



WeldPulse®

Welding Procedure Ready



Designed &
priced for
individuals



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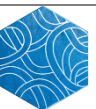
- Short intro
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- Filler Properties
- Train me[®]



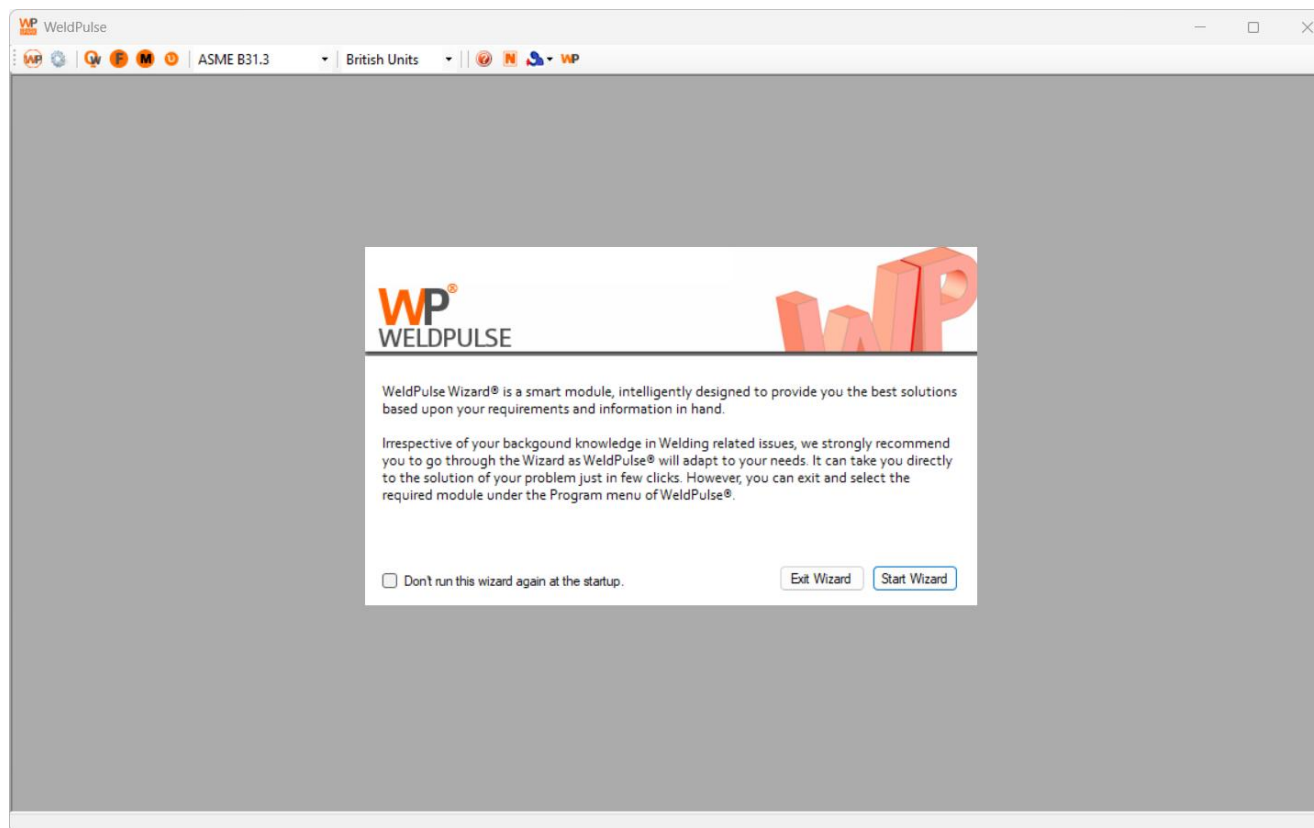
Short intro

WeldPulse[®] Spark Edition is designed for individual engineers working in petrochemical industries. It helps in taking welding decisions and provides you a competitive edge in your welding career. With features suiting the needs of an individual, WeldPulse[®] Spark Edition is a complete package to deal with ASME IX welding code requirements.

"WeldPulse Splash Screen"



When you run WeldPulse[®] the following window appears:



WeldPulse Wizard[®]

When you click **Next**, it takes your welding profile



WP[®]
WELDPULSE

My Welding Profile:

☐ I don't have any knowledge about welding. (Novice)

☐ I know the basics of welding. (Beginner)

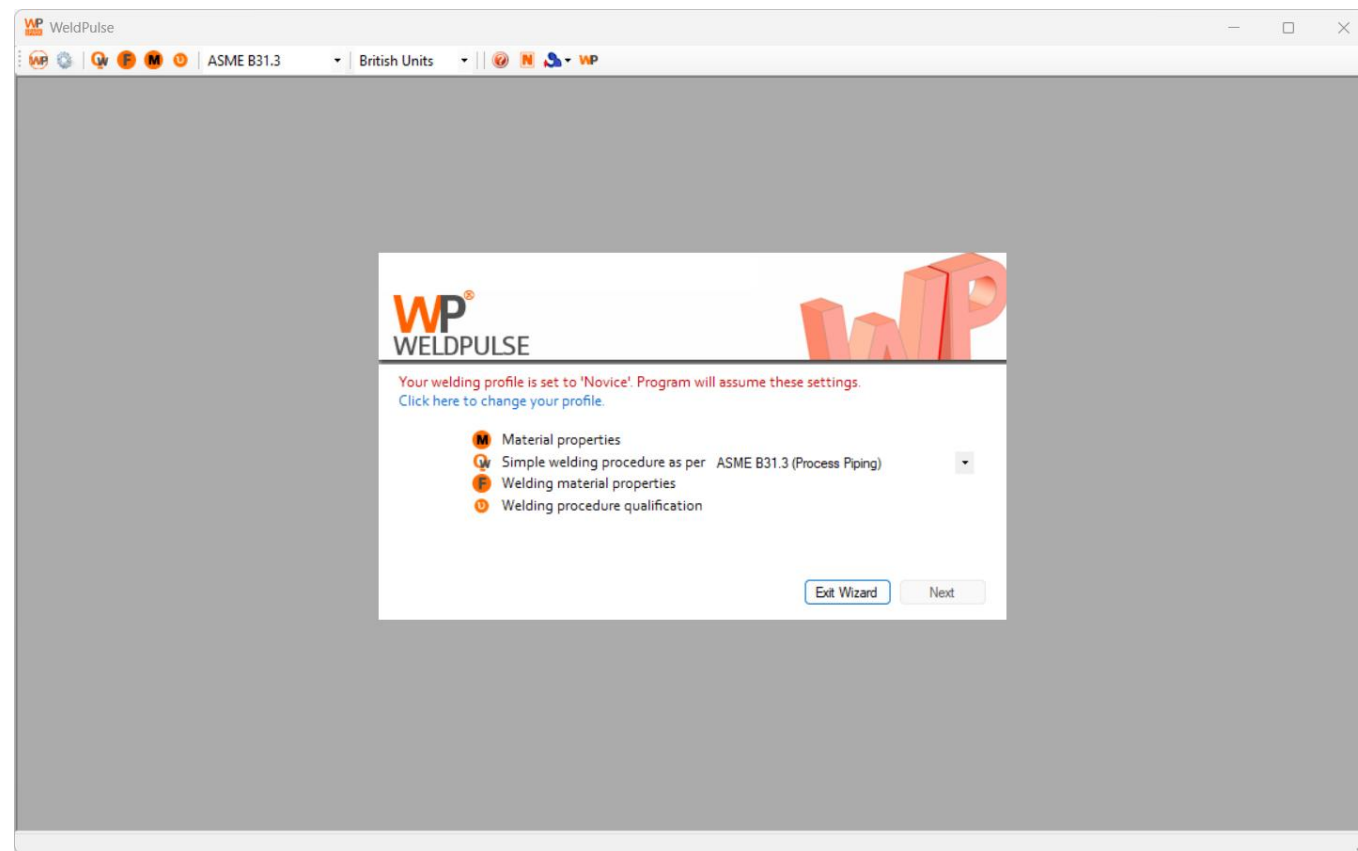
☐ I am a professional, it's my field. (Professional)

Exit Wizard Next

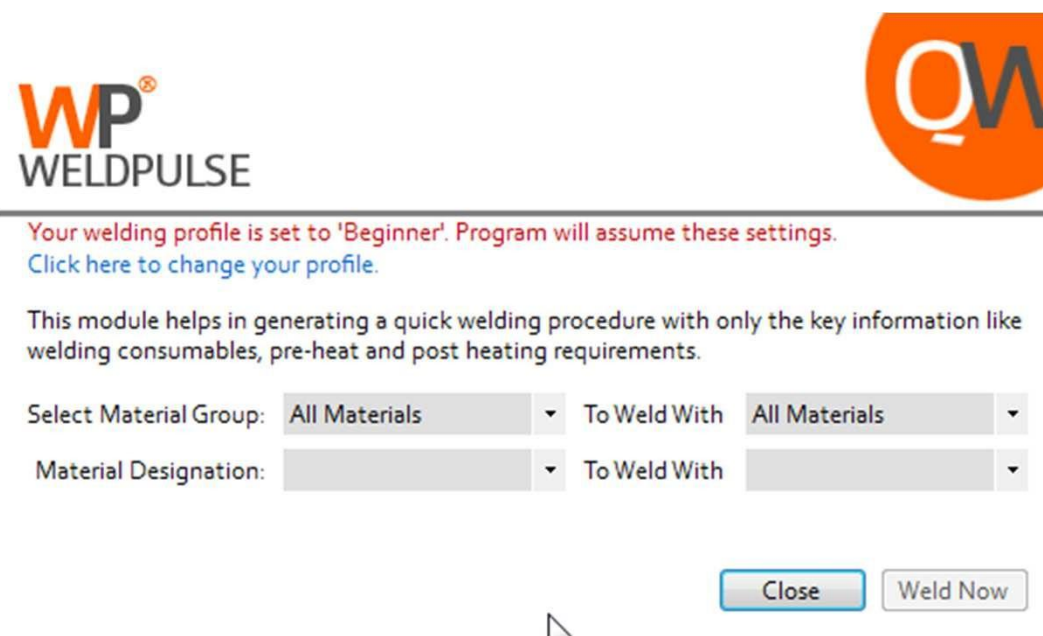
Profile settings customizes the inputs and results suiting your experience level in welding. Therefore, it is recommended to set your profile.



WeldPulse[®] presents you with modules suiting your welding profile



For example, click Quick Welding Procedure



WP[®]
WELDPULSE

QW

Your welding profile is set to 'Beginner'. Program will assume these settings.
[Click here to change your profile.](#)

This module helps in generating a quick welding procedure with only the key information like welding consumables, pre-heat and post heating requirements.

Select Material Group: All Materials ▼ To Weld With: All Materials ▼

Material Designation: ▼ To Weld With: ▼

Close Weld Now

Note: Modules including WPS, PQR, Ferrite Check, CE, HI , Properties, procedure & performance qualifications do not have any impact on profile settings however all these modules are available only in Arc Edition.





QuickWeld[®] is designed to provide you quick welding guidelines just by providing the materials information. You need to know about the construction code, materials to be welded and their joint thickness to make best use of QuickWeld

Inputs

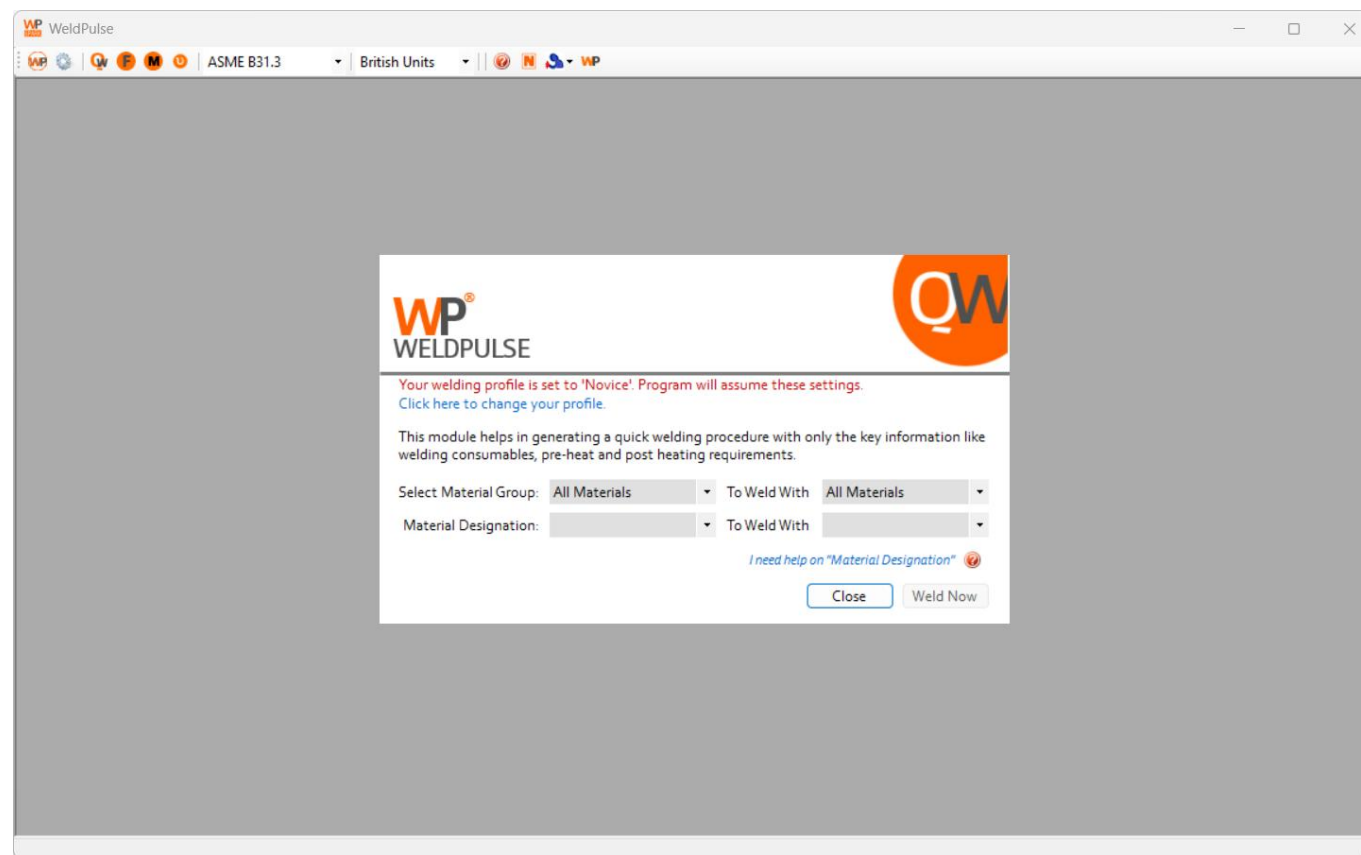
- Material information
- Construction code

Results (depends upon profile)

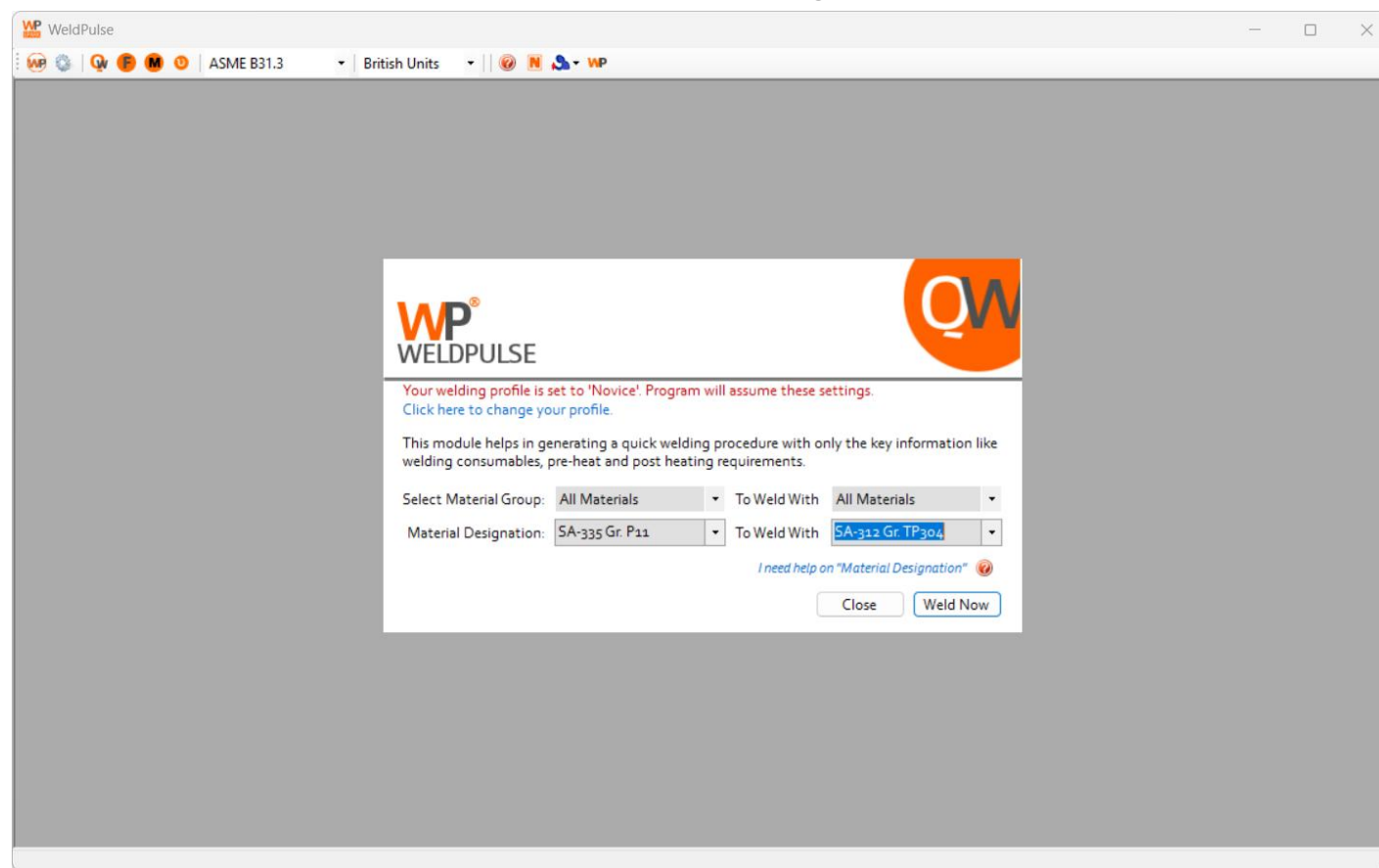
- Pre-heat
- Interpass
- Filler & electrode (GTAW & SMAW only)
- Post weld heat treatment
- General comments, if any



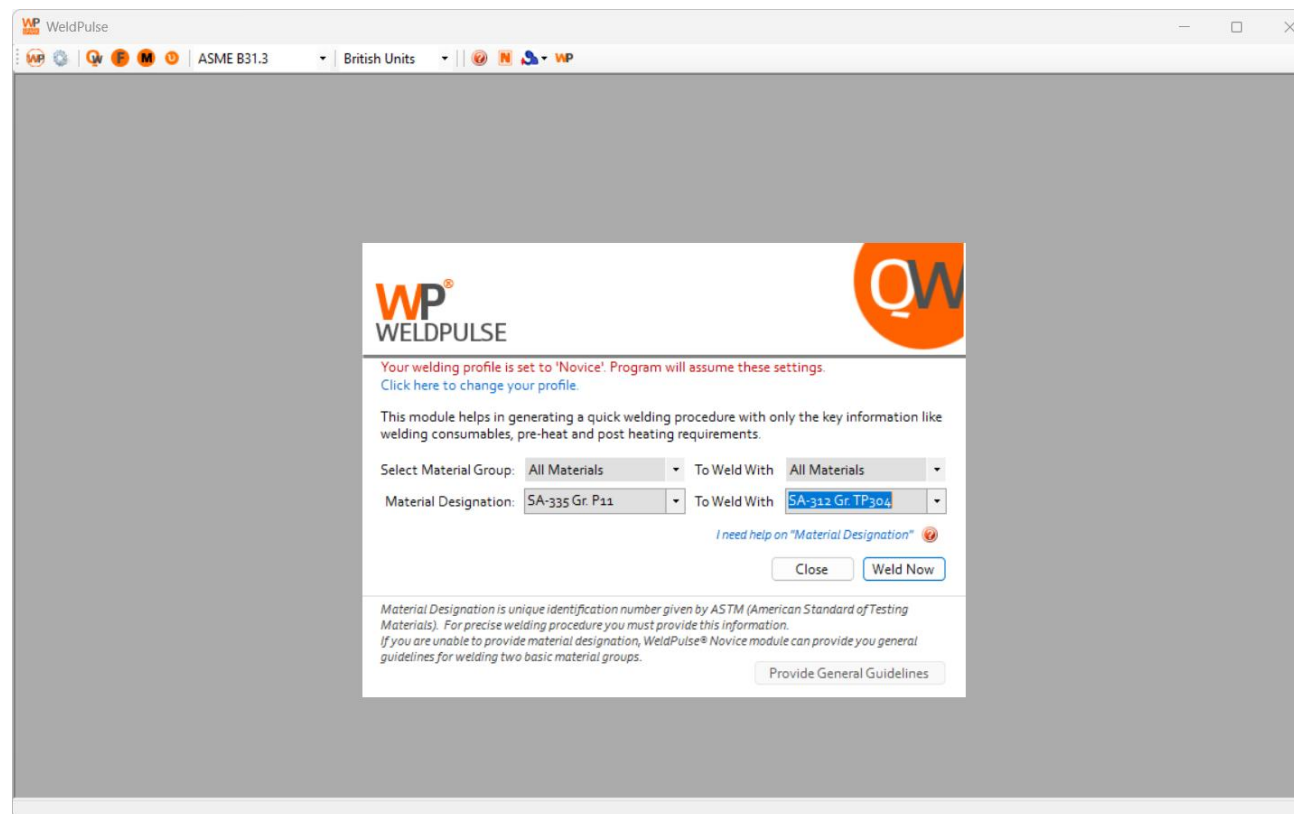
Let's start QuickWeld[®] module in Novice settings:



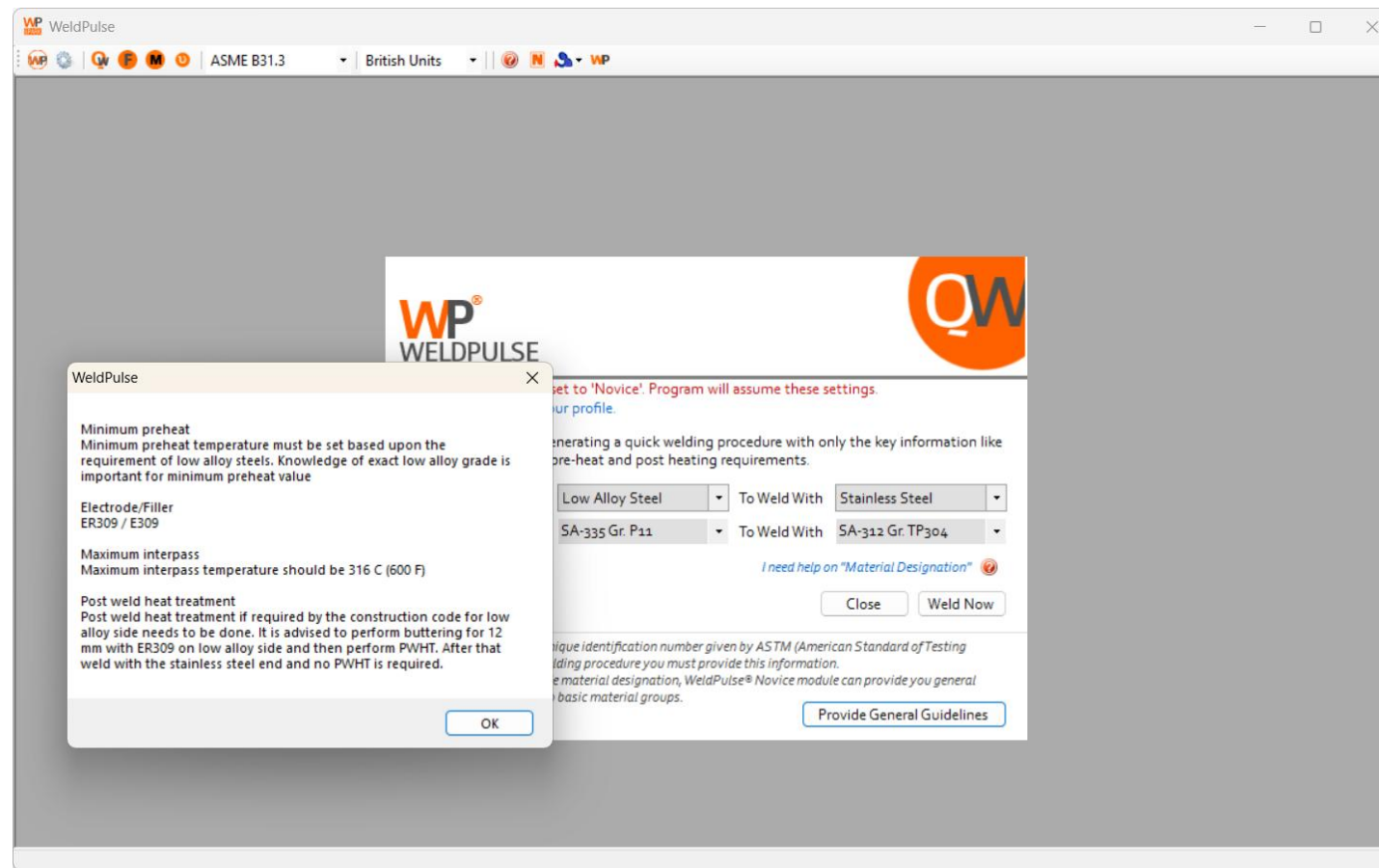
Let's have a look at QuickWeld[®] in Novice settings



Material designation guidelines...



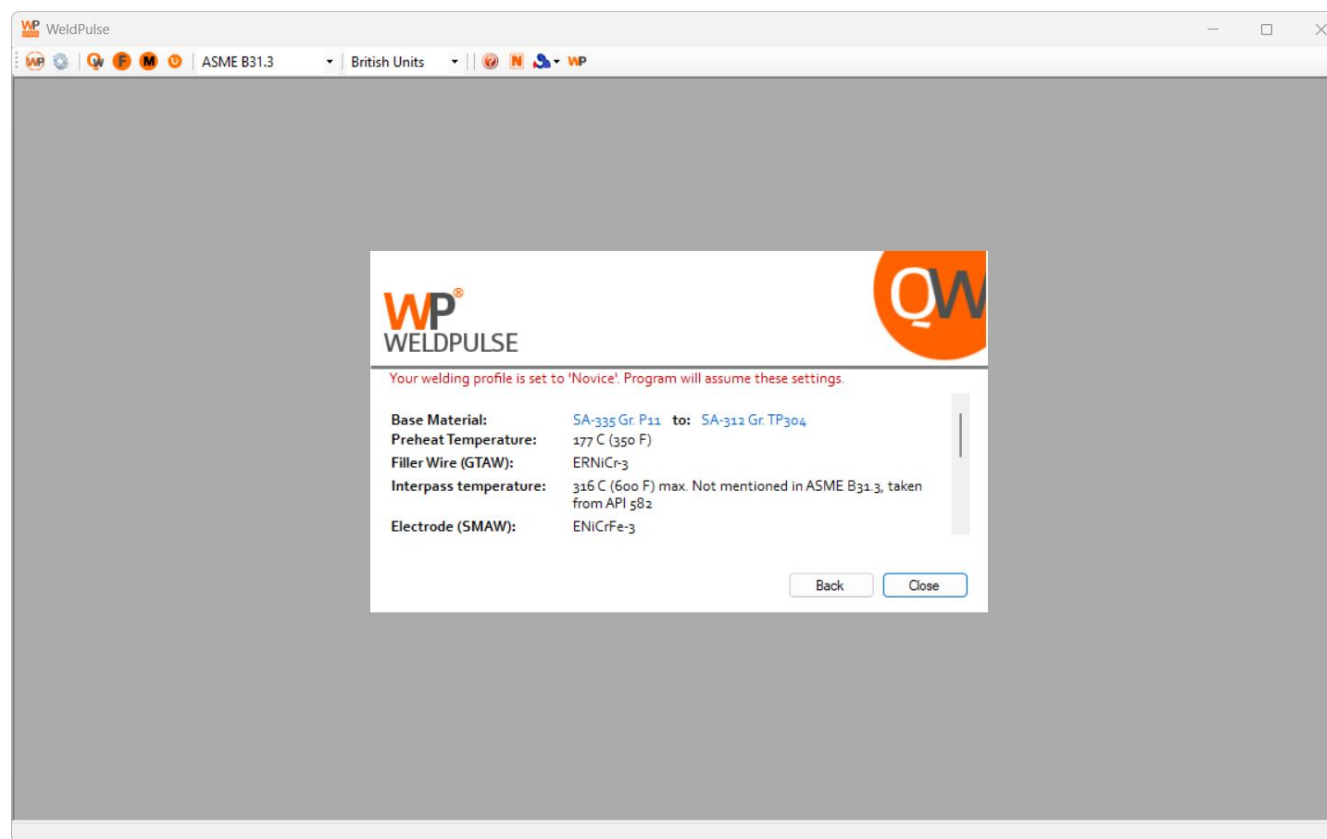
If you don't know the material specifications, click general guidelines:



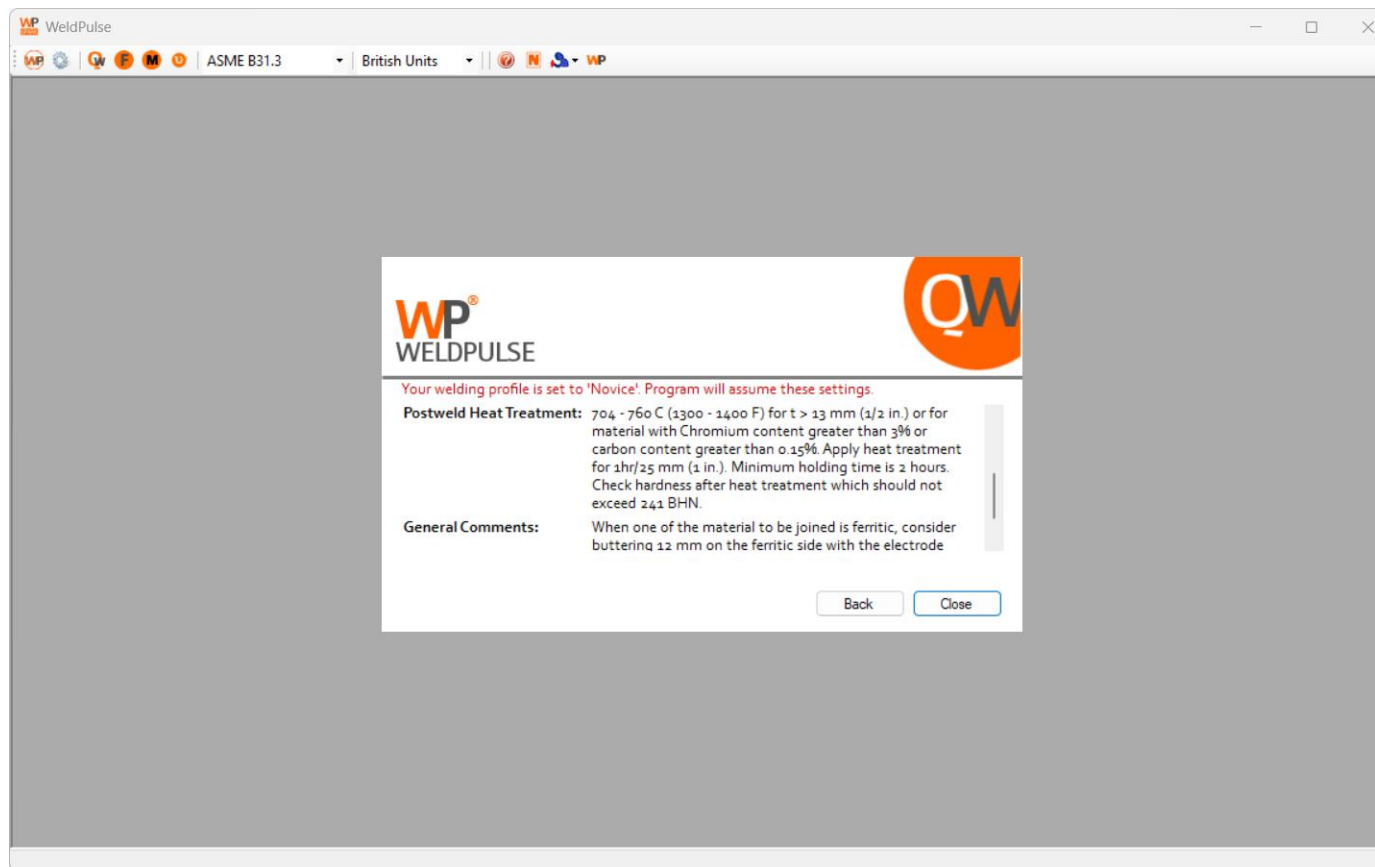
Value other than
All Materials is
required to be
provided under
**Select Materials
Group** to get
general guidelines



Results for Novice settings are as here (part 1/2):

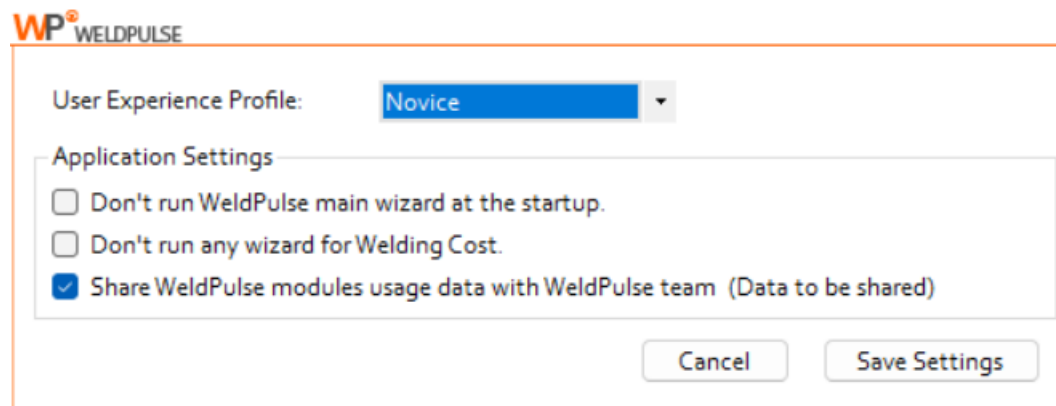


Results for Novice settings are as here (part 2)/2:



Let's change the profile to beginner and then use QuickWeld[®]:

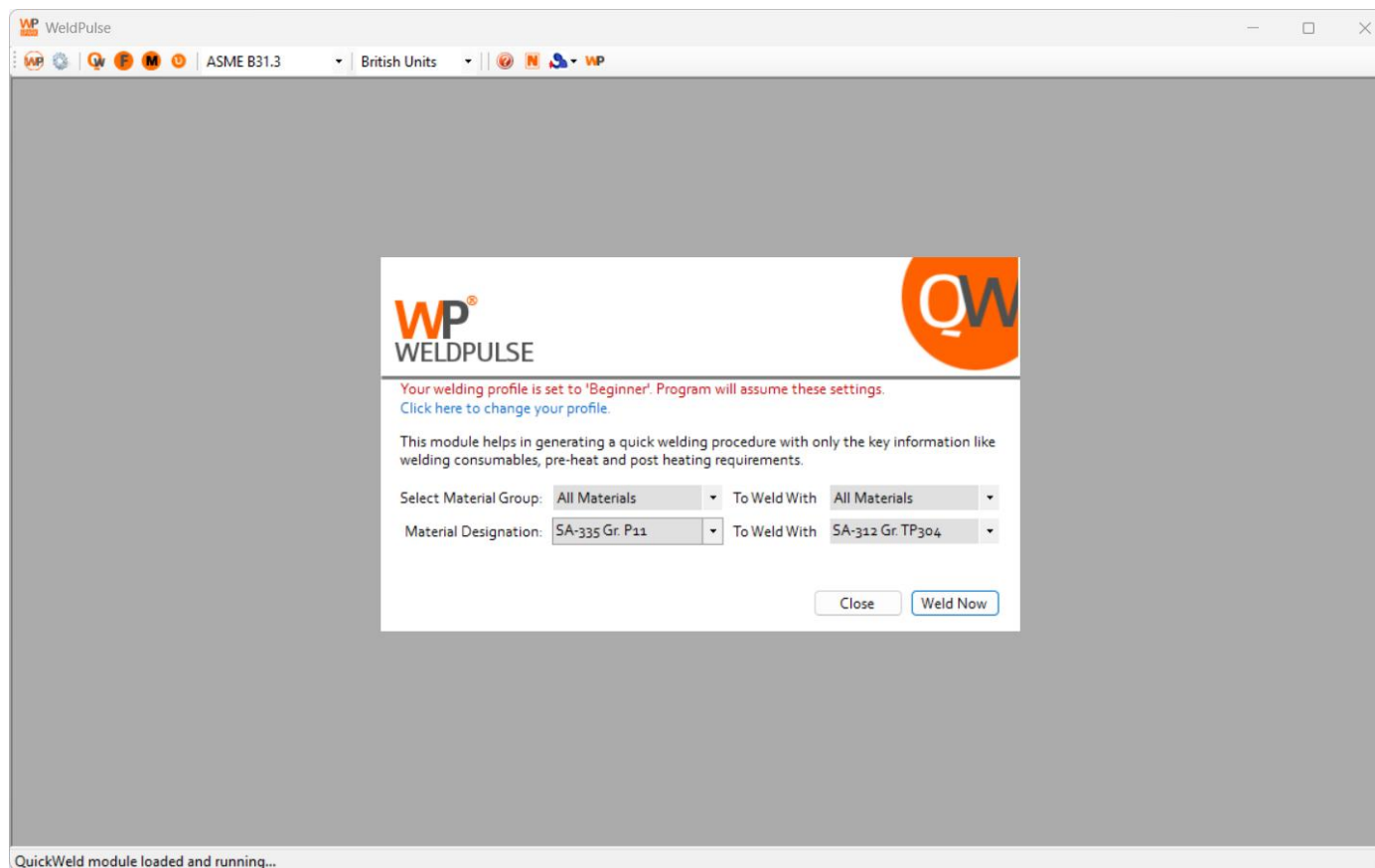
Change the profile to
beginner and click **Save
Settings**



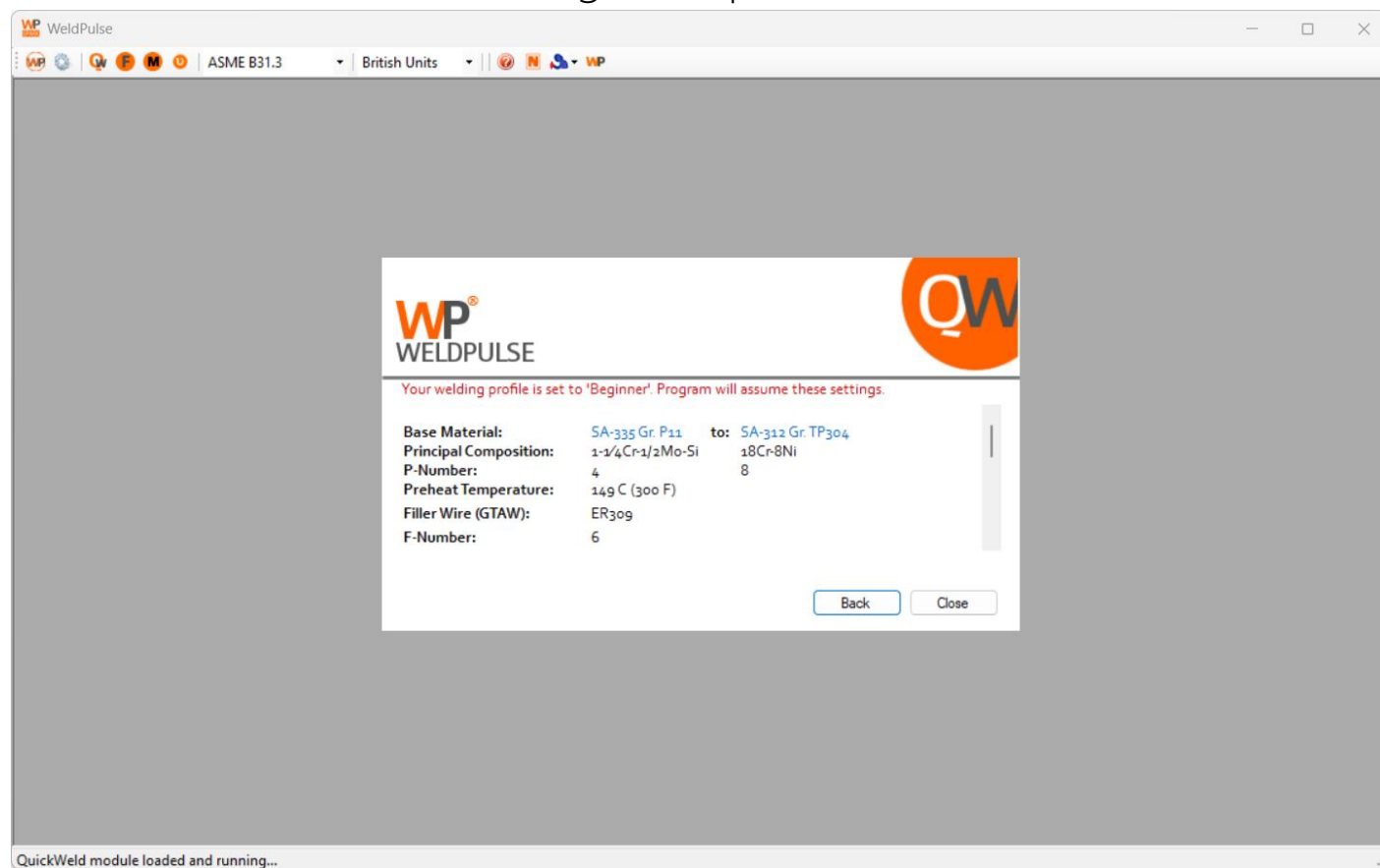
The screenshot shows a dialog box titled "WP[®] WELDPULSE". It contains a "User Experience Profile:" label followed by a dropdown menu currently set to "Novice". Below this is a section titled "Application Settings" which includes three checkboxes: "Don't run WeldPulse main wizard at the startup." (unchecked), "Don't run any wizard for Welding Cost." (unchecked), and "Share WeldPulse modules usage data with WeldPulse team (Data to be shared)" (checked). At the bottom right of the dialog are two buttons: "Cancel" and "Save Settings".



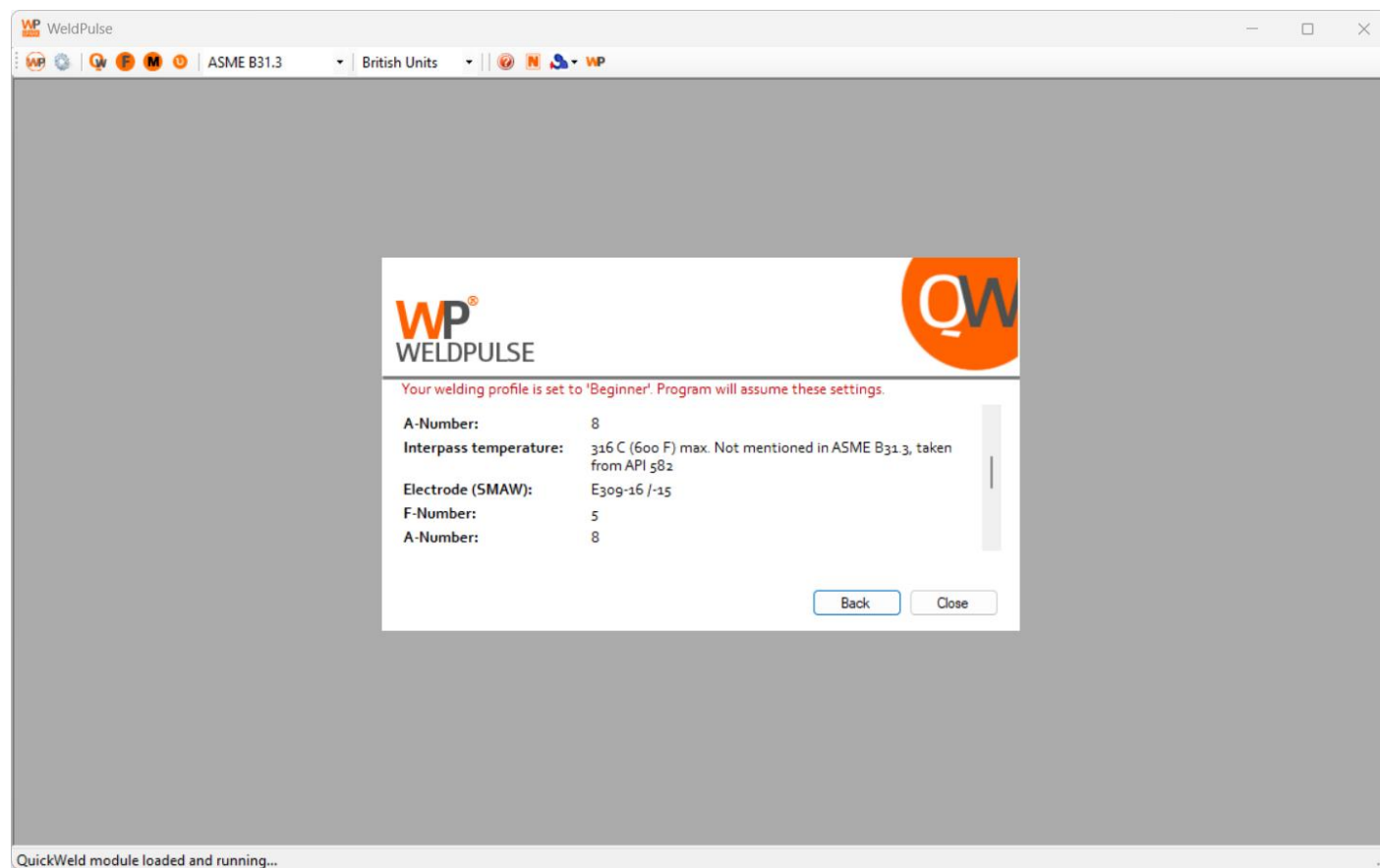
See in this profile setting, no general guidelines offered



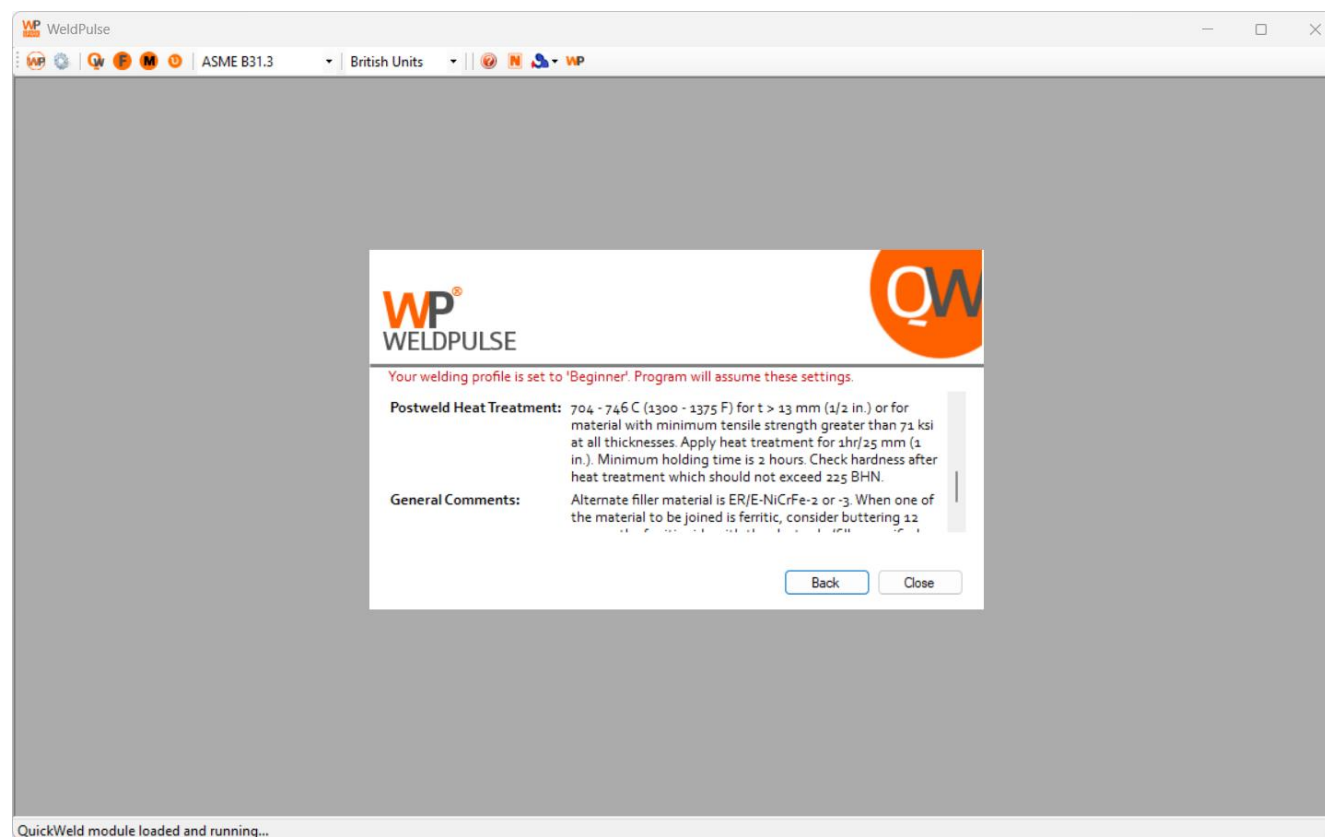
See the level of details offered to Beginner (part 1/3):



See the level of details offered to Beginner (part 2/3):



See the level of details offered to Beginner (part 3/3):



Professional results show as below:

WP[®]
WELDPULSE

Your welding profile is set to 'Professional'. Program will assume these settings.

Base Material:	SA-335 Gr. P11	to: SA-312 Gr. TP304
Alloy Designation:	K11597	S30400
Principal Composition:	1-1/4Cr-1/2Mo-Si	18Cr-8Ni
P-Number:	4	8
Group No.:	1	1
Preheat Temperature:	149 C (300 F)	

Back Close

WP[®]
WELDPULSE

Your welding profile is set to 'Professional'. Program will assume these settings.

Filler Wire (GTAW):	ER309
F-Number:	6
A-Number:	8
AWS:	5.9
Interpass temperature:	316 C (600 F) max. Not mentioned in ASME B31.3, taken from API 582

Back Close

W
WELDPULSE

Your welding profile is set to 'Professional'. Program will assume these settings.

Electrode (SMAW):	E309-16 /-15
F-Number:	5
A-Number:	8
AWS:	5.4
Postweld Heat Treatment:	704 - 746 C (1300 - 1375 F) for t > 13 mm (1/2 in.) or for material with minimum tensile strength greater than 71 ksi at all thicknesses. Apply heat treatment for 1hr/25 mm (1

Back Close

W
WELDPULSE

Your welding profile is set to 'Professional'. Program will assume these settings.

General Comments:

at all thicknesses. Apply heat treatment for 1hr/25 mm (1 in.). Minimum holding time is 2 hours. Check hardness after heat treatment which should not exceed 225 BHN.

Alternate filler material is ER/E-NiCrFe-2 or -3. When one of the material to be joined is ferritic, consider buttering 12 mm on the ferritic side with the electrode /filler specified and perform heat treatment. In this case, no pre-heat or PWHT is required.

Back Close

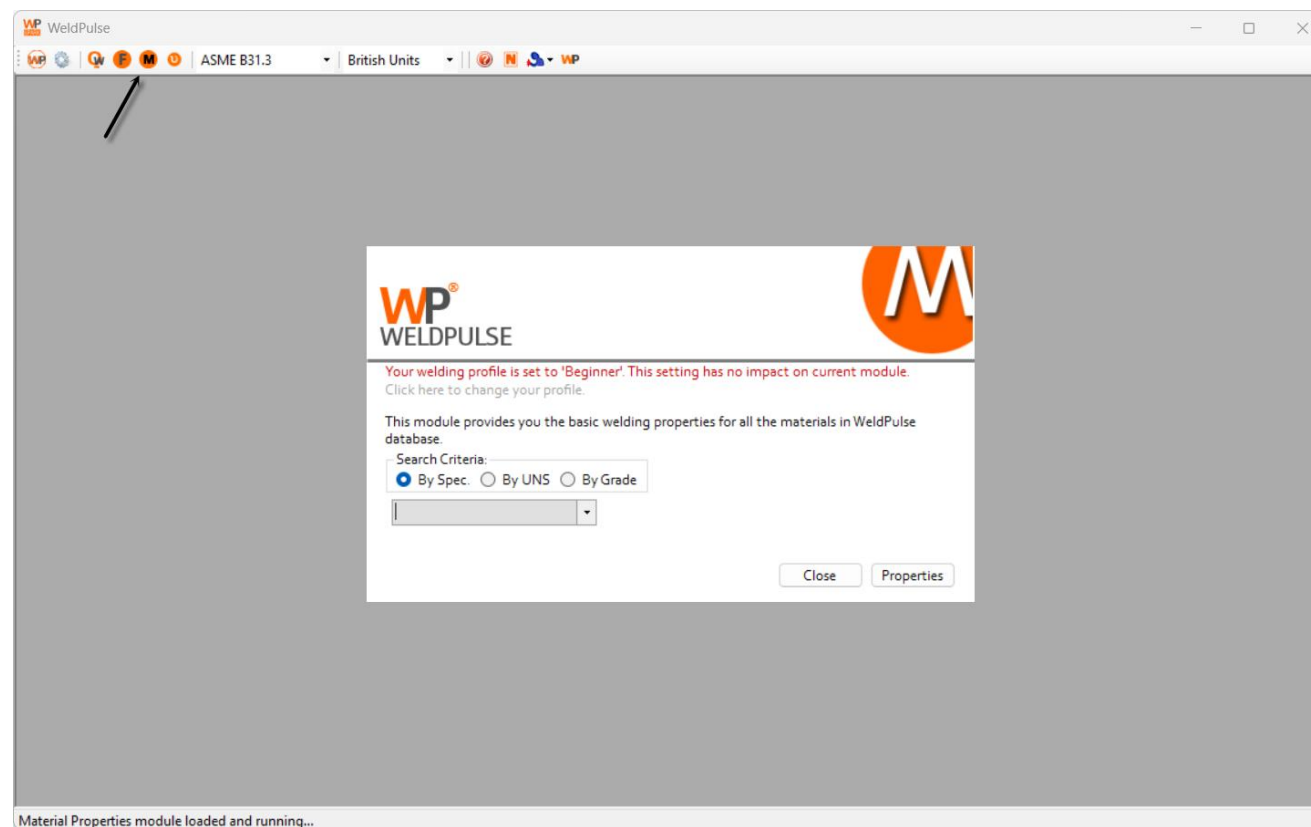


Material Properties



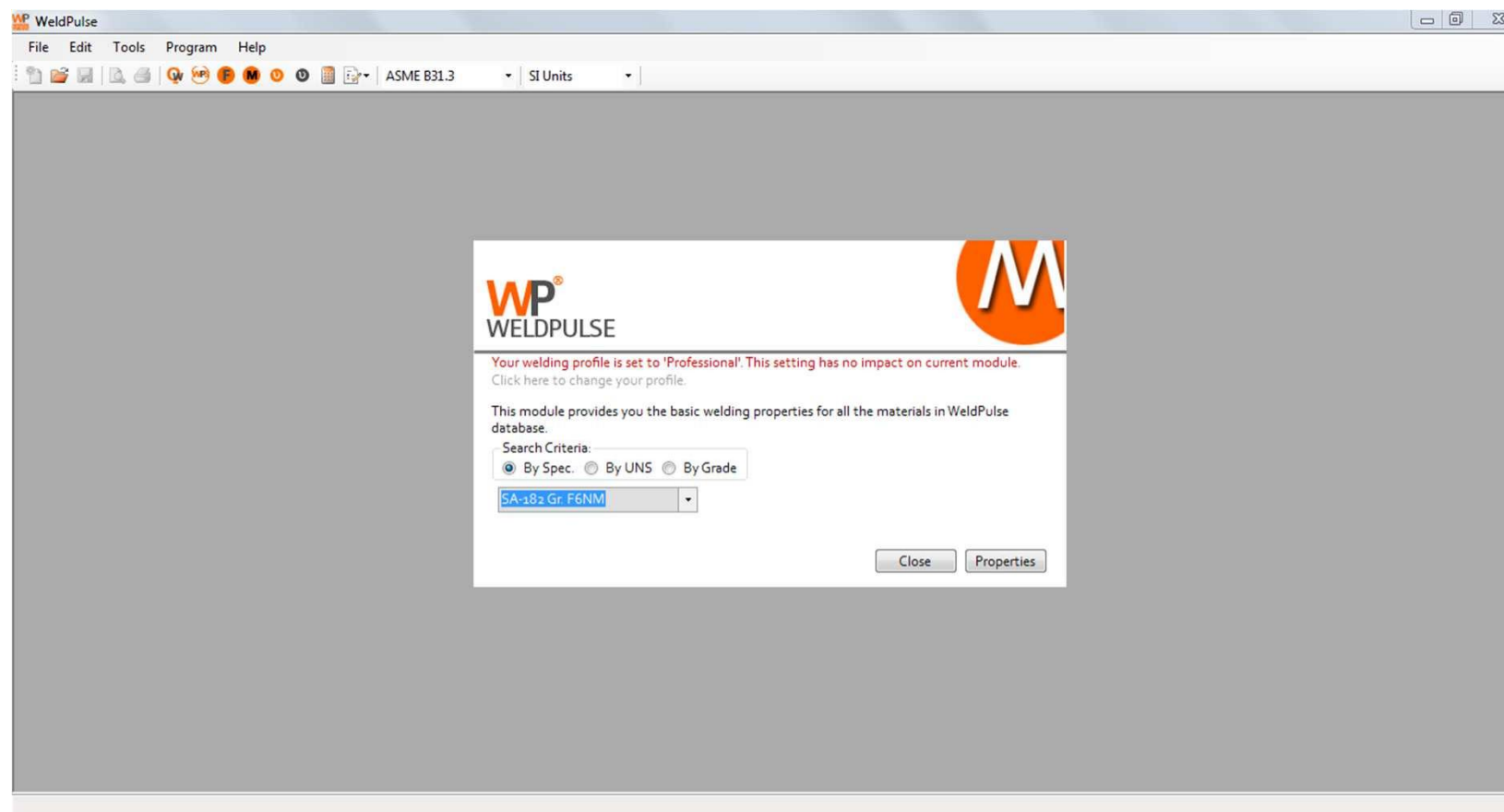
Material Properties

WeldPulse[®] provides chemical and mechanical properties of materials in database.



Material Properties

Enter either the specification, grade or UNS number to get the properties



Material Properties

Properties appear like shown below:

WP WELDPULSE **MATERIAL WELDING PROPERTIES** IMAC

Full Spec. Name: SA-182 Gr. F6NM
 Alloy Designation/UNS No: S41500
 Discription: Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service

Product Form: Forgings
 P. Number: 6
 G. Number: 4
 Min. Tensile Strength (MPa): 115
 Min. Yield Strength (MPa): 90
 Nominal Composition: 13Cr-4Ni

Chemical Composition:

Carbon (C)	0.05
Manganese (Mn)	0.50-1.00
Silicon (Si)	0.60
Sulfur (S)	0.030
Phosphorus (P)	0.030
Chromium (Cr)	11.5-14.0
Nickel (Ni)	3.5-5.5
Molybdenum (Mo)	0.50-1.00

includes P-number, Group number also

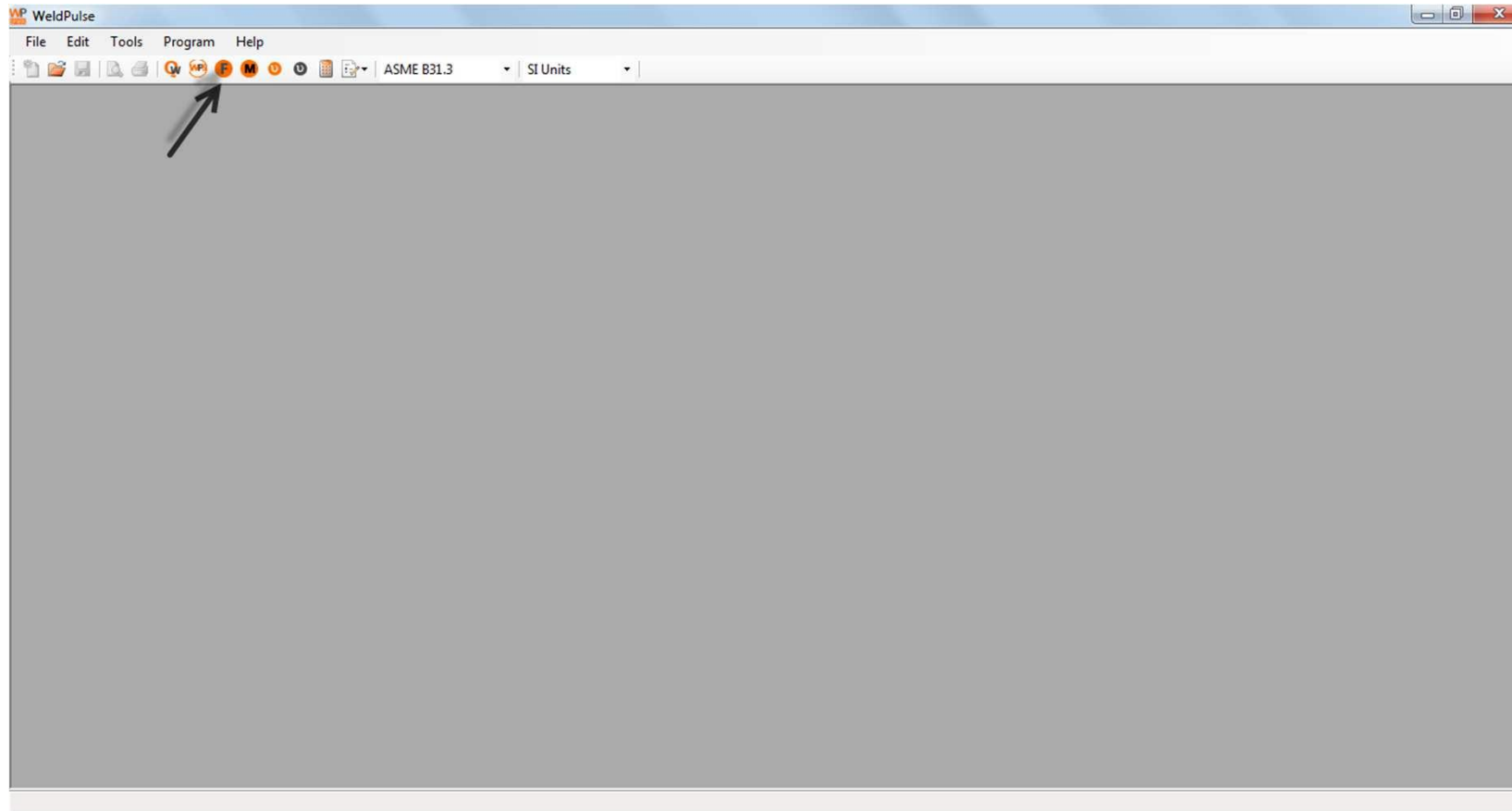


Filler Properties



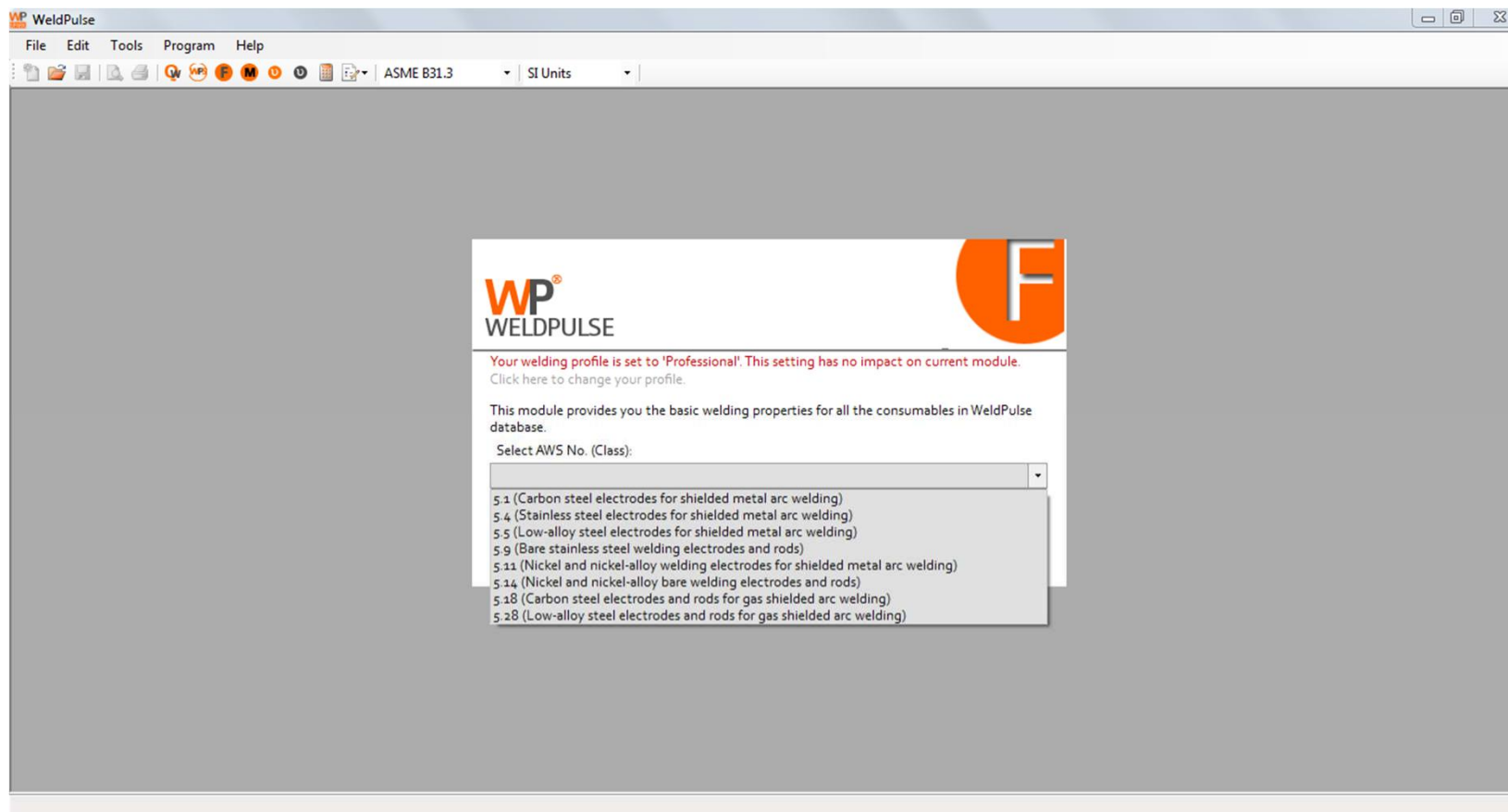
Filler Properties

Filler materials database is included for SMAW & GTAW processes



Filler Properties

Choose the appropriate AWS classification



Filler Properties

Filler properties are shown as below:

WP WELDPULSE WELDING CONSUMABLE PROPERTIES IMAC

Consumable (Spec. No.): ENiCrMo-4
 AWS: 5.11 (Nickel and nickel-alloy welding electrodes for shielded metal arc welding)
 Description: The nominal composition (wt.-%) of weld metal produced by electrodes of this classification is 57 Ni, 16 Mo, 15.5 Cr, 5.5 Fe, 4 W, low C. Electrodes of this classification are used for welding low carbon nickel-chromium-molybdenum alloy, for welding the clad side of joints in steel clad with low-carbon nickel-chromium-molybdenum alloy, and for welding low carbon nickel-chromium-molybdenum alloy to steel and to other nickel-base alloys. Typical specifications for the nickel-chromium-molybdenum base metals are ASTM B 574, B 575, B 619, B 622, and B 626, all of which have UNS Number N10276. These electrodes normally are used only in the flat position.

F. Number: 43
 A. Number: NA
 Welding position: 0
 Polarity: Most of the electrodes in SFA 5.11 are intended to be used with DCEP. Electrode manufacturer should be consulted before using on AC
 Amperage: The range of amperage to be used shall be as recommended by the manufacturer

Chemical Composition:

Carbon (C)	0.02
Manganese (Mn)	1
Silicon (Si)	0.2
Phosphorus (P)	0.04
Sulfur (S)	0.03
Nickel (Ni)	Rem
Chromium (Cr)	14.5 to 16.5
Molybdenum (Mo)	15.0 to 17.0
Copper (Cu)	0.5
Vanadium (V)	0.35
Iron (Fe)	4.0 to 7.0
Cobalt (Co)	2.5
Tungsten (W)	3.0 to 4.5
Others	0.5

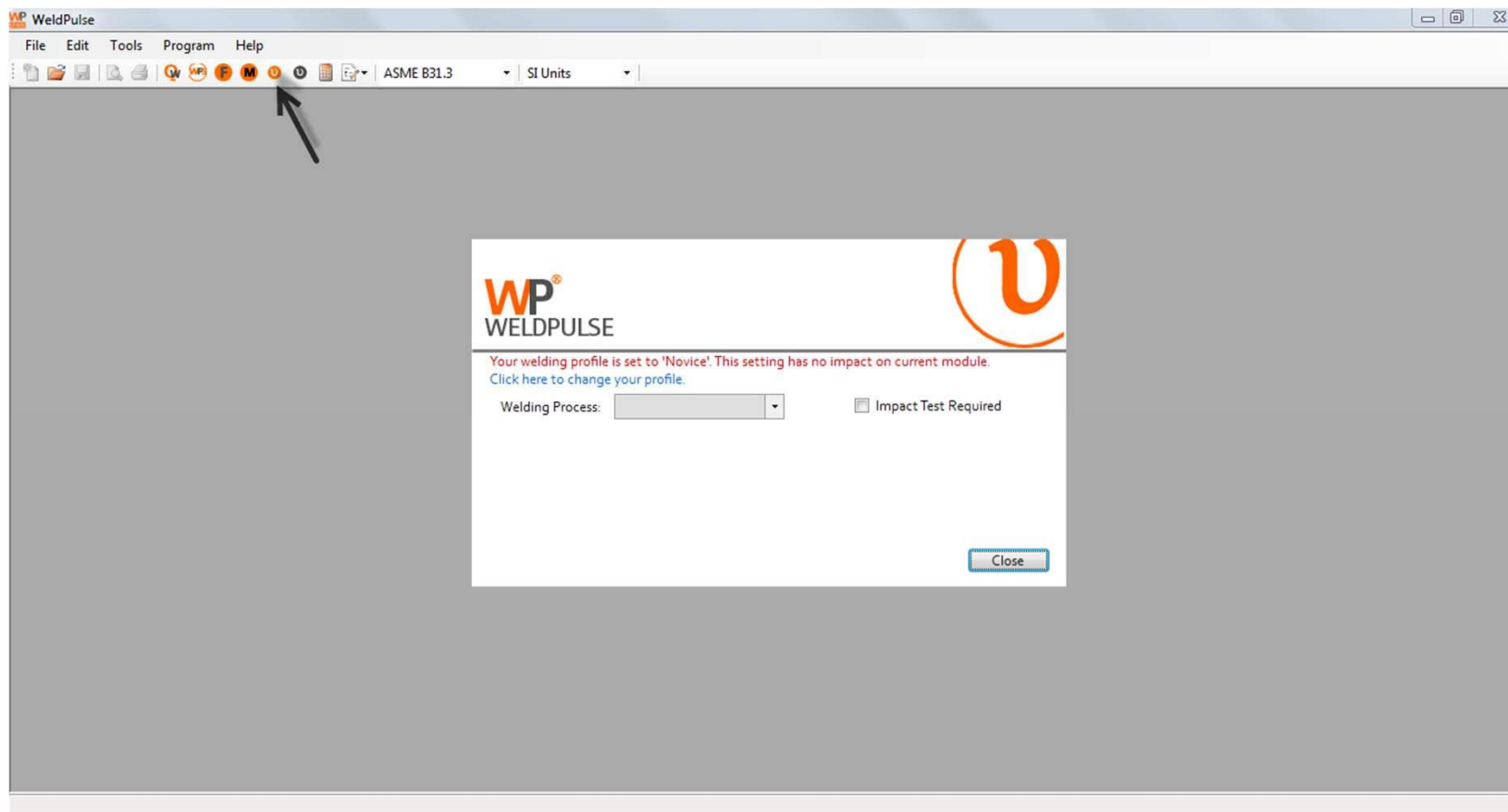


Procedure Variables



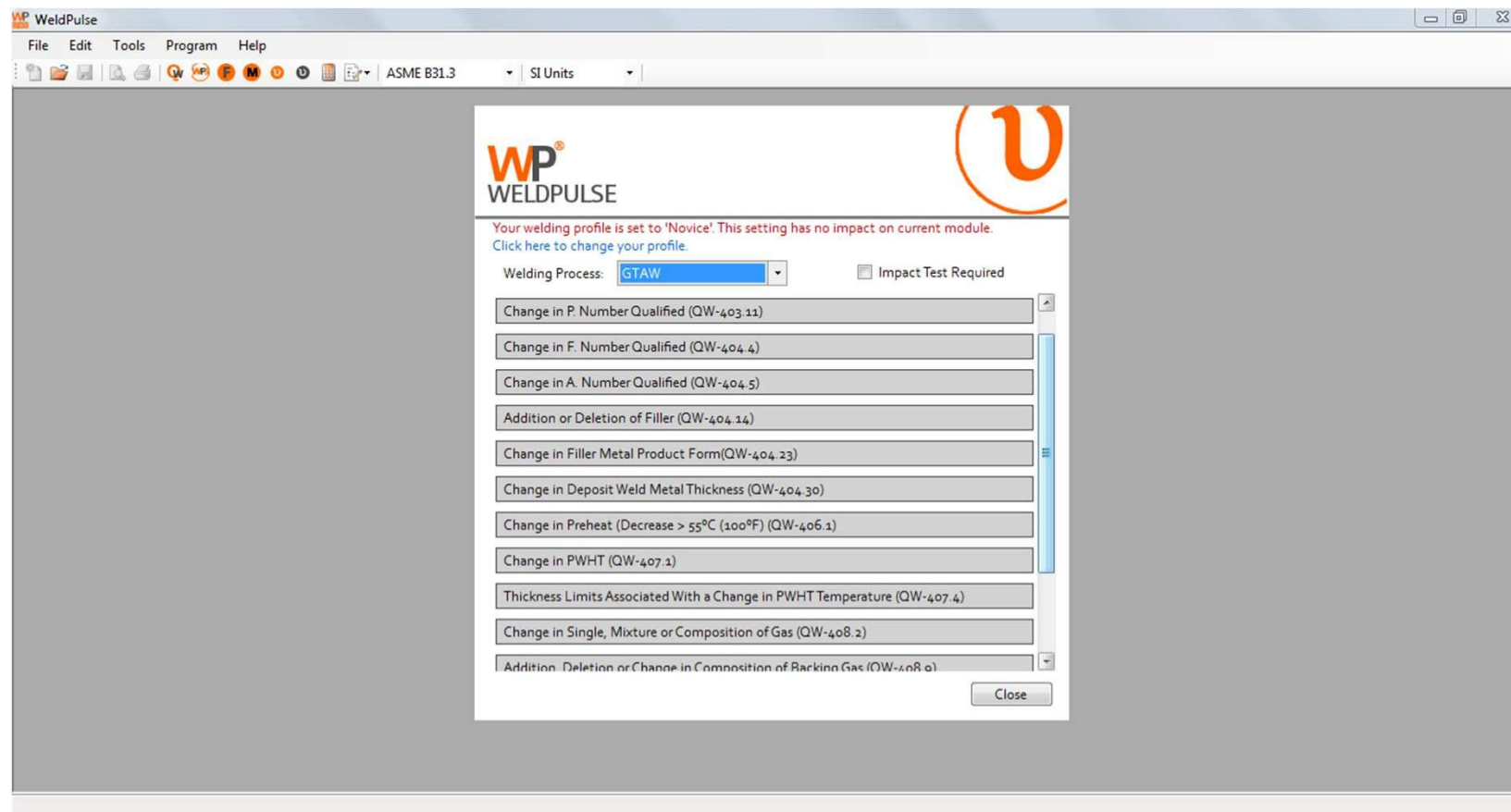
Procedure Variables

Check the procedure applicability



Procedure Variables

Select the welding process



Procedure Variables

Check any variable to see if re-qualification is required

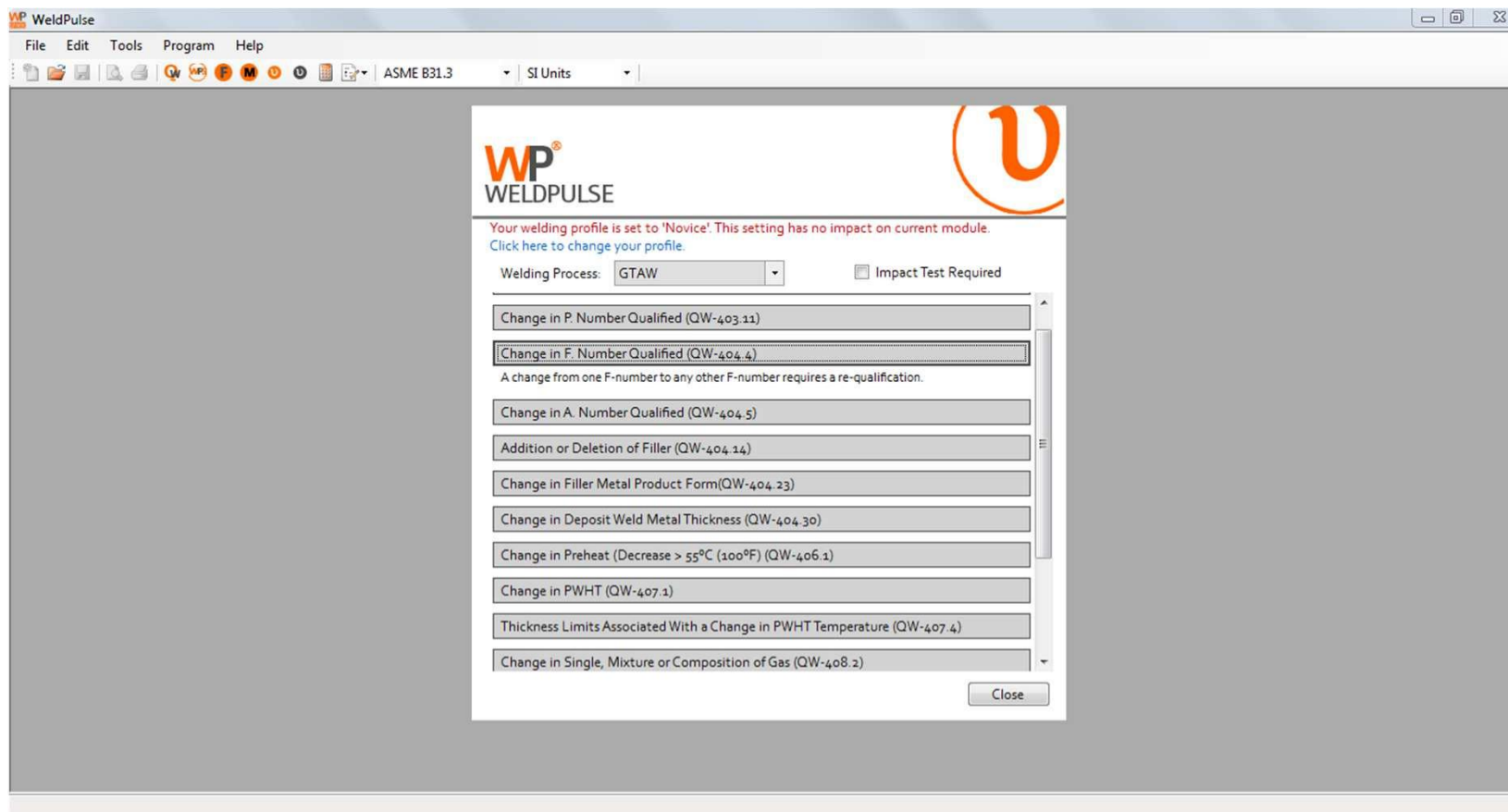
The screenshot shows the WP WELDPULSE software interface. The main window has a menu bar (File, Edit, Tools, Program, Help) and a toolbar. The 'Program' menu is open, showing 'ASME B31.3' and 'SI Units'. A dialog box titled 'WP WELDPULSE' is displayed in the center. The dialog box contains the following information:

- Welding Process:** GTAW (dropdown menu)
- Impact Test Required:** ☐
- Change in Base Metal Thickness (QW-403.8):** (Section header)
- Case:** Groove-Weld Tension and Transverse-Bend Tests (dropdown menu)
- Qualified for / Thickness of weld coupon, specimen, base metal:** 40
- Thickness of weld deposit qualified:** 40
- Thickness of new weld:** 40
- * All inputs and outputs are in mm**
- Minimum thickness qualified (base metal):** 5
- Maximum thickness qualified (base metal):** 200
- Maximum t qualified (deposited weld metal):** 200
- The procedure qualifies for the new weld thickness.**
- Important Note:** For P.No. 8, P.No. 44, P.No. 42, P.No. 43, P.No. 44, P.No. 45, P.No. 46, P.No. 49, P.No. 51, P.No. 52, P.No. 53, P.No. 61 and P.No. 62 metal, there shall be no limitation on the maximum thickness of the thicker production member in joints of similar P.No materials provided qualification was made on base metal having a thickness of 6 mm (1/4 in.) or greater (QW-202.4(b))
- Change in P. Number Qualified (QW-403.11):** (Section header)
- Close** button



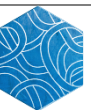
Procedure Variables

What happens if F-number is changed...?



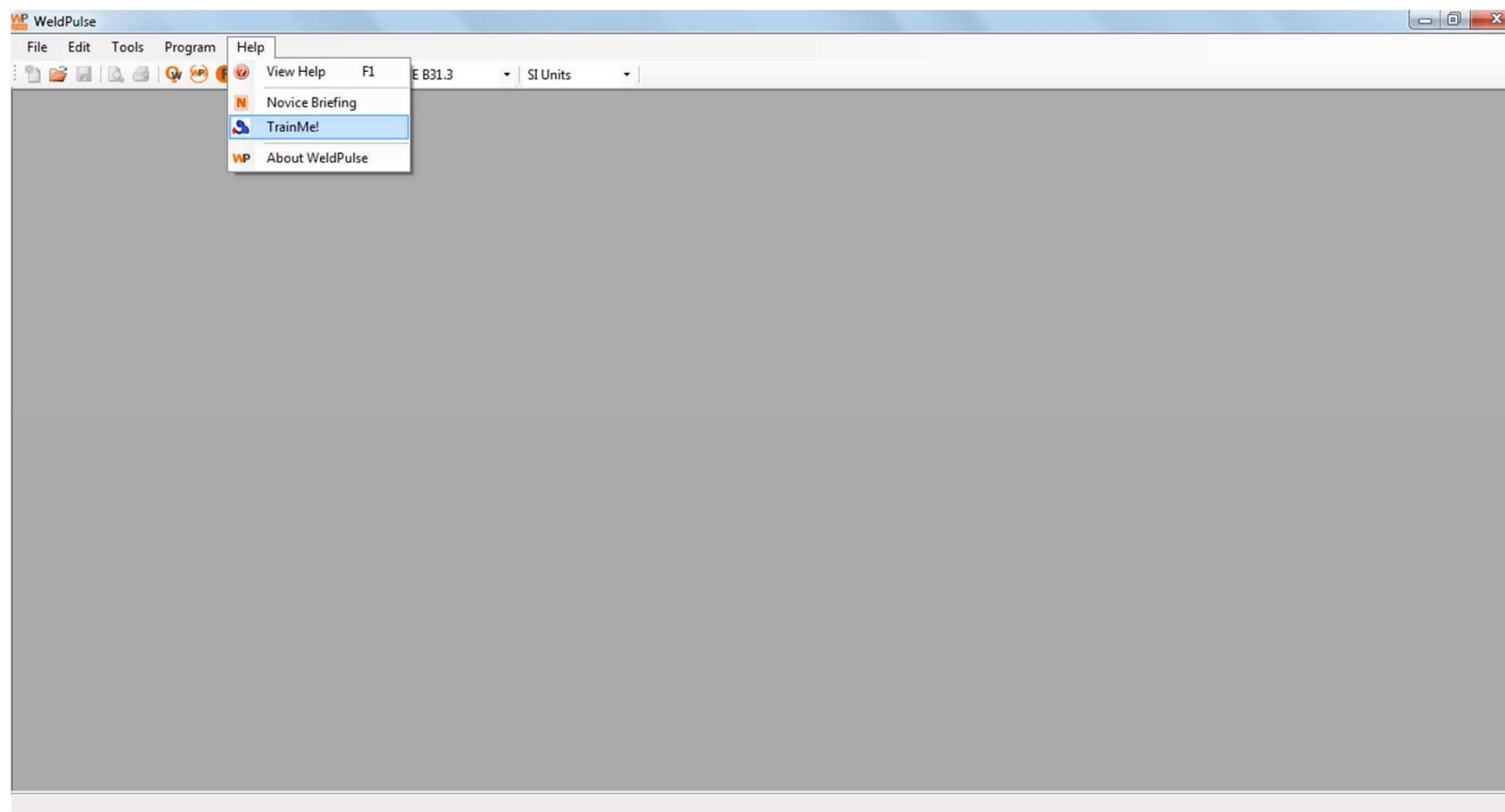


Train me!



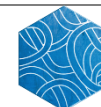
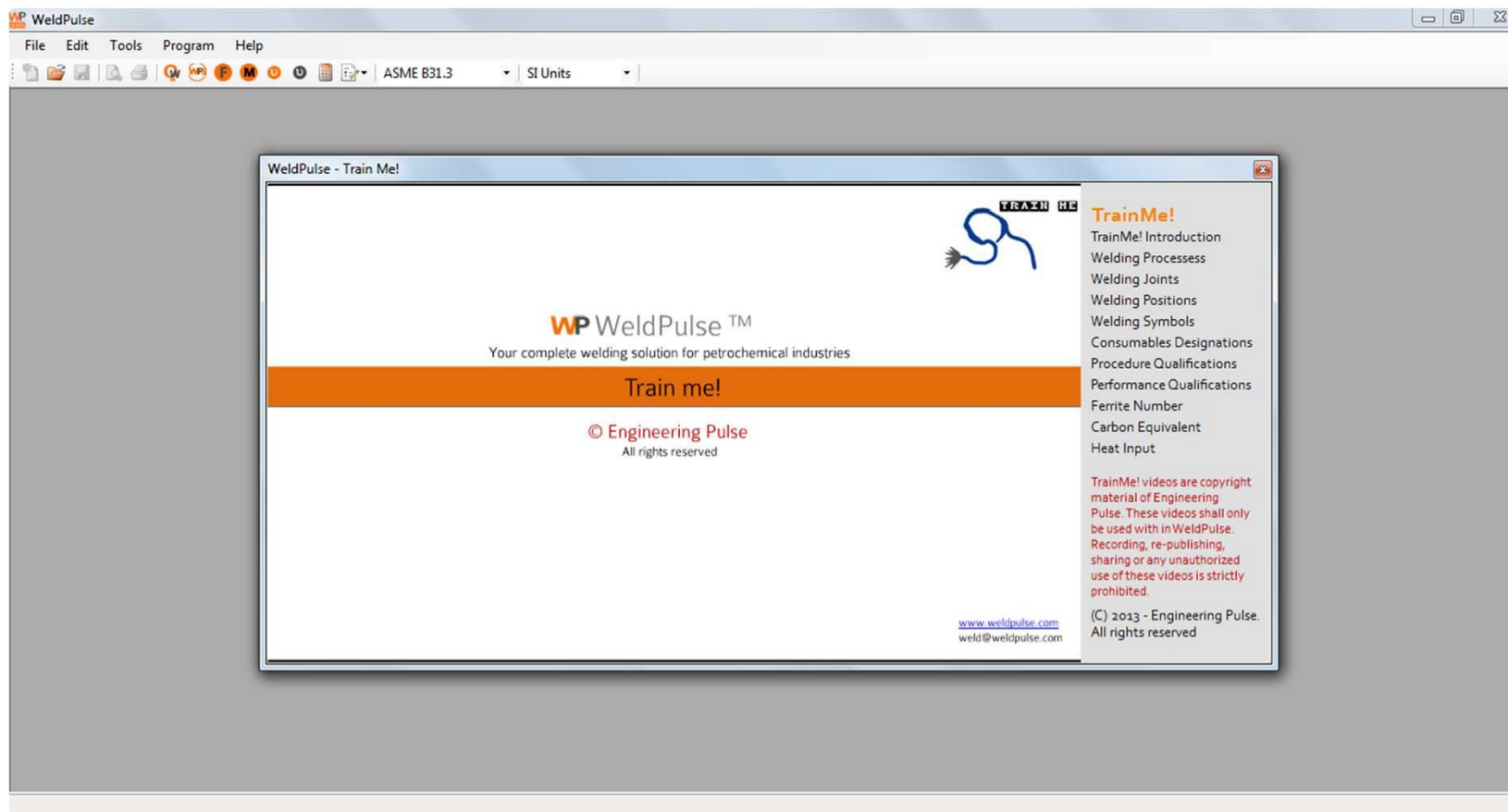
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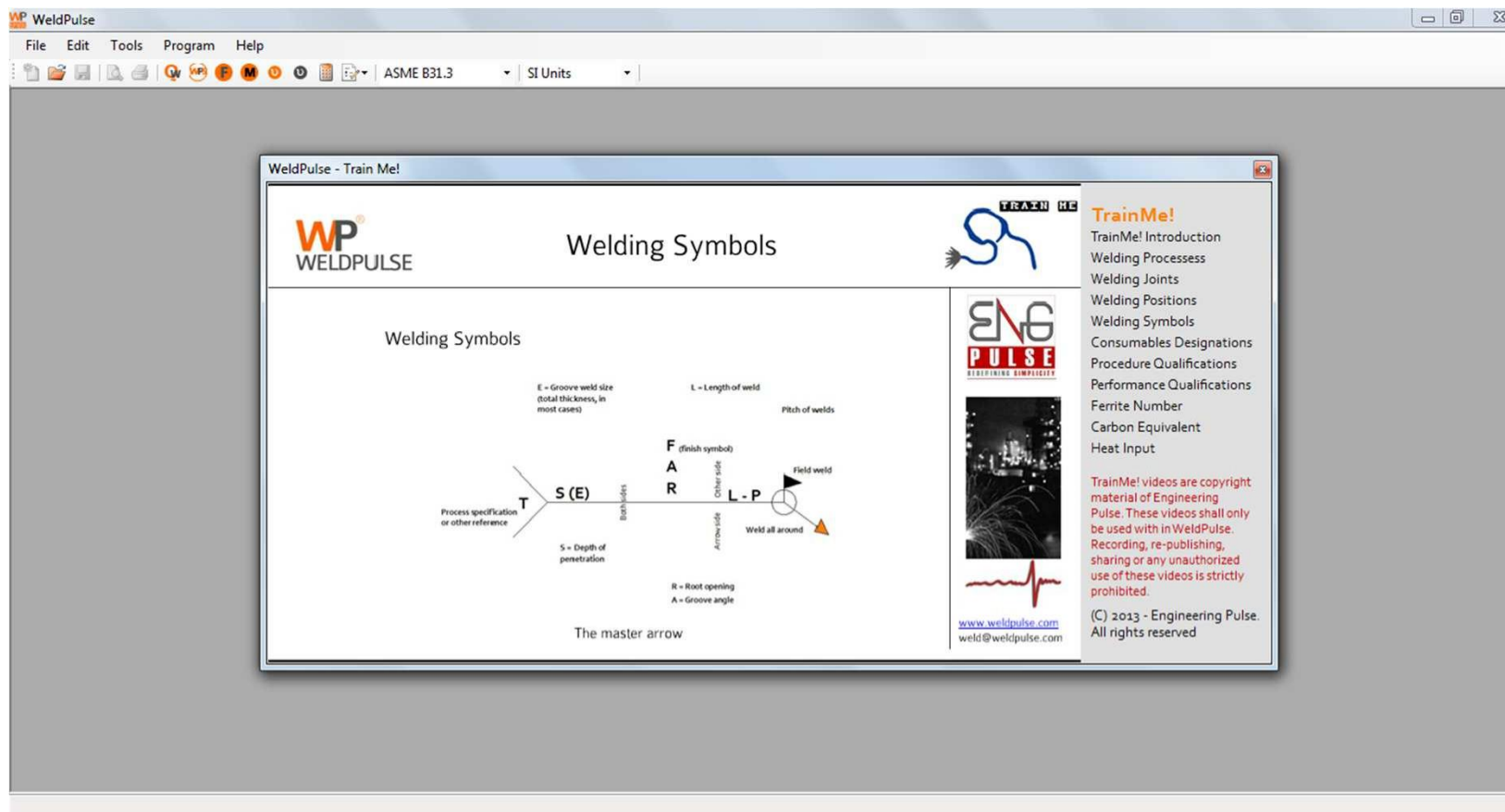
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Contact us



Technical:

weld@weldPulse.com

Sales:

sales@PetroStreet.com

