the project team's activities.

31 During the kick-off meeting of a project, the scope of work shall be clearly defined and
32 understood by all participating members.

33 Once set up, the PT/MT is under the responsibility of the Project Leader / Convenor who is
34 expected

- 35 • to manage the development of the project,
- 36 • to organize and chair the meetings,
- 37 • to report to the Working Group Convenor, Secretary, and Chairman on progress or
38 delays;
- 39 • to report to the Working Group Convenor, Secretary, and Chairman on any significant
40 problem affecting the project;
- 41 • to follow through the project until circulation of the FDIS.

42 A project can also be managed by the Convenor of the Working Group and developed by the
43 whole Working Group. In this case the Project Team is identical to the Working Group. There
44 should be a consensus between the WG-members on how to work together in each case.

1 Project Leaders and Working Group / Maintenance Team Convenors shall inform their
2 members on the content of this guidance document.

3 **4.3 Role of the experts**

4 [Individually appointed experts](#) are brought together to deal with the specific task allocated to
5 the Working Group, Maintenance Team or Project Team. The experts act in a personal
6 capacity and not as the official representative of the organization by which they were
7 appointed. However, it is recommended that they keep close contact with their organization
8 (National Committee or other International Organization in liaison) in order to inform them
9 about the progress of the work. Only experts of TC 112 who are listed in the Expert
10 Management System (EMS) of Central Office are allowed to participate in meetings of
11 Working Groups or Maintenance Teams or Project Teams unless invited to attend by the
12 Convenor. At WG meetings, the expert status as "invited guest" or "observer" must be
13 recorded in the minutes.

14 **4.4 Project Team organization**

15 Project Leader and Project Teams can devise a way of managing its appointed experts. If for
16 example a Project Team is becoming too large, it can be internally organized to be more
17 manageable. The Project Team could, for example, have small specialist groups of experts
18 having a particular knowledge that could tackle those issues delegated to the group and report
19 back to the Project Team via a single expert input, thus saving time and making decisions easier
20 to reach.

21 **4.5 Meetings and corresponding Work**

22 It is convenient if the Working Groups meet in the week before the Plenary Meeting takes
23 place and discuss the Projects. The Convenor of the Working Group should give a report to
24 the Plenary Meeting. Project Teams should decide if meetings are necessary or if the work
25 could be done by correspondence. If necessary Project Teams should meet also within the
26 time between two Plenary meetings.

27 **4.6 Meeting agenda**

28 To help the issue of meeting agendas, Annex A gives an example of a Draft Agenda which
29 can be used to suit the particular meeting.

30 **4.7 Internal documents**

31 To keep track of internal documents, it is recommended a numbering in the following way and
32 should be listed in a document updated continuously by the Project Leader:

33 112 / (WG n,MT n,PT n) / MT/PTxx (name) yy.

34 where n is the Working Group number, MT/PTxx is e.g. the project number and name is the
35 surname (family name) of the expert and yy is the sequential number assigned by the
36 expert that has circulated the document.

37 Examples:

38 112 / WG 6 / MT 60085 (Project leader name) 05

39 112 / WG 3 / MT 61934 (Project leader name) 01

40 112 / WG 1/ PT Analytical Tests (Project leader name) 03

41 112 / MT 9 / 60050-212 (Project leader name) 01

1 112 / MT 10 / 62039 (Project leader name) 03

2 **4.8 Minutes**

3 Minutes shall be made at each meeting and sent to PT members, Working Group Convenor
4 and TC officers.

5 **4.9 Participation**

6 If it becomes necessary to manage the participation it may be decided, in conjunction with the
7 Secretary and the relevant National Committee, to remove any non-active expert from the
8 PT/MT. It is in the responsibility of the Convenors and Project Leaders to ensure that only Experts
9 who are listed in the EMS of the Central Office are allowed to participate in the WG/MT/PT unless
10 invited to attend by the Convenor. Invited guest" or "observer" must be recorded in the
11 minutes. The activity level of the experts should be reported to the Secretary on a regular
12 basis so that corrective actions can be taken e.g. the Membership of a non-participating
13 Member of a WG or MT should be reviewed in conjunction with their NC and the TC
14 Secretary.

15 Convenors and Project Leaders should review the participation of the WG/PT/MT experts at
16 regular intervals and in particular at the end of each maintenance cycle. The review should
17 be communicated to the Secretary for action.

18 **4.10 Guidance for Convenors/Project Leaders TC 112 GWP Document**

19 This GWP document shall be pointed out at the start of each project and/or maintenance cycle.

20 This document is available for viewing and downloading on the IEC TC 112 website

21 **5 Drafting of standards**

22 **5.1 General**

23 The initial electronic text to be used in a revision or amendment shall be the IEC publication, not
24 the FDIS text from the previous edition. This is the actual text to be altered, which will avoid
25 unnecessary editing. This text is to be obtained from the Secretary.

26 Only the Convenor, or a Project Leader by and/or the Secretary shall revise this text
27 electronically to avoid corruption of the template and to maintain control of the changes and avoid
28 copyright issues.

29 Download the latest IEC Standard Template to your computer from the IEC web site:
30 http://www.iec.ch/standardsdev/resources/docpreparation/forms_templates/

31 Do not use "Automatically update document styles" in Microsoft Word, under "Tools",
32 "Templates and Add-ins". The box for "Automatically update document styles" should NOT be
33 ticked. When the box is ticked, the Word programme tries to update all the styles every time
34 you open the file, which may cause problems when the document is long, and full of tracked
35 changes.

36 Before preparing the FDIS the Project Leader should use the IEC Central Office edited
37 version of the CDV, if available, from the Secretary

38 **5.2 Development of International Standards**

39 The development of International Standards has to follow [ISO/IEC Directives Part1](#)

1 At the start of each project, the following [IEC Guides](#) should be taken in to consideration,
2 where applicable:

3 IEC Guide 108: Guidelines for ensuring the coherency of IEC publications – Application of
4 horizontal standards

5 IEC Guide 109: Environmental aspects – Inclusion in Electrotechnical Standards

6 ISO/ IEC Guide 2: Standardization and related activities — General vocabulary

7 [IEC 60050-212](#): International Electrotechnical Vocabulary - Chapter 212: Insulating solids,
8 liquids and gases

9 **5.3 References**

10 References to other documents may be specific in nature and it is important therefore to
11 remind the reader that the most up-to-date version should be used. Publications in the
12 Normative References clause should be undated.

13 **5.4 Notes**

14 It should be remembered that the notes are only informative and cannot contain the word
15 “shall”.

16 **5.5 Comment resolution**

17 Editorial comments and the technical comments received from National Committees on
18 Committee Drafts (CDs) and Committee Drafts for Voting (CDVs) are sent to the Project Leader
19 by the Secretary using the IEC Comment form.

20 The Secretary can make some proposals for the solution of editorial comments; the technical
21 comments should be resolved by the Project Leader and the Project Team. It may be
22 necessary that the Working Group Convenor and the Secretary could also be involved.

23 For consistency, the dispositions of comments shall be as follows (acronyms shall not be
24 used):

25 **5.5.1 Accepted**

26 The comment was acceptable as presented.

27 **5.5.2 Not Accepted / Rejected**

28 This disposition indicates that the comment will not be incorporated into the document. All
29 rejections shall have the justification for rejection, whether technical or editorial and
30 documented as part of this disposition.

31 **5.5.3 Partly accepted**

32 This disposition indicates that some parts of the comment will be accepted and incorporated
33 into the document. An explanation of how the accepted part is to be incorporated into the
34 document shall be given. The parts that have not been accepted shall have the justification
35 for doing so, whether technical or editorial, documented as part of this disposition.

36 **5.5.4 Accepted in principle**

37 This disposition indicates that the principle of the comment was accepted, but is to be
38 incorporated into the document in a different manner than that suggested by the commenter.

1 Explanation of how this is to be incorporated into the document shall be included along with
2 the justification for the decision.

3 **5.5.5 Held for next edition**

4 This disposition is to be used for major technical comments received for the CDV that has had
5 a positive vote but have merit for consideration, but shall be held until the next maintenance
6 cycle of the document if the vote was in acceptance of the CDV.

7 **5.5.6 Noted**

8 This is used where there is no action required on the comment.

9 The justification provided should clearly convey the specific reasons why the comment was
10 not acceptable. This will allow the commenter the opportunity to provide additional information
11 and justification at the next stage of review for those cases where, perhaps because of
12 language barriers or interpretation difficulties, the commenter believes that the Working Group
13 or Maintenance Team did not fully understand the proposal.

14 **5.6 Approved CDVs**

15 In case of an approved CDV, the Chairman and Secretary agree to publish the document as
16 FDIS. To resolve the comments on a Committee Draft for Vote (CDV) is in the responsibility of
17 Secretary. In practice the Convenor will undertake the changes in collaboration with the
18 Secretary.

19 **5.7 Publication without FDIS - CDVs without negative votes**

20 If a CDV is approved with no negative votes and only minor editorial comments it is the
21 responsibility of the Secretary to decide if a publication without an FDIS is appropriate. The
22 secretary will take into account advice from the Chairman, the Project Leader and the CO
23 before deciding to publish with or without an FDIS stage.

24 **5.8 Comments on FDIS**

25 The only changes made after the FDIS approval and prior to publication are the correction of
26 obvious errors which are to be submitted to the IEC CO by the TC Secretary before the
27 closing date of vote.

1 **Annex A Example Agenda**

2 **Meeting of TC 112/WG n /XX at YY Date.**

3 **Project Leader:** Name (NC), Email-address

4 Agenda

5 Beginning of the meeting time and date

6 End of the meeting time and date

7 1) Welcome, announcements from the host

8 2) Apologies for absence

9 3) Approval of the agenda

10 4) Approval of minutes of last meeting

11 5) Membership, address list, list of documents

12 6) Working items

13 7) Any other business

14 8) Date and venue of the next meeting

Annex B Working Groups/Maintenance Teams - Publication Responsibilities

TC 112

Chairman: Roger C. Wicks, US
Secretary: Bernd K. Goettert, DE

as of 2010-02-15

WG 1:
Thermal
Endurance
(Montanari, IT)

IEC 60216-1
IEC 60216-2
IEC 60216-3
IEC 60216-4-1
IEC 60216-4-2
IEC 60216-4-3
IEC 60216-5
IEC 60216-6
IEC 60212
PWI 15E-2

WG 2:
Radiation
(Kudoh,JP)

IEC 60544-1
IEC 60544-2
IEC 60544-4
IEC 60544-5
IEC 61244-1 TS
IEC 61244-2 TS
IEC 61244-3 TS

WG 3:
Electric Strength
(Stimper, DE)

IEC 60243-1
IEC 60243-2
IEC 60243-3
IEC 61934 TS
IEC 62068-1
IEC 61251 TS

WG 4:
Dielectric/Resistive
Properties
(Haupt, DE)

IEC 60093
IEC 60167
IEC 60250
IEC 60377-1
IEC 60377-2
IEC 60343
IEC 60345
IEC 62631-1

MT9:
(Stimper, DE)

IEC 60050-212 Ed. 2.0

MT 10:
(Stimper, DE)

IEC 62039 TR

WG5:
Tracking
(Winter, DE)

IEC 60112
IEC 60587
IEC 61302
IEC 61621
IEC 62062 TR

WG 6:
General Methods of
Endurance of
Electrical Insulation
(Smit, NL)

IEC 60505
IEC 61857-1
IEC 61857-21
IEC 61857-22
IEC 61858
IEC 62332-1 TS
IEC 62101 TS
IEC 60085
IEC 61956 TS

WG 7:
Statistics
(Okamoto, JP)

IEC 60493-1
IEC 60493-2 TR
IEC 62539

WG 8:
Material
Properties
(Shimizu, JP)

IEC 61234-1
IEC 61234-2
IEC 60426
IEC 60589
IEC 60450
PWI 112-1
PWI 112-3