

ASNT ISQ O&G-UTT-5 EXAM INSTRUCTIONS

MATERIAL – CARBON STEEL

NUMBER OF TEST PIECES FOR EXAM – Ten (10) TEST BLOCKS

TEST PIECE THICKNESS RANGE - 0.250” (6.35mm) TO 2.5” (63.5mm)

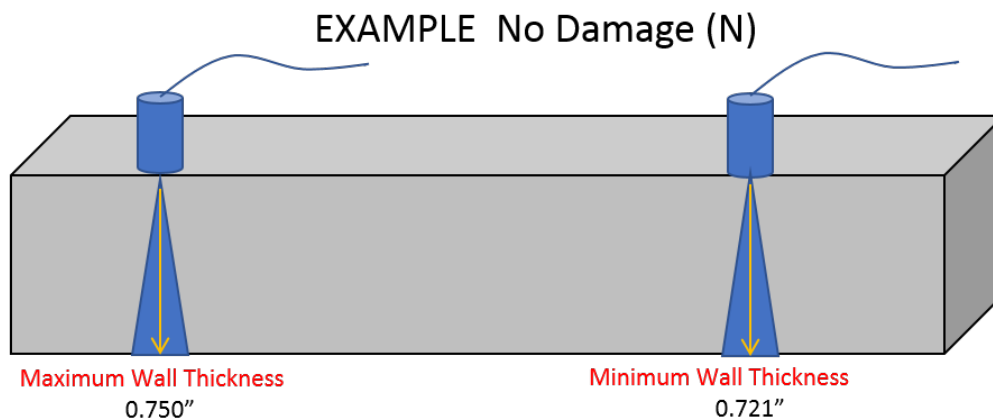
- There will be a verification of each candidate’s identification via a government issued photo ID before examination. This verification is required and if it is not satisfactorily met the candidate shall not be allowed to take the examination. Identification requirements can be found in O&G-UTT-4 Ultrasonic Thickness and Scanning Protocol.
- Safety instructions:
 - Site specific safety instructions to be provided by the Authorized Examination Proctor (AEP).
 - All exam specimens shall be wiped clean of couplant before a candidate returns the specimen to the storage area / holding area during the examination.

Instructions

- 1) Read the O&G-UTT-4 Protocol and the O&G-UTT Procedure UT-PTP7 before starting the exam. If there are any questions, the candidate shall resolve them with the AEP (authorized examination proctor) before starting the exam. The candidate shall have a **maximum of 4 hours** to complete the examination including calibration time, examination of ten (10) test specimens, and filling out all paperwork. For computerized examinations additional time shall be allowed for electronic data entry and submission of the examination report however no access to the test specimens shall be allowed after the four (4) hour timeframe has passed.
- 2) Questions may be asked during the exam to the AEP **only**. Specific questions about the exam content shall not be answered.
- 3) All calibrations shall be performed during the examination. No pre-saved calibrations shall be allowed for use on the exam. Calibration and/or reference standards are not provided for the examination. Technicians shall be expected to bring their own calibration and/or reference standards.
- 4) The ASNT provided UT Thickness procedure, UT-PTP7, shall be followed for the examination.
- 5) A candidate may use a UT Thickness Meter with an A-scan presentation and/or a UT Flaw Detector. Ultrasonic thickness gauges with no A-scan presentation shall not be allowed. A candidate should take the exam and qualify with the instrument they normally use on a regular basis in the field. It is recommended that a technician utilize a UT instrument that has a current appropriate calibration.
- 6) For Instruments with additional B-scan and/or C-scan functions, the B-scan and/or C-scan functions will have to be switched off and only the A-scan function shall be utilized during the exam.
- 7) Only straight beam (0 degree) contact or delay line, single and/or dual element, transducers that are applicable to wall thickness measurements and flaw detection are acceptable to be used on this exam.
- 8) The candidate shall not remove or tamper with the affixed backing on the test specimens. If it is determined that tampering has occurred, the candidate shall be disqualified from the exam. Any candidate found to be in violation of the ASNT examination rules or code of ethics shall be reported to the ASNT ISC certification group in accordance with CMC 15.3.1.2. If the information and subsequent investigations find there was a violation of the requirements, the candidate may be excluded from all further ISQ examinations for a minimum of one (1) year.

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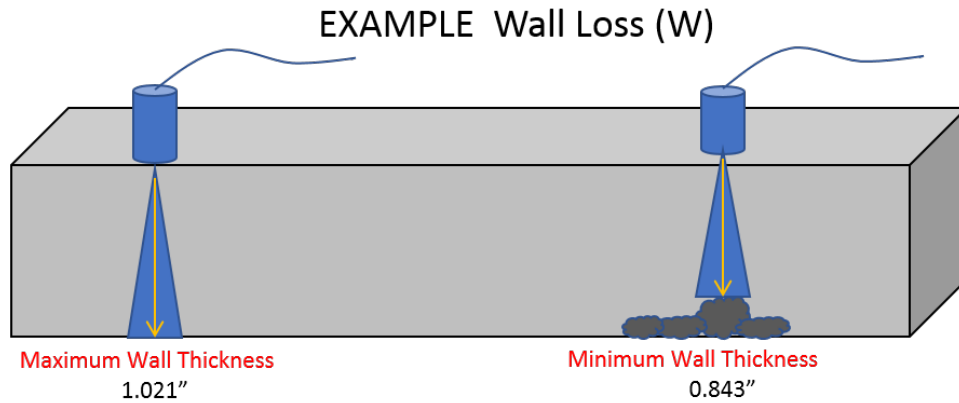
- 9) The exam consists of ten (10) test specimens of various thickness in the range of 0.250" (6.35mm) to 2.5" (63.5mm). Each test specimen shall be examined in its entirety to determine the type of flaw if any, to measure the minimum thickness (area with maximum wall loss), and to measure the maximum (nominal) thickness. The acceptable answers for both minimum and maximum thickness values for each specimen shall be within the following tolerances to be given credit per each given flaw type;
- For specimens with no damage the acceptable tolerance range shall be +/- 0.020" (0.5mm) for all test specimens < 1" (25.4mm) in maximum thickness and +/- 0.040" (1mm) for all test specimens \geq 1" (25.4mm) in maximum thickness.
 - For specimens with (a) mid-wall lamination(s) the acceptable tolerance range shall be +/- 0.020" (0.5mm) for all test specimens < 1" (25.4mm) in maximum thickness and +/- 0.040" (1mm) for all test specimens \geq 1" (25.4mm) in maximum thickness.
 - For specimens with wall loss the acceptable tolerance range shall be +/- 0.030" (0.75mm) for all test specimens < 1" (25.4mm) in maximum thickness and +/- 0.050" (1.27mm) for all test specimens \geq 1" (25.4mm) in maximum thickness.
- 10) The flaw type determined shall be recorded in the 'flaw type' data entry location for the corresponding specimen. The flaw type options for data entry for each specimen are as follows; 'N' for a specimen with no damage observed, 'W' for a specimen observed as containing any form of wall loss, or 'M' for a specimen with one or multiple mid-wall laminations observed. No specimens shall include flaw types from more than one of the above three categories.
- A test specimen shall be considered as having No Damage when there is no rough backwall surface due to irregular wall loss and the difference from the maximum thickness to the minimum thickness is \leq 0.030" (0.75mm) for all test specimens < 1" in maximum thickness and \leq 0.050" (1.27mm) for all test specimens \geq 1" in maximum thickness.



ONLY the **Maximum Wall thickness** and the **Minimum wall thickness** are to be recorded

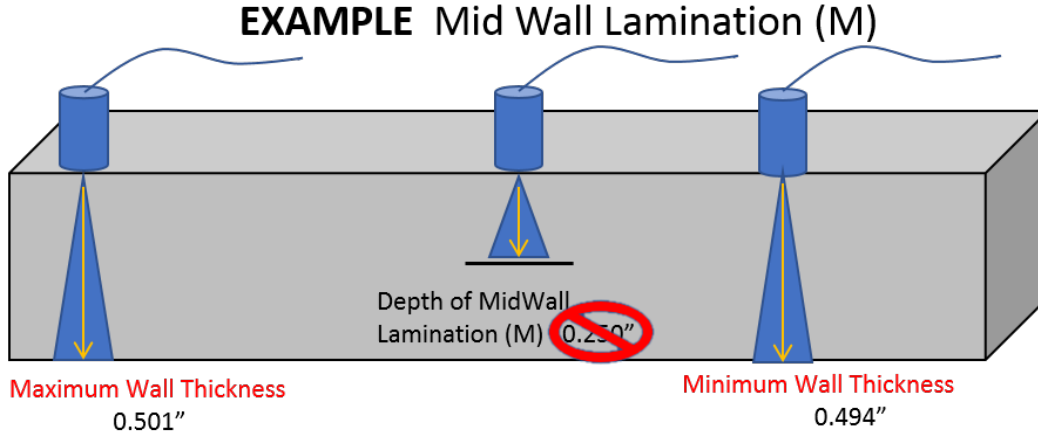
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- 11) For test specimens identified as containing wall loss of any type, the minimum remaining thickness shall be determined and recorded in the 'minimum thickness' data entry location for the corresponding specimen.



ONLY the Maximum Wall thickness and the Minimum wall thickness are to be recorded

- 12) For test specimens identified as containing (a) mid-wall lamination(s), the minimum remaining thickness for the entire test specimen, *not the mid-wall lamination(s)*, shall be determined and recorded in the 'minimum thickness' data entry location for the corresponding specimen. *The depths or horizontal dimensions of the mid-wall lamination(s) shall not be recorded.*



ONLY the Maximum Wall Thickness and the Minimum wall thickness are to be recorded.

⊘ DO Not record the depth of the Mid Wall Lamination as the minimum wall Thickness.

- 13) The maximum thickness shall be determined for each test specimen and recorded in the 'maximum thickness' data entry location for the corresponding specimen.
- 14) Each of the ten (10) assigned exam specimens shall be scanned fully to cover the entire specimen except for a 0.250" (6.35mm) border around the outside of each specimen's scanning surface. This border of 0.250" (6.35mm) on all UTT specimens shall not include any dimensions or flaws that are included in the exam answer key. At no time should an Ultrasonic transducer of ≤ 0.500 " (12.7mm) in diameter have to be placed in a position where any portion of the transducer's face overhangs the edge of a specimen's surface in order to inspect the specimen.

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- 15) All thickness values shall be recorded in the following format,
 - a. For standard measurements; 'X.XXX' with a whole number and three (3) decimal places (thousandths). E.G. 0.123" or 1.234".
 - b. For metric measurements 'XX.XX' with two (2) whole number and two (2) decimal places (fraction of millimeters). E.G. 05.67 or 56.78.
- 16) A candidate shall correctly identify all the flaw types with no errors allowed in order to pass the exam. E.G. If a specimen containing wall loss is reported as having (a) mid-wall lamination(s) or no damage, the exam shall be an automatic failure. If a specimen containing (a) mid-wall lamination(s) is reported as containing wall loss or no damage, the exam shall be an automatic failure. If a specimen containing no damage is reported as having wall loss or (a) mid-wall lamination(s), the exam shall be an automatic failure.
- 17) A candidate shall correctly report the minimum and maximum thicknesses, within the acceptable tolerances, for **80%** or eight (8) out of the ten (10) specimens, in order to successfully pass the exam. If a candidate reports a value outside of the acceptable tolerance for either the minimum or the maximum thickness for a given specimen, then they shall not receive credit for that specimen.
- 18) Pagers, mobile/cellular phones, cameras, or any electronic devices capable of any type of communication or recording shall NOT be allowed in the examination area. If you need to communicate with anyone, you will have to wait until after the exam is completed. For known emergency situations, please communicate with the test AEP to make arrangements prior to the start of the exam.
- 19) All paperwork shall be given to the AEP at the end of the exam. This includes all scratch notes or drawings made during the exam. **All paperwork shall be supplied by ASNT. No paperwork shall be allowed into, or out of, the examination area.**