

ProWrite D1

Welding Documentation Software

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CEI ONLINE

This software manual is only a small part of the Computer Engineering, Inc., experience. From documentation to social media, CEI has an expansive online presence.



CEI can be found at facebook.com/computer.engineering.inc and as [@ComputerEng](https://twitter.com/ComputerEng) on Twitter. Videos are posted on the CEI channel at youtube.com/user/ComputerEngInc. All of our documentation can be accessed via our Documentation Portal at help.computereng.com. Release notes and other information are posted on our blog at computerengineeringinc.wordpress.com. And you can always visit us at computereng.com.

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GENERAL ASSISTANCE

The CEI Portal

Summary:

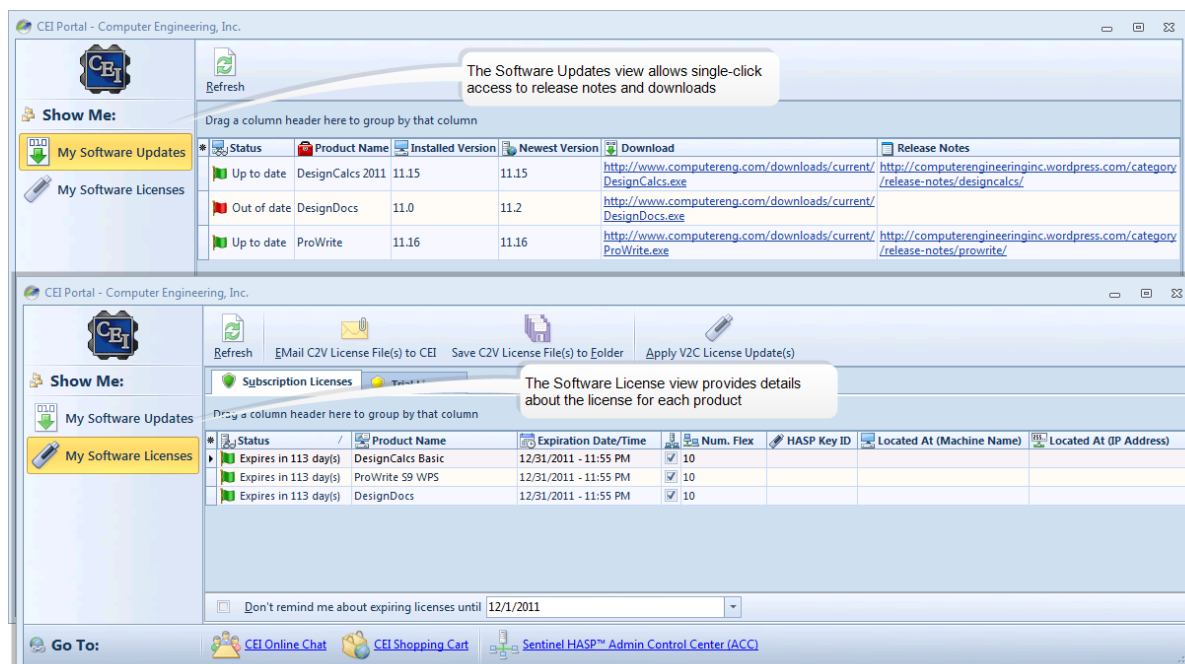
This article will familiarize you with Computer Engineering's software update portal. The portal provides notifications of upcoming expirations and makes downloading updates quick and easy.

Detailed Information:

The software portal is installed with your CEI software. It runs minimized in the taskbar and regularly checks for updates. When an update for your installed software is available, the portal provides notification. Downloading the update is as simple as clicking the link in the portal interface. Release notes that detail the content of each update are also available.



Details about your CEI software licenses can also be accessed through the portal. On the Software License view, you can see which licenses are expired and how much time you have left on the others. The portal will notify you of upcoming expirations. You can choose to not be reminded until after a certain date by selecting the checkbox on the bar near the bottom that says "Don't remind me..." and entering a date. The software portal will not send any reminders until after the date entered even if licenses expire during this period. To ensure uninterrupted productivity, we recommend that you do not turn off the portal reminders.



The software portal makes updating and licensing your software simple and straightforward. If you do have difficulty, you can use the portal to contact CEI through our online chat. Occasionally we may ask that you send us a specific license file - the portal also makes this easy. Click the "Email C2V License Files to CEI" button and you're done.

Troubleshooting: Licensing

Summary:

Our flexible licensing model increases the benefits of our software. Because the license can be placed anywhere on a network, the software can be used by those who need it on any computer in the network. Occasional issues do appear, however, so this article aims to walk you through those issues and their solutions.

Detailed Information:

Software is running in Demo mode

Check to be sure that your subscription has not expired. Access the CEI Portal ([show me](#)) and click on My Software Licenses. Green flags indicate current licenses, yellow flags indicate licenses that will expire soon, and red flags indicate licenses that have expired. If your license has expired, you may click the link at the bottom of the Portal and visit the CEI online store, or you may email our [sales department](#) to purchase a new license.

Only part of the software is available/working

If your company has an unequal number of licenses to certain modules, some users may find themselves operating in a partial demo mode. For example, if you have two licenses for DesignCalcs Basic but only one license for the Skirt Module, the first user to launch the program will use a license for DesignCalcs Basic and the license for the Skirt Module. The second user will only have access to the DesignCalcs Basic license, so the Skirt Module will operate in Demo mode.

To remedy this situation, both users should exit the program and the user that needs the Skirt Module license should then launch the software first.

Software was working when launched but is now in Demo mode/not working

Check the CEI Portal to make sure your subscription has not expired ([show me](#)). If your license is still valid, it may have timed out. If the software is launched but not used for an extended period of time, the license will be released back to the key so others may access it. Close and reopen the software to obtain another license from the key.

License key is plugged in locally but no licenses are visible

If your license key is plugged into your physical machine and no licenses are visible in the CEI Portal, you may need to install the HASP™ drivers. Click the link below and save the file.

ftp://ftp.aladdin.com/pub/hasp/Sentinel_HASP/Runtime_%28Drivers%29/Sentinel_HASP_Run-time_setup.zip

Locate and open the downloaded file on your computer. Double-click "HaspUserSetup.exe" and select Run to install the drivers.

License key is plugged in locally but a "404" error appears when accessing the HASP™ Admin Control Center

If your license key is plugged into your physical machine and your browser returns a "404" (page not found) error when you click the Sentinel HASP Admin Control Center button in the CEI Portal, you may need to install the HASP drivers. Follow the instructions above to do so.

Advanced Troubleshooting - HASP™ ACC configuration & Firewalls

The primary functionality available within the ACC is the configuration of access to CEI's Flex License Keys. By default, the keys will "broadcast" licenses to all systems on a network so any system on that network with CEI software and the Sentinel HASP driver installed will be capable of using the licenses. In a large network with multiple sub-networks or in the case of users remote accessing the network, additional configuration may be necessary.

Click the Sentinel HASP™ Admin Control Center (ACC) button at the bottom of the CEI Portal; on the page that loads, select Configuration from the Administration Options.

To connect to a license on another machine, select the Access to Remote License Managers tab. "Allow Access to Remote Licenses" and "Broadcast Search for Remote Licenses" should be selected. Select "Aggressive Search for Remote Licenses" to allow access to licenses blocked by Firewalls.

Enter the IP address of the system which has the physical key plugged into it. Press Enter and then type the machine name of that computer. Once the desired changes have been made, click Submit.

Hardware and software firewalls should be checked to verify that Port 1947 is open and accessible as well.

Troubleshooting Reports: Report Fonts are Crowded

Summary:

Occasionally the font on a report will appear smashed together when you create a PDF. This article will take you through the steps to adjust your computer's DPI and Display settings to resolve this issue.

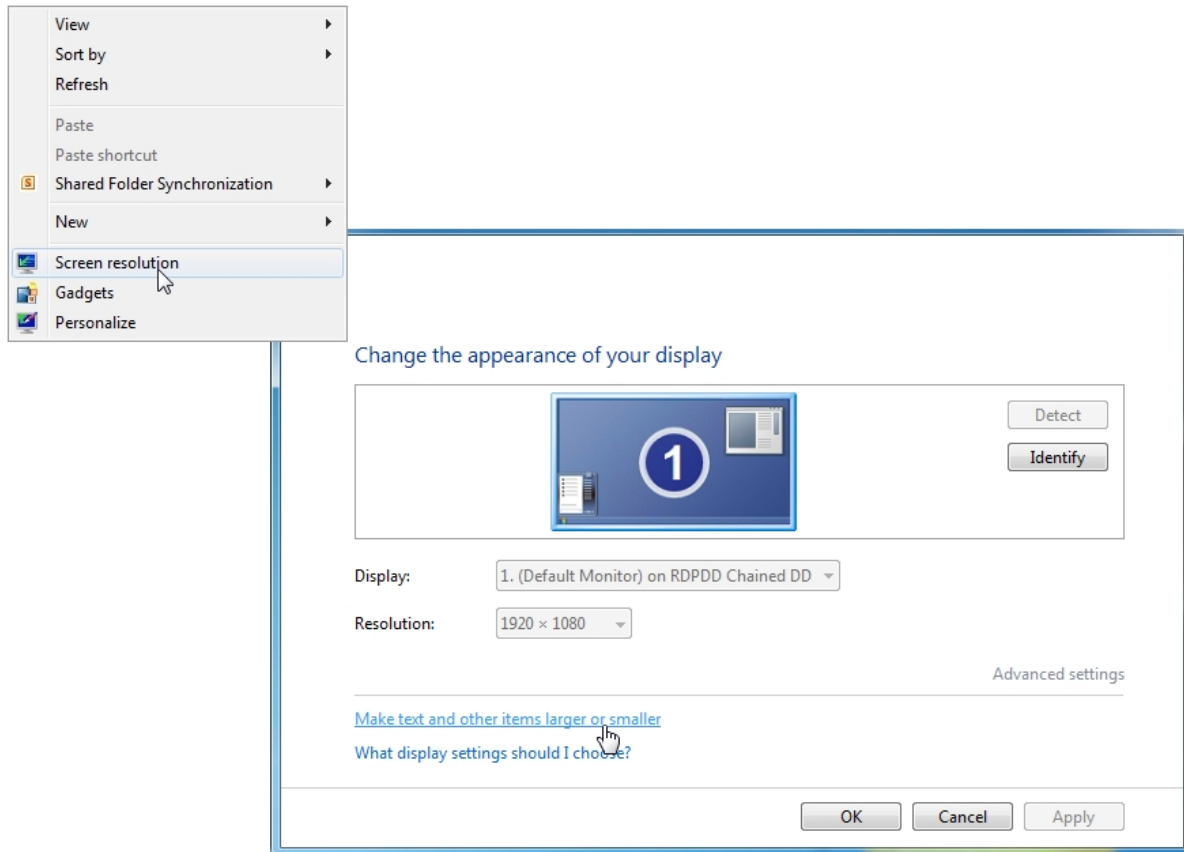
Detailed Information:

Please check your Display DPI and Resolution Settings. The DPI should be set at 100% or 96 DPI. The text size should be set to "Smaller" or 100%. Either one or both of these settings can

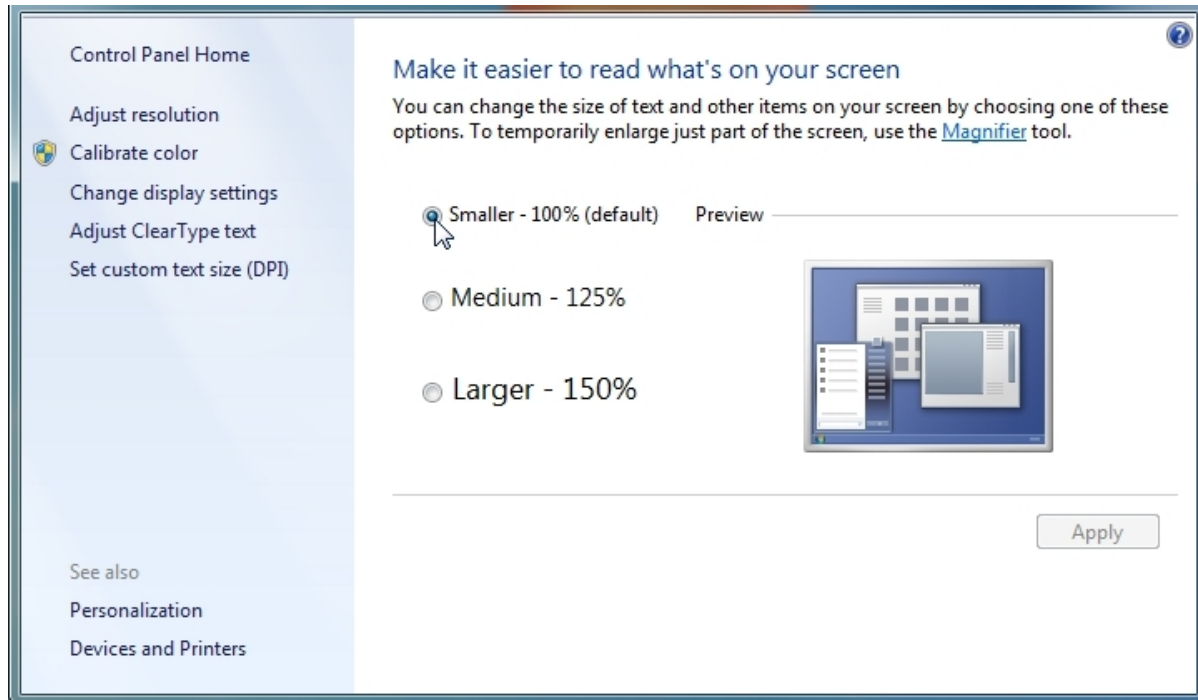
cause the creation of the PDF to be skewed or misaligned.

Windows 7/Vista

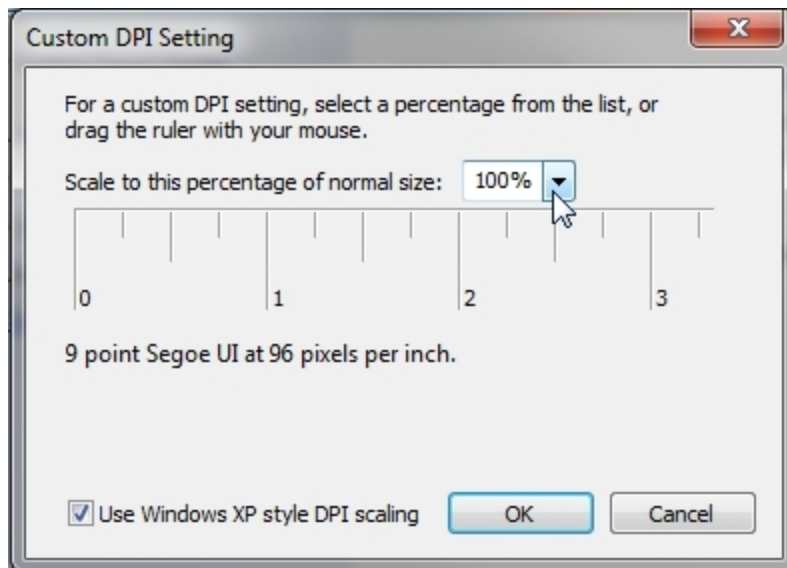
Right click on your Desktop and select the screen resolution option, then click the "Make text and other items larger or smaller" link.



Select "Smaller-100%" and click Apply. You may need to restart your machine for the changes to take effect.

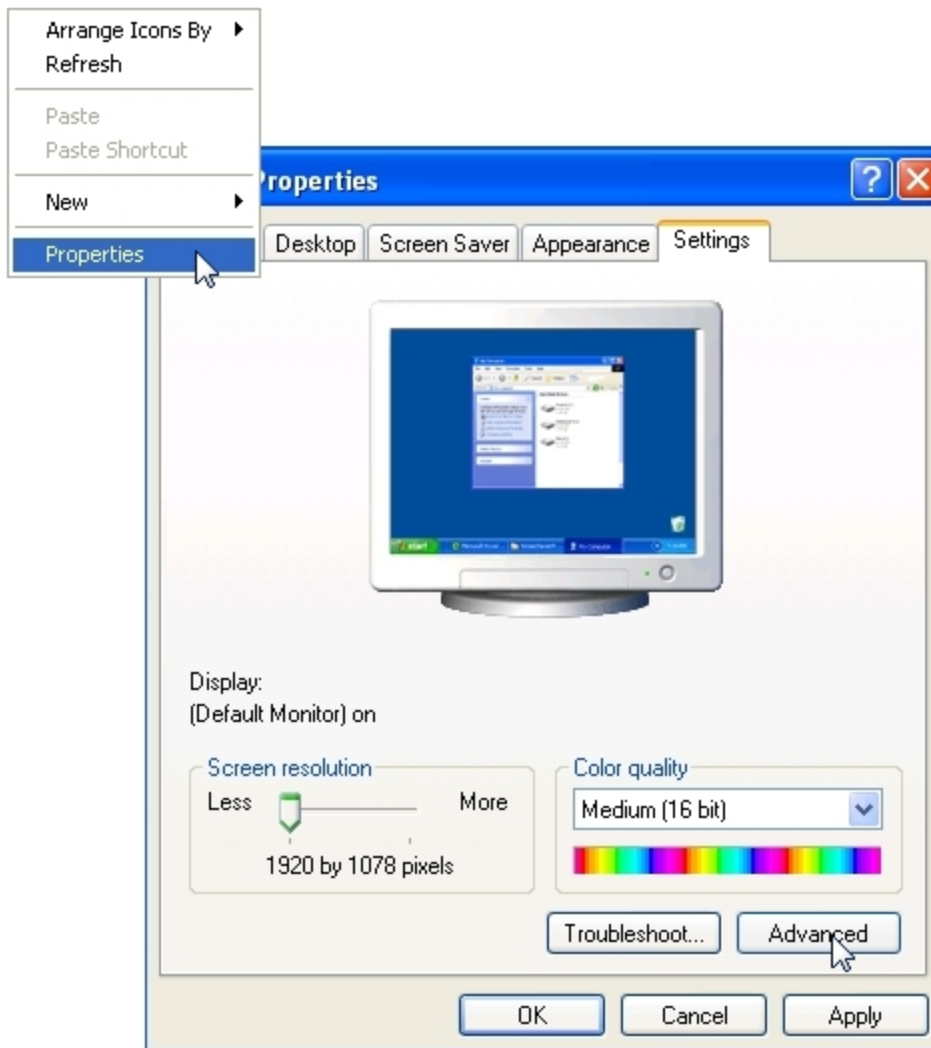


You will need to recreate any PDFs that were problematic. If the fonts are still crowded, return to the screen above and click the "Set custom text size (DPI)" link in the blue sidebar. This setting should also be at 100%.

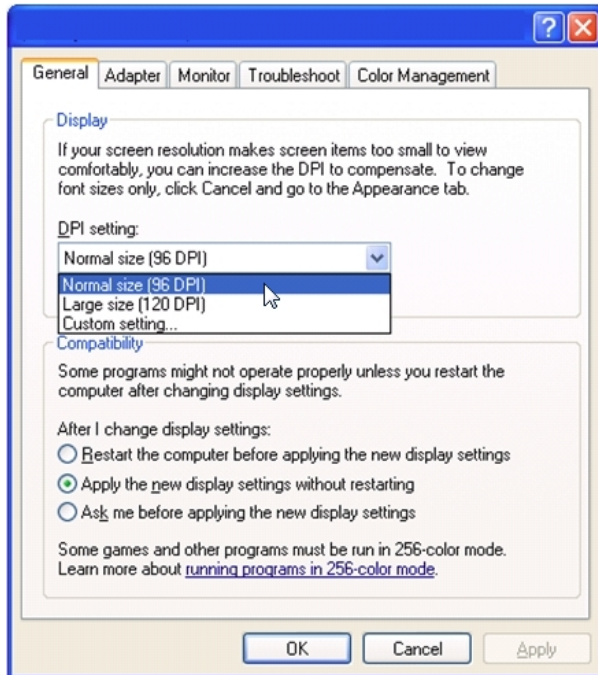


Windows XP

Right click on your desktop and select Properties. Click the Advanced button on the Settings tab.



On the General tab, change the DPI setting to "Normal size (96 DPI)".



You will need to recreate any PDFs that were problematic.

Tips: File Extensions

Summary:

This article lists the file extensions for the CEI programs that use a flat file system (instead of a single file database) and gives the most common/default location for the files. Your settings may place your files elsewhere.

Detailed Information:

DesignCalcs

*.**DesignCalcs** - Vessel files are stored with this extension. They are often located in C:\CEI Data\DesignCalcs 2011.

DcSupport.adb - This is a supporting database that is often located in C:\CEI Data\DesignCalcs 2011.

DesignDocs

*.**DesignDocs** - Design files are stored with this extension. These files are often located in the My Documents folder.

WeldDocs

The following file types are used for WeldDocs files. These files are often located in the My Documents folder.

*.welder	*.BS_EN_ISO_15609_1
*.API1104	*.BS_EN_281_1
*.AWS_D1_1_PQR	*.Section9WPS
*.AWS_D1_1_WPS	*.Section9WPQ
*.AWS_D1_1_WPQ	*.Section9WOPQ
*BS_EN_ISO_15614_1	*.Section9PQR

WeldToolbox

The following file types are used for WeldToolbox files. These files are often located in the My Documents folder.

*.wtcad	*.bmp
*.whclc	*.wtest

Temporary Folder

Occasionally a program will use the Windows Temp folder to store files (e.g., ProWrite export tables). This location typically looks like C:\Users\[user name]\AppData\Local\temp.

How To: Change the Data Path

Query:

How do I change the data path in ProWrite?

Response:

Save any changes to the open forms. ProWrite will need to restart to apply the new data path and any unsaved changes will be lost.

Click the Tools button on the main toolbar and select Change Datapath from the menu. The program will notify you that it must close to change the data path. Click the OK button to continue.

Navigate to the folder that contains the data file and click OK. If the selected folder does not contain the ProWriteData.adb file, the explorer dialog will reload. You may select Cancel to leave the data path unchanged. ProWrite will restart once the explorer dialog is closed whether the path has been changed or not.

You can confirm that the data path is correct by clicking Tools on the main toolbar and viewing the path listed next to Change Datapath.

How To: Adjust the Continuity Reports

Query:

My welders appear to be expired in my Continuity Reports even though I'm sure they are still qualified. How can I change this?

Response:

To fix this issue, check the Welder Defaults. On the Welder tab of Tools > Defaults, there is a section titled "Logs and Reports." If the "Use Qualification Expiration Date" box is selected, the welder of the processes on expiring WPQs will also be marked as expired. Clear this box if you want to decouple welder and WPQ expiration dates.

Tutorial: Entering a Welder

Summary:

This document will take you through the process of adding a welder to ProWrite.

Detailed Information:

To open the Add New Welder Information screen, either click the Welders button on the main toolbar and select New Welder, or click the New button on the main toolbar and select Welder under the Other category.

Enter the information requested in the fields. The Stamp Number will also act as the Welder's unique ID number. The Social Security Number and Hourly Rate fields are optional. The Hourly Rate field integrates with CEI's [Weld Estimation software](#).

Once the top section has been completed, the welder can be saved and the tabs can be accessed. Continuity will not be available until a WPQ has been created for the welder.



Scan this code or click [here](#)
to view the related video

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AWS WELDING PROCEDURE SPECIFICATION (WPS)

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WPS Properties

WPS Information

WPS number: Enter a unique number for this WPS. Important variables in the test may be encoded in the WPS number, depending on the classification system used.

WPS date: The date the original WPS was created.

Revision number: QW-200.1(c) allows a WPS to be changed provided the changes are documented by revision. Each revision to a WPS should be documented with a revision number.

Revision date: The date of the latest revision.

System of units: Select either English or Metric units.

Code year: Select the Edition/Addenda of the AWS D1 Code.

Weld type: Select the weld type allowed with this WPS.

Include Optional notes: One or more pages of notes can be added to allow for the inclusion of additional information with the WPS. These pages will print just before the test results and will be numbered as part of the permanent document.

Qualification type: Code checking can be reduced or disabled through this drop-down. Once code checking has been reduced or turned off, it cannot be turned on again or returned to its previous level for that WPS.

Supporting PQR(s): The PQR(s) that support this WPS. If the WPS is created from an existing PQR, the number will be automatically inserted into this field. Code checking must be disabled to edit this field. To enter more than one PQR, the numbers must be formatted **PQR##1** , **PQR##2** and so on. Be sure to enter a space on both sides of the comma.

Process Information

Process: When creating a prequalified WPS, select the process and method(s) used. When creating a WPS from a PQR, the process will be transferred from the PQR.

Signatures

Prepared By: Enter the name of the document preparer and select an electronic signature. Once one or more signatures have been added to the document, the data cannot be changed until the signatures are removed.

Title: Enter the job title of the preparer.

Base Metals

Base Metals

Base Metal: Enter the base material used in the test. This is the metal or alloy that is welded, brazed, or cut. Most related fields will be automatically completed if the material is selected from the *Material Browser*. Selecting a material as the "Base Metal 1" will select that material for "Base Metal 2" as well. However, another material may then be selected or entered independently for either field.

Group: This field will be automatically completed based on the chosen material, however a different Group Number may be manually selected.

Thicknesses: The minimum and maximum thickness in the Groove, Fillet, and Plug/Slot fields default to their qualified ranges. These values may be reduced within the qualified range.

Diameter: The pipe diameter defaults to the qualified minimum and maximum ranges. These values may be reduced within the qualified range.

Base Metal notes: Enter additional notes about the base metal.

Preheat

Minimum preheat temperature: The minimum temperature in the weld joint preparation immediately prior to the welding; in the case of multiple pass welds, this refers to the minimum temperature in the section of the previously deposited weld metal immediately prior to welding.

Min. interpass temperature: The lowest temperature in the weld joint immediately prior to welding; in the case of multiple pass welds, this refers to the lowest temperature in the section of the previously deposited weld metal immediately before the next pass is started.

Max. interpass temperature: The highest temperature in the weld joint immediately prior to welding; in the case of multiple pass welds, this refers to the highest temperature in the section of the previously deposited weld metal immediately before the next pass is started.

Preheat notes: Enter additional notes about the preheat process.

Postweld Heat Treatment

PWHT: Select whether or not a post-weld heat treatment will be performed.

Temperature: Enter the temperature of the post weld heat treatment.

Holding time: Enter the actual post weld heat treatment time. This should be expressed in hours and decimals; for example, record a PWHT time of 4 hours and 15 minutes as 4.25.

PWHT notes: Enter additional notes about the PWHT that should be included with this WPS.

Joint Design

AWS Joint designation: This field is only required when creating a Prequalified WPS and will be automatically completed when the joint is selected from the *Joint Browser*.

Groove type: Select the groove type. If the groove type cannot be changed, this field is locked according to the AWS Joint Designation.

Joint type: Select the joint type. The options may be limited by the selection in the "AWS Joint Designation" field.

CJP: Select this box to indicate complete joint penetration. This may be disabled depending on the "AWS Joint designation" selection.

Double Welded: Select this box if the weld joint was double welded.

Backing used: Select the box to indicate that backing was used on this joint. If backing was used, enter the backing material in the associated "Material" field.

Back gouging: Select the box to indicate that back gouging was used on this joint. If back gouging was used, enter the method in the associated "Method" field.

Root Opening: Enter the area at the joint root between the pieces of metal being joined together.

Root Face: Enter the portion of the groove face within the joint root.

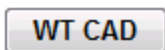
Groove Angle: Enter the total included angle of the groove between work pieces.

Groove Radius: Enter the radius used to form the shape of a J- or U-groove weld.


Weld Size Notes: When creating a prequalified WPS, this field will be populated according to the notes specified for the AWS Joint Designation. When creating a WPS from a PQR, this field is open for any notes pertaining to the weld size.

Joint Notes: Enter any notes about the joint design.

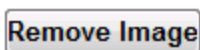
Joint Detail Image: Select a joint detail image. ProWrite provides a variety of joint detail images, but locally created images may also be used. Joint Detail Image files must be in bitmap (.bmp) format.

WT CAD

Click this button to launch the CAD program. This allows the user to create custom joint images and import them into ProWrite. If the CAD program is not installed, this will open an informational document about Computer Engineering's Welder's Toolbox suite.

Load Image

Insert an image into the WPS.

Remove Image

Remove the image from the WPS.

Process Data

Filler Metal

AWS classified filler metal: Select this box to indicate that the material used has been classified by AWS.

Filler metal used: For GTAW processes, this box indicates that a filler metal was used.

AWS classification: Enter the AWS Classification of the filler metal. If the filler metal is selected through the *Filler Metal Browser*, this will be entered automatically.

AWS specification: Enter the specification number of the filler. If the filler metal is selected through the Filler Metal Browser, this will be entered automatically.

F-Number: Enter the F-Number of this filler metal. This field will be automatically completed if a filler metal is selected from the *Filler Metal Browser*. The F-Number is used to group electrodes and welding rods based on their usability characteristics and determines the ability of welders to make satisfactory welds with a given filler metal.

Trade name: Enter the trade name for this filler metal.

Weld Size: Enter the size of the weld.

Wire feed: For GTAW processes, select whether cold or hot wire feed was used. This cannot be changed once the procedure is qualified.

Supplemental filler metal: If a supplemental filler metal was not used, enter None in this field. Otherwise, enter the trade name or the chemical analysis of the supplementary filler metal used.

Shielding

Shielding gas: A protective gas used to prevent or reduce atmospheric contamination. The shielding gas may be selected or entered manually. Custom gases and their compositions may be entered into *Tools > Support Database > Gases*; doing so will add them to the options available.

Flow rate: The rate at which gas is being administered into the system.

Gas cup size: A gas cup is the device at the exit end of the torch or gun that directs shielding gas. Enter the actual size of this device used during the weld test.

Electrode-flux: Enter the classification of the flux and filler metal in combination.

Flux trade name: Enter the trade name for the flux. This field is essential if the filler metal and the flux have not been classified in combination with each other (i.e., F7A2-EM12K).

Flux from recrushed slag: For SAW processes, indicate whether or not the flux was from recrushed slag.

Position

Groove Position: The qualified position(s) in which the groove will be welded.

Fillet Position: The qualified position(s) in which the fillet will be welded.

Progression: For vertical welds, select the direction the welding was performed.

Notes: Enter any notes pertaining to the position or the progression of the welding procedure.

Electrical Characteristics

Current/polarity: Enter the current type and polarity. This may also be selected from the drop-down.

Transfer mode: For GMAW/FCAW processes, select the transfer mode.

Heat input: Calculated using an equation¹ that requires the inputs of voltage, amperage, and travel speed.

Output: Select whether Constant Voltage or Constant Current was used. This is only required for GMAW or FCAW processes.

Tungsten type: For GTAW processes, indicate the type of tungsten electrode used.

Tungsten size: For GTAW processes, enter the size of the tungsten electrode used.

Power source model: Enter the model of the power source.

Technique

Interpass cleaning: Enter the method of cleaning.

Total number of passes: Record the total number of passes made in the process.

Peening: The mechanical working of metals using impact blows.

1 $\frac{(V * A * 60)}{TS}$

Number of electrodes: Enter the number of electrodes.

Passes per side: For groove and fillet welds, select single pass, multiple pass, or a combination of the two.

Contact tube to work: Enter the contact tube to work distance recorded during testing. This field only applies to SAW and GMAW/FCAW processes.

Bead type: Select the bead type. A stringer bead is made without appreciable weaving motion; a weave bead is made with transverse oscillation.

Travel Angle: Enter the travel angle. This is only required for machine or automatic SAW processes.

Oscillation: An alternating motion relative to the direction of travel of welding, brazing, or thermal spray device. This field applies to machine and automatic processes.

Angle Normal to Travel: This field is required for machine or automatic SAW processes.

Electrode Spacing: For machine and automatic processes, enter the spacing of the electrodes.

Process Notes

Enter any notes about the process.

Weld Details

Pass or Weld Layer(s): Specify which passes or layers are being described (e.g., "1", "1-7", etc.).

Weld Process: This will default to the weld process of the WPS.

Size: Enter the size of the pass or weld layer.

Current/polarity: Enter the current type and polarity. This may also be selected from the drop-down.

Amperage used: Enter the amps recorded for the electrodes or filler metals used with this process.

Wire feed speed: For semiautomatic, automatic, or machine processes, enter the speed of the wire feed used.

Voltage used: Enter the voltage used in the test.

Travel Speed: Enter the travel speed recorded for the electrodes or filler metal used in this process.

AWS PROCEDURE QUALIFICATION RECORD (PQR)

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PQR Properties

PQR Information

PQR number: Enter the identification number to associate with this PQR. This number will be displayed on all pages of the PQR document.

Test date: The date of the test may be manually entered or selected from the calendar.

System of units: Select either English or Metric units.

WPS number: A WPS number is not required on the PQR. When the WPS number field is left blank and a WPS is printed with supporting PQRs, the WPS numbers are automatically inserted into the space provided on the PQR. A WPS number may be entered if it is required by the inspection agency or company standards. Once the WPS number is entered only that WPS number will be printed on the PQR.

Code year: Select the Edition/Addenda of the AWS D1 Code used in the test.

Weld Type: Select the weld type used in this test.

Include Optional notes: One or more pages of notes can be added to allow for the inclusion of additional information with the PQR. These pages will print just before the test results and will be numbered as part of the permanent document.

Use code assistance: Clear this box to disable Code checking for this PQR. Once Code checking is turned off, it cannot be turned back on for the current PQR. A WPS or BPS cannot be created from a PQR that has Code checking disabled.

Process Information

Process: Select the process for this PQR.

Joint Design

Groove/Fillet type: Select the type of groove or joint used in the test.

CJP: Select this box to indicate a complete-joint-penetration groove weld.

Product form: Select the material form that will be used for the PQR test. For Pipe, the size and schedule can be selected from the *Pipe/Tube Browser* on the Base Metals tab (See page 9).


Double Welded: Select this box if the weld joint was double welded.

Backing used: Select this box to indicate that backing was used.

Material: Enter the backing material used.

Back gouging: Select this box to indicate that back gouging was used.

Method: Enter the method of back gouging used.

 These input fields are for nonessential or additional information variables. The Code does not require the user to document these variables on the PQR and these variables are not listed on the suggested format for PQRs. If the input field is left blank, the label and output location for this variable will not appear on the PQR document.

Root Opening: Enter the area at the joint root between the pieces of metal being joined together.

Root Face: Enter the portion of the groove face within the joint root.

Groove Angle: Enter the total included angle of the groove between work pieces.

Groove Radius: Enter the radius used to form the shape of a J- or U-groove weld.

Notes: Enter any additional notes about the groove or joint.

Joint Detail Image: Select a joint detail image. ProWrite provides a variety of joint detail images, but locally created images may also be used. Joint Detail Image files must be in bitmap (.bmp) format.

WT CAD

Click this button to launch the CAD program. This allows the user to create custom joint images and import them into ProWrite. If the CAD program is not installed, this will open an informational document about Computer Engineering's Welder's Toolbox suite.

Load Image

Insert an image into the PQR.

Remove Image

Remove the image from the PQR.

Base Metals

Base Metals

Base Metal: For a Plug weld, these fields will be labeled "Joining Plate" and "Backing Plate" instead of Base Metals 1 and 2. Enter the base material used in the test. This is the metal or alloy that is welded, brazed, or cut. Most related fields will be automatically completed if the material is selected from the *Material Browser*. Selecting a material as the "Base Metal 1" will select that material for "Base Metal 2" as well. However, another material may then be selected or entered independently for either field.

Group: This field will be automatically completed based on the chosen material, however a different Group Number may be manually selected.

Tensile Strength: Enter the tensile strength of the base metal. This field will be automatically completed if the material is selected from the *Material Browser*.

Thickness: Enter the coupon thickness used in the test. If a pipe is selected from the *Pipe/Tube Browser*, the nominal thickness of the pipe will be automatically inserted into the base material thickness field.

Diameter: If Pipe was selected as the "Product Form" (View PQR Properties), enter the diameter of the pipe in this field. If a pipe is selected from the *Pipe/Tube Browser*, the diameter will be automatically inserted.

Base Metal notes: Enter additional notes about the base metal.

Preheat

Minimum preheat temperature: The minimum temperature in the weld joint preparation immediately prior to the welding; in the case of multiple pass welds, this refers to the minimum temperature in the section of the previously deposited weld metal immediately prior to welding.

Min. interpass temperature: The lowest temperature in the weld joint immediately prior to welding; in the case of multiple pass welds, this refers to the lowest temperature in the section of the previously deposited weld metal immediately before the next pass is started.

Max. interpass temperature: The highest temperature in the weld joint immediately prior to welding; in the case of multiple pass welds, this refers to the highest temperature in the section of the previously deposited weld metal immediately before the next pass is started.

Preheat notes: Enter additional notes about the preheat process.

PWHT

PWHT: Select whether a heat treatment was performed subsequent to welding.

PWHT temperature: Enter the temperature of the post weld heat treatment.

PWHT holding time: Enter the actual post weld heat treatment time. This should be expressed in hours and decimals; for example, record a PWHT time of 4 hours and 15 minutes as 4.25.

PWHT notes: Enter additional notes about the PWHT that should be included with this PQR.

Process Data

Filler Metal

AWS classified filler metal: Select this box to indicate that the material used has been classified by AWS.

Filler metal used: Select this box if a filler metal was used.

AWS classification: Enter the AWS Classification of the filler metal. If the filler metal is selected through the *Filler Metal Browser*, this will be entered automatically.

AWS specification: Enter the specification number of the filler. If the filler metal is selected through the *Filler Metal Browser*, this will be entered automatically.

F-Number: Enter the F-Number of this filler metal. This field will be automatically completed if a filler metal is selected from the *Filler Metal Browser*. The F-Number is used to group electrodes and welding rods based on their usability characteristics and determines the ability of welders to make satisfactory welds with a given filler metal.

Trade name: Enter the trade name for this filler metal.

Weld Size: Enter the size of the weld.

Wire feed: For GTAW processes, select whether cold or hot wire feed was used. This cannot be changed once the procedure is qualified.

Supplemental filler metal: If a supplemental filler metal was not used, enter None in this field. Otherwise, enter the trade name or the chemical analysis of the supplementary filler metal used.

Shielding

Shielding gas: A protective gas used to prevent or reduce atmospheric contamination. The shielding gas may be selected or entered manually. Custom gases and their compositions may be entered into *Tools > Support Database > Gases*; doing so will add them to the options available.

Flow rate: The rate at which gas is being administered into the system.

Gas cup size: A gas cup is the device at the exit end of the torch or gun that directs shielding gas. Enter the actual size of this device used during the weld test.

Electrode-flux: Enter the classification of the flux and filler metal in combination.

Flux trade name: Enter the trade name for the flux. This field is essential if the filler metal and the flux have not been classified in combination with each other (i.e., F7A2-EM12K).

Flux from recrushed slag: For SAW processes, indicate whether or not the flux was from recrushed slag.

Position

Position: The relationship between the weld pool, joint, joint members, and weld heat source during welding. Select the position used when qualifying the weld.

Progression: For vertical welds, select the direction the welding was performed.

Notes: Enter any special notes regarding the position of the coupon.

Electrical Characteristics

Current/polarity: Enter the current type and polarity. This may also be selected from the drop-down.

Transfer mode: For GMAW/FCAW processes, select the transfer mode.

Heat input: Calculated using an equation¹ that requires the inputs of voltage, amperage, and travel speed.

Output: Select whether Constant Voltage or Constant Current was used. This is only required for GMAW or FCAW processes.

Tungsten type: For GTAW processes, indicate the type of tungsten electrode used.

Tungsten size: For GTAW processes, enter the size of the tungsten electrode used.

Power Source: Enter the name of the power source.

Technique

Interpass cleaning: Enter the method of cleaning.

Total number of passes: Record the total number of passes made in the process.

Peening: The mechanical working of metals using impact blows.

Number of electrodes: Enter the number of electrodes.

Passes per side: For groove and fillet welds, select single pass, multiple pass, or a combination of the two.

Contact tube to work: Enter the contact tube to work distance recorded during testing. This field only applies to SAW and GMAW/FCAW processes.

1 $\frac{(V * A * 60)}{TS}$

Bead type: Select the bead type. A stringer bead is made without appreciable weaving motion; a weave bead is made with transverse oscillation.

Travel Angle: Enter the travel angle. This is only required for machine or automatic SAW processes.

Oscillation: An alternating motion relative to the direction of travel of welding, brazing, or thermal spray device. This field applies to machine and automatic processes.

Angle Normal to Travel: This field is required for machine or automatic SAW processes.

Process Notes

Enter any notes about the process.

Weld Details

Pass or Weld Layer(s): Specify which passes or layers are being described (e.g., "1", "1-7", etc.).

Weld Process: This will default to the weld process of the PQR.

Size: Enter the size of the pass or weld layer.

Current/polarity: Enter the current type and polarity. This may also be selected from the drop-down.

Amperage used: Enter the amps recorded for the electrodes or filler metals used with this process.

Wire feed speed: For semiautomatic, automatic, or machine processes, enter the speed of the wire feed used.

Voltage used: Enter the voltage used in the test.

Travel Speed: Enter the travel speed recorded for the electrodes or filler metal used in this process.

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Welder

Name: Enter the welder's first name, middle initial, and last name into their respective fields. Include any applicable suffix (e.g. Jr., Sr., III) in the "Last Name" field.

Stamp Number: Enter the welder's Stamp number.

Welder SSN: Enter the Welder's Social Security Number.

Current Status: If a welder temporarily stops working ,change the status to Inactive or Unavailable. Doing so will keep the welder from appearing on Inspection Reports, Welder Qualification Reports, and WPS Qualification Reports. Toggle the display of inactive welders on the *Tools > Defaults > Welder* tab.

Welder ID: This is a required field. Each welder record must be unique so that the proper record is used throughout the program, therefore each record must have a unique Welder ID. This information may be automatically completed depending upon the settings on the *Tools > Defaults > Welder* tab.

Hourly Rate: This is not a required field. This field integrates with the Weld Estimation software. Visit the CEI website for more information.

Personal Information

Address

Enter the Welder's address in this section.

Current Status

Active Date: Enter the active date of the welder.

Inactive Date: Enter the inactive date of the welder. By default, inactive welders are not listed in reports. This can be changed in *Tools > Defaults > Welder*.

Location: Enter the welder's location (e.g., the site name, the city name, etc.). This field can be used to filter and sort the welder data. The label for this field can be changed in *Tools > Defaults > Welder*.

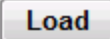
Foreman: Enter the welder's foreman. This field can be used to filter and sort the welder data. The label for this field can be changed in *Tools > Defaults > Welder*.

Union Local: Enter the local union number. This field is not required and will not be applicable for all welders.

Common Arc: Select this box to list the welder as a common arc welder. This will allow the welder to be viewed when running the Common Arc Continuity Report.


Welder Notes: Enter additional notes about this welder.

Welder Image: A welder image may be added to the documentation. The image must be added here on the welder information tab before the image can be attached to the document.

 Load an image into the welder record.

 Remove the image from the welder record.

Continuity Summary

 Information about a welder's qualified processes is displayed here. This information is drawn from a welder's WPQ records and history log.

Process: Displays the process and type this welder is qualified for.

Continuity Code: The qualification will be supported by either an ASME WPQ or an AWS WPQ.

Original Date: The date of the welder's original qualification for this process and type. For ASME and AWS records, this will be the test date for a WPQ. For Exact Match records, this is the weld date of the earliest history record for this process and type.

Weld Date: The weld date from the most recent qualifying history record. For ASME records, Manual and Semiautomatic types will update together, as will Machine and Automatic. For AWS records, all weld dates for each process will update regardless of type. Exact Match records will only be updated when the exact process/type pair is used.

Expiration Date: The amount of time allowed between welds before a welder's qualification on each process expires. The default value for this field is 6 months, but this can be adjusted in *Tools > Defaults > Welder*.

Job: The job number from the most recent qualifying history record. This field is optional and is used for tracking purposes only.

Witness: The individual signing off on the review. This field is optional and is used for tracking purposes only.

Inspection Data

Displays information about inspection results for each welder

Filter

Adjust the display of the inspection log. The results can be grouped by process, inspection type, and date (See page I).

Clear Filter

Click this button to remove the currently applied filter and display all fields for each result.

Process: The process and type that was inspected.

Inspection Type: The inspection method used.

Date: The date of the inspection.

Job: The job the welder was working on at the time of the inspection. This field is optional and is used for tracking purposes only.

Inspection length: The total weld length inspected. The label for this field can be changed in the Inspection defaults found in *Tools > Defaults > Welder*.

Inspection defects: The weld length that failed the inspection. The label for this field can be changed in the Inspection defaults found in *Tools > Defaults > Welder*.

Percentage of Failure: This is calculated by dividing the "Inspection length" by the "Inspection defects" and multiplying the result by 100.¹

Continuity/Inspection History Log

Process: The process and type that was welded during the Performance Qualification of the welder.

Weld Date: The date of the Performance Qualification of the welder.

Job: The job the welder was working on at the time of the inspection. This field will be automatically completed with the WPS number shown in the WPQ, however this value can be manually adjusted. This field is optional and is used for tracking purposes only.

Witness: The individual signing off on the review. This field is optional and is used for tracking purposes only.

Inspection Type: The inspection method used.

Inspection length: The total weld length inspected. The label for this field can be changed in the Inspection defaults found in *Tools > Defaults > Welder*.

¹ $\frac{\text{length}}{\text{defects}} \times 100$

Inspection defects: The weld length that failed the inspection. The label for this field can be changed in the Inspection defaults found in *Tools > Defaults > Welder*.

Operator Factor: The ratio of actual welding time to total work time. This field integrates with the Weld Estimation software. Visit the CEI website for more information.

CEI Integration

Process: The process and type that was welded during the Performance Qualification of the welder.

Operator Factor: The ratio of actual welding time to total work time. This field integrates with the Weld Estimation software. Visit the CEI website for more information.

Appendix I: Inspection Data Filter..... I

APPENDIX I: INSPECTION DATA FILTER

Set criteria to limit the number of records shown on the Welder Inspection Data tab (See page 15).

◆ The filter criteria will not change until the Welder Information screen is navigated away from or until the Clear Filter button is clicked.

Select from Process: Select this box to choose the processes to include in the filter.

Select from Inspection Type: Select this box to choose the type of inspections to include in the filter.

Group Results By

◆ Only welders who have inspection information will show on the final listing. For all summaries other than Inspections by Entry, only those records that have both length inspected and length defective information will be included.

Entry: Lists all inspection entries separately.

Month: Groups inspections by month. Sums the length inspected and length defective and displays the percentage of failure for each filtered group.

Quarter: Groups inspections by quarter. Sums the length inspected and length defective and displays the percentage of failure for each filtered group.

Year: Groups inspections by year. Sums the length inspected and length defective and displays the percentage of failure for each filtered group.

Inspection Type: Groups inspections by inspection type. Sums the length inspected and length defective and displays the percentage of failure for each filtered group.

Select Dates: Choose a range of dates to include in the filter.