

The Weld & PDI Attributes tab of the DM Weld Properties web-form is shown in Figure 3-5.

The screenshot shows the 'DM Weld Configuration Database' interface. The main title is 'DM Weld Properties - Input Parameters' with a 'Bottom' label. The plant is set to 'Plant 1'. There are three tabs: 'Weld Identification', 'Weld & PDI Attributes' (which is selected), and 'Inspection Attributes'. The 'Weld & PDI Attributes' tab contains a list of attributes with input fields:

- Counterbores
- Weld Root
- Buttering
- Weld Buttering
- Remnant Welds
- Weld repairs
- Weld Crown Height: 0 in
- Weld Crown Width: 0 in
- Circumference: 0 in
- ID @ Weld Centerline - Calculated: in
- OD @ Weld Centerline - Calculated: in
- Presence of Diametric Shrinkage
- Average Depth of Diametric Shrinkage
- Exposed Weld Toes
- Gaps Greater Than 1/32"
- Adjacent Welds

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Weld & PDI Attributes tab**

There are two sections on the Weld & PDI Attributes tab which include the Weld Attributes section and the PDI Attributes section. The Weld & PDI Attributes has the following controls for user entry:

*Weld Attributes*

Weld Conditions:

- Counterbores - This is intended to capture whether or not the weld contains any notable counter bores detected during ultrasonic examination.
- Weld Root - This is intended to capture whether or not there is a discernable weld root detected during ultrasonic examination.
- Buttering - This defines the type and level of weld buttering associated with the weld. Some welds include buttering on both sides of the weld. Not all DM welds contain a nozzle fitting.

- Weld Buttering - Indicates whether or not weld buttering is present. Some DMW have no buttering
- Remnant Welds - Indicates the existence of past weld repairs remnant components as part of a repair procedure.
- Weld repairs - May support the determination of the condition of the weld crown. Used in evaluating the inspectability of the weld as well as whether or not it is covered within the PDI Program sample population.
- Weld Crown Height - Depicts the condition of the weld crown and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- Weld Crown Width - Used in evaluating inspectability and examination volume coverage.
- Circumference – Defines the pipe diameter taken at weld centerline.
- ID @ Weld Centerline – Calculated - Calculated based on outside diameter and thickness.
- OD @ Weld Centerline – Calculated - Calculated based on outside diameter
- Presence of Diametric Shrinkage - Defines the presence of weld "hoop" shrinkage.
- Average Depth of Diametric Shrinkage - Depicts the average severity of shrinkage.
- Exposed Weld Toes - Defines whether or not the weld toes have been altered.
- Gaps Greater Than 1/32" - Defines the magnitude of weld crown height, shrinkage and overall surface condition.

Adjacent Welds:

- Adjacent Welds - Used in supporting the evaluation of whether or not the weld is covered within the PDI program sample population. Also is used to determine if adjacent welds will interfere with the UT inspection.

- Weld Crown Condition of Adjacent weld - Depicts the condition of the weld crown and is used in evaluating the inspectability of the weld as well as whether or not it is covered within the PDI Program sample population.
- Weld Crown Height of Adjacent weld - Depicts the condition of the weld crown and is used in evaluating the inspectability of the weld as well as whether or not it is covered within the PDI Program sample population.

#### Weld Prep:

- Weld Prep Type - Defines the Butt Weld Type.
- Weld Prep Angle Upper - Defines the Butt Weld configuration parameters.
- Lower Angle Start Point from ID - Defines the Butt Weld configuration parameters.
- Weld Prep Angle Lower - Defines the Butt Weld configuration parameters.
- Weld Prep Root Gap - Defines the Butt Weld configuration parameters.
- Weld Groove Radius - Defines the Butt Weld configuration parameters.
- Weld Prep Land Length - Defines the Butt Weld configuration parameters.
- Weld Prep Land Height - Defines the Butt Weld configuration parameters.

#### PDI DMW Program:

- Weld configuration within PDI DMW Program – States whether or not the component is covered by the current PDI Program Sample Configurations.

#### Critical Dimensions:

- D1 - Nozzle Taper to Battering - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- D2 - Battering Width - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- D3 - Battering to DM Weld Tangent / Weld Toe - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
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- D4 - DM Weld Tangent to Safe-End - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- D5 - Safe-End Width - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- D6 - Weld Width - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- D7 - Weld to BM Restriction (if any) - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- D8 - DM Weld Tangent to Toe (at surface) - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- D9 - Weld Width (at surface) - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- A1 - DM weld Surface Angle - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- A2 - Weld Surface Angle - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- T1 - Nozzle Thickness - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- T2 - Safe-End Thickness - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.
- T3 - Elbow Thickness - Depicts the condition of the weld and is used in evaluating the inspectability of the weld as well as whether it is covered within the PDI Program sample population.

Critical Reference Points:

- Centerline Reference Point - Indicates / describes the point which the Weld Centerline distance was measured from.
- Distance to Weld Centerline From reference Point - Defines the Weld Centerline position relative to the referenced point.
- Interface reference Point - Indicates / describes the point which the Weld Centerline distance was measured from.
- Distance to Interface From reference Point - Defines the Weld Interface position relative to the referenced point.

Tapers:

- Taper 1 Description - Describes the taper in terms of transition from and to.
- Taper 1 reference point - Indicates / describes the point which the Weld Centerline distance was measured from.
- Start of Taper 1 to reference point - Defines the position of the start of the taper relative to the referenced point.
- Stop of Taper 1 to reference point - Defines the position of the end/stopping point of the taper relative to the referenced point.
- Taper 1 Angle - Defines the angle of the taper relative to the normal axis of the pipe.
- Taper 2 Description - Describes the taper in terms of transition from and to.
- Taper 2 reference point - Indicates / describes the point which the Weld Centerline distance was measured from.
- Start of Taper 2 to reference point - Defines the position of the start of the taper relative to the referenced point.
- Stop of Taper 2 to reference point - Defines the position of the end/stopping point of the taper relative to the referenced point
- Taper 2 Angle - Defines the angle of the taper relative to the normal axis of the pipe.

Thickness:

- Thickness at Weld Centerline- Defines the thickness of the weld at weld centerline.

- Thickness Upstream - Defines the thickness of the pipe on the upstream side of the weld.
- Thickness Downstream - Defines the thickness of the pipe on the downstream side of the weld.

Obstructions:

- Obstruction Reference Point - Defines the point at which the obstruction is measured from.
- Distance to Downstream Obstruction - Defines the axial location of the obstruction axially downstream from the referenced point.
- Distance to Upstream Obstruction - Defines the axial location of the obstruction axially downstream from the referenced point.

Materials:

- Safe End Material - Defines the Safe End Material.
- Weld Material - Defines the Weld Material.
- Repair Material - Defines the Repair Material.
- Downstream Butter material - Defines the Downstream Butter Material.
- Upstream Butter Material - Defines the Upstream Butter Material.
- Nozzle Material - Defines the Nozzle Material.
- Other materials - Defines any other materials which the ultrasonic beam may have to propagate through. Describe the material and where it is located relative to the best available drawing.

The Weld & PDI Attributes tab provides a “Help?” button for the Weld Prep and Critical Dimensions sections and is shown in Figure 3-6 and Figure 3-7.

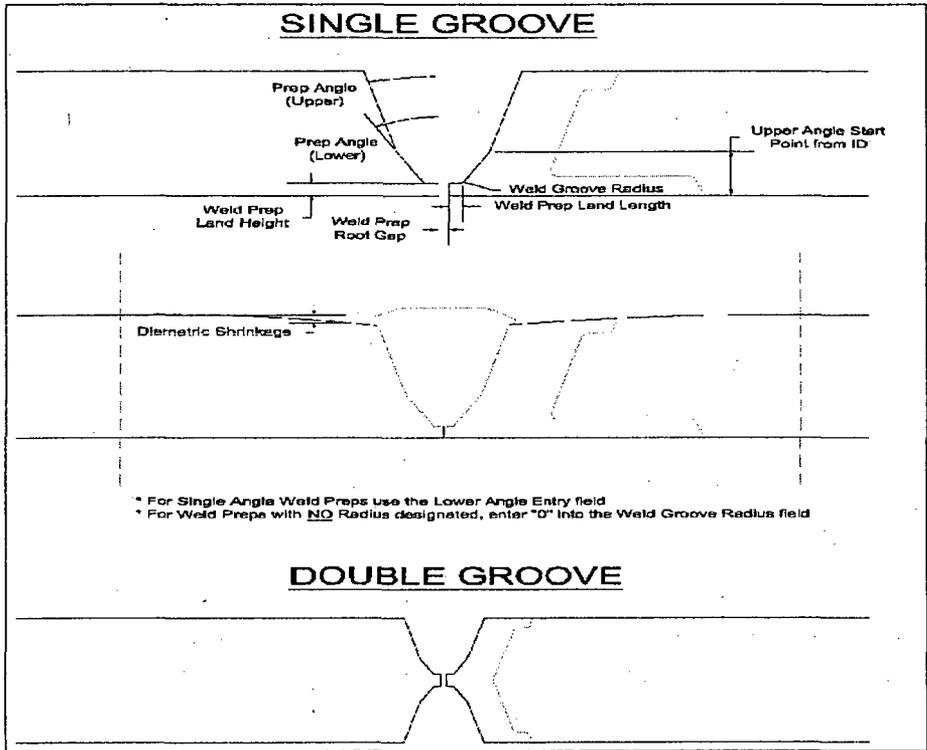


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 Weld Prep Help Screen

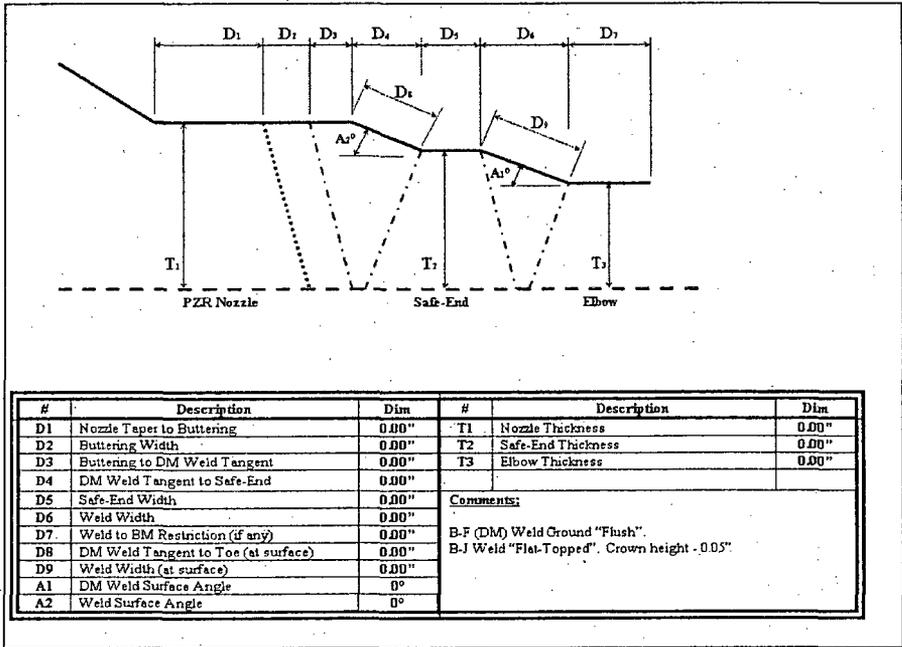


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 Critical Dimensions Help Screen

*PDI Attributes*

- Classification per MRP – 139 - Defines the MRP-139 classification.
- Mitigation Methods – Defines the Mitigation Methods.
- Axial Scan Coverage Value – Defines the Coverage Value.
- Circumferential Scan Coverage Value – Defines the Coverage Value.

The Weld & PDI Attributes tab also provides a “Help?” button for the PDI Attributes section and is shown in Figure 3-8.

EPRI MRP-139 - Table 6-1 Summary of Volumetric or Surface Examination Schedules for PWSCC of PWR Piping Butt Weldments (Note 1)				
PWSCC Category	Description of Weldments	Inspected/ Cracked? (Note 2)	Stress Expansion (Note 2)	Examination Extent and Schedule
A	Resistant Materials	--	Note 2	Existing Code Examination Program or Approved Alternative.
B	Non-resistant Mat. Reinforced by full structural weld Overlay	Yes Uncracked	Note 2	Existing Code Examination Program or Approved Alternative.
C	Non-Resistant Mat. Mitigated by SI	Yes Uncracked	Note 2	50% of each mitigation type within next 5 years; if no indication, continue with existing Code examination program or approved alternative.
D	Non-resistant Mat. No SI Pressurizer and Hot Leg $\geq 4"$	-- Uncracked	N/A	100% per period, but no longer than 5 years between exams for pressurizer locations (include surge line nozzle welds near pressurizer). 100% every 5 years for hot leg locations (include surge line nozzle welds near hot leg).
E	Non-resistant Mat. No SI Cold Leg $\geq 4"$	-- Uncracked	N/A	100 % every 5 years.
F	Non-resistant Mat. Cracked Reinforced by full structural weld overlay	Yes Cracked	N/A	Once in the next 5 years; if no additional indications/growth, continue with existing Code examination program for unflawed condition or approved alternative.
G	Non-resistant Mat. Cracked Mitigated by SI	Yes Cracked	N/A	100% at 2 RFO intervals. If no additional indications/growth after the 2 <sup>nd</sup> examination (4 <sup>th</sup> RFO), continue with existing Code examination program for unflawed condition or approved alternative.
H	Non-resistant Mat. Pressurizer and Hot Leg Examination does not meet requirements of Figure 5-1 Item 6 Configuration not addressed in Appendix VIII	No Unknown	Note 2	Frequency defined in Table 6-1 for Category D to the extent possible. Additional interim requirements as defined in Section 5.1.7.
I	Non-resistant Mat. Cold Leg Examination does not meet requirements of Figure 5-1 Item 6 Configuration not addressed in Appendix VIII	No Unknown	Note 2	Frequency defined in Table 6-1 for Category E to the extent possible. Additional interim requirements as defined in Section 5.1.7.

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Classification per MRP - 139 sections Help Screen**