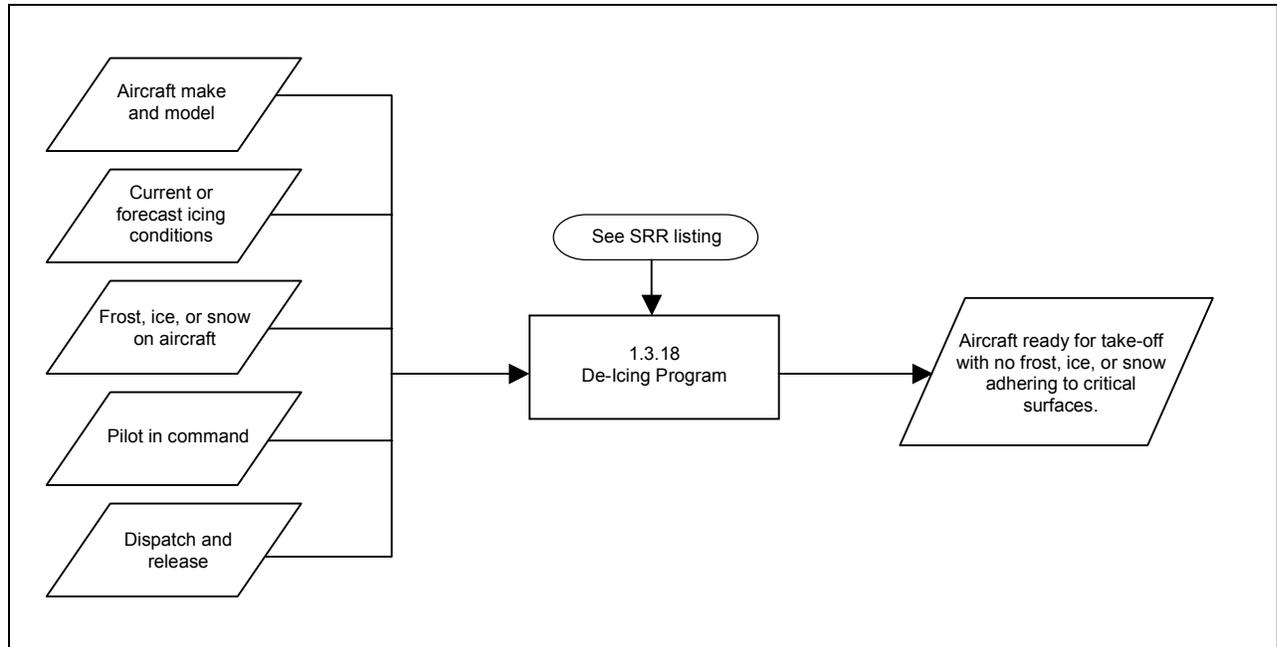


Safety Attribute Inspection (SAI) Job Aid



ELEMENT SUMMARY INFORMATION

Element: 1.3.18 De-Icing Program

Purpose of this Element (Air Carrier's responsibility): To assure Air Carrier's aircraft are properly Deiced/Anti-iced prior to departure.

Objective (FAA responsibility): To assure the Air Carrier is following its approved Deicing/Anti-icing Program policies and procedures.

Inputs:

- Aircraft Make and Model
- Current or Forecast Icing Conditions
- Frost, Ice, or Snow on Aircraft
- Pilot in Command
- Dispatch and Release

Outputs:

- Aircraft ready for take-off with no frost, ice, or snow adhering to critical surfaces.

Performance Measures:

- Aircraft ready for take-off with no frost, ice, or snow adhering to critical surfaces.

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SRR:

- 121.629 (c) Operating in Icing Conditions

Other CFRs and/or FAA Guidance:

- FAA Order 8300.10, Volume 2, Chapter 4 “Evaluate An Operator’s Deicing/Anti-icing Program”
- FAA Order 8300.10, Volume 2, Chapter 221 “Conduct Evaluation of Operator/Applicant’s Maintenance Facility”
- FAA Order 8300.10, Volume 3, Chapter 131 “Inspect Operator’s Maintenance Facility”
- FAA Order 8400.10, Volume 4, Chapter 8, Section 1--Aircraft Navigator Certificates, Section 1. General
- FAA Order 8400.10, Volume 4, Chapter 8, Section 2--Approval of CFR Parts 121 and 135 Procedures.
- FAA Order 8400.10, Volume 6, Chapter 2, Section 10-- Ground Deicing/Anti-Icing Inspections.
- CFR 121.629 (d)--De-Icing program exception.
- FSAT 96-14-- Advisories Airbus A-300B4-605R and A-310 Aircraft: Loss of Primary and Secondary Airspeed Indicating Systems Training, Contd
- FSAW 97-22--Important Safety Information Advisory on Dilutions of UCAR Aircraft Deicing/Anti-Icing Fluid ULTRA+
- Refer to appropriate Advisory Circulars

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SRR SPECIFIC INFORMATION

SRR	Intent	Inspectors
121.629 (c)	To authorize dispatch, release, or take-off during icing conditions using a ground De-Ice/Anti-Ice Program when in compliance with an approved ground de-icing program.	Certification: <i>Maintenance and Operations</i> Surveillance: <i>ASI</i>

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1.3.18 De-Icing Program

SECTION 1 - RESPONSIBILITY ATTRIBUTE

Objective: To determine if there is a clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of the De-Icing Program.

To meet this objective, the inspector will accomplish the following tasks:

1. Identify the person who is responsible for the quality of the De-Icing Program.
2. Review the description in the Manual that delineates the duties and responsibilities of the person.
3. Evaluate the person's qualifications and work experience (or resume', if appropriate).
4. Review the appropriate organizational chart.
5. Discuss the De-Icing Program with the person.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Is there a clearly identifiable person who is answerable for the quality of the De-Icing Program?	<input type="checkbox"/> YES If yes, provide the name: <input type="checkbox"/> NO If no, explain:
2. Does the person understand the procedures associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
3. Does the person understand the controls associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
4. Does the person understand the interfaces associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Does the person understand the process measurements associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. Is the responsibility of this position clearly documented in the air carrier's Manual(s)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7. Are the qualification standards for this position clearly documented?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7a Are the qualification standards for this position appropriate for the duties that are assigned?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the person meet the qualification standards?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
9. Does the person acknowledge that he/she has responsibility for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
10. Does the person know who has authority to establish and modify the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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1.3.18 De-Icing Program

SECTION 2 – AUTHORITY ATTRIBUTE

Objective: To determine if there is a clearly identifiable, qualified, and knowledgeable person with the authority to establish and modify the De-Icing Program.

To meet this objective, the inspector will accomplish the following tasks:

1. Identify the person who has the authority to establish or modify the De-Icing Program.
2. Review the description in the Manual that delineates the duties and responsibilities of the person.
3. Evaluate the person's qualifications and work experience (or resume', if appropriate).
4. Review the appropriate organizational chart.
5. Discuss the De-Icing Program with the person.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Is there a clearly identifiable person who has authority to establish and modify the air carrier's policies for the De-Icing Program?	<input type="checkbox"/> YES If yes, provide the name: <input type="checkbox"/> NO If no, explain:
2. Does the person understand the procedures associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
3. Does the person understand the controls associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
4. Does the person understand the interfaces associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Does the person understand the process measurements associated with the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. Is the authority of this position clearly documented in the air carrier's Manual(s)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7. Are the qualification standards for this position clearly documented?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7a Are the qualification standards for this position appropriate for the duties that are assigned?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the person meet the qualification standards?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
9. Does the person acknowledge that he/she has authority for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
10. Does the individual know who has the responsibility for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
11. Are the procedures for delegation of authority clearly documented for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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1.3.18 De-Icing Program

SECTION 3 – PROCEDURES ATTRIBUTE

Objective: To determine if the air carrier has documented procedures for accomplishing the De-Icing Program.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program to ensure that they contain who, what, where, when, and how.
2. Review the FAA Guidance and Specific Regulatory Requirements (SRR) included in the supplemental information section of this SAI.
3. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the procedures.
4. Observe the De-Icing Program to gain an understanding of the procedures.

To meet this objective, the inspector will determine and record answers to the following questions:

1.1 Do written procedures exist to ensure that the approved De-Icing Program meets the following requirements: [SRR 121.629 (c)]

1.1.1 CFR 121.629 (c);

YES **If no or N/A, explain:**
 NO
 N/A

1.1.2 AC (120-60); and

YES **If no or N/A, explain:**
 NO
 N/A

1.1.3 FSAT - FAA Approved De-Icing Program Updates, as Amended?

YES **If no or N/A, explain:**
 NO
 N/A

1.1.4 Ensure that the person who identifies the need to de-ice is empowered to initiate the activity; [SRR 121.629(c)]

YES **If no or N/A, explain:**
 NO
 N/A

1.1.5 Ensure that outsourcing personnel for de-icing follow the air carrier's approved De-Icing Program, including shared equipment; [SRR 121.629(c)]

YES **If no or N/A, explain:**
 NO
 N/A

1.1.6 Initiate, start up, and close down the seasonal De-Icing Program; and

YES **If no or N/A, explain:**
 NO
 N/A

1.1.7 Ensure that the air carrier implements new approved technology and chemistry into their approved program?

YES **If no or N/A, explain:**
 NO
 N/A

or

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1.3.18 De-Icing Program

SECTION 3 – PROCEDURES ATTRIBUTE

1.2 Do written procedures ensure that an Air Carrier without an approved De-Icing Program has the following:	
1.2.1 <i>Operations Specifications approval for an alternate program; and</i>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
1.2.2 <i>A check outside the aircraft of critical surfaces for frost, ice, or snow within five minutes of departure?</i>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<i>or</i>	
1.3 Do written procedures prohibit the Air Carrier lacking Operations Specifications and an approved De-Icing Program from departing when icing conditions exist?	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
2. Do the procedures identify: who, what, where, when and how?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
3. Are the procedures in compliance with the CFR(s)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
4. Do the procedures conform to other written guidance (E.g., Operations Specifications, FAA Orders, Airworthiness Directives, Advisory Circulars, Handbook Bulletins, Directives, and Manufacturer's Recommendations)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Does the air carrier have the resources to support the written procedures for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. If alternate procedures exist for use during irregular conditions, do they achieve the same desired results as the primary procedures so that an equivalent level of safety is maintained? (E.g., a manual system used as a result of equipment failure).	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A No alternate procedures exist for this element
7. Are the procedures published in different manuals relating to the De-Icing Program consistent?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the air carrier have a documented method for assessing the impacts of procedural changes to the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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1.3.18 De-Icing Program

SECTION 4 – CONTROL ATTRIBUTE

Objective: To determine if checks and restraints are designed into the De-Icing Program to ensure a desired result is achieved.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program.
2. Review the FAA Guidance and Specific Regulatory Requirements (SRR) included in the supplemental information section of this SAI
3. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the controls.
4. Observe the De-Icing Program to gain an understanding of the controls.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Are the following checks and restraints built into the De-Icing Program:

1.1 Does the air carrier have an approved De-Icing Program Manual? [SRR 121.629(c)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.2 Does the air carrier include a visual inspection as part of the procedures for de-icing personnel?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.3 Does the flight crew perform a visual check of critical surfaces before take-off?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.4 Does the air carrier perform a check of fluids in storage by use of a refractometer?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.5 Does the air carrier utilize a ground conditions monitoring device for current conditions?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.6 Does the air carrier require that de-icing personnel (including outsource personnel) complete training before the beginning of de-icing season? [SRR 121.629(c)]	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.7 Does the air carrier have an acceptance test for delivered fluid (e.g., barrel, truck) that meets specifications?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
1.8 Does the air carrier inspect the condition of the de-icing application equipment?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:

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1.3.18 De-Icing Program

SECTION 4 – CONTROL ATTRIBUTE

<p>1.9 Does the air carrier have a checklist for each station manager to perform seasonal start-up and shut-down?</p>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<p>1.10 Does the air carrier ensure that de-icing fluid is not sprayed into prohibited areas?</p>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<p>1.11 Does the Air Carrier do a tactile check for ice, snow, and frost, adhering to the critical surfaces within five minutes prior to takeoff or another check as required or approved by operations specifications?</p>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<p>1.12 For air carriers with no approved De-Icing Program and no Operations Specifications, are the following checks and restraints built into their Flight Operations procedures:</p>	
<p>1.12.1 Does the air carrier ensure that dispatch does not release the airplane when ground icing conditions exist or are forecast? [SRR 121.629(c)]</p>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<p>1.12.2 Does the air carrier's manual prohibit take-off when ground icing or forecast icing conditions exist?</p>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
<p>2. Do the checks and restraints ensure the desired result is achieved for the De-Icing Program?</p>	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
<p>3. Does the air carrier have a documented method for assessing the impacts of any changes made to checks and restraints in the De-Icing Program?</p>	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
<p>4. Does the air carrier have the resources to support the checks and restraints for the De-Icing Program?</p>	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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1.3.18 De-Icing Program

SECTION 5 - PROCESS MEASUREMENT ATTRIBUTE

Objective: To determine if the air carrier measures and assesses the De-Icing Program, to identify and correct problems or potential problems.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program.
2. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the process measures.
3. Observe the De-Icing Program to gain an understanding of the process measures.

To meet this objective, the inspector will determine and record answers to the following questions:

1. <Deleted>

2. Does the air carrier's De-Icing Program include the following process measurements?

2.1 *The air carrier performs ongoing audits of outsource de-icing for compliance with approved program.*

YES **If no or N/A, explain:**
 NO
 N/A

2.2 *The air carrier performs ongoing audits of compliance with their own approved program.*

YES **If no or N/A, explain:**
 NO
 N/A

2.3 *The air carrier's internal audit of compliance includes at least the following:*

2.3.1 *Documentation of initial and recurrent training;*

YES **If no or N/A, explain:**
 NO
 N/A

2.3.2 *Documentation of calibration of refractometers;*

YES **If no or N/A, explain:**
 NO
 N/A

2.3.3 *Assessment of application procedures;*

YES **If no or N/A, explain:**
 NO
 N/A

2.3.4 *Ongoing analysis of de-icing fluid; and*

YES **If no or N/A, explain:**
 NO
 N/A

2.3.5 *Review of the reasons for turn back related to de-icing.*

YES **If no or N/A, explain:**
 NO
 N/A

3. Does the air carrier document their process measurement methods and results?

YES **If no, explain:**
 NO

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1.3.18 De-Icing Program

SECTION 5 - PROCESS MEASUREMENT ATTRIBUTE

4. Are the air carrier's process measurement methods effective?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Does the air carrier use their process measurement results to improve their programs?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
6. Are the process measurement results accessible to the FAA?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
7. Does the organization that conducts the process measurement have direct access to the person with responsibility for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
8. Does the air carrier have the resources to support the process measurement for the De-Icing Program?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO

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1.3.18 De-Icing Program

SECTION 6 – INTERFACES ATTRIBUTE

Objective: To determine if the air carrier identifies and manages the interactions between the De-Icing Program and the other element processes within the air carrier organization.

To meet this objective, the inspector will accomplish the following tasks:

1. Review the documented instructions and information related to the De-Icing Program.
2. Discuss the De-Icing Program with appropriate personnel to gain an understanding of the interfaces.
3. Observe the De-Icing Program to gain an understanding of the interfaces.

To meet this objective, the inspector will determine and record answers to the following questions:

1. Are the following interfaces identified for the De-Icing Program:

<i>1.1 Outsource Organization (Element 1.3.7)</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
<i>1.2 Manuals (System 2.0)</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
<i>1.3 Flight Dispatch Release (Element 3.2.1)</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
<i>1.4 Maintenance Training Program (Element 4.2.1)</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
<i>1.5 Training of Flight Crew Members (Element 4.2.3)</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
<i>1.6 Airports (e.g., where to spray, environmental restrictions, air carrier's membership on the airport's Snow Committee).</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
<i>1.7 Operations Specifications</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:
<i>1.8 Ground Personnel</i>	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	If no or N/A, explain:

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1.3.18 De-Icing Program	
SECTION 6 – INTERFACES ATTRIBUTE	
<i>1.9 Air Traffic Control</i>	<input type="checkbox"/> YES If no or N/A, explain: <input type="checkbox"/> NO <input type="checkbox"/> N/A
2. List any additional interfaces identified:	
3. Are there written procedures for the use of air carrier personnel in the application of these interfaces?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
4. Are there controls to ensure that interfaces occur?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO
5. Are the interfaces between the De-Icing Program and other processes treated consistently in the Manual(s)?	<input type="checkbox"/> YES If no, explain: <input type="checkbox"/> NO