

WELDING PROCEDURE SPECIFICATION NO: CSL-1

WELDING PROCEDURE QUALIFICATION RECORD NO (S): CSL-1-1

QUALIFIED FOR

Base Metal (Typical): P1 to P1 (SA 53 Gr.B, SA 106 Gr.B, SA 105, SA 234 WPB, SA 516 Gr.70 etc.)

Process(es): SMAW Weld Types: GROOVE & FILLET

Position: ALL POSITIONS Diameter: ALL DIAMETERS

Filler Metal: E6010, E6011, E7018, E7018-1

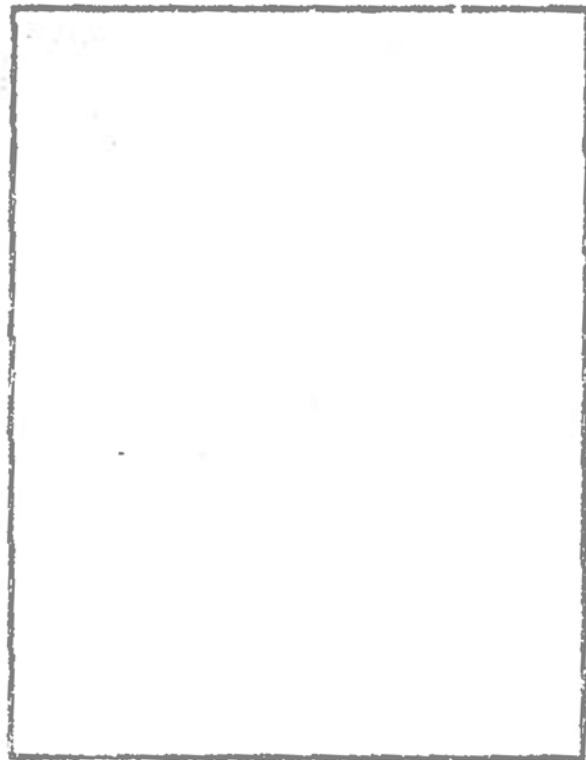
BASE METAL CONDITIONS & THICKNESS RANGE QUALIFIED:

STANDARD APPLICATIONS AS WELDED

ASME B31.1	<u>1.5 to 19.1 mm (0.062 to 0.75 in.) inclusive.</u>
ASME B31.3	<u>1.6 to 19.1 mm (0.062 to 0.75 in.) inclusive.</u>
ASME SECT. VIII, DIV.1	<u>1.6 to 19.1 mm (0.062 to 0.75 in.) inclusive.</u>

ALBERTA BOILERS SAFETY ASSOCIATION	
PROVINCE OF ALBERTA	
SAFETY CODES ACT	
WELDING PROCEDURE	
Reg. No. WP	<u>2000.2</u>
Spec No	<u>CSL-1</u>
Weld Process	<u>SMAW</u>
Main Gr. P No.	<u>1</u>
to P No.	<u>1</u>
Ess. Gr. F No.	<u>3+4</u>
A No.	<u>1</u>
Th. Qual. For	<u>(9.14mm) PWHT NO.</u>
V. 97, No. 9, Day 24, Signed <u>R. ROSEBERG</u>	
R. ROSEBERG P. E. WELDER SPECIALIST	

PROVINCIAL REGISTRATION



WELDING PROCEDURE SPECIFICATION NO.: CSL-2 (Rev.1)

WELDING PROCEDURE QUALIFICATION RECORD NO.(S): CSL-2-1 (Rev.1),
CSL-2-2 (Rev.0),
CSL-2-3 (Rev.0)

QUALIFIED IN ACCORDANCE WITH ASME SECTION IX FOR

Base Metal (Typical): P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr.6, SA 350 Gr.LF2, SA 420 WPL6, SA 516 Gr.70 etc.)
Process(es): SMAW Weld Types: GROOVE & FILLET
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: E6010, E7018-1

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

NOTCH TOUGHNESS APPLICATIONS TO -50°F WITH POSTWELD HEAT TREATMENT
BASE METAL THICKNESS RANGE 0.116 to 8.0 in. inclusive

COMBINED DEPOSITED WELD METAL THICKNESS

ASME B31.1 8.0 in. maximum
ASME B31.3 8.0 in. maximum
ASME SECTION VIII, DIVISION 1 8.0 in. maximum

ABSA
SAFETY CODES ACT - PROVINCE OF ALBERTA
WELDING PROCEDURE

Reg. No. WP 2000.2
Spec No. CSL-2 (Rev.1)
Weld Process SMAW
Matl. Gr. P No. 1Gr. 1+2 to P No. 1Gr. 1+2
Elect Gr. F No. 3+4 A No. 1
Th. Qual For 203mm P.W.H.T. YES
MIN TH QUAL 29mm, C/W -46°C
Yr. 15 Mo. 2 Day 19 Signed JR
**JASON REINHART, PENG
WELDING SPECIALIST**

PROVINCIAL REGISTRATION

This WPS was prepared to the requirements of ASME IX 2013 and includes some of the additional requirements of the construction codes listed. The application of this WPS is outside the work scope of SGS Ludwig Associates Ltd.

Prepared By: Keelan Sevigny, C.E.T.
Signed: Keelan Sevigny
Date: February 19, 2015

Reviewed By: Ron Peters, R.E.T. P.L. (Eng.)
Signed: Ron Peters
Date: Feb 19, 2015

(File E14-764)

WELDING PROCEDURE SPECIFICATION NO.: CSL-3

WELDING PROCEDURE QUALIFICATION RECORD NO. (S): CSL-3-1, CSL-3-2,
CSL-1-1

QUALIFIED FOR

Base Metal (Typical): P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr.6, SA 350 Gr.LF2, SA 420 WPL6, SA 516 Gr.70 etc.)
Process(es): SMAW Weld Types: GROOVE & FILLET
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: E6010, E7018-1

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

NOTCH TOUGHNESS APPLICATIONS TO -46°C AS WELDED
BASE METAL THICKNESS RANGE 3.2 to 19.1 mm (0.125 to 0.750 in.) inclusive

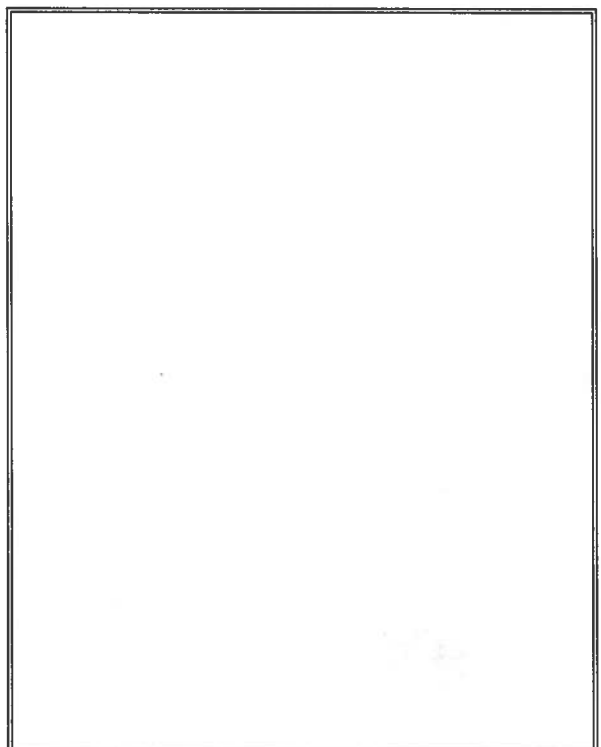
COMBINED DEPOSITED WELD METAL THICKNESS
ASME B31.1 19.1 mm (0.750 in.) maximum
ASME B31.3 19.1 mm (0.750 in.) maximum
ASME SECT. VIII, DIV.1 19.1 mm (0.750 in.) maximum

ALBERTA BOILERS SAFETY ASSOCIATION
PROVINCE OF ALBERTA
SAFETY CODES ACT
WELDING PROCEDURE

Reg. No. WP 3000.2
Spec No. CSL-3
Weld Process SMAW
Mati. Gr. P No. 1 Gr 1+2 to P No. 1 Gr 1+2
Elec. Gr. F No. 3+4 A No. 1
Th. Qual. For 3.2 to 19.1 mm PWHT NO
CVN-46°C

Yr. 04 Mod. Day 31 Signed [Signature]
R. ROSEBERG P.ENG.
WELDING SPECIALIST

PROVINCIAL REGISTRATION



WELDING PROCEDURE SPECIFICATION NO.: CSL-4

WELDING PROCEDURE QUALIFICATION RECORD NO. (S): CSL-4-1

QUALIFIED FOR

Base Metal (Typical): P8 to P8 (SA 240, SA 312 Types 304, 304L, 316, 316L etc.)
Process(es): GTAW / SMAW Weld Types: GROOVE & FILLET
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: ER3XX(L), E3XX(L)-15/16/17

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

STANDARD APPLICATIONS AS WELDED

BASE METAL THICKNESS RANGE 1.6 to 19.1 mm (0.063 to 0.750 in.) inclusive

COMBINED DEPOSITED WELD METAL THICKNESS RANGE

ASME B31.1	<u>19.1 mm (0.750 in.) maximum</u>
ASME B31.3	<u>19.1 mm (0.750 in.) maximum</u>
ASME SECTION VIII, DIVISION 1	<u>19.1 mm (0.750 in.) maximum</u>

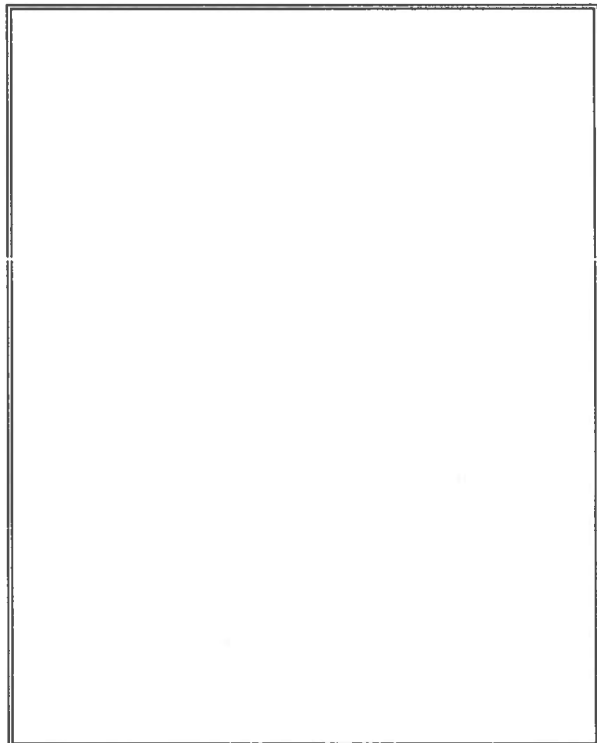
ABSA

SAFETY CODES ACT - PROVINCE OF ALBERTA
WELDING PROCEDURE

Reg. No. WP 2000-2
Spec. No. CSL-4
Weld Process GTAW / SMAW
Matl. Gr. P No. 8 to P No. 8
Elec. Gr. F No. 6+5 A No. 8
Th. Qual. For 19.1mm P.W.H.T. NO

Yr. 08 Mo. 09 Day 29 Signed [Signature]
R. ROSEBERG P.ENG.
WELDING SPECIALIST

PROVINCIAL REGISTRATION



WELDING PROCEDURE SPECIFICATION NO.: CSL-5


WELDING PROCEDURE QUALIFICATION RECORD NO.(S): CSL-5-1

QUALIFIED FOR

Application: TEMPER BEAD WELDING
Base Metal: P1 Groups 1 & 2
Process(es): SMAW
Weld Types: FULL AND PARTIAL PENETRATION GROOVE, FILLET WELDS,
AND WELD BUILD-UP
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: E7018-1-H4
Carbon Equivalent: 0.42 maximum

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:
NOTCH TOUGHNESS APPLICATIONS TO -46°C (-50°F) AS WELDED
BASE METAL THICKNESS RANGE 15.9 to 8.0 mm (0.625 to 8.0 in.) inclusive

DEPOSITED WELD METAL THICKNESS
ASME SECTION IX 203 mm (8.0 in.) maximum

ASCA	
SAFETY CODE ACT - PROVINCE OF ALBERTA	
WELDING PROCEDURE	
RESTRICTED APPLICATION *	
Reg. No. WP <u>2000.7</u> Spec No. <u>CSL-5</u>	
Weld Process <u>SMAW (TEMPER BEAD)</u>	
Metl. No. <u>P1 Gr 1+2</u> to Metl. No. <u>P1 Gr 1+2</u>	
Elec. Gr. F No. <u>4</u> A No. <u>1</u>	
Th. Qual. For <u>15.9 to 203 mm P.W.H.T.</u> <u>NO</u>	
* Limited To: <u>TEMPER BEAD USED IN</u>	
<u>CONJUNCTION WITH ACCEPTED</u>	
<u>REPAIR PROCEDURE (CVN -46°C)</u>	
Yr. <u>10</u> Mo. <u>8</u> Day <u>10</u> Signed 	
PROVINCIAL REGISTRATION	

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WELDING PROCEDURE SPECIFICATION NO.: CSL-6 (Rev.0)

WELDING PROCEDURE QUALIFICATION RECORD NO.: CSL-6-1, CSL-6-2

QUALIFIED FOR

Base Metal (Typical): P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr.6, SA 350 Gr.LF2, SA 420 WPL6, SA 518 Gr.70 etc.)

Process(es): SMAW Weld Types: GROOVE & FILLET

Position: ALL POSITIONS Diameter: ALL DIAMETERS

Filler Metal: E6010, E7010-P1, E7018-1

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

NOTCH TOUGHNESS APPLICATIONS TO -46°C AS WELDED

BASE METAL THICKNESS RANGE 3.2 to 25.4 mm (0.125 to 1.0 in.) inclusive

COMBINED DEPOSITED WELD METAL THICKNESS

ASME B31.1	<u>19.1 mm (0.750 in.) maximum</u>
ASME B31.3	<u>19.1 mm (0.750 in.) maximum</u>
ASME SECTION VIII, DIVISION 1	<u>25.4 mm (1.0 in.) maximum</u>

ABSA

**SAFETY CODES ACT - PROVINCE OF ALBERTA
WELDING PROCEDURE**

Reg. No. WP 2000.2

Spec. No. CSL-6 (REV.0)

Weld Process SMAW/SMAW

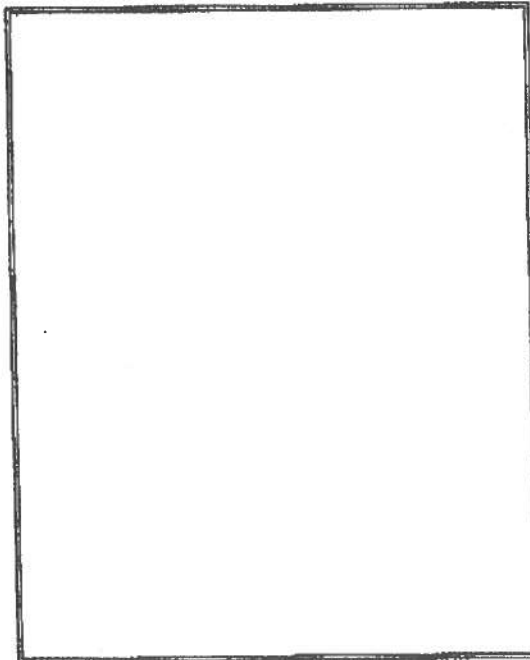
Matl. Gr. P No. 1 Gr 1+2 to P No. 1 Gr 1+2

Elec. Gr. F No. 3+4 A No. 1

Th. Qual. For 3.2 to 25.4 mm P.W.H.T. NO
CVN -46°C

Pr. 13, Mo. 11, Day 20 Signed [Signature]
**R. ROSEBERG, P.ENG.
WELDING SPECIALIST**

PROVINCIAL REGISTRATION



WELDING PROCEDURE SPECIFICATION NO.: CSL-7 (Rev. 0)

WELDING PROCEDURE QUALIFICATION RECORD NO.(S): CSL-7-1 (Rev. 0)
CSL-7-2 (Rev. 0)

QUALIFIED IN ACCORDANCE WITH ASME SECTION IX FOR

Base Metal (Typical): P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr. 6, SA 350 Gr. LF2, SA 420 Gr. WPL6, SA 516 Gr. 70 etc.)
Process(es): GMAW-S / SMAW Weld Types: GROOVE & FILLET
Position: ALL POSITIONS Diameter: ALL DIAMETERS
Filler Metal: ER70S-6, E7018-1

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

NOTCH TOUGHNESS APPLICATIONS TO -50 °F AS WELDED
BASE METAL THICKNESS RANGE 0.116 in. to 1.00 in. inclusive

COMBINED DEPOSITED WELD METAL THICKNESS

ASME B31.1 0.910 in. maximum
ASME B31.3 0.910 in. maximum
ASME SECTION VIII, DIVISION 1 0.910 in. maximum

ADSA

SAFETY CODES ACT - PROVINCE OF ALBERTA
WELDING PROCEDURE

Reg. No. WP 2000.2
Spec No. CSL-7 (Rev. 0)
Weld Process GMAW, SMAW
Matl. Gr. P No. 1Gr. 1+2 to P No. 1Gr. 1+2
Elect Gr. F No. 6+4 A No. *+1
Th. Qual For 254mm P.W.H.T. NO
MIN TH QUAL 29mm CVN-46
*ER70S-6
Yr. 17 Mo. 11 Day 28 Signed [Signature]
JASON WEINHART, P.ENG.
WELDING SPECIALIST

PROVINCIAL REGISTRATION

This WPS was prepared to the requirements of ASME Section IX 2015 and includes some of the additional requirements of the construction codes listed. The application of this WPS is outside the work scope of SGS Canada Inc.

Prepared By: Joel Fruncillo, T.T.
Signed: [Signature]
Date: November 17, 2017

Reviewed By: Keelan Wolfe, C.E.T.
Signed: [Signature]
Date: November 17, 2017

(File E17-00560)

PIPELINE WELDING PROCEDURE SPECIFICATION

Carlan Services Ltd.
3335 34th Avenue
Whitecourt, Alberta
T7S 1X3

WPS No: CSL-PL-2(Rev.0)

Date: April 5, 2016

Scope: This welding procedure specification details the procedure to be followed for production field butt and repair welding of pipe and/or components required by CSA Standard Z662, Oil and Gas Pipeline Systems.

Normative References: This welding procedure specification was prepared in accordance to CSA Z662-15 and incorporates by undated references, provisions from other publications. Revision to this specification is not required unless subsequent referenced code and or specification additions include changes to essential welding variables.

Service Restrictions: Sweet or Sour

Temperature Restrictions: Temperatures not requiring notch toughness properties.

1. WELDING PROCESS & METHOD

Shielded Metal Arc Welding (SMAW) - manual method.

2. BASE MATERIAL

a) **Composition:** This specification applies to pipe and/or component material manufactured in accordance with, or listed as "Acceptable Alternative Materials" in any of the following standards:

CSA Z662, Oil and Gas Pipeline Systems
CAN/CSA-Z245.1, Steel Line Pipe
CAN/CSA-Z245.11, Steel Fittings
CAN/CSA-Z245.12, Steel Flanges
CAN/CSA-Z245.15, Steel Valves

b) **Pipe Grades:** 386 MPa (SMYS) or less

c) **Wall Thickness Qualified:** 1.5 to 12.9 mm inclusive

d) **Pipe Diameters Qualified:** 60.3 to 323.9 mm O.D. inclusive

e) **Carbon Equivalent:** Sweet Service: N/A

Sour Service: Limitations to be determined by the engineer in charge

3. FILLER METAL CLASSIFICATION & SIZE

a) **Root Pass:** E6010; 3.2 mm

b) **Hot Pass:** E7010-P1; 4.0 mm

c) **Fill Pass(es):** E7010-P1; 4.0, 4.8 or 5.0 mm

d) **Cap Pass(es):** E7010-P1; 4.0, 4.8 or 5.0 mm