1. MISSION, OBJECTIVES AND SCOPE

1.1 The mission of the SAE G-12 Aircraft Ground Deicing Committee is to improve worldwide safety and efficiency in matters related to aircraft ground deicing.

1.2 The objectives of the SAE G-12 Aircraft Ground Deicing Committee are:
   a) To develop high quality standards and recommended practices in the area of aircraft ground deicing.
   b) To promote the global use of those standards and practices.
   c) To provide an authoritative and competent forum where issues related to aircraft ground deicing can be addressed and resolved.
   d) To provide a venue for innovators, industry experts and regulators to exchange knowledge related to the field of aircraft ground deicing.

1.3 Scope of the SAE G-12 Aircraft Ground Deicing Committee:
   a) Aircraft deicing and anti-icing fluids specifications, and related testing procedures
   b) Processes and testing procedures for endurance time for the development of holdover times, including ice detection equipment
c) Standard methods to deice and anti-ice aircraft on the ground, including ice detection equipment communication procedures and phraseology for communications between ground and cockpit crews

d) Standards for weather support equipment to determine holdover time

e) Standards for equipment to perform aircraft deicing and anti-icing

f) Standards for facilities where aircraft deicing and anti-icing is performed

g) Standards for training

h) Standards for safety, quality control and quality assurance

i) New aircraft ground deicing and anti-icing technology

j) Runway deicing products specifications and related testing procedures

2. STRUCTURE

The SAE G-12 Aircraft Ground Deicing Committee is comprised of the:

2.1 Steering Group

2.2 Aircraft Deicing Fluid Committee

2.3 Holdover Time Committee

2.4 Methods Committee

2.5 Deicing Facilities Committee

2.6 Training and Quality Control Committee

2.7 Future Technology Committee

2.8 Equipment Committee

2.9 Runway Deicing Fluid Committee

2.10 Several ad hoc Workgroups reporting to the Committees, such as the Aerodynamics Workgroup, Carbon Oxidation Workgroup, Rotorcraft Workgroup, etc.

3. G-12 AIRCRAFT GROUND DEICING STEERING GROUP

3.1 The Steering Group is the administrative and charter setting body for the SAE G-12 Aircraft Ground Deicing Committee.

3.2 The Steering Group shall have one chair, two vice-chairs (to allow for better regional representation) and one secretary.

3.3 Committee Co-chairs are *ex officio* members of the Steering Group.

3.4 To achieve competent and authoritative representation, the Steering Group chair, in consultation with the Vice-chairs, shall invite/select additional members with the aim to achieve an equitable balance of representation by region (North America, Europe and Asia) and interest (users, regulators, airframe manufacturers, trade associations, suppliers) from G-12 members who are interested in participating in the administration of G-12.

3.5 The Steering Group, by vote, may recommend to Aerospace Council the establishment or removal, of technical committees. If a committee is removed, its document must be assigned to another committee.
3.6 Duties of the Steering Group Chair are:
   a) call for meetings and prepare the meeting agenda
   b) conduct meetings
   c) encourage consensual and innovative solutions to issues
   d) select the Steering Group secretary
   e) review the membership roster (with the Vice-chairs) at least annually
   f) prepare a flow-chart of all documents issued by G-12
   g) represent G-12 and liaise with other groups (industry associations, regulators, etc.) involved in aircraft ground deicing
   h) elevate issues, concerns and opportunities to the SAE Aerospace Council in a timely manner

3.7 Duties of the Steering Group Vice-chairs
   a) participate in the day-to-day decision making with the chair (see section 0)
   b) chair meeting in the absence of the chair
   c) review the membership roster (with the Chair) at least annually

3.8 Duties of the Chair and Vice Chairs together as a group

Under usual circumstances, the Steering Group meets on two separate days during the annual general meeting. During the year, a number of decisions need to be made in preparation of the annual general meeting and to advance the objective of G-12. Ideally, the chair and vice chairs should work consensually to prepare the general annual meeting, set goals, resolve issues arising, review the roster, and make strategic proposals to the Steering Group, as required.

4. COMMITTEES

4.1 Each Committee shall have two co-chairs, one secretary and one sponsor for each standard originating from the Committee. (It was found in G-12 that having two co-chairs leading Committees facilitated consensual decision making at the Committee level).

4.2 Becoming a Committee Member. Individuals who have interest and/or expertise in the activities of a Committee can request membership. Requests should be submitted to the Committee co-chairs who determine the membership category (voting member, liaison member, mailing list recipient) and notify the SAE staff representative to make the modification to the roster.

4.3 Ex officio Members. The chair and the two vice-chairs of the Steering Group shall be ex officio members of all the G-12 Committees.

5. MEMBERSHIP IN COMMITTEES

5.1 Categories of members
   a) **Liaison members.** Liaison status is the normal membership status for the majority of participants in Committees. Liaison members receive communications, minutes and ballots originating from the Committee. Liaison members may, but are not required to, comment on ballots and their comments must be addressed by the sponsor.
   b) **Voting members.**

   Voting members are active experienced members in the committee who have agreed to vote on all ballots and who have been selected by the co-chairs to be voting members (see also 5.2 Voting Membership Balance).

   There are three categories of voting members:

   - **Producer:** a member whose technical views are drawn from an organization that produces or sells materials, products, systems, or services covered in the committee scope.
**User**: a member whose technical views are drawn from an organization that purchases or uses materials, products systems, or services, covered in the committee scope, provided that the member would not also be classified as a producer as it relates to the work of the committee.

**General Interest**: a member whose technical views are drawn from an organization that cannot be classified as either a Producer or a User. Examples include members whose technical views are drawn from academic, airframe manufacturers or, regulatory, or laboratory communities, or who are individuals whose participation is not being sponsored in any way by any other interest.

c) **Mailing List Participants.** Mailing list participants are people who wish to receive meeting notices but not other communications from the Committee.

5.2 **Voting Membership Balance.** To ensure a competent and authoritative stature, the committee co-chairs shall continuously aim to achieve an equitable balance of voting representation by interest (producer, user, general interest – regulators, airframe manufacturers, laboratory representatives) and by region (North America, Europe and Asia). Co-chairs should also avoid having more than one voting member per organization to avoid bias on ballots.

5.3 **Attendance.** Voting members who are absent without alternate representation from three consecutive meetings of the same Committee may be dropped from voting membership of that Committee unless the co-chairs determine that other circumstances warrant retention; co-chairs of each Committee may change the voting membership status to liaison status.

5.4 **Mandatory Response to Ballots.** Voting members are required to vote on all ballots. Failure to respond to three consecutive ballots from the same Committee may also be considered cause for revoking voting membership of that Committee; co-chairs of each Committee may change the membership status of a member to liaison.

5.5 **Roster Annual Review.** Co-chairs of each Committee shall review their Committee roster membership at least once annually.

5.6 **Changes in status.** The co-chairs should inform the member and direct the SAE staff to make the roster change, as necessary.

6. **ELECTION OF COMMITTEE CO-CHAIRS, STEERING GROUP CHAIR AND VICE-CHAIRS**

6.1 **When there is a vacancy in the position of co-chair, an election shall be called during the next Committee meeting held during general meeting (the “May” meeting).** To be clear, there shall be no election of co-chairs during mid-year meetings. If there is a co-chair resignation during the meeting, the election shall be held at the next “May” meeting.

6.2 **Any members may self-nominate (voting, liaison or mailing list recipient) or be nominated by another member in which case the candidate must accept the nomination.**

6.3 **Candidates shall be given time, if they so desire, to say as to why they should be selected as co-chair.**

6.4 **If there is only one candidate, the vote shall be conducted by raised hands.**

6.5 **If there is more than one candidate, there shall be a secret written vote.**

6.6 **All members (voting, liaison, mailing list) present at the meeting shall have the right to vote. Absent member do not have a right to vote. Proxies are not accepted.**

6.7 **For a secret vote, the members shall write on a piece of paper the name of the person they choose.**
6.8 The vote shall be tallied by two members selected for that task. The candidate who gets more than 50% of the vote shall be the selected candidate. If there is no candidate with more than 50% of the vote, a run-off election will be held immediately with the candidates who received the highest and second highest number of votes in the voting.

6.9 The selected candidate must be confirmed by a vote of the Steering Group.

6.10 Election of the Steering Group Chair and Vice-chairs shall follow the same process as the election of committee co-chairs, adapted as required. Confirmation shall be done by a vote of the Aerospace Council.

7. SELECTION OF SECRETARIES AND SPONSORS

7.1 The Committee secretary is selected by the respective Committee co-chairs.

7.2 The document sponsors (Sponsors) are selected by Committee co-chairs where the document originates from.

8. DUTIES

8.1 Duties of the Committee co-chairs
   a) prepare agendas and distribute to members or forward to SAE for distribution
   b) conduct meetings
   c) encourage consensual and innovative solutions to issues
   d) select the Committee secretary and document sponsors
   e) select the workgroup chair or co-chairs
   f) review the Committee roster at least annually
   g) manage the five-year document review process
   h) write technical correspondence, as agreed by the Committee
   i) represent the Committee at the Steering Group meetings
   j) represent the Committee at other G-12 Committee meetings, as required
   k) elevate issues, concerns and opportunities to the Steering Group in a timely manner

8.2 Duties of the Committee Secretaries
   a) Prepare minutes of meetings and forward to members or to SAE for distribution

8.3 Duties of Document Sponsors
   a) Write new SAE standards (e.g. Aerospace Material Specification (AMS), Aerospace Recommended practice (ARP), Aerospace Standard (AS), etc.) or prepare revisions of existing standards, as requested by the Committee.
   b) Ballot new standards or proposed revisions to standards.
   c) Resolve ballot technical comments, as required.
   d) Report to the Committee at each meeting, seeking consensus on the proposed new or revised standard.

8.4 Duties of voting and liaison members
   a) In discharging their responsibilities, members function as individuals dedicated to the objectives of the SAE G-12 Aircraft ground Deicing Committee and not as representatives of any organization with which they may be associated. Governmental employees participate in accordance with government regulations.
   b) Members should actively support the work being accomplished within the Committee by attending meetings, bringing forth issues and solutions, sharing experiences, supporting teleconferences and reviewing and responding to ballots.
9. BALLOTING OF STANDARDS

9.1 There are two levels of required balloting:
   a) Committee Level Ballot: Approval shall be done by the members of the G-12 Committee where the document originates from. The Committee members shall review the document for technical content. To be clear, the document shall not be balloted to the G-12 Steering Group.
   b) Aerospace Council Level Ballot: Aerospace Council Members will review the document for technical content, adherence to SAE policies, and the overall impact to the aerospace community and the public.

9.2 In order to facilitate the timely updating of standards, members shall vote and provide technical comments only on the specific changes being balloted (typically shown in track changes in the balloted document). Changes to other sections of the document should be forwarded to the document sponsor and shall be considered for the next revision of the document. Members are encouraged to communicate with the document sponsor anytime they have feedback on a standard, even if a revision is not currently in progress.

10. WORKGROUPS

10.1 Committee co-chairs may establish workgroups to resolve specific technical issues identified during Committee work. This has been found to be particularly useful for subjects requiring specialized knowledge (e.g., Aerodynamics Workgroup) or where a large committee is not as efficient as a workgroup (e.g. Workgroup on Aircraft Coatings). The activities of workgroups are subject to review and approval by the parent the technical committee.

10.2 Committee co-chairs shall seek volunteers from the Committee to become members of the workgroup.

10.3 For highest effectiveness, it is suggested that the number of workgroup members does not exceed ten (10).

10.4 The Committee co-chairs select a chair or two co-chairs for the workgroup and members, seeking a balanced representation (e.g., producers, users, experts, regulators, specialized knowledge, experience, etc.). Committee co-chairs may select less experienced members as observers a means for them to acquire knowledge.

10.5 At times, workgroups may be assigned potentially complex or contentious issues or issues which may impact commercial concerns. Workgroup chairs should be aware of contentious issues which can stifle or sidetrack the workings of the workgroup. The best practice is to adhere to the published agenda and address non-related questions once the agenda has been completed. If here are particular difficulties, workgroup chairs should consult with Committee co-chairs for resolution.

10.6 As SAE meetings are by nature open, non-members may wish to attend workgroup meetings as observers. Workgroup chairs should consider technical issues raised by observers but establish appropriate priority in dealing with the raised issues.

10.7 Workgroups are expected to issue minutes of meetings and present progress updates at Committee meetings.

10.8 Workgroup chair or co-chairs shall issue call for meetings as required. If multiple meetings are required during the year, use of remote access (WebEx) is encouraged.

10.9 Upon termination of the task of the workgroup, the Committee co-chairs shall dissolve the workgroup.
11. MEETINGS

11.1 General meeting frequency and location
   a) The Steering Group chair shall call for a general meeting of all committees once a year. The
      annual general meeting is usually held in May. May was selected to allow results of winter
      testing (northern hemisphere) to be presented and not later to avoid the difficulty of travel during
      the busy summer months.
   b) The general meeting location normally alternates between North America and Europe. Other
      continents could be considered, if cost effective.
   c) The meeting location is selected by the Steering Group chair and vice-chairs based on
      recommendation of all members, availability of a suitable facility, convenience and cost.
   d) Ideally, the locations should be selected two years in advance especially for European locations
      which are more difficult to book.

11.2 General considerations for hotel selection
   a) Hotel location:
      1. Downtown in a major city
      2. Access to nearby restaurants
      3. Access to public transportation
   b) Number of rooms, typically about 300
   c) Amenities: coffee and soft drinks, if budget allows
   d) Meeting rooms equipped with :
      1. powerful good quality projector
      2. screen
      3. portable microphones (for the larger committee meetings)
      4. power bars for the audience
      5. room set up: preferably with tables and podium

11.3 Meetings other than the general meeting
   a) Committee co-chairs may call for additional so called “mid-year” meetings.
   b) Committee co-chairs are encouraged to coordinate meeting locations/dates to minimize travel
      of members.

11.4 Conduct of meetings. The following are general recommendations to Committee co-chairs and
      Workgroup chairs for committee conduct:
   a) No commercialism. Prior to the meeting, Committee co-chairs should ensure that presentations
      are not meant to promote specific products. Stick to technical issues and never endorse or
      belittle specific products.
   b) Ask participants to set cellular phones on silent mode.
   c) Only one person speaking at any given time.
   d) Use microphones at all times in large rooms – for presenters and for those asking questions.
   e) Allow sufficient time for breaks and lunches. Informal discussions during breaks often facilitate
      resolution of issues.
   f) Be on time, returning from breaks and lunches.
   g) Encourage candidness and discourage silent skepticism.
   h) Do not allow anyone to dominate discussions.
   i) Do not allow individuals to be attacked. Allow participants to tackle the issue, not the person.
   j) Strive for an open atmosphere that promotes a free-flowing interchange of technical
      information.
   k) If issues are too complex or take too long to be resolved at the Committee level, create
      workgroups to resolve issues.
I) Never allow discussions of cost, pricing policies, product usage surveys, marketing plans.

m) Stay focused on the meeting. Follow the agenda or other legitimate direction agreed to by the Committee.

n) Strive for high quality standards and recommended practices that improve safety and benefit all stakeholders: users, airframe manufacturers, regulators, vendors and the industry as a whole.

o) Strive to post presentations on the Committee web site no later than 3 days after the meeting.

p) Strive to post unconfirmed minutes of meetings within 6 weeks of the meeting.

12. REVISIONS OF THE SAE G-12 CHARTER AND OPERATING PROCEDURES

Amendment of the Charter and Operating Procedures (“Charter”) will be accomplished by a Steering Group member submitting a written proposal and rationale to the Steering Group chair at least six weeks before the annual general meeting. The chair shall include the proposal on the meeting agenda and call for a vote, if the proposal is seconded. Proposed amendments require a two thirds approval of the members present. Quorum is set at fifty percent of the Steering group members.

Unless otherwise provided by the amendment, the amendment effective date shall be 30 days after a successful vote. Amendments shall not have a retroactive effect.

The Steering Group chair shall be responsible to incorporate the amendment in the Charter and request SAE staff to post the revised Charter on the SAE G-12 web site within 30 days of the successful vote.

PREPARED UNDER THE JURISDICTION OF
SAE COMMITTEE G–12, AIRCRAFT GROUND DEICING