

Oklahoma Department of Labor

Oklahoma Administrative Code
Title 380 – Department of Labor
Chapter 20 – Welding Rules



Mark Costello
Commissioner of Labor

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Oklahoma Administrative Code

Title 380 – Department of Labor

Chapter 20 – Welding Rules

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380:20-1-1. Purpose

The purpose of the rules in Chapter 20 is to provide guidance for the implementation of standards for the licensing of welders, certification of weld test facilities, and certification of welding inspectors as mandated by Title 59 of Oklahoma Statutes, Section 1624, et seq.

380:20-1-2. General certification requirements

The Rules contained in Chapter 20 are applicable to the specific construction Codes adopted in the Oklahoma Welding Law, found in Title 59 O.S. Section 1624, et seq. The Oklahoma Boiler and Pressure Vessel Safety Act, Title 40, O.S., Sections 141.1 et seq., contains the Statutes for new construction, field assembly, alteration, and repair of boilers and pressure vessels. For new construction and repair of welded down stream piping operated or designed to operate in excess of 15 P.S.I. pressure, welder performance test and certification of test reports must be made by an Oklahoma Weld-Test Facility certified by the Department of Labor in accordance with the following procedures.

- (1) The welding inspector shall:
 - (A) Forward properly certified and signed test reports to the Department of Labor.
 - (B) Make sure that the permanent address of the welder is included in the test reports. These test reports shall contain the following information as a minimum: complete name and mailing address of the welder; welding position(s) in which the weld test(s) was/were performed; welding process or processes used; date(s) of test(s); social security number; birth date; hair color; eye color; height; weight; complete name and mailing address of the weld test facility; and the state assigned identification number of the weld test facility.
- (2) The welder shall:
 - (A) Apply for a welder's certification card on forms provided by the Department of Labor.
 - (B) Perform certification weld coupon(s) to a qualified ASME, API, or AWS Weld Procedure Specification;
 - (C) Include a twenty-five dollar (\$25.00) check, money order, or certified check payable to the Oklahoma Department of Labor;
 - (D) Renew their certification cards by the last day of the welders birth month each year. Failure to renew certification cards within one year of expiration shall require retesting and re-certification.
 - (E) Welders certification cards once issued become the sole property of the individual whose name appears on the card

and must be carried on the person of the welder when performing weldment(s) in this state;

- (F) Be responsible for maintaining a Welders Continuity Log to verify that welder certification has been maintained in every qualified process by the making of weldments at least every six (6) months as may be required by the applicable ASME, API or AWS Code(s). Such documentation shall be made available to inspectors or employer upon request. The welder certification card issued to any welder shall become invalid when the Welder Continuity Log is not maintained as required by these Rules. An invalid certification card shall be considered valid again only when the welder satisfactorily retests. Such retesting must be performed prior to the expiration date of the certification card. Such periods of inactivity shall not impact the expiration date of the welder's certification card.
- (3) The Department of Labor shall:
 - (A) Document and file test results and welder applications,
 - (B) Mail welder's certification card to the welder's address as listed on the welder's application.

380:20-1-3. Welding inspectors

- (a) The intent of Title 59 O.S. Section 1627 is that the welding inspector be physically present during the welders fusing of the test materials and that he witness the test fused materials from fit up through fusion, preparation of coupons and ultimate destructive test or to the on-site nondestructive examination personnel. Therefore the welding inspectors test report must contain the following statement: "I certify that I personally witnessed all phases of the welding performance test of the above named welder and that the above data reflects a true report of the test results."
- (b) The following definitions shall apply to this Chapter:
 - (1) "ASME" means the American Society of Mechanical Engineers, Three Park Avenue, New York, 10016-5990;
 - (2) "API" means the American Petroleum Institute, 1220 L Street, Northwest, Washington, D.C. 20005-4070;
 - (3) "ASTM" means American Society of Testing and Materials, 100 Bar Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959;
 - (4) "AWS" means the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126;
 - (5) "Certificate," or "Certification Card" means the document issued to an applicant upon successful examination;

- (6) "Destructive" means to bend or pull the weld test coupon to see if it cracks or breaks;
 - (7) "NDE" means a nondestructive examination;
 - (8) "Welding Inspector" means any person certified as a welding inspector in accordance with Section 1628 of this Act, or any person in possession of one of more of the following certifications issued by the American Welding Society:
 - (A) Senior Certified Welding Inspector ("SCWI");
 - (B) Certified Welding Inspector ("CWI");
 - (C) Certified Associate Welding Inspector ("CAWI").
 - (9) "Welding Procedure Specification" ("WPS") means a written document providing direction to the welder for making production welds in accordance with Code requirements by identifying all essential, supplemental essential, and non-essential variables.
 - (10) "Structure" means any commercial or industrial building intended for human occupancy where any part of the building is fabricated, constructed, altered, repaired or enlarged using weldable material found in AWS D1.1 or D1.3 in the welding process.
 - (11) "Continuity log" means a written record that verifies a welder has maintained their certification in every qualified process by producing sound welds at least every 6 months as may be required by the applicable ASME, API or AWS code(s).
- (c) The welding inspector shall forward all welder test results properly certified showing under which qualified procedure the welder tested (as permitted by this Act) to the Department of Labor. Upon receipt of the completed application affidavit, the test results and the twenty-five dollar (\$25.00) application affidavit fee, pursuant to 380:20-1-2(2)(C), the certification card will be mailed to the welder.
 - (d) All welding inspector certifications will specify with which weld-test facility the inspector is associated.
 - (e) Title 59 O.S. Section 1638 refers to an owner-user inspector and a certified AWS inspector as being exempt from the Act under certain conditions.
 - (1) For the purpose of clarifying Title 59 O.S. Section 1638, an owner-user is defined as a firm, company or organization which owns the piping which is being constructed, modified or repaired by full time company employees of the firm. This excludes high pressure steam (in excess of 15 P.S.I.) power piping (boiler external piping) falling within the scope of Section I of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers and the Oklahoma Boiler and Pressure Vessel Law, Title 40 O.S. Section 141.1, et seq.

- (2) For the purpose of clarifying Title 59 O.S. Section 1638, an owner-user inspector is defined as an inspector working as a paid company employee inspecting welds and qualifying welders to weld only those welds on owner piping facilities. The Department of Labor will recognize owner-user inspectors for purposes of certifying their welders qualifications only. (Any inspection required by virtue of the Oklahoma Boiler Code such as boiler repair and high-pressure steam lines shall be performed in accordance with the provisions of the Boiler and Pressure Vessel Law, Title 40 O.S. Section 141.1 et seq.)
- (f) A certified welding inspector may witness welder performance qualification in the field, provided the field testing facility is equipped with proper the test equipment (destructive or NDE devices).
- (g) Except for owner-user situations and organizations in possession of a valid Certificate of Authorization issued by the ASME or the National Board of Boiler and Pressure Vessel Inspectors, no certified welding inspector or certified testing facility shall be affiliated with any parent or subsidiary company which builds, constructs, erects or repairs piping systems designed in accordance with the provisions of any of the Codes identified in this Act, 40 O.S. 1624 et seq.
- (h) For the purpose of welder certification, no welding inspector or testing facility certified by the Department of Labor shall certify any welders in their own employ or any welders in the employment of any parent organization unless done by an employee of an owner-user organization as per 380:20-1-3(e)(2), or an organization in possession of a valid Certificate of Authorization from the ASME or the National Board of Boiler and Pressure Vessel Inspectors.
- (i) For the purpose of certifying welders by the Department of Labor, all certified welding inspectors and certified test facilities shall qualify, observe and test welders under one of the procedures and specifications referred to as:
- (1) D.P.-1 or;
 - (2) D.P.-2 or;
 - (3) Any welding procedure certified in accordance with Section IX of the ASME Boiler and Pressure Vessel Code sanctioned by the welder's employer; or
 - (4) Any welding procedures certified in accordance with API Standard 1104 sanctioned by the welder's employer; or
 - (5) Any appropriate AWS standard welding procedure.
- (j) The welder must successfully qualify in all respects to the selected procedure and all new test results forwarded to the Department of Labor shall so specify the welding process or processes used, and the position or positions in which welded. Test results shall remain valid for one year from the date the test weldment was performed.

380:20-1-4. Limitations affecting welding inspector certifications

A welding inspector certification is non-transferable. Upon a certified welding inspector's termination from a weld-test facility, his certification shall be deemed cancelled.

380:20-1-5. Penalties

- (a) The Oklahoma Welding Act (Title 59 O.S. Section 1631), provides the Oklahoma Commissioner of Labor shall have the power to suspend, refuse renewal of or revoke the welding inspector's certification, and the power to place on probation or to reprimand the holder, if he is found guilty of an unauthorized practice. The Commissioner of Labor may apply to any court of competent jurisdiction for an enforcement of its administrative decisions and rulings.
- (b) The Oklahoma Welding Act (Title 59 O.S. Section 1640), provides any person who violates its provisions shall be guilty of a misdemeanor and upon conviction thereof shall be punished by payment of a fine of Five Hundred Dollars (\$500.00).

380:20-1-6. Application procedure - weld-test facility

To facilitate uniform welding certification, the State Department of Labor will issue to each applicant successfully meeting the qualifications requirements a certificate stating that the applicant has met the certification requirements. The certifications shall be valid for one (1) year unless revoked pursuant to the Oklahoma Welding Act, Title 59 O.S. Sections 1624-1641. The certification fee for each weld-test facility shall be two hundred-fifty dollars (\$250.00). The certification shall be issued for a period of one (1) year, and shall be renewed by January 1st of each year. Failure to renew the certificate within thirty (30) days of expiration shall require certification.

380:20-1-7. Weld-test facility certification

- (a) Each weld test facility shall as a minimum:
 - (1) Have in their employ, a weld inspector in possession of a current American Welding Society Inspector Certification and be certified by the Commissioner of Labor; or
 - (2) Have in their employ, a weld inspector with a minimum of seven (7) years of the last ten (10) years of experience in the weld inspection field and be certified by the Commissioner of Labor; or
 - (3) Be certified as an owner-user welding inspector.
- (b) Each Weld-Test Facility shall have adequate welding equipment, material and staff personnel to perform any and all tests set forth by the requirements of the Oklahoma Welding Act and the Oklahoma Boiler and Pressure Vessel Safety Act, Title 40 of the Oklahoma Statutes 40 Section 141.1, et seq.

- (c) Any organization in possession of a valid Certificate of Authorization from the American Society of Mechanical Engineers or the National Board of Boiler and Pressure Vessel Inspectors may be certified as a weld test facility. Each such organization must have in effect a valid quality control system addressing welder qualification in accordance with the requirements of Section IX of the ASME Boiler and Pressure Vessel Code. Welder's Performance Qualifications may be used to certify only those welders being full time employees of the Certificate of Authorization holder and welder testing for the purpose of certification shall not be made available to the general public.

380:20-1-8. Limitations affecting weld-test facility certifications

- (a) Upon termination of employment of a certified welding inspector at the weld-test facility, the weld-test facility certification shall be deemed temporarily suspended until such time as the Department of Labor certifies another welding inspector for the facility.
- (b) All weld-test facility certifications are non-transferable.
- (c) Any weld-test facility certified by the Commissioner of Labor wherein welders are instructed and/or undergoing welding training are prohibited from certifying the qualifications of their own student welders connected with said school unless there exists on file with the Department of Labor, a written Quality Control System detailing those controls necessary to maintain separation of the classroom and inspection/certification functions of the facility. The quality control system shall be signature approved by the Chief Boiler Inspector or Deputy Boiler Inspector and shall as a minimum include all of the following elements:
 - (1) There shall be a forward statement signed by a senior company official stating that the inspector has the freedom to fail any weld certification test coupon that does not satisfy the requirements of this Act and the applicable referencing Code;
 - (2) The inspector must be certified in accordance with the provisions of this Act;
 - (3) The inspector may conduct formal welder instruction but shall not be permitted to conduct certification examinations on welders which he has been responsible for training;
 - (4) Any changes that are to be made to the written Quality Control System shall be approved by the Chief Boiler Inspector prior to implementation; and
 - (5) Facilities shall be open to random surveillance by the Chief or Deputy Boiler Inspector without prior notification. There shall be no cost associated with such surveillance.

- (d) Any weld-test facilities except owner-user weld-test facilities certified by the Commissioner of Labor, must make their facilities available to the general public as a testing lab for qualifying welders.
- (e) Each applicant for a weld-test facility shall make application in affidavit form to the Oklahoma State Department of Labor and file with the Department a thorough and factual written report in reference to procedures, equipment, integrity, standards of skills, practices and conduct in the occupation of inspection and testing and shall be cognizant of the principles and scope of rules which may apply.
- (f) Upon receiving the request, the application affidavit and the two hundred-fifty dollars (\$250.00) certification fee, the Department of Labor will inspect the facilities, and upon approval the weld-test facility will be issued a certification card.

380:20-1-9. Weld-test facility application affidavit (non-owner-user)

Application for weld-test facility (public non-owner-user) shall be on affidavit forms provided by the Department of Labor. See Appendix E.

380:20-1-10. Welding inspector certification; procedure

- (a) Each welding inspector shall have as minimum qualifications:
 - (1) A current American Welding Society Welding Inspectors Certification; or
 - (2) A minimum of seven (7) years of the last ten (10) years of documented experience in the weld inspection field as required by Title 59 O.S. 59 Section 1628 of this Act; or
 - (3) Have current employment documentation as an owner-user inspector.
- (b) Each welding inspector applicant is to make application to the Department of Labor using the appropriate application affidavit forms as specified by the Department of Labor. See Appendix G.

380:20-1-11. Limitations affecting welding inspector certification

Upon the termination of employment of a certified welding inspector at a weld-test facility, the welding inspector certification shall be deemed canceled. A welding inspector certification is non-transferable.

380:20-1-12. Weld-test facility application affidavit (owner-user)

Application for weld-test facility (owner-user) shall be on affidavit forms as specified by the Department of Labor. See Appendix F.

380:20-1-13. Welding inspector application affidavit

- (a) The welding inspector application shall include the following:
 - (1) Name of Welding Inspector - Applicant
 - (2) Enclose a copy of American Welding Society Certification; documentation of seven (7) years of the last ten (10) years

experience as a welding inspector; or proof of current employment if an owner-user inspector.

- (3) Name of company employing applicant to inspect weldments.
- (b) The welding inspector application shall be on affidavit forms as specified by the Department of Labor. See Appendix G.

380:20-1-14. Welding procedure specifications for butt weld


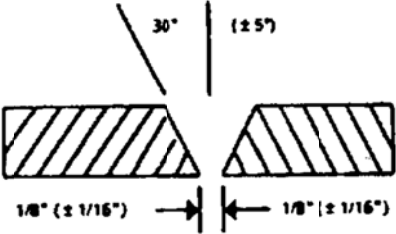

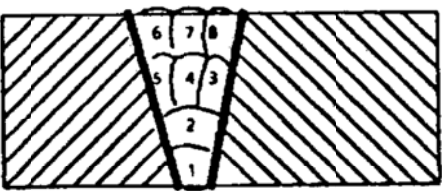
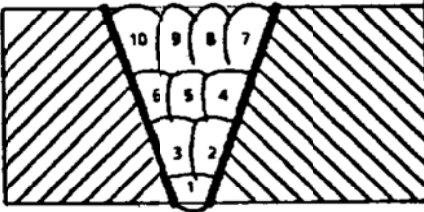
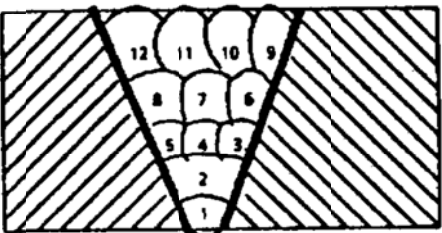
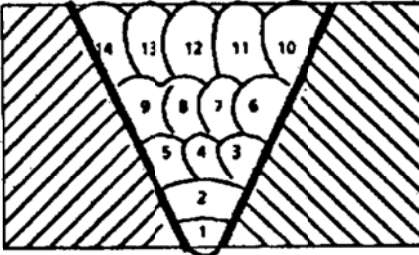
- (a) **Specifications.**
 - (1) Number Okla. D.P.-1 (without backing ring)
 - (2) Number Okla. D.P.-2 (with backing ring)
- (b) **Process.**
 - (1) S.M.A.W.- Shielded Metal Arc Welding
 - (2) G.M.A.W. - Gas Metal-Arc Welding
 - (3) G.T.A.W. - Gas Tungsten-Arc Welding
 - (4) O.F.G.W. - Oxyfeul Gas Welding
- (c) **Base Material.** The base material shall conform to the specifications of the following:
 - (1) ASME Boiler & Pressure Vessel Code, as applicable
 - (2) A.P.I. STD 1104 as applicable
 - (3) AWS Part A, as applicable
- (d) **Forgings.** Filler metal; The filler metal shall conform to the applicable code requirements of specifications under which the welder is being qualified, and restricted to the particular welding process being utilized. Applicable codes: ASME Section IX, current Edition and addenda, ASME B31.1, current Edition and addenda, API 1104, current Edition and addenda, and AWS D1.1, current Edition and addenda.
- (e) **Position.** The welding shall be done in test position 2G and 5G or 5G or 6G, as described in Section IX of the ASME Boiler and Pressure Vessel Code or positions described in AWS D1.1 or D1.3.
- (f) **Preparation of base material.** The edges or surfaces of the parts to be joined by welding shall be prepared by being machined, ground or gas cut to form groove design joints, as shown on the attached appendices and shall be cleaned of all oil and grease and excessive amounts of scale or rust. Fillet design joints shall not be used for welder certification.
- (g) **Nature of electric current.** The current shall be DC, the base metal to be on the negative side of the line.
- (h) **Welding technique.** The welding technique, electrode size and mean voltages and currents for each electrode shall be substantially as shown on attached appendices.
- (i) **Appearance of welding layers.** The welding current and manner of depositing the weld material shall have the appearance shown on the attached appendices. There shall be practically no undercutting on the side walls or the welding groove or the adjoining material.

- (j) **Cleaning.** All slag or flux remaining on any bead of welding shall be removed before laying down the next successive bead.
- (k) **Defects.** Any cracks or blow holes that appear on the surface shall be removed by chipping, grinding or gas gouging before depositing the next successive bead of welding.
- (l) **Heat treatment.** The heat treating or stress relieving of completed welds, when required, shall be performed in accordance with the requirements of the specific code under which the work is conducted.

380:20-1-15. Welding procedure specifications for structural steel welding

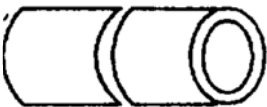
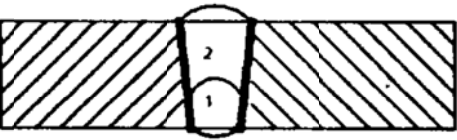
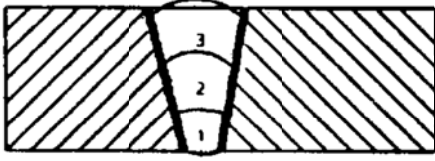
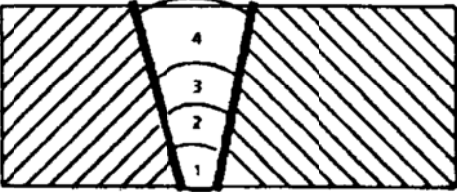
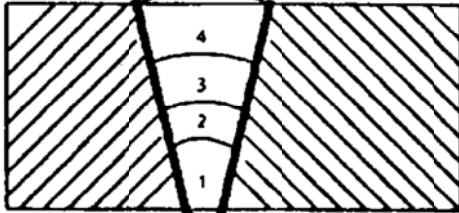
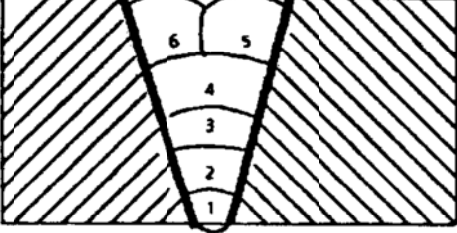
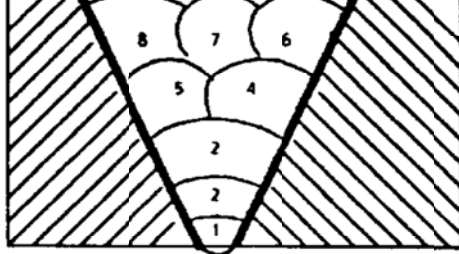
The welding procedure specifications for structural steel welding is that which is found in AWS D1.1 and/or D1.3.

Appendix A. Procedure Okla. D.P. - 1 Vertical Fixed Position (2-G) Only

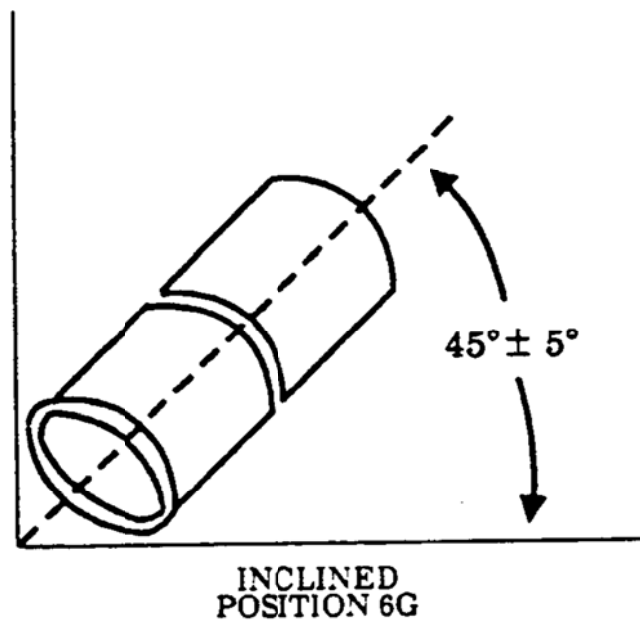
 <p>Test Position 2-G Axis of pipe or plate fixed in the vertical position.</p>	<table border="1"> <thead> <tr> <th>Diameter of electrode</th> <th>Amps</th> <th>Minimum Volts</th> </tr> </thead> <tbody> <tr> <td>3/32" to 1/8"</td> <td>70-120</td> <td>20</td> </tr> <tr> <td>3/32" to 5/32"</td> <td>100-160</td> <td>20</td> </tr> </tbody> </table> <p>Note: No. of beads shown may be increased or decreased 25%</p>	Diameter of electrode	Amps	Minimum Volts	3/32" to 1/8"	70-120	20	3/32" to 5/32"	100-160	20
Diameter of electrode	Amps	Minimum Volts								
3/32" to 1/8"	70-120	20								
3/32" to 5/32"	100-160	20								
 <p>30° (±5°) 1/8" (±1/16") → ← 1/8" (±1/16")</p> <p>Beveling and spacing for pipe or plate 3/4" to 1" wall thickness</p>	<p>.250" wall thickness</p>  <p>No. 1,2,3 beads 3/32" to 1/8" electrode No. 4,5,6 beads 3/32" to 5/32" electrode</p>									
<p>.375" wall thickness</p>  <p>No. 1-2 beads - 3/32" to 1/8" electrode. No. 3,4,5,6,7,8 beads 3/32" to 5/32" electrode</p>	<p>.500" wall thickness</p>  <p>No. 1 to 4 beads 3/32" to 1/8" electrode. No. 5 to 10 beads 3/32" to 5/32" electrode.</p>									
<p>.625" wall thickness</p>  <p>No. 1-2 beads 3/32" to 1/8" electrode. No. 3-12 beads 3/32" to 5/32" electrode.</p>	<p>.750" wall thickness</p>  <p>No. 1-2 beads 3/32" to 1/8" electrode. No. 2-12 beads 3/32" to 5/32" electrode.</p>									

Exceptions - (1) When root pass is deposited with G.T.A.W. process 3/32" filler material is acceptable. (2) When remaining weld deposits are made using low hydrogen electrodes, 3/32" diameter electrodes are permissible.

Appendix B. Procedure Okla. D.P. - 1 Horizontal Fixed Position (5-G)

<p>2" min. to 12" max. or actual job size.</p>  <p>Test Position 5-G Axis of pipe in the horizontal fixed position.</p> <p>Note: Beveling and spacing to be the same as shown for position 2-G</p>	<table border="1"> <thead> <tr> <th>Diameter of electrode</th> <th>Amps</th> <th>Minimum Volts</th> </tr> </thead> <tbody> <tr> <td>3/32" to 1/8"</td> <td>70-120</td> <td>20</td> </tr> <tr> <td>3/32" to 5/32"</td> <td>100-160</td> <td>20</td> </tr> </tbody> </table> <p>Note: No. of beads shown may be increased or decreased 25% if "T" = .500</p>	Diameter of electrode	Amps	Minimum Volts	3/32" to 1/8"	70-120	20	3/32" to 5/32"	100-160	20
Diameter of electrode	Amps	Minimum Volts								
3/32" to 1/8"	70-120	20								
3/32" to 5/32"	100-160	20								
<p>.125" wall thickness</p>  <p>No. 1-2 string beads 3/32" to 1/8" electrode</p>	<p>.250" wall thickness</p>  <p>No. 1 string bead 3/32" to 1/8" electrode No. 283 weaving beads 5/32" electrode</p>									
<p>.375" wall thickness</p>  <p>No. 1 string bead 3/32" to 1/8" electrode No. 2 to 4 weav. beads 1/8" to 5/32" electrode</p>	<p>.500" wall thickness</p>  <p>No. 1 string bead 3/32" to 1/8" electrode No. 2 to 4 weav. beads 1/8" to 5/32" electrode</p>									
<p>.625" wall thickness</p>  <p>No. 1 string bead 3/32" to 1/8" electrode No. 2 to 6 weav. bead 1/8" to 5/32" electrode</p>	<p>.750" wall thickness</p>  <p>No. 1 string bead 3/32" to 1/8" electrode No. 2 to 8 weav. beads 1/8" to 5/32" electrode.</p>									

PROCEDURE



PIPE WELDING

TO BE QUALIFIED TO WELD PIPE IN ALL POSITIONS A WELDER SHALL PASS TESTS IN THE 2G AND 5G OR 6G POSITION.

Appendix D. Procedure Okla. D.P. - 2

Procedure Okla. D.P. - 2 (with welding rings) shall conform to the specifications of Procedure Okla. D.P. - 1 (without welding rings) rod size, amps, minimum arc in volts, and various positions shall be the same as Procedure Okla. D.P. - 1. Welding rings shall conform to the ASME Boiler Construction Code, and A.N.S.I Power Piping Code B31.1 and shall be the groove type welding rings with knock-off spacer pin or the ridge type as manufactured by the tube turn, as shown in the following sketches under Procedure Okla. D.P. - 2. Ferrous rings, nonferrous, nonmetallic or consumable inserts may be used accordingly in compliance with applicable codes.

