

**SUBJECT: Notification of California Department of Transportation  
Qualification Requirement for Ultrasonic Testing  
Personnel**

**TEST SITE: CALTRANS  
Bay Area METS Laboratory  
690 Walnut Ave, Suite 150  
Vallejo, California 94592**

California Department of Transportation (Caltrans) has established a policy that Caltrans qualify Ultrasonic Testing personnel, prior to performing specified weld testing for designated Construction Contracts. The purpose of the qualification program is to provide a means for Caltrans to confirm the proficiency and knowledge of Ultrasonic Testing Technicians performing work on Caltrans projects. This qualification program consists of candidates passing a two-part test.

The Prime Contractor is responsible for submitting the applications of the Quality Control Ultrasonic Test personnel to Caltrans. The attached application, in addition to an electronic application copy, must be completed and returned via regular mail, email, or fax to:

Regular mail: CALTRANS UT QUALIFICATION PROGRAM  
Quality Assurance and Source Inspection Branch  
690 Walnut Ave, Suite 150  
Vallejo, California, 94592  
ATT: Jason Wilcox

Email: [jason.wilcox@dot.ca.gov](mailto:jason.wilcox@dot.ca.gov)

Fax Number: 707-649-5493

Applications must be received by Caltrans a minimum of five days prior to the established exam date to be admitted to the scheduled exam. Applications submitted to Caltrans for initial qualification testing will be reviewed and verified. Candidates that meet the minimum requirements specified in this letter will be tested in the order as received. The candidates will be notified by mail or E-Mail correspondence of the scheduled test date and location. The scheduled test date may be rescheduled if a written request is received by Caltrans two working days prior to the test date. If a candidate does not arrive at the test site, as scheduled, the application will be marked as disqualified. The applicant

may reapply after the 30-day waiting period as allowed for disqualified candidates.

The first part of the qualification test consists of a written examination, and the second part is a hands-on practical demonstration of ultrasonic testing proficiency. Both parts will be based on the requirements of the American Welding Society AWS D1.1-20 Code, Clause 8, Part F "Ultrasonic Testing (UT) of Groove Welds." The written specific examination will be given a minimum of twice per month at the Caltrans Transportation Laboratory in Sacramento, California or the Bay Area METS office located at 690 Walnut Ave Suite 150 in Vallejo, CA. A maximum of ten people can take the test on any given day. The written specific qualification examination will consist of twenty multiple choice, and true or false questions. The written examination will test the candidate's ability to apply the rules of AWS D1.1-20 Code. A maximum time duration of two hours will be strictly enforced. A minimum of fourteen out of the twenty questions (70%) must be answered correctly to pass the written test.

Caltrans will provide reference material to answer the code and specification questions. The Caltrans provided reference material is a laminated copy of AWS D1.1-20, Clause 8, and a Caltrans Standard Specification book. **Some questions will require calculations to determine the correct answer. Candidates must bring a calculator and photograph identification to the test site.** The candidate shall not bring any additional reference material to the test. A representative of Caltrans will proctor the examination. The proctor for the written examination will be an Engineer, Caltrans NDT Level III, or Caltrans NDT Level II Technician. The results of the examination will be mailed to the candidate within seven working days. The results will be reported as "pass" or "fail". **No information regarding the results of the qualification test will be given on the telephone.** The examination questions will not be reviewed or discussed with the applicants. The candidate is responsible for notifying their employer of their test result status. Only candidates that pass the written examination will be permitted to take the second part of the qualification test.

Candidates that fail the written examination may apply for a subsequent qualification test, after a thirty-day waiting period. The thirty-day waiting period commences from the date noted on the result notification letter. During this waiting period, the candidate shall receive additional training. This additional training must be documented in a notarized letter signed by an ASNT NDT Level III. This notarized letter must be attached to the application, along with the qualifications of the Level III. Caltrans will review the application for re-testing and notify the candidate of the

application disposition within ten days of receipt. The Certifying Authority shall determine if the additional training is sufficient, based upon the previous qualification test results.

Candidates who pass the written examination will receive a scheduled date for the practical demonstration, along with the results of the written examination. The candidate must confirm or cancel the practical demonstration within five days of the scheduled practical demonstration date.

The second part of the qualification test is a hands-on practical demonstration of the candidate's ability to perform ultrasonic testing in accordance with AWS D1.1-20, Clause 8, Part F "Ultrasonic Testing (UT) of Groove Welds." The practical demonstration will be conducted on two separate weld sample plates. The candidate shall evaluate twelve linear inches of weld, in each sample plate, in accordance with the requirements of AWS D1.1-20 Clause 8.25 "Testing Procedures."

The candidates must be capable of detecting, sizing, evaluating, and reporting known ultrasonic indications in accordance with the criteria set forth in AWS D1.1-20. A separate report ("Report of UT of Welds" Form P-11, Annex P, AWS D1.1-20) is required for each sample plate to document the findings and evaluation of discontinuities. Caltrans will provide the necessary report forms.

**The candidate shall bring the following items to the test site for the practical demonstration examination:**

- **Scientific calculator**
- **Ultrasonic equipment (as specified in this letter).**
- **Photographic identification.**
- **Notification letter received from Caltrans.**

The two weld sample plates are mock-ups of typical joints utilized in the field welding of pile material. One sample is a double "V" groove joint and the other sample is a single "V" groove joint with backing. The sample welds have known ultrasonic indications that were evaluated and qualified by a series of examinations conducted by Caltrans personnel, consultants, and the test block manufacturer. Certain discontinuities have been designated as "Required Detection Indications" that must be detected and properly evaluated in order to pass the qualification test. Candidates failing to locate, size, evaluate, and report the "Required Detection Indications" are disqualified.

In addition to the "Required Detection Indications", the candidates will be evaluated on their ability to comply with the requirements of AWS D1.1-20, Clause 8, Part F. The candidate will receive credits for the proper completion of specific mandatory checkpoints. The checkpoint items are derived directly from the AWS D1.1-20 Code requirements. A minimum score of seventy-percent (70%) is required for the hands-on demonstration test. This evaluation will be scored by a Caltrans proctor, during the entire practical demonstration. The proctor for the hands-on practical examination will be a Caltrans Level III or an approved Caltrans Level II NDT Technician. The composite average score of the written examination and the hands-on practical demonstration must be equal to or greater than eighty-percent (80%) for successful qualification. For example, failure can occur with a 70% on one test and an 89% or less on the second test.

The maximum time allowed for the practical demonstration is four hours. During this four-hour period, the candidate is required to calibrate the instrument, test both plates, and document the test findings. If the candidate does not complete the above noted tasks within the allotted, time he/she will be disqualified.

The results of the complete qualification test will be mailed to the candidate within seven days after completion of the hands-on practical demonstration. The results of the complete qualification test will be reported as "Qualified Ultrasonic Testing Technician" or "Disqualified". Remember, a "Disqualified" result can occur when the average score of the written examination and the hands-on practical demonstration is not equal or greater than 80%. The candidate is responsible for informing their employer of their qualification status. **Caltrans will not accept telephone calls regarding the examination results.**

Qualified technicians will be issued a wallet card with a qualification identification number. This qualification will be effective for a period of three years. Caltrans reserves the right to revoke this qualification if the technician fails to maintain proficiency as determined by the Engineer. In order to renew or recertify the qualification, the technician must submit to Caltrans a current application, current eye examination, current employer NDT certification, a notarized letter that details their work history for the previous qualification period, and Caltrans Ultrasonic Testing Letter (if applicable). Caltrans may renew the qualification if there is no lapse of hands-on ultrasonic testing greater than six months, and if the technician's previous Caltrans work history is satisfactory, as determined by the Certifying Authority. A 9-year recertification by practical exam is required. The practical exam will evaluate you in the practical aspects of ultrasonic testing and establish that your skills are current.

Disqualified candidates may apply for qualification testing after a thirty-day waiting period. Disqualified candidates will be required to retake the entire practical examination. The thirty-day waiting period commences from the date noted on the disqualification letter. During this waiting period, the candidate shall receive additional training and hands-on experience performing ultrasonic testing in accordance with the AWS D1.1-20 Code. This additional training and hands-on experience must be documented in a notarized letter signed by an ASNT NDT Level III. This notarized letter must be attached to the application, along with the qualifications of the Level III. Caltrans will review the application for re-testing and notify the candidate of the application disposition within ten days of receipt. The Certifying Authority shall determine if the additional training and hands-on experience is sufficient.

**The following is a summary of the minimum requirements for applicant candidates and ultrasonic equipment:**

**Minimum Requirements for Candidate:** Candidate's certification and experience level must comply with the following criteria:

1. Certified by employer as Level II UT Technician, in accordance with the current American Society of Nondestructive Testing (ASNT), SNT-TC-1A Guidelines.
2. Proof of formal Ultrasonic Testing training as described in the current SNT-TC-1A.
3. Current eye examination as specified in the current SNT-TC-1A.
4. Documented work history for the current period of Level II certification.
5. Certifying Level III's credential must be submitted with application.

**Minimum Equipment Requirements:** Candidates must bring the following ultrasonic equipment and documents to the practical demonstration test:

1. Ultrasonic instrument meeting the minimum requirements of AWS D1.1-20, Clause 8.21 "UT Equipment." The instrument must be qualified in accordance with the requirements of AWS D1.1-20 Clause 8.23 "Equipment Qualification." Proof of current two-month qualification of instrument gain control is required. Previously stored calibrations may not be utilized during the qualification test. The instrument storage will be cleared at the qualification test site. The candidate shall be capable of calibrating and setting-up the equipment for testing as required by AWS D1.1-20 and as stated in ASNT Recommended Practice No. SNT-TC-1A.

2. Angle-beam search units meeting the minimum requirements of AWS D1.1-20, Clause 8.21.7. Transducer frequency shall be between 2 and 2.5 MHz, inclusive. Transducer dimensions must comply with the requirements of AWS D1.1-20, Clause 8.21.7.2.
3. Straight-beam (longitudinal wave) search units meeting the minimum requirements of AWS D1.1-20, Clause 8.21.6
4. Couplant conforming to the requirements of AWS D1.1-20 Clause 8.25.4. With the following restrictions: The couplant material must be Ultra-Gel or equivalent and in no case shall it be two-part cellulose gum. This is to protect the test plates from corrosion.
5. AWS D1.1-20 Structural Welding Code.
6. IIW Calibration Reference Standard.
7. Measuring and marking materials.

**Caltrans Provided Resources:** Caltrans will provide the following resources at the qualification test site:

1. Reference material for written test (laminated copy of AWS D1.1-20, Clause 8, and Caltrans Standard Specification Book).
2. Test report forms for documenting findings during the practical demonstration test.

### **Confidentiality Statement**

Caltrans will require each qualifying candidate to sign a confidentiality statement prior to testing. This requirement forbids the disclosure of any information regarding the content of the written test or flaw location and characterization. In addition, the candidate may not take notes or remove any scratch paper from the test facility. If Caltrans has reason to believe the integrity of the qualification test has been jeopardized, the qualifications of the individuals involved will be revoked.

## Application for Ultrasonic Qualification Testing

Name of Applicant:
Address:
Phone No:
Email:
Contract No:

**Prime Contractor**

Company Name:
Address:
Phone No:
Name of Contact Person:
Position and Title of Contact Person:

**Nondestructive Testing Company**

Company Name:
Address:
Phone No:
Name of Contact Person:
Position and Title of Contact Person:

All the information requested below must be submitted to be considered a completed application. An incomplete application package submitted for qualification will not be accepted or processed.

The application package shall include the following documentation:

1. A written practice conforming to SNT-TC-1A
2. Proof of Education (diploma or degree)
3. Proof of Testing (the actual exams may be requested)
4. Documentation of Experience (list references and phone numbers)
5. Certification by employer as Level II UT Technician, in accordance with the American Society of Nondestructive Testing (ASNT), SNT-TC-1A Guidelines
6. Proof of formal Ultrasonic Testing training as described in SNT-TC-1A
7. Current eye examination as specified in SNT-TC-1A
8. Documented work history for the current period of Level II certification
9. Certifying Level III's credential
10. Certification by ASNT as ACCP Level II UT (optional).

I certify that the above provided information is true and accurate.

Signature:	Date:
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