



PSI Services LLC
<https://test-takers.psiexams.com/akel>

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



**MECHANICAL ADMINISTRATORS EXAMINATION
CANDIDATE INFORMATION BULLETIN**

Examinations by PSI Services LLC	2	Examination Site Location.....	5
Guidelines for Licensing.....	2	Reporting to the Examination Site	6
Examination Scheduling Procedures.....	2	Required Identification.....	6
Eligibility and Fees.....	2	Security Procedures.....	6
On-line, via the Internet Registration.....	3	Taking the Examination by Computer.....	7
Telephone Registration	5	Tutorial.....	7
Rescheduling/Canceling an Examination	5	Examination Review.....	7
Re-taking a Failed Examination	5	Score Reporting	7
Missed Appointment or Late Cancellation	5	Duplicate Score Reports	7
Exam Accommodations.....	5	Experimental Items	7
Emergency Examination Center Closing.....	5	Examination Content Outlines	7
Social Security Number Confidentiality.....	5		

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.

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.

Take your examination:

- Must bring one form of valid identification, which bears your signature and 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 an Electrical Administrators 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
(855) 746-8173
<https://test-takers.psiexams.com/akel>

EXAMINATION 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.

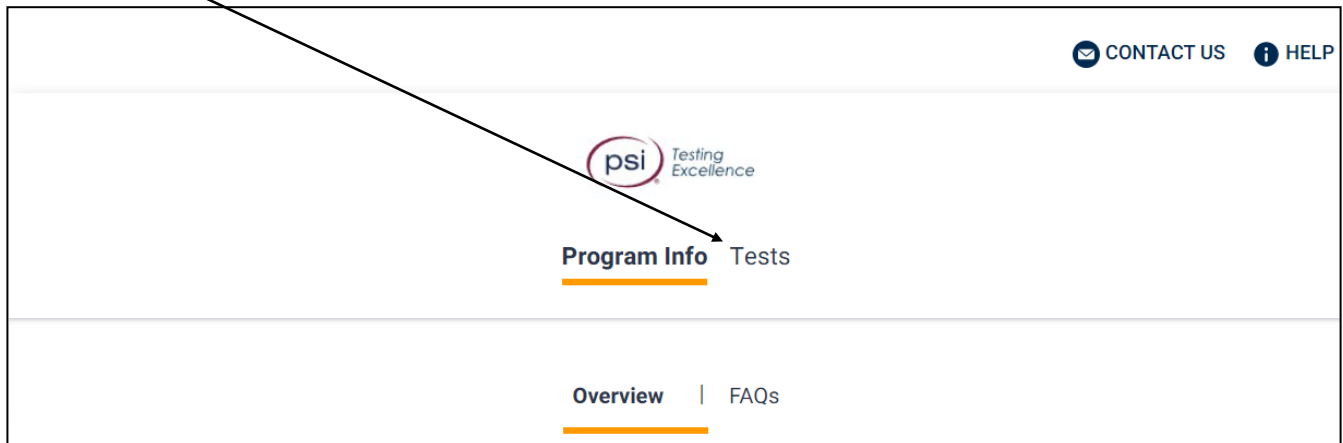
- All eligibilities are valid for 1 year from the date on the eligibility letter. If you do not pass the examination within the 1-year period, you must reapply with the state.
- You may take the examination an unlimited number of times during the 1-year period.

Examination Fee \$150

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

For the fastest and most convenient examination scheduling process, register for your examinations online by accessing PSI's registration Website: [Click Here](#) or on the email confirmation you received from PSI.

1. Select **TESTS** to create an account.



2. Select the examination and you are ready to create an account. Select **LOGIN/REGISTER**.

To continue the booking process and schedule your test, you must login or create an account.

LOGIN/REGISTER

3. You will be prompted to **CREATE AN ACCOUNT** with PSI.

The first and last name must match exactly with your current, valid, government-issued ID.

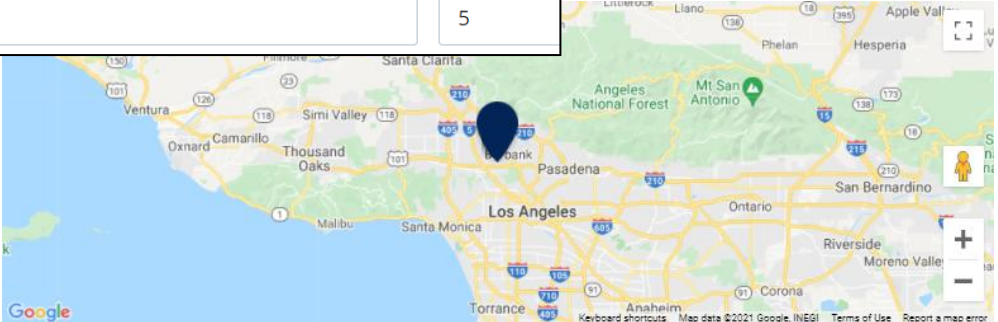
ID *	
First Name *	Last Name *
Middle Name	Generation
Email *	
Password *	Your password must contain: • At least one capital letter A-Z • At least one lower case letter a-z • At least one number 0-9 • At least one special character !@#V\$%^&V/* • At least 8 and up to 32 characters
Confirm Password *	

4. Enter the “City or Postal Code” and select **FIND**.

Search Test Center Location

Radius

5



5. Select a date and time to book an appointment.

Choose a Date and Time

<

October 2021

>

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

☐ Available ☒ Selected

Time slots available for October 08, 2021

08:00 AM

01:30 PM

6. You are now ready to pay.

Payment

Billing Address

Address 1 *

Address 2

Address 3

City *

Order Summary

Commercial Contractor Practice Test

Mechanical Bus and Law

\$100.00 USD

Total Price

CONTINUE

7. Once payment has been made you will receive a message confirming the test center, booked date, and booked time.

Booking Confirmed!!  [Print Confirmation](#)

Email Address:
asingla81@psionline.com

Home Phone:
111224444

Office Phone:
2221112345

4

TELEPHONE

PSI registrars are available at (855) 746-8173, Monday-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).

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 message is not an acceptable form of cancellation. Please use the PSI Website or call PSI to speak directly to a Customer Service Representative.

RETAKE 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 <https://test-takers.psiexams.com/akel>. 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 should request for alternative arrangements by [Clicking Here](#).

Candidates granted accommodation in accordance with the ADA, **MUST** schedule their examination by telephone and speak directly with a PSI registrar.

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

Fairbanks

University of Alaska
1790 Tanana Lp Rm 122, UAF Bunnell Building
Fairbanks, AK 99775

Juneau

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

Ketchikan

Ketchikan - University of Alaska Southeast
2600 7th Ave. Paul Bldg RM 101
Ketchikan, AK 99901

Sitka

Sitka - University of Alaska Southeast
1332 Seward Avenue
Mount Edgecumbe Campus
Sitka, AK 99835

Soldotna

Kenai Peninsula College - Kenai River Campus
156 College Road
Soldotna, AK 99669

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 at least 30 minutes prior to your scheduled appointment time. This allows time for the sign-in and identification verification procedure as well as providing time for you to familiarize yourself 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 AT EXAMINATION SITE

You must provide 1 form of identification. The identification must match the name you scheduled with.

NOTE: ID must contain candidate's signature, photo, be valid and unexpired.

- State issued driver's license
- State issued identification card
- US Government Issued Passport
- US Government Issued Military Identification Card (not allowed for remote testing)
- US Government Issued Alien Registration Card
- Canadian Government Issued ID

Failure to bring the proper documentation invalidates your registration. You will not be able to take the examination as scheduled, and you will forfeit your examination fee.

SECURITY PROCEDURES

The following security procedures will apply during the examination:

- 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.

TAKING THE EXAMINATION BY COMPUTER

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

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

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.

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 on the computer 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.

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 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.

You can print the score report from your online account.

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.

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 not 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.

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.

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.

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.

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.

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

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

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

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.

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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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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

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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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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.

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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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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 Solar Energy Code, 2018, International Association of Plumbing and Mechanical Officials, (IAPMO), 5001 East Philadelphia Street, Ontario, CA 91761-2816, www.iapmo.org.

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.

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