

**CITY OF LOS ANGELES
DEPARTMENT OF BUILDING AND SAFETY
LICENSE SECTION
221 N. Figueroa Street, #700
(213) 482-0099
www.ladbs.org**

**EXAMINATION INFORMATION
STEAM ENGINEERS AND BOILER OPERATORS**

GENERAL: A valid Boiler Operator License or Steam Engineer License is required by the City of Los Angeles for a person to operate, within city limits, one or more high pressure steam boilers rated above 5 horsepower (high pressure steam is steam in excess of 15 PSI {PSI - pounds per square inch}) - L.A.M.C. Sec. 97.0201.

TYPE OF LICENSES:

1. **BOILER OPERATOR:** This license allows for the operation of high pressure steam boilers rated from over 5 HP to 35 HP (HP = horsepower).
2. **STEAM ENGINEER - 500 HP:** This license allows for the operation of one or more high pressure steam boilers rated up to 500 HP. If multiple boilers are connected for joint operation or piped to a common steam header, the total HP rating from all the connected boilers cannot exceed 500 HP.
3. **STEAM ENGINEER - UNLIMITED HP:** This license allows for the operation of one or more high pressure steam boilers of any size or horsepower rating.
4. **TURBINE ENDORSEMENT*:** Allows the operation of one or more steam turbines of any size. This applies only to the holders of the Unlimited HP license.

**TURBINE ENDORSEMENT is a notation printed on the Steam Engineer Unlimited Certification when the Turbine exam is passed. One must already have the Steam Engineer Unlimited license in order to qualify for the endorsement examination or one can apply for the Unlimited and Turbine examinations to be taken at the same time, in which case, the Steam Engineer Unlimited exam must be passed first in order to activate the Turbine Endorsement.*

EXAMINATION REQUIREMENTS

A. EXPERIENCE:

1. **BOILER OPERATOR:** at least 6 months as an operator of boilers over 5HP but not exceeding 35 HP carrying over 15 pounds per square inch of steam.
2. **STEAM ENGINEER (500 HP):** at least one year full time as a boiler operator (35 HP) or, in lieu thereof, two years experience as a water tender, fireman or assistant engineer working with steam boilers.
3. **STEAM ENGINEER (UNLIMITED HP):** at least one year full time as an engineer or, in lieu thereof, three years experience as a water tender, fireman or assistant engineer working with steam boilers.
4. **STEAM ENGINEER (TURBINE ENDORSEMENT):** at least one year experience as an operator or in lieu thereof, three years experience as an oiler, wiper, water tender, auxiliary operator or assistant to the person in charge of a steam turbine.

B. FEES: APPLICATION / FILING: \$54.50 ANNUAL RENEWAL: \$27.50

There is no additional fee for the “*TURBINE ENDORSEMENT*” examination when taken in conjunction with the Unlimited Steam Engineer examination. If taken individually, a separate application and filing fee will be required.

C. **ONE CURRENT PASSPORT SIZE COLOR PHOTO (FULL-FACE, 2" X 2") PLEASE ATTACH TO THE APPLICATION.**

D. **APPLICATION AND OTHER REQUIRED INFORMATION:**

Complete and sign the "Trade License Application".

A completed and signed "Steam Operator & Boiler Engineer Certification of Work Experience".

Applicant will fill out Part 1 and Employer will fill out and sign Part 2.

Include only work experience related to boiler operation. However, courses taken from seminars or technical schools relevant to boiler operation may also be included in the application form for partial work experience credit. Work telephone number(s) and name(s) of supervisor(s) must be provided.

The City reserves the right to verify any claims of employment or work history related to boiler operating experience.

Note: You must specify the type(s) of license that you are applying for on the application form at "Examination Title".

E. **ABOUT THE EXAMINATION:**

All examination topics consist of two parts. The **first part** is a closed-book written examination with multiple choice questions pertaining to the safe operation of high pressure steam boilers and steam-driven equipment. The **second part**, an oral interview, is given only when a passing grade is obtained from the first part and is used to determine the applicant's practical knowledge and safe operation of steam boilers and steam-related accessories. Except for foreign language translation dictionaries, no books or reference materials of any kind are permitted to be used during the examination. Other than the restroom breaks, no one is allowed to leave the room or building until he/she has completed the examination(s) and returned the whole exam packages to the Examiner. The Examiners are not obligated to review test results with an unsuccessful applicant. In general, the steam boiler exam may contain questions in the following categories:

1. Boiler Operation & Maintenance

2. Boiler Safety & Control Devices

3. Combustion Principles

4. Pumps and Compressors

5. Water Treatment

6. Safety or Relief Valves

7. Physics & Chemistry

8. Superheaters & Economizers

PASSING SCORE: 70% minimum. Applicants who attain at least 35 correct answers (from 50 questions) in the written Steam Engineer exam or 18 correct answers (from 25 questions) in either the Boiler Operator or Turbine Endorsement written exam will be eligible for the oral interview. Both the written and oral exams must be passed in order to get a boiler operator or steam engineer license or the turbine endorsement. Cheating during the written exams will result in automatic failure of the applicant and may affect the acceptability of the applicant to take other City examinations.

SCHEDULING: All applicants will be notified of the examination date by phone or email. If unable to take the examination, the applicant will automatically be rescheduled. **Applications expire 6 months from cashier's validation date.** If examinations are not taken within that time, a new application must be filed and new fees paid. The previous fees shall not be refundable.

EXAMINATION LOCATION: Applicants will be notified through email and sent the link for the virtual examination.

LENGTH OF EXAM: 1 - HOUR

- F. **RE-EXAMINATION:** Applicants who fail to pass the first examination are entitled to a second examination. Rescheduling for the second examination is automatic. **It takes approximately four to six weeks,** and requires no additional fee. Applicants will be notified of the appointment date by phone or email. Applicants who fail to pass the second examination are required to **wait 30-days** before they may file another application. A new application along with the filing fee is required.
- G. **IDENTIFICATION:** **A valid government-issued photo I.D. with a signature (such as driver's license, military I.D., or passport) will be required when applicants appear for the examination.** Failure to provide the proper identification may prevent the applicant from taking the scheduled examination until such time that the required identification is provided.

The City of Los Angeles does not approve, certify, rate or endorse any of the information provided below. The information given on where to obtain books and reference materials, which bookstores to obtain them from and which schools or individuals to go to, are merely suggestions and intended to give applicants an initial basis to studying or reviewing for the exam. It is the applicant's primary responsibility, and are strongly encouraged, to pursue additional means that will help enhance their chances of passing the examination.

SUGGESTED BOOKS FOR REFERENCE MATERIAL

(Additional books may be obtained if necessary)

BOILER OPERATOR'S GUIDE
Harry M. Spring

HIGH PRESSURE BOILERS
Steingress & Frost

RECOMMENDED CARE OF POWER BOILERS
A.S.M.E. * Code Section VII

STEAM PLANT OPERATION
Woodruff & Lammers

POWER BOILERS
A.S.M.E. Code Section I

CALIFORNIA CODE OF REGULATIONS
Title 8. Divisions 1 and 2
Boiler & Unified Pressure Vessel Safety Orders
State of California - D.O.S.H.

SUGGESTED BOOKSTORES

BUILDING NEWS BOOKS
990 Park Center Dr, Suite E
Vista, CA 92081
(310) 474-7771
www.bnibooks.com

BUILDER'S BOOK, INC.
8001 Canoga Avenue
Canoga Park, CA 91304
(818) 887-7828 / (800) 273-7375
ww.buildersbook.com

SUGGESTED TRAINING SCHOOLS OR FACILITIES

LOCAL 501 OPERATING ENGINEERS
(For Members Only)
(213) 385-2889

L.A. TRADE TECHNICAL COLLEGE
400 W. Washington Blvd
Los Angeles, CA 90015
(213) 744-9058

PARKER SCHOOLS FOR INDUSTRY #322
13681 Newport Ave., Suite 8
Tustin, CA 92780
(800) 752-1093

THE FOLLOWING ARE SAMPLE QUESTIONS WHICH ARE RELEVANT TO THE EXAMINATION FOR A LICENSE TO OPERATE A BOILER CARRYING OVER 15 POUNDS PER SQUARE INCH (PSI) OF STEAM PRESSURE. THIS IS ONLY A STUDY GUIDE.

1. What are the precautions to be observed when starting any boiler that has been closed down overnight? Are there any special precautions required before starting a gas burning boiler?
2. How do you bring a newly-started boiler on line?
3. How do you determine whether the feedwater check valve for the boiler is not closing?
4. What causes foaming in the boiler? How do you know when a boiler is foaming? How do you stop foaming in a boiler?
5. What is boiler priming? What causes priming? How can priming in a boiler damage an engine or pump?
6. What would you do if the pressure gauge on the boiler registered 150 PSI and you knew the safety valve was set to open at 100 PSI?
7. How do you test a safety valve to see if it operates at the proper set pressure? What is the difference between a safety valve and a relief valve? How often do you test these valves? How is a leaking safety valve repaired?
8. How do you change the pressure setting of a safety valve if it popped at a pressure less than the steam pressure you desired? Would you install a shut-off valve between the boiler and its safety valve?
9. What causes heavy black smoke from the firebox of an oil-burning boiler?
10. What does heavy yellow smoke from the firebox of an oil-burning boiler indicate?
11. Name some of the causes of an excessive amount of accumulated soot in the firebox and tubes of an oil burning boiler.
12. How often should a boiler be blown down? If the boiler water is treated, is it necessary to blow down the boiler everyday? Why? What is the purpose of treating the boiler water? What is TDS?
13. What would you do if you could not see the water level in the boiler gauge glass while the boiler is in operation? What would you do if the water level in the gauge glass shifted up and down?
14. If the boiler feedwater pump is operating and the water level in the boiler is not rising, what is the best thing to do? Can you increase the speed of the feedwater pump for more water volume?
15. What is boiler water pH? What pH reading is considered acidic and alkaline? Give an example.
16. What is a superheater? What is the purpose of superheating the steam? Does a superheater require a safety valve? Are there any precautions to be taken when bringing a superheater on line?
17. What causes boiler tubes and other boiler heating surfaces to overheat or fail?
18. How do you prevent corrosion or pitting? What effect has oxygen or carbon dioxide on metals?
19. How long can an operating steam boiler be left unattended?
20. If a boiler was very low on water and showed signs of overheating, should you fill it with water to cool it down?

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**BOILER OPERATOR LICENSE AND STEAM ENGINEER LICENSE EXAM
APPLICATION INSTRUCTIONS**

1. **Examination Title:** What exam are you applying for? 35HP, 500HP, Unlimited, Unlimited with Turbine
2. **Date:** The date you are filling out the exam application
3. **Applicant Name:** What is your full legal name as it appears on your driver's license or approved Government identification
4. **Birth Date:** What date were you born Month/Date/ Year
5. **Address:** Where do you reside as of the date you are filling out the exam application
6. **Email:** What electronic mail address do you want to be contacted at?
7. **Phone:** What phone number do you want to be contacted at? Mobile phone number is preferred
8. **Height:** What is your approximate height measurement (feet/inches)?
9. **Weight:** What is your approximate weight?
10. **Eyes:** What is the color of your eyes?
11. **Hair:** What is your hair color?
12. **Employer-Name Address:** Only list the relevant employers name and address where you have operated a steam boiler. You may also include the name of the school and address, training facility and address, military rank & enlistment location
13. **Duties Related to Examination:** List the duties and responsibilities for each of the employers. You may also provide separate documents listing your job duties. A signed and completed "Steam Operator & Boiler Engineer Certification of Work Experience" shall be included with your application.
14. **Dates:** List the date you began with the employer/school and the date you left the employer/school
15. **Total time:** How many years and months were you with the employer/school or if you are still with the employer/school
16. **Applicant's Full Signature:** Sign the application certifying the information you provided is true

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**BOILER OPERATOR LICENSE AND STEAM ENGINEER LICENSE EXAM
APPLICATION INSTRUCTIONS**

NOTE:

1. Please print your application or provide clear and legible penmanship
2. Incomplete applications will not be accepted
3. Provide relevant certificates of completion, school degrees
4. LADBS is not responsible to notify you of errors on your application
5. LADBS is not responsible to conserve copies of your applications
6. LADBS is not responsible to compile your application
7. Steam Engineer (500 HP/Unlimited HP): Application job title clarification such as trainee, assistant, apprentice, junior operator, junior engineer, etc. shall be classified as assistant engineers to the person in charge of the steam boiler.
8. Volunteer experience shall not be accepted

LAMC SEC 97.0203 (b) Failure to Pass. No part of any sum shall be returned to any applicant who fails to pass the examination for which the fees were paid. If any applicant fails to receive the percentage required at the first examination, he or she shall be entitled to take a second examination without payment of a second fee. In case any applicant fails to pass the second examination, he or she shall be required to wait one month before he or she may file another application for examination.

SEC. 97.0205. CONDUCT OF EXAMINATION.

The Department shall make a careful and thorough examination of the qualifications of every applicant for any license required by this article. The examination shall test the applicant's knowledge of the operation, care and maintenance of the apparatus, machinery or equipment set forth in the application.



TRADE LICENSE APPLICATION

221 N. Figueroa St., Suite 700
 Los Angeles, CA 90012
 (213) 482-0099

Examination Title: _____ Date: _____

Applicant Name: _____ Birth Date: _____

Address: _____
 Address City State Zip

Email: _____ Phone: _____

Height: _____ Weight: _____ Eyes: _____ Hair: _____

Employer – Name and Address <small>* Only show experience needed to qualify for examination</small>	Duties Related to Examination	Dates	Total Time
		From: _____ To: _____	YEARS/MOS
		From: _____ To: _____	YEARS/MOS
		From: _____ To: _____	YEARS/MOS
		From: _____ To: _____	YEARS/MOS
		From: _____ To: _____	YEARS/MOS

I hereby certify that all of the information that I have given herein is true and complete to the best of my knowledge and belief. I understand that any false statement will subject me to disqualification.

16.

Applicant's Full Signature _____

FOR OFFICE USE ONLY:

EXAM NUMBER	EXAM STATUS		
	Exam Date		
	Oral		
LICENSE NUMBER	Written		
	Final		
	Initial		

FEES		2nd Fees (if applicable)
Approved for Exam By		
Filing Fee		
D.S.C Surcharge		
System Surcharge		
Total Fees Due		

For Cashier's Use Only

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities



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Examination Title: Date:

Applicant Name: Birth Date:

Address:

Address City State Zip

Email: Phone:

Height: Weight: Eyes: Hair:

Employer/Education – Name and Address <small>* Only show experience needed to qualify for examination</small>	Duties Related to Examination	Dates	Total Time
		From: To:	YEARS/MOS
		From: To:	YEARS/MOS
		From: To:	YEARS/MOS
		From: To:	YEARS/MOS
		From: To:	YEARS/MOS

I hereby certify that all of the information that I have given herein is true and complete to the best of my knowledge and belief. I understand that any false statement will subject me to disqualification.

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EXAM NUMBER	EXAM STATUS		
	Exam Date		
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FEES		2nd Fees (if applicable)
Approved for Exam By		
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D.S.C Surcharge		
System Surcharge		
Total Fees Due		

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Steam Operator & Boiler Engineer Certification of Work Experience

INSTRUCTIONS:

The applicant shall complete the information in Part 1 below, then the person certifying the work experience (employer or contractor) shall complete Part 2. The Los Angeles Department of Building and Safety reserves the right to contact the certifier to verify work experience and/or dates. If additional space is needed to list the experience, please attach a separate sheet that must also be signed under the same certification statement contained below.

Use a separate form for each employer. **Please type or print neatly and legibly in black or dark blue ink—pencil is not acceptable.** Forms containing strikeouts or modifications may not be accepted. Corrections must be initialed by the certifier.

PART 1- APPLICANT INFORMATION				
The <u>Applicant</u> must complete Part 1 <u>before</u> the Certifier completes Part 2				
<u>Name</u>				
First:	Last:	Middle:		
Have you had a previous City of Los Angeles Boiler License? Yes No				
License Number:		Expiration Date:		
<u>Type of classification and the license you are applying for:</u>				
35 HP	500 HP	Unlimited HP	Unlimited HP w/ Turbine	Turbine

PART 2- WORK EXPERIENCE AND CERTIFICATION STATEMENT				
The <u>Certifier</u> must complete Part 2 <u>after</u> the applicant completes Part 1				
Employer:				
License #:		Supervisor:		
<u>Employer's street address</u>				
Number/Street:		City:	State:	ZIP:
<u>Name of Certifier</u>		<u>Telephone # of Certifier</u>		<u>Certifier email address</u>
Applicants job title:				
<u>DATES</u> (List only dates that the applicant was engaged in work related to the type of examination indicated in Part 1)				
From	To	Equals	Years	Months
In the space below, describe the job duties related to boiler and/or boiler operation only:				
<u>List the boiler(s) and/or turbine(s) that you have worked with at this job:</u>				
Manufacturer	_____	_____	_____	
Boiler Type	_____	_____	_____	
Used As	_____	_____	_____	
HP & PSI	_____	_____	_____	
Were the boilers connected to a common steam header?			Yes	No
I Certify that I have direct knowledge of the work covering the time period outlined above. I certify under penalty of perjury, under the laws of the State of California, that the information stated above is true and correct.				
Date:	Signature:		Printed Name:	