



PSI Services LLC
 3210 E Tropicana
 Las Vegas, NV 89121
www.psiexams.com



**DEPARTMENT OF COMMERCE, COMMUNITY,
 AND ECONOMIC DEVELOPMENT
 DIVISION OF CORPORATIONS,
 BUSINESS AND PROFESSIONAL LICENSING**



**MECHANICAL ADMINISTRATORS EXAMINATION
 CANDIDATE INFORMATION BULLETIN**

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Please refer to our website to check for the most updated information at www.psiexams.com

Alaska Examination Procedure Checklist

Before registering for an examination, make sure that you have reviewed the following checklist.

- Candidates must submit the application fee, license application and supporting documentation which can be found online at: <https://www.commerce.alaska.gov/web/>
- Upon approval from the department, you will be sent an Examination Eligibility Letter, along with instructions for registering and scheduling the examination.
- All eligibilities are valid for 1 year from the date on the eligibility letter. If you do not pass the examination within the 1-year period, you must reapply with the state.
- You may take the examination an unlimited number of times during the 1-year period.

Prepare for your examination:

- Use the examination content outlines provided in this bulletin as the basis of your study.

Register for your examination:

- Complete the registration form on line, at www.psiexams.com, and submit it to PSI via the Internet or;
- Completely fill out the PSI Registration Form (see page 2) and mail or fax to PSI or;
- Call (855) 746-8173 to register.
- Send online _____ (no wait for scheduling the examination date).
- Mailed on _____ (allow 2 weeks for processing before scheduling the examination date).
- Faxed on _____ (allow 4 business days for processing before scheduling the examination date).
- Phoned on _____ (no wait for scheduling the examination date).

Schedule your examination:

- Once you have paid, you are responsible for contacting PSI to schedule an appointment to take the examination. You may either schedule via the Internet, or schedule over the telephone at (855) 746-8173.
- Scheduled for:
- Examination Date: _____
- Examination Time: _____
- Test Center Location: _____
- To change scheduled date, call back by _____

Take your examination:

- Must bring two forms of identification, which bear your signature. One of these must also have your photograph. Your name as shown on the application form must exactly match the name on the photo I.D. used when checking in at the examination site.
- Arrive 30 minutes prior to appointment.

After your examination:

- Upon passing the examination, your results will be made available to the State to access. For licensing information, go to: <https://www.commerce.alaska.gov/web/> or email: license@alaska.gov or call 907-465-2550.



EXAMINATIONS BY PSI SERVICES LLC

This Candidate Information Bulletin provides you with information about the examination process for obtaining a Mechanical Administrator License in Alaska.

The Department of Commerce, Community, and Economic Development has contracted with PSI Services LLC (PSI) to conduct the examination program. PSI works closely with the Department to make certain that these examinations meet the State's as well as nationally established technical and professional standards for examination development and administration. PSI provides these examinations through a network of computer examination centers in Alaska.

GUIDELINES FOR LICENSING APPLICATION/QUALIFICATION

1. The Mechanical Administrator License candidate must review the requirements for licensure and must submit the application fee, license application and supporting documentation which can be found online at the following website: <https://www.commerce.alaska.gov/web/>
2. Upon approval from the department, you will be sent an Examination Eligibility Letter, along with instructions for registering and scheduling the examination. Included with your letter will be an identification number assigned by the State to you for this testing program. You must use this identification number when scheduling for your examination.
3. The eligibility letter is valid for 1 year from the date on the letter. If you fail the examination, you may retake the examination an unlimited number of times during the 1-year period.

All questions and requests for information pertaining to licensing should be directed to the department.

State of Alaska
Department of Commerce, Community,
and Economic Development
Division of Corporations,
Business and Professional Licensing
Contractor Licensing Section
333 Willoughby Avenue, 9th Floor, Juneau, Alaska 99801
Website: <https://www.commerce.alaska.gov/web/>
Email: license@alaska.gov or 907-465-2550

All questions and requests for information pertaining to examinations should be directed to PSI.

PSI licensure:certification
3210 E Tropicana
Las Vegas, NV 89121
(855) 746-8173 • Fax (702) 932-2666
www.psiexams.com

EXAMINATION REGISTRATION PAYMENT AND SCHEDULING PROCEDURES

ELIGIBILITY AND FEES

The following fee table lists the applicable fee for the examination. The fee is for each registration, whether you are taking the examination for the first time or repeating.

- All eligibilities are valid for 1 year from the date on the eligibility letter. If you do not pass the examination within the 1-year period, you must reapply with the state.
- You may take the examination an unlimited number of times during the 1-year period.

Examination Fee \$150

NOTE: EXAMINATION FEES ARE NOT REFUNDABLE OR TRANSFERABLE. THE EXAMINATION FEE IS VALID FOR ONE YEAR FROM THE DATE OF PAYMENT.

ON-LINE (WWW.PSIEXAMS.COM)

For the fastest and most convenient examination scheduling process, PSI recommends that you register for your examinations using the Internet. You register online by accessing PSI's registration website at www.psiexams.com. Internet registration is available 24 hours a day.

1. Log onto PSI's website and create an account. Please enter your email address and first and last name. This information must match exactly with the information the department has on file. Be sure to **check the box next to "Check here to attempt to locate existing records for you in the system"**.
2. You will be asked to select the examination and enter the ID# that the department provided to you in the eligibility letter. Your record will be found, and you will now be ready to pay and schedule for the exam. Enter your zip code and a list of the testing sites closest to you will appear. Once you select the desired test site, available dates will appear. If you have problems, contact PSI at for help.

TELEPHONE

PSI registrars are available at (855) 746-8173, Monday through Friday between 4:30 am and 7:00 pm, and Saturday/Sunday between 6:00 am and 2:30 pm, Pacific Time to receive your payment and schedule your exam.

For telephone registration, you will need a valid credit card (VISA MasterCard, American Express, or Discover).

FAX REGISTRATION

Complete the PSI registration form (found at the end of this bulletin), including your credit card number and expiration date. Fax the completed form to PSI (702) 932-2666. Fax registrations are accepted 24 hours a day.

Please allow 4 business days to process your Registration. After 4 business days, you may call PSI to schedule the examination, (855) 746-8173.



STANDARD MAIL REGISTRATION

Complete the PSI registration form (found at the end of this bulletin), and appropriate examination fee to PSI. Payment of fees can be made by credit card (VISA, MasterCard, American Express, Discover), company check, money order or cashier's check, made payable to PSI. Print your name on the check or money order to ensure that your fees are properly assigned. **CASH and PERSONAL CHECKS ARE NOT ACCEPTED.**

Please allow 2 weeks to process your Registration. After 2 weeks, you may call PSI to schedule the examination after 4:30 am (Monday-Friday) or 6:00 am (Saturday-Sunday), Pacific Time, at (855) 746-8173.

RESCHEDULING/CANCELING AN EXAMINATION APPOINTMENT

You may cancel and reschedule an examination appointment without forfeiting your fee if your *cancellation notice is received 2 days before the scheduled examination date*. For example, for a Monday appointment, the cancellation notice would need to be received on the previous Saturday. You may call PSI at (855) 746-8173 or use the PSI Website.

Note: A voice mail or email message is not an acceptable form of cancellation. Please use the PSI Website or call PSI to speak directly to a Customer Service Representative.

RETKING A FAILED EXAMINATION

It is not possible to make a new examination appointment on the same day you have taken an examination; this is due to processing and reporting scores. A candidate who tests unsuccessfully on a Wednesday can call the next day, Thursday, and retest as soon as Friday, depending upon space availability. You may access a registration form at www.psiexams.com. You may also call PSI at (855) 746-8173.

MISSED APPOINTMENT OR LATE CANCELLATION

If you miss your appointment, you will not be able to take the examination as scheduled, further you will forfeit your examination fee, if you:

- Do not cancel your appointment 2 days before the scheduled examination date;
- Do not appear for your examination appointment;
- Arrive after examination start time;
- Do not present proper identification when you arrive for the examination.

EXAM ACCOMMODATIONS

All PSI examination centers are equipped to provide access in accordance with the Americans with Disabilities Act (ADA) of 1990, and exam accommodations will be made in meeting a candidate's needs. A candidate with a disability or a candidate who would otherwise have difficulty taking the examination must follow the instructions on the Exam Accommodations Request Form at the end of this Candidate Information Bulletin.

EXAMINATION SITE CLOSING FOR AN EMERGENCY

In the event that severe weather or another emergency forces the closure of an examination site on a scheduled examination date, your examination will be rescheduled. PSI personnel will attempt to contact you in this situation. However, you may check the status of your examination schedule by calling (855) 746-8173. Every effort will be made to reschedule your examination at a convenient time as soon as possible. You will not be penalized. You will be rescheduled at no additional charge.

SOCIAL SECURITY NUMBER CONFIDENTIALITY

PSI will use your social security number only as an identification number in maintaining your records and reporting your examination results to the State. A Federal law requires State agencies to collect and record the social security numbers of all licensees of the professions licensed by the State.

EXAMINATION SITE LOCATIONS

The following directions are generated from the most current mapping services available. However, new road construction and highway modifications may result in some discrepancies. If you are not familiar with the specific area of the examination site, please consult a reliable map prior to your examination date.

Anchorage
Land and Sea Aviation
2400 E. 5th Ave
Anchorage, Alaska 99501
Coming from the West on 5th Ave: Turn right onto Reeves Blvd and park in the parking lot.
Coming from the East on 5th Ave: Turn left onto Reeves Blvd and park in the parking lot. The lot is across the street from the Wendy's fast food restaurant.

Anchorage
University of Alaska
3901 Old Seward Hwy, Rm 112
Anchorage, Alaska 99503
Test center is located on Old Seward Highway between Tudor and 36th Avenue.
From Tudor turn right or left onto Old Seward.
Travel North to the light at 40th and turn right onto 40th Avenue.
Travel all the way around the building following the signs to the South Entrance of the University Center. Go to Room 112.

Fairbanks
University of Alaska-Fairbanks
314 S. Chandler St, 211 Gruening Building
Fairbanks, Alaska 99775
Testing Services can be accessed from either Alumni Drive on the corner of University Avenue and College Road or Thompson Drive off Geist Road.



Juneau
University of Alaska SE Learning Center
11066 Auke Lake Way
Egan Library 101
Juneau, Alaska 99801

Heading north on Glacier Ave, take the 1st left onto W 10th St. Take the 2nd right onto AK-7/Egan Drive. Continue straight onto Glacier Hwy. Destination will be on the right. Proceed to Egan Library.

Ketchikan

University of Alaska Southeast
2600 7th Ave.
Paul Building, Room 101
Ketchikan, Alaska 99901

From ferry terminals:

Drive South on Tongass Avenue to Jefferson (first light). Turn left at Jefferson. Drive to top of Jefferson, turn left at College Ave. Follow street around and up into campus parking lot. Testing center is located on the 1st floor of the Paul Building, Room 101.

From Downtown/Cruise Ship Docks:

Drive North on Tongass Avenue to Jefferson (approx. 1.5 miles). Turn right at Jefferson. Drive to top of Jefferson, turn left at College Ave. Follow street around and up into campus parking lot. Testing center is located on the 1st floor of the Paul Building, Room 101.

Kodiak

University of Alaska-Kodiak College
117 Benny Benson
Kodiak Campus
Kodiak, Alaska 99615

Take East Rezanof Drive going east to Benny Benson Drive and turn left. The College is on the right one-half block. Turn right into the college. The Test Center is located in room 108 of the Benny Benson Building, on your right as you enter the campus center.

Additionally, PSI has examination centers in many other regions across the United States. You may take this examination at any of these locations. Once you have paid for the examination, enter your zip code and a list of the testing sites closest to you will appear.

REPORTING TO THE EXAMINATION SITE

On the day of the examination, you should arrive 30 minutes before your appointment. This extra time is for sign-in, identification, and familiarizing you with the examination process. *If you arrive late, you may not be admitted to the examination site and you will forfeit your examination registration fee.*

REQUIRED IDENTIFICATION

Candidates must register for the exam with their LEGAL first and last name as it appears on their government issued identification. All required identification below must match the first and last name under which the candidate is registered. Candidates are required to bring two (2) forms of valid (non-expired) signature bearing identification to the test site. If the candidate fails to bring proper identification or the

candidate names do not match, the candidate will not be allowed to test, and their examination fee will not be refunded.

PRIMARY IDENTIFICATION

- State issued driver's license
- State issued identification card
- US Government Issued Passport
- US Government Issued Military Identification Card
- US Government Issued Alien Registration Card

SECONDARY IDENTIFICATION

- Credit Card (must be signed)
 - Social Security Card
 - US issued Birth Certificate with Raised Seal
- *NOTE: Student ID and employment ID are **NOT** acceptable forms of identification.

SECURITY PROCEDURES

The following security procedures apply during examinations:

- Candidates may take only approved items into the examination room.
- All personal belongings of candidates, with the exception of close-fitting jackets or sweatshirts, should be placed in the secure storage provided at each site prior to entering the examination room. Personal belongings **include, but are not limited to**, the following items:
 - **Electronic devices of any type**, including cellular / mobile phones, recording devices, electronic watches, cameras, pagers, laptop computers, tablet computers (e.g., iPads), music players (e.g., iPods), smart watches, radios, or electronic games.
 - **Bulky or loose clothing or coats** that could be used to conceal recording devices or notes, including coats, shawls, hooded clothing, heavy jackets, or overcoats.
 - **Hats or headgear not worn for religious reasons** or as religious apparel, including hats, baseball caps, or visors.
 - **Other personal items**, including purses, notebooks, reference or reading material, briefcases, backpacks, wallets, pens, pencils, other writing devices, food, drinks, and good luck items.
- Person(s) accompanying an examination candidate may not wait in the examination center, inside the building or on the building's property. This applies to guests of any nature, including drivers, children, friends, family, colleagues or instructors.
- No smoking, eating, or drinking is allowed in the examination center.
- During the check in process, all candidates will be asked if they possess any prohibited items. Candidates may also be asked to empty their pockets and turn them out for the proctor to ensure they are empty. The proctor may also ask candidates to lift up the ends of their sleeves and the bottoms of their pant legs to ensure that notes or recording devices are not being hidden there.
- Proctors will also carefully inspect eyeglass frames, tie tacks, or any other apparel that could be used to harbor a recording device. Proctors will ask to inspect any such items in candidates' pockets.
- If prohibited items are found during check-in, candidates shall put them in the provided secure storage or return these items to their vehicle. PSI will not be responsible for the security of any personal belongings or prohibited items.



- Any candidate possessing prohibited items in the examination room shall immediately have his or her test results invalidated, and PSI shall notify the examination sponsor of the occurrence.
- Any candidate seen giving or receiving assistance on an examination, found with unauthorized materials, or who violates any security regulations will be asked to surrender all examination materials and to leave the examination center. All such instances will be reported to the examination sponsor.
- Copying or communicating examination content is violation of a candidate's contract with PSI, and federal and state law. Either may result in the disqualification of examination results and may lead to legal action.
- Once candidates have been seated and the examination begins, they may leave the examination room only to use the restroom, and only after obtaining permission from the proctor. Candidate will not receive extra time to complete the examination.

IMPORTANT: After you have entered your responses, you will later be able to return to any question(s) and change your response, provided the examination time has not run out.

CANDIDATE COMMENTS

During the test development process, PSI makes every effort to create accurate and fair test questions. However, on occasion a candidate may feel that a particular test question is misleading or is missing information that is needed in order to provide a correct answer. If during the test you believe that a test question needs clarification, we highly recommend that you submit your comments and concerns to PSI while at the test center. Comments may be entered by clicking the Comments link on the function bar of the test question screen.

When submitting comments, please provide as much detail as possible describing what you feel is problematic about the test question.

All comments made are for the future benefit of candidates. PSI will review all comments and, if necessary, make immediate key changes (or item deletions). But, PSI will under no circumstances retroactively change a grade of any prior candidate.

EXAMINATION REVIEW

Failing candidates will have the option of reviewing their examination in a secure environment and challenging any questions or answers that they feel should be eliminated or changed. The review is one hour in length.

The fee for reviewing your examination is \$150. You may register for the examination review via Telephone, Internet, Mail or Fax. If you would like to register by Mail or Fax, please complete the PSI registration form (found at the end of this bulletin). You may pay by valid credit card (VISA, MasterCard, American Express or Discover), money order, company check, or cashier's check. Cash and personal checks are not accepted.

During the review, candidates will be presented with the questions the candidate incorrectly answered during the examination. Additionally, the candidate will be given the correct answer to the question. The purpose of the review is to allow the candidate to self-research the question to determine why the answer they selected was incorrect.

All comments made are for the future benefit of candidates. PSI will review all comments and, if necessary, make immediate key changes (or item deletions). But, PSI will not, under any circumstances, retroactively change a grade of any prior candidate. There will not be any notification sent to you from PSI with regard to your review.

You may not be permitted to take any notes out of the review sessions. Please call (855) 746-8173 with any questions. The examination review fee is \$150, and it is one hour in length. **You must schedule the examination review within 30 days from the date you originally took the examination.**

PROTESTS BY CANDIDATES

If a candidate has a concern involving content or scoring of the examination and would like a written response from PSI, the candidate must submit an appeal letter. This letter must include name, social security number, name of the

TAKING THE EXAMINATION BY COMPUTER

The examination will be administered via computer. You will be using a mouse and computer keyboard.

IDENTIFICATION SCREEN

You will be directed to a semiprivate testing station to take the examination. When you are seated at the testing station, you will be prompted to confirm your name, identification number, and the examination for which you are registered.

TUTORIAL

Before you start your examination, an introductory tutorial is provided on the computer screen. The time you spend on this tutorial, up to 15 minutes, DOES NOT count as part of your examination time. Sample QUESTIONS are included following the tutorial so that you may practice answering questions and reviewing your answers.

TEST QUESTION SCREEN

The "function bar" at the top of the test question screen provides mouse-click access to the features available while taking the examination.

The screenshot shows the top of the examination interface. At the top, there is a navigation bar with icons for Mark, Comments, Goto, Help, and End. Below this, a status bar displays: Question: 3 of 40, Answered: 2, Unanswered: 1, Marked: 0, View: All, Time Left(Min): 359. The main question area contains the text: "3. What do the stars on the United States of America's flag represent?". Below the question is a text input field. Underneath the input field, it says "(Choose from the following options)". There are four radio button options: "1. Presidents", "2. Colonies", "3. States", and "4. Wars". At the bottom of the question area, there are two buttons: "<< Back" and "Next >>".

One question appears on the screen at a time. During the examination, minutes remaining will be displayed at the top of the screen and updated as you record your answers.



examination, test date, and specific description of concerns. This letter also must contain your signature.

SCORE REPORTING

Passing examination results are valid for 12 months from the “pass” date.

Your score will be given to you immediately following completion of the examination. The following summary describes the score reporting process:

- **On screen** - your score will appear immediately on the computer screen. This will happen automatically at the end of the time allowed for the examination;
 - If you **pass**, you will immediately receive a successful notification.
 - If you **do not pass**, you will receive a diagnostic report indicating your strengths and weaknesses by examination type with the score report.
- **On paper** - an unofficial score report will be printed at the examination site.

DUPLICATE SCORE REPORTS

You may request a duplicate score report after your examination by emailing scorereport@psionline.com or by calling (855) 746-8173.

EXPERIMENTAL QUESTIONS

In addition to the number of examination items specified, a small number of 5 to 10 “experimental” questions may be administered during the examinations. **These questions will not be scored, and the time taken to answer them will not count against examination time.** The administration of such non-scored experimental questions is an essential step in developing future licensing examinations.

TIPS FOR PREPARING FOR YOUR LICENSE EXAMINATION

The following suggestions will help you prepare for your examination.

- Only consider the actual information given in the question, do not read into the question by considering any possibilities or exceptions.
- Planned preparation increases your likelihood of passing.
- Start with a current copy of this Candidate Information Bulletin and use the examination content outline as the basis of your study.
- Read study materials that cover all the topics in the content outline.
- Take notes on what you study. Putting information in writing helps you commit it to memory, and it is also an excellent business practice.
- Discuss new terms or concepts as frequently as you can with colleagues. This will test your understanding and reinforce ideas.
- Your studies will be most effective if you study frequently, for periods of about 45 to 60 minutes. Concentration tends to wander when you study for longer periods of time.

EXAMINATION CONTENT OUTLINES

AK HEATING, COOLING, AND PROCESS PIPING MECHANICAL ADMINISTRATOR

Scope - 12 AAC 39.232. Scope of a Mechanical Administrator License in the Heating, Cooling, and Process Piping Category. (a) The holder of a mechanical administrator license in the heating, cooling, and process piping category may supervise all work described in (b) of this section in accordance with AS 08.40.400. (b) Heating, cooling and process piping work includes the installation, alteration, or retrofitting of (1) hydronic heating, cooling, and process piping systems, including steam and hot water systems of any temperature-pressure range, chilled water systems, condensing water systems, pressure vessels, heat exchangers, boilers, refrigeration water chillers, cooling towers, fuel oil tanks and piping, and fuel gas piping; and (2) steam and hot water boilers, including chimney connections, flues, refractories, burners, fittings, valves, thermal insulation, controls, accessories, and incidental piping. (c) A mechanical administrator licensed in the heating, cooling, and process piping category may supervise, in accordance with AS 08.40.400, the installation or retrofitting of all pneumatic or electric controls and the retrofitting of all control wiring of 48 volts or less necessary for the operation of heating, cooling, and process piping equipment and systems so long as those modifications do no alter the electrical characteristics of the mechanical system or controls. The original installation of control wiring, or the alteration of retrofitting of controls and control wiring that alters the electrical characteristics of the mechanical system, must be supervised by an electrical administrator licensed in the appropriate category under 12 AAC 32.

# of Questions	% Required to Pass	Time Allowed
100	70%	240 Minutes

CONTENT OUTLINE

Content Area	# of Items
Piping Systems	20
Boilers	15
Chillers and Refrigeration	15
Chimneys, Flues, and Vents	15
Combustion Air	10
Alaska Statutes and Regulations	10
Controls	8
Testing and Trouble Shooting	7

REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.



The following reference material is allowed in the examination center:

Alaska Centralized Regulations, Alaska Department of Commerce, Community and Economic Development, Division of Corporations, Business and Professional Licensing, P.O. Box 110806, Juneau, AK 99811-0806, https://www.commerce.alaska.gov/web/Portals/5/pub/Centralized_Licensing_Regs.pdf

Alaska Centralized Statutes, Alaska Department of Commerce, Community and Economic Development, Division of Corporations, Business and Professional Licensing, P.O. Box 110806, Juneau, AK 99811-0806, https://www.commerce.alaska.gov/web/Portals/5/pub/Centralized_Licensing_Stats.pdf

Alaska Construction Contractor Statutes and Regulations (AS 08.18; 12 AAC 21), Alaska Department of Commerce, Community and Economic Development, Division of Corporations, Business and Professional Licensing, P.O. Box 110806, Juneau, AK 99811-0806, <https://www.commerce.alaska.gov/web/portals/5/pub/ContractorStatutes.pdf>

Alaska Mechanical Administrator Statutes and Regulations (AS 08.40; 12 AAC 39), Alaska Department of Commerce, Community and Economic Development, Division of Corporations, Business and Professional Licensing, P.O. Box 110806, Juneau, AK 99811-0806, <https://www.commerce.alaska.gov/web/Portals/5/pub/MechStatutes.pdf>

International Mechanical Code, 2012 Edition, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795, www.iccsafe.org.

Uniform Plumbing Code, 2018, International Association of Plumbing and Mechanical Officials (IAPMO), 5001 East Philadelphia Street, Ontario, CA 91761-2816, www.iapmo.org. Both the 2015 and 2018 references can be used up until October 1st, 2020 and then only the 2018 edition can be used after that date.

NFPA 54 - National Fuel Gas Code, 2018 Edition, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101, www.nfpa.org. Both the 2012 and 2018 references can be used up until December 23, 2020 and then only the 2018 edition can be used after that date.

Control Systems for Heating, Ventilating, and Air Conditioning, Sixth Edition, 2003, Kluwer Academic Publishers, Order Department, P.O. Box 358, Accord Station Hingham, MA 02018-0358, www.springer.com

The following reference material is NOT allowed in the examination center:

High Pressure Boilers, 5th Edition, 2012, Frederick M. Steingress & Harold J. Frost, American Technical Publishers, Inc., (800) 323-3471, www.atplearning.com

Low Pressure Boilers, Frederick M. Steingress, Daryl R. Walker, 4th Edition, 2013, American Technical Publishers, Inc., (800) 323-3471, www.atplearning.com

Modern Refrigeration and Air Conditioning, 20th Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 18604 West Creek Drive, Tinley Park, IL 60477-6243, 800-323-0440, www.g-w.com.

Boiler Operator's Guide, Fourth Edition, 1998, McGraw-Hill Publishing, Inc., P.O. Box 182604, Columbus, OH 43272, www.books.mcgraw-hill.com

IPT's Pipe Trades Handbook, Robert A. Lee, 1991, IPT Publishing and Training, Ltd., (888) 808-6763, www.iptbooks.com

Mathematics for Plumbers and Pipefitters, Lee Smith, 8th Edition, 2013, www.cengage.com

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, annotated and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing, highlighting, underlining and/or indexing in the references during the examination will be reported to the Department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. References may be tabbed/indexed with permanent tabs only. (Permanent tabs are defined as tabs that would tear the page if removed). Temporary tabs, (defined as Post-It notes, or other tabs that may be removed without tearing the page) are not allowed and must be removed from the reference before the exam will begin. If you are downloading from the Internet, you may bring this reference into the testing center with you as long as it is bound. You can have it spiral bound or you may hole-punch it and put it in a binder.

AK MECHANICAL SYSTEMS TEMPERATURE CONTROL ADMINISTRATOR

Scope - 12 AAC 39.292. Scope of a Mechanical License in the Mechanical Systems Temperature Control Category. The holder of a mechanical administrator license in the mechanical systems temperature control category may supervise, in accordance with AS 08.40.400, the installation or retrofitting of all pneumatic or electric controls and the retrofitting of all control wiring of 48 volts or less necessary for all mechanical systems described in this chapter so long as those modifications do not alter the electrical characteristics of the mechanical system. The original installation of control wiring, or the alteration or retrofitting of controls and control wiring that alters the electrical characteristics of the mechanical system, must be supervised by an electrical administrator licensed in the appropriate category under 12 AAC 32.

# of Questions	% Required to Pass	Time Allowed
60	70%	120 Minutes

CONTENT OUTLINE

Content Area	# of Items
Electricity and Electronics	12
Alaska Statutes and Regulations	12
HVAC Unit Controls	8
Pneumatics	6
Terminology	5
Piping and Tubing	5
Sizing and Estimating	6
Testing and Inspecting	6

REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry



practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

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Alaska Mechanical Administrator Statutes and Regulations (AS 08.40; 12 AAC 39), Alaska Department of Commerce, Community and Economic Development, Division of Corporations, Business and Professional Licensing, P.O. Box 110806, Juneau, AK 99811-0806, <https://www.commerce.alaska.gov/web/Portals/5/pub/MechStatutes.pdf>

International Mechanical Code, 2012 Edition, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795, www.iccsafe.org.

NFPA 70 - National Electrical Code, 2014, or *The National Electrical Code Handbook*, National Fire Protection Association (NFPA), (800) 344-3555, www.nfpa.org.

NFPA 54 - National Fuel Gas Code, 2018 Edition, *National Fire Protection Association*, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101, www.nfpa.org. **Both the 2012 and 2018 references can be used up until December 23, 2020 and then only the 2018 edition can be used after that date.**

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Modern Refrigeration and Air Conditioning, 20th Edition, Althouse, Turnquist, & Bracciano, Goodheart-Willcox Publisher, 18604 West Creck Drive, Tinley Park, IL 60477-6243, 800-323-0440, www.g-w.com.

Ugly's Electrical References, George V. Hart, 2014 edition. Jones and Bartlett, (800) 832-0034, <http://www.uglys.net>.

AK RESIDENTIAL HVAC MECHANICAL ADMINISTRATOR

Scope - 12 AAC 39.332. Scope of a Mechanical Administrator License in the Residential HVAC Category. (a) The holder of a mechanical administrator license in the residential HVAC category may supervise all work described in (b) of this section in accordance with AS 08.40.400. (b) Residential HVAC includes the installation, alteration, or retrofitting of (1) fuel gas piping downstream of the gas meter, or fuel tank and fuel oil piping that is integral to work on an HVAC system for a single-family dwelling or a duplex dwelling not exceeding three stories; and (2) warm air heating systems not exceeding 240,000 B.T.U./hour input. (c) A mechanical administrator licensed in the residential HVAC category may supervise, in accordance with AS 08.40.400, the installation or retrofitting of all plug-in type electrical control panels and apparatus, and may supervise the retrofitting of all control wiring of 48 volts or less, in a residential single family dwelling or a duplex dwelling not exceeding three stories so long as those modifications do not alter the electrical characteristics of the mechanical system or controls. The original installation of control wiring, or the alteration or retrofitting of controls and control wiring that alters the electrical characteristics of the mechanical system, must be supervised by an electrical administrator licensed in the appropriate category under 12 AAC 32. (d) Nothing in this section prohibits a mechanical administrator licensed in the unlimited HVAC/sheet metal category, as described in 12 AAC 39.252, from performing or supervising mechanical work on a residential dwelling.

# of Questions	% Required to Pass	Time Allowed
65	70%	120 Minutes

CONTENT OUTLINE

Content Area	# of Items
Alaska Statutes and Regulations	12
Burners	8
Controls	8
Air Conditioning Systems	8
Fuel Piping	7
Chimneys, Flues, and Vents	7
Sheet Metal and Duct Systems	8
Testing and Inspections	4
Evaporative Cooling	3

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International Mechanical Code, 2012 Edition, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795, www.iccsafe.org.

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HVAC Duct Construction Standards, Metal and Flexible - 3rd edition, 2005, SMACNA, 4201 Lafayette Center Drive, Chantilly, VA 20151-1209, www.SMACNA.org

Residential Oil Burners, 3rd Edition, 2007, Herb Weinberger, 6904, www.cengage.com

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AK RESIDENTIAL PLUMBING AND HYDRONIC HEATING MECHANICAL ADMINISTRATOR

Scope - 12 AAC 39.312 Scope of a mechanical administrator license in the residential plumbing and hydronic heating category. (a) The holder of a mechanical administrator license in the residential plumbing and hydronic heating category may supervise, in accordance with AS 08.40.400, all work described in (b) of this section for a single-family dwelling, or a duplex dwelling not exceeding three stories. (b) Residential plumbing and hydronic heating work includes the installation, alteration, or retrofitting of (1) plumbing, fixtures, and water conditioners for a single-family dwelling, or a duplex dwelling not exceeding three stories; (2) hot water heating systems not exceeding

50 P.S.I. working pressure for a single-family dwelling, or a duplex dwelling not exceeding three stories; (3) existing plumbing systems, including fixtures, softener installation, and accessories; (4) fuel gas piping downstream of the gas meter, or fuel tank and fuel oil piping for a single-family dwelling, or a duplex dwelling not exceeding three stories; and (5) lawn sprinkler systems that are connected to a potable water supply, including excavation and backfilling as necessary for proper installation of the system.

# of Questions	% Required to Pass	Time Allowed
100	70%	240 Minutes

CONTENT OUTLINE

Content Area	# of Items
General Knowledge	22
Alaska Statutes and Regulations	10
Drainage, Waste, and Vents	14
Fuel Gas and Oil Piping	14
Water Piping and Backflow Prevention	10
Specialty Plumbing	8
Plumbing Fixtures	6
Hydronic Heating	6
Isometric Analysis	10

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Uniform Plumbing Code, 2018, International Association of Plumbing and Mechanical Officials (IAPMO), 5001 East Philadelphia Street, Ontario, CA 91761-2816, www.iapmo.org. **Both the 2015 and 2018 references can be used up until October 1st, 2020 and then only the 2018 edition can be used after that date.**

NFPA 54 - National Fuel Gas Code, 2018 Edition, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101, www.nfpa.org. Both the 2012 and 2018 references can be used up until December 23, 2020 and then only the 2018 edition can be used after that date.

International Mechanical Code, 2012 Edition, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795, www.iccsafe.org.

The following reference material is NOT allowed in the examination center:

Low Pressure Boilers, Frederick M. Steingress, Daryl R. Walker, 4th Edition, 2013, American Technical Publishers, Inc., (800) 323-3471, www.atplearning.com

Mathematics for Plumbers and Pipefitters, Lee Smith, 8th Edition, 2013, www.cengage.com

Modern Plumbing, 2008 Edition, Goodheart-Willcox Company, Inc., 18604 West Creek Drive, Tinley Park, IL, 60477-6243, www.g-w.com.

Residential Oil Burners, 3rd Edition, Delmar Learning, P.O. Box 6904, Florence, KY 41022, www.delmarlearning.com.

Boiler Operator's Guide, Fourth Edition, 1998, McGraw-Hill Publishing, Inc., P.O. Box 182604, Columbus, OH 43272, www.books.mcgraw-hill.com

IPT's Pipe Trades Handbook, Robert A. Lee, 1991, IPT Publishing and Training, Ltd., (888) 808-6763, www.iptbooks.com

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AK UNLIMITED HVAC AND SHEET METAL MECHANICAL ADMINISTRATOR

Scope - 12 AAC 39.252. Scope of a Mechanical Administrator License in the Unlimited HVAC/Sheet Metal Category. (a) The holder of a mechanical administrator license in the unlimited HVAC/sheet metal category may supervise, in accordance with AS 08.40.400, (1) all HVAC/sheet metal work described in (b) of this section; (2) the work defined under the heating, cooling, and process piping category in 12 AAC 39.232(b) that is integral to work on an HVAC system; (3) the work defined under the mechanical systems temperature control category in 12 AAC 39.292 that is integral to work on an HVAC system; and (4) the work defined under the residential HVAC category in 12 AAC 39.332(b). (b) HVAC sheet/metal works includes the installation, alteration, or retrofitting of the following as they apply to HVAC systems only: (1) all components of the air handling and refrigeration cycle, including fans, coils, evaporative cooling units, self-contained packaged air conditioning and heating units, air handling units, condensing units, furnaces, flues, chimneys, duct work, cooled mechanical air handling and ventilation applications, and related accessories; (2) fuel oil tanks and piping and fuel gas piping. (c) A mechanical administrator licensed in the unlimited HVAC/sheet metal category may supervise, in accordance with AS 08.40.400, the installation or retrofitting of all pneumatic or electric controls and the retrofitting of all control wiring of 48 volts or less necessary for the operation of HVAC equipment or systems so long as those modifications do not alter the electrical characteristics of the mechanical system or controls. The original installation of control wiring, or the alteration or retrofitting of controls and control wiring that alters the electrical characteristics of the mechanical system, must be supervised by an electrical administrator licensed in the appropriate category under 12 AAC 32. (d) A mechanical administrator licensed in the unlimited HVAC/sheet metal category is not authorized to install or supervise the installation of piping other than fuel oil and fuel gas piping, refrigerant piping, chilled water piping, and condensing water piping that is integral to work on an HVAC system. (e) Only sheet metal work directly related to heating, ventilation, and air conditioning systems, and any work covered by the Uniform Mechanical code, is required to be supervised by a mechanical administrator licensed in the HVAC/sheet metal category defined in this section.

# of Questions	% Required to Pass	Time Allowed
100	70%	240 Minutes

CONTENT OUTLINE

Content Area	# of Items
Boilers and Burners	15
Chimneys, Flues, and Vents	15



Fuel Piping and Storage	15
Controls and Electrical	10
Duct Systems and Sheet Metal	10
Alaska Statutes and Regulations	10
Steam and Hot Water Piping	5
Air Conditioning Systems	5
Refrigeration Piping and Tubing	4
Chillers	4
Pneumatics	3
Evaporative Cooling	1
Heat Pumps	3

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Order Department, P.O. Box 358, Accord Station Hingham, MA 02018-0358, www.springer.com.

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HVAC Duct Construction Standards - Metal and Flexible, Third Edition, 2005, Sheet Metal and Air Conditioning Contractors National Association (SMACNA), 4201 Lafayette Center Drive, Chantilly, VA, 22022-1230, www.smacna.org

Boiler Operator's Guide, Fourth Edition, 1998, McGraw-Hill Publishing, Inc., P.O. Box 182604, Columbus, OH 43272, www.books.mcgraw-hill.com

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AK UNLIMITED REFRIGERATION MECHANICAL ADMINISTRATOR

Scope - 2 AAC 39.272. Scope of a Mechanical Administrator License in the Unlimited Refrigeration Category. (a) The holder of a mechanical administrator license in the unlimited refrigeration category may supervise, in accordance with AS 08.40.400, the installation, alteration, or retrofitting of refrigeration and air conditioning equipment and systems, unlimited as to thermal capacity or type of refrigerant, including the installation of domestic water piping from an existing valve connection to the system, tower and condensing water piping, and chilled water piping. Work under this category is limited to the refrigerant cycle, controls, and related appurtenances. (b) A mechanical administrator licensed in the unlimited refrigeration category may supervise, in accordance with AS 08.40.400, the installation or retrofitting of all pneumatic or electric controls and the retrofitting of all control wiring of 48 volts or less necessary for the operation of refrigeration systems so long as those modifications do not alter the electrical characteristics of the mechanical system or controls. The original installation of control wiring, or the alteration or retrofitting of controls and control wiring that alters the electrical characteristics of the mechanical system, must be supervised by an electrical administrator licensed in the appropriate category under 12 AAC 32.

# of Questions	% Required to Pass	Time Allowed
100	70%	240 Minutes



CONTENT OUTLINE

Content Area	# of Items
Component Knowledge	21
Testing and Troubleshooting	15
Piping and Tubing	14
Commercial Refrigeration Systems	14
Alaska Statutes and Regulations	11
Controls	10
Refrigerants	8
Sizing	7

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IPT's Pipe Trades Handbook, Robert A. Lee, 1991, IPT Publishing and Training, Ltd., (888) 808-6763, www.iptbooks.com

Industrial Refrigeration Handbook, W. F. Stoecker, 1998, McGraw-Hill, (800) 262-4729, www.books.mcgrawhill.com

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AK UNLIMITED COMMERCIAL AND INDUSTRIAL PLUMBING MECHANICAL ADMINISTRATOR

Scope - 12 AAC 39.212. Scope of a mechanical administrator license in the unlimited commercial and industrial plumbing category. (a) The holder of a mechanical administrator license in the unlimited commercial and industrial plumbing category may supervise, in accordance with AS 08.40.400, (1) all plumbing work described in (b) of this section; (2) the work defined under the heating, cooling, and process piping category in 12 AAC 39.232(b); (3) the work defined under the mechanical systems temperature control category in 12 AAC 39.292; and (4) the work defined under the residential plumbing and hydronic heating category in 12 AAC 39.312(b). (b) Plumbing work includes the installation, alteration, or retrofitting of (1) plumbing, fixtures, fixture traps, and domestic water, waste, storm, and vent pipes, including all of their devices, appurtenances, and connections, that extend no more than five feet horizontally outside the building or structure that they serve, and through which domestic water, waste, sewage, oil, drainage, and air are carried; (2) piping, fixtures, or equipment that is an integral part of a swimming pool, spa, or hot tub filter or heating system, or solar energy system; (3) fuel oil and gas piping and appliances, and their appurtenances either within the property lines of the building or structure to be served by the fuel oil and gas, or to the point of connection with the utility system; and (4) lawn sprinkler systems that are connected to a potable water supply, including excavation and backfilling as necessary for proper installation of the system. (c) In this section "fixtures" includes water closets, lavatories, bathtubs, showers, kitchen sinks, laundry trays, hot water tanks, softeners, urinals, bidets, service sinks, shower pans, drink fountains, water pumps, water conditioners, water coolers, and other similar fixtures used in water systems. (d) A mechanical administrator licensed in the unlimited commercial and industrial plumbing category may supervise, in accordance with AS 08.40.400, the installation or retrofitting of all pneumatic or electric controls, and may supervise, in accordance with AS 08.40.400, the retrofitting of all control wiring of 48 volts or less, necessary for the operation of plumbing or water conditioning equipment so long as those



modifications do not alter the electrical characteristics of the mechanical system or controls. The original installation of control wiring, or the alteration or retrofitting of controls and control wiring that alters the electrical characteristics of the mechanical system, must be supervised by an electrical administrator licensed in the appropriate category under 12 AAC 32.

# of Questions	% Required to Pass	Time Allowed
100	70%	240 Minutes

CONTENT OUTLINE

Content Area	# of Items
General Knowledge	22
Alaska Statutes and Regulations	10
Drainage, Waste, and Sanitary including Vents	14
Fuel Gas and Oil	10
Water Piping Systems	10
Specialty Plumbing	12
Plumbing Fixtures	6
Roof and Storm Drain Piping	6
Isometric Analysis	10

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Uniform Plumbing Code, 2018, International Association of Plumbing and Mechanical Officials (IAPMO), 5001 East Philadelphia Street, Ontario, CA 91761-2816, www.iapmo.org. **Both the 2015 and 2018 references can be used up until October 1st, 2020 and then only the 2018 edition can be used after that date.**

NFPA 54 - National Fuel Gas Code, 2018 Edition, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101, www.nfpa.org. **Both the 2012 and 2018 references can be used up until December 23, 2020 and then only the 2018 edition can be used after that date.**

Uniform Solar Energy Code, 2018, International Association of Plumbing and Mechanical Officials, (IAPMO), 5001 East Philadelphia Street, Ontario, CA 91761-2816, www.iapmo.org. **Both the 2015 and 2018 references can be used up until October 1st, 2020 and then only the 2018 edition can be used after that date.**

Uniform Swimming Pool, Spa and Hot Tub Code Updates, 2018, International Association of Plumbing and Mechanical Officials, (IAPMO), 5001 East Philadelphia Street, Ontario, CA 91761-2816, www.iapmo.org. **Both the 2015 and 2018 references can be used up until October 1st, 2020 and then only the 2018 edition can be used after that date.**

The following reference material is NOT allowed in the examination center:

High Pressure Boilers, 5th Edition, 2012, Frederick M. Steingress & Harold J. Frost, American Technical Publishers, Inc., (800) 323-3471, www.atplearning.com

Low Pressure Boilers, Frederick M. Steingress, Daryl R. Walker, 4th Edition, 2013, American Technical Publishers, Inc., (800) 323-3471, www.atplearning.com

Mathematics for Plumbers and Pipefitters, Lee Smith, 8th Edition, 2013, www.cengage.com

IPT's Pipe Trades Handbook, Robert A. Lee, 1991, IPT Publishing and Training, Ltd., (888) 808-6763, www.iptbooks.com

Modern Plumbing, 2008 Edition, Goodheart-Willcox Company, Inc., 18604 West Creek Drive, Tinley Park, IL 60477-6243, www.g-w.com.

Boiler Operator's Guide, Fourth Edition, 1998, McGraw-Hill Publishing, Inc., P.O. Box 182604, Columbus, OH 43272, www.books.mcgraw-hill.com

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, annotated and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing, highlighting, underlining and/or indexing in the references during the examination will be reported to the Department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. References may be tabbed/indexed with permanent tabs only. (Permanent tabs are defined as tabs that would tear the page if removed). Temporary tabs, (defined as Post-It notes, or other tabs that may be removed without tearing the page) are not allowed and must be removed from the reference before the exam will begin. If you are downloading from the Internet, you may bring this reference into the testing center with you as long as it is bound. You can have it spiral bound or you may hole-punch it and put it in a binder.






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