WeldProc
Program Guide
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1.0 WeldProc Software

WeldProc software is an online tool to assist Welding Engineers, Welding Supervisors and QA personnel to prepare welding procedures.

2.0 Registration

Very first step to access the online software is registration. Users are required to create their account. Registration is simple, follow steps outlined below:

a. Click “Register Now” tab on Home Page on the website, www.weldproc.com

b. Fill out the registration form. Information marked with asterisk (*) is mandatory information and cannot be left blank. The email id and password are your login and passwords respectively. User may also choose to upload their company logo before clicking “Submit” tab. The logo uploaded will be displayed on the welding procedure forms created.

Figure 1- WeldProc Registration
c. Select Type of Service you require.

d. After all information is selected click on Terms & Conditions link, a page displaying terms and conditions for use of WeldProc program and website will appear. Read the terms and conditions carefully and indicate your choice by clicking on one of the two options. Please note that, you can only proceed further if you agree to the Terms & Conditions.

e. After accepting the Terms & Conditions, click on “Submit” button and a secure payment link will open. Follow the steps on secure PayPal payment gateway. Your registration is complete as soon as your payment is accepted. See Figures 2, 3, 4 and 5 below.
Figure 3- Registration, Terms and Conditions

Figure 4- Registration – Terms & Conditions
### Figure 5- Registration - Payment

#### 3.0 Login and Password

![Login to WeldProc](image)

**Figure 6- Login to WeldProc**
4.0 Exploring WeldProc Features

WeldProc has following four distinct features to allow users to manage and create welding procedures online.

Figure 7 - WeldProc Features

4.1 Profile Update

This feature allows user to edit company / contact information entered during registration. To change the information, click on “Profile Update” tab. Following page will be displayed, update information as required and click “Submit” tab at the bottom. (Screen shot below is for single company, similar screen appears for consulting engineers as well)
4.2 Manage Clients

This feature allows CWB retained engineers or consulting engineers to manage their client’s information. Engineers can populate their client’s company name and address information. Information entered will be utilized to create, track and manage welding procedures for their clients. You can add as many clients as you need.

To add client information click on “Manage Clients” tab. Following page appears when you click “Manage Clients” tab.

Figure 8- WeldProc Profile Update

Figure 9- Manage Client
Currently there are no clients for this company and hence there is no information appearing on the screen above.

To add client information, click on “Add New” tab above and following screen appears. Enter client information and click “Submit” tab. Information entered will not get updated until “Submit” tab is clicked.

To create welding procedure, click on “Create Welding Procedure” tab. Following screen appears when you click “Create New Welding Procedure” tab shown above.
5.0  Create Welding Procedures for Canadian Welding Bureau (CWB) Certification

With this option welding procedure can be created for companies certified to CSA W47.1. Welding procedures can be created in CWB recommended welding procedure format.

Welding procedures can be created in accordance with following reference standards:

1.  CSA W47.1 / CSA W59
2.  CSA W47.1 / AWS D1.6
3.  CSA W47.1 / AWS D1.3
4.  CSA W47.1 / AWS D1.1

**CSA W47.1 / CSA W59:** Using this reference standard, welding procedures for carbon and low alloy steels can be created.

**CSA W47.1 / AWS D1.6:** Using this reference standard, welding procedures for stainless steel can be created.

**CSA W47.1 / AWS D1.3:** CSA W59 does not cover welding of base metal less than 3 mm (1/8"). For welding of base metal less than 3 mm (1/8”) provision of AWS D1.3 standard may be used. With this option welding procedures can be created in accordance with requirements of AWS D1.3.

**CSA W47.1 / AWS D1.1:** Using this option welding procedures can be created in accordance with AWS D1.1 standard. This option is mainly for Canadian Companies shipping fabricated products to their clients in United States.
We will go through step by step process of how to create Welding Procedures. Since procedure is same for all above reference standards, we will use CSA W47.1 / W59 reference standard for illustration. Before we proceed let’s take a look at some of the basic rules of the program that will enable the user to understand how program works.

**Basic Rules:**

- Program is designed to help end user create prequalified welding procedures. Where possible it will caution the end user when prequalified conditions are deviated.
- User will select the data from the program screen.
- For ease of operation and illustration, the variables are arranged into two columns, namely “Left Column” and “Right Column”.
- Data **must** be selected in the specified order for program to work. Data must be selected in the left column from top to bottom followed by right column. See Reference Information Section below, data selection order is displayed.
- Data will not appear in the variable drop down boxes if it is irrelevant. For example for SMAW process shielding gas selection will not be available.

The Program page is divided into following nine (9) sections:

a) **Reference Information:** As stated above user selects data in the top to bottom order, first from the left column and then from the right column.
Figure 12- Data Selection Order

b) **Base Metal Selection:** In this section select base material you want to weld.

c) **Preheat and Interpass Temperature:** Select Preheat and Interpass temperature corresponding to base material.
d) **Filler Metal**: Select filler metal information from this section. Only relevant data will be available for selection.

![Filler Metal Section](image)


e) **Shielding Gas**: Select shielding gas and other relevant information.

![Shielding Gas Section](image)
f) **Joint Design & Welding Parameters:**

Selection of data for this section of the program is illustrated using various examples below. Before we do that let us understand the function of following icons of this section:

- **Calculate Travel Speed**

- The program has built in arc travel speed calculator for commonly used weld types.
- To calculate arc travel speed, users are required to click on this icon. All left column and right column data must be selected before clicking “Calculate Travel Speed” button.
A new window displaying arc travel speed calculator will open up. User is required to select desired weld type and other information.

The program will calculate travel speed based on variables selected by the user.

User will then go back to welding procedure program screen to manually enter the arc travel speed obtained through this calculator.

The program has built in heat input calculator that calculates heat input based on current, voltage and arc travel speed values.

To calculate Heat Input, click on “Calculate Heat Input” button.

Current, Voltage and Arc Travel Speed (Travel Speed) must be selected prior to clicking “Calculate Heat Input Button”.

This button is provided to transfer welding data (thickness, weld size, side, layer, pass, current, wire feed speed, voltage, travel speed and heat input) into the welding parameter table.

Welding Parameter table only appears when “Add Side” button is clicked.

This button is provided to add more than one thickness for CJP and PJP groove welds and weld size for fillets and arc spot welds.

To enter more than one thickness or weld size for the welding procedure, click on this button.
Example 1: Groove Welds (CJP or PJP), welded from both Sides

Penetration: CJP (Complete Joint Penetration)

Weld Type: Select Weld type as required. In this case we need Groove weld, welded from both sides. So let’s say we select “Complete Penetration Bevel Groove Weld, Welded from both sides with backgouging”.

Groove Angle: Select desired groove angle from the list

Root Gap: Select desired value from the list

Radius (J-U): It is “NA” in this case

Thickness: Select desired value from the list

*Root Face: Select desired value from the list

Grove Depth: Select desired value from the list

Weld Size: Select desired value from the list

Side: Weld type selected is welded from both side 1 and side 2 of the weld joint. We select side 1 first.

Layer: Select number of layers for side #1

Pass: Select number of layers for side #1

Electrode/Wire Diameter: Select required size of electrode/wire

Current: Select current corresponding to electrode wire diameter selected

Wire Feed Speed: Select wire feed speed corresponding to current selected

Voltage: Select voltage corresponding to WFS selected
Calculate Travel Speed: Click this button to calculate travel speed. A new window displaying travel speed calculator will open up. Enter information as required in this calculator to determine travel speed. Enter manually travel speed value obtained from the calculator into the space provided beside “Calculate Travel Speed” button.

Click on the link” How to Use Travel Speed Calculator” to know more about how to use of Travel Speed Calculator.

Heat Input: If heat input is required, click on this button. Heat input will be calculated based on parameters selected and displayed in the box.

This concludes selection of all variables for welding from Side # 1. We also need to select same parameters for welding from side # 2. Before we do that we must transfer side #1 parameters into the welding parameter table. To do that click on “Add Side” button and all data selected will get transferred to welding parameter table. See below. For side 2, select layer and pass information. Electrode/Wire Diameter, Current, Wire Feed Speed and Voltage value remains same for side 2 as well and hence are not required to be selected. Go directly to “Calculate Travel Speed Button” to calculate travel speed to deposit side# 2 weld passes. Click “Calculate Heat Input “to calculate heat input value. To add side # 2 data into welding parameter table click “Add Side” button and all side #2 data selected above will get transferred to the table.

If you need more than one thickness, click “Add More Thickness/Weld Size” button on the left. All fields including thickness and onwards will turn blank. Populate data as stated above for other thicknesses. When welding data for all thicknesses have been selected and transferred to the welding parameter table go to next step “Sketch Selection”
Example 2: Groove Welds (CJP or PJP), welded from one Side

Process is same as described above, except you don’t need to select parameters for side#2.

Penetration: PJP (Partial Joint Penetration) or CJP (Complete Joint Penetration)

Weld Type: Select Weld type as required. In this case we need Groove weld, welded from one sides.

So for this example we select “Partial Penetration Bevel Groove Weld, Welded from one side”.

Groove Angle: Select desired groove angle from the list

Root Gap: Select desired value from the list

Radius (J-U): It is “NA” in this case

Thickness: Select desired value from the list

*Root Face: Select desired value from the list

Groove Depth: Select desired value from the list

Weld Size: Select desired value from the list

Side: Weld type selected is welded from only one side. We need to select welding data for side #1 only.

Layer: Select number of layers for side #1

Pass: Select number of layers for side #1

Electrode/Wire Diameter: Select required size of electrode/wire

Current: Select current corresponding to electrode wire diameter selected

Wire Feed Speed: Select wire feed speed corresponding to current selected
Voltage: Select voltage corresponding to WFS selected

Calculate Travel Speed: Click this button to calculate travel speed. A new window displaying travel speed calculator will open up. Enter information as required in this calculator to determine travel speed. Enter manually travel speed value obtained from the calculator into the space provided beside “Calculate Travel Speed” button.

Click on the link” How to Use Travel Speed Calculator” to know more about how to use of Travel Speed Calculator.

Heat Input: If heat input is required, click on this button. Heat input will be calculated based on parameters selected and displayed in the box.

This concludes selection of all variables for welding from Side # 1. Since we don’t need to weld from Side # 2 of the joint we will go ahead with transferring data to “Welding Parameter Table”. To do that click on “Add Side” button and all data selected will get transferred to welding parameter table. See below.

If you need more than one thickness, click “Add More Thickness/Weld Size” button on the left. All fields including thickness and onwards will turn blank. Populate data as stated above for other thicknesses. When welding data for all thicknesses have been selected and transferred to the welding parameter table go to next step “Sketch Selection”

*Root Face: Please note Root Face value once selected will freeze for all thicknesses. Currently there is no provision in the program to incorporate individual Root Face values for each thickness. However there are more than one possible combination of Root Face and hence Groove Depth and Weld Sizes are available. User can create welding procedure for each of the thickness, groove depth and weld size combination separately.
Example 3: Fillet Weld or Arc Spot Weld

Process is same as described above, except you don’t need to select parameters for side#2.

Penetration: Fillet or Arc Spot

Weld Type: Select Weld type as required. In this case we will select weld type as fillet.

Groove Angle: It is “NA” in this case

Root Gap: It is “NA” in this case

Radius (J-U): It is “NA” in this case

Thickness: It is “NA” in this case

Root Face: It is “NA” in this case

Grove Depth: It is “NA” in this case

Weld Size: Select desired value from the list

Side: Weld type selected is welded from only one side. We need to select welding data for side #1 only.

Layer: Select number of layers for side #1

Pass: Select number of layers for side #1

Electrode/Wire Diameter: Select required size of electrode/wire

Current: Select current corresponding to electrode wire diameter selected

Wire Feed Speed: Select wire feed speed corresponding to current selected

Voltage: Select voltage corresponding to WFS selected
Calculate Travel Speed: Click this button to calculate travel speed. A new window displaying travel speed calculator will open up. Enter information as required in this calculator to determine travel speed. Enter manually travel speed value obtained from the calculator into the space provided beside “Calculate Travel Speed” button.

Click on the link “How to Use Travel Speed Calculator” to know more about how to use of Travel Speed Calculator.

Heat Input: If heat input is required, click on this button. Heat input will be calculated based on parameters selected and displayed in the box.

This concludes selection of all variables for welding from Side # 1. Since we don’t need to weld from Side # 2 of the joint we will go ahead with transferring data to “Welding Parameter Table”. To do that click on “Add Side” button and all data selected will get transferred to welding parameter table. See below.

If you are welding more than one weld size click “Add More Thickness/Weld Size” button on the left. All fields including thickness and onwards will turn blank. Populate data as stated above for other weld sizes. When welding data for all weld sizes have been selected and transferred to the welding parameter table go to next step “Sketch Selection”

g) Sketch: Select desired sketch from the list of sketch/es.
h) **Remarks:** Users don’t have to select any data in this box. All relevant remarks will be populated by the program depending on variables selected above.

![Remarks Section]

i) **Submit / Rest Button:** After all data have been selected, click submit button to generate Welding Procedure Datasheet. To clear all data click “Reset” button.

![Submit and Reset Buttons]
6.0  Create Welding Procedures in American Welding Society Suggested format

Welding Procedures can also be prepared in accordance with AWS D1.1, AWS D 1.6 and D1.3 codes in AWS recommended format.

To create welding procedures in above format, users are required to click on “AWS” tab of the program screen. Steps to create welding procedure are same as illustrated above.

7.0  Edit Welding Procedure

This program feature is provided to edit or revise welding procedure created. To use this feature, go to “My Access” tab at the top of the screen and click on “Edit/View Previous Welding Procedure” tab.

Figure 13- Edit / View Previous Welding Procedure
“Edit” Function:

This function is provided to edit or revise previous welding procedure. The welding procedure number will not change. User can change the revision number of the procedure.

“Edit & Create New “ Function:

This function is provided to create new welding procedure from previously created one. This saves time and effort to create new welding procedure requiring same parameters. This function is mainly useful for CWB retained engineers.

CWB Retained engineers can use welding procedure created for one client to create same one for another client saving time and effort.
Upon clicking the “edit” link as shown above, welding procedure program page will open and user can change data as required. **Do not forget to click submit button.** Changes will not be saved or welding procedure will not generate until submit button is hit.

### 8.0 Welding Procedure Specification (Only for CWB Certified Company)

To create Welding Procedure Specification (WPS), following steps identified below:

1. Click on “Create New Welding Procedure” tab on the “My Access” page (Figure 7)
2. Select “CWB” icon (Figure 11)
3. On the screen click on “Welding Procedure Specification “icon on top right hand corner. (Figure 14)
4. Click on the required welding procedure specification link
5. A PDF file of the selected welding procedure specification will open , fill in “Revision “ and Company Name and Address details in the boxes and save the document on your computer.
Figure 14- Create Welding Procedure Specification

Figure 15- Select Welding Procedure Specification
Figure 16- Information Required for Welding Procedure Specification