Radiographic Interpretation of Welds

What's the defect?

Lack of root penetration

What's the defect?
What’s the defect?

Lack of root Fusion
Radiographic Interpretation of Welds

What’s the defect?

- Excess Penetration
- Piping
- MAG Process

What’s the defect?
Radiographic Interpretation of Welds

What's the defect?
Lack of root fusion with misalignment

What's the defect?
Radiographic Interpretation of Welds

What's the defect?

Excessive root penetration

What’s the defect?
What’s the defect?

Concave root
What’s the defect?

Cluster porosity
Radiographic Interpretation of Welds

What’s the defects?

Burn through
Radiographic Interpretation of Welds

What’s the defect?

Cap undercut

What’s the defect?
Radiographic Interpretation of Welds

What’s the defect?

Wormholes/Piping
Radiographic Interpretation of Welds

Note: Grinding marks on parent plate

Cap undercut intermittent

Concave root

What’s the defect?
What’s the defects?

Radiographic Interpretation of Welds

- Hard Stamping
- Blow hole/piping
- Lack of root fusion

MAG process
Radiographic Interpretation of Welds

What's the defects?

- Root undercut
- Arc strike indication
- Porosity

Note: Grinding marks on parent plate
Radiographic Interpretation of Welds

What’s the defect?

Root undercut
What’s the defect?

Incomplete filled groove
Radiographic Interpretation of Welds

What’s the defect?

Longitudinal crack

What’s the defect?
What’s the defects?

- Cap Undercut Intermittent
- Slag Line
What’s the defect?

Radiographic Interpretation of Welds

Slag line
Poor stop/start
Slag line
Radiographic Interpretation of Welds

What's the defect?

Elongated slag lines

What’s the defect?
Radiographic Interpretation of Welds

What’s the defect?

Linear misalignment

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M.S. Rogers
What’s the defect?

Radiographic Interpretation of Welds

Lack of sidewall fusion
What’s the defect?

Transverse cracking
What’s the defect?

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- Cap undercut intermittent
- Slag inclusions
- Root piping

What’s the defect?
Radiographic Interpretation of Welds

What’s the defect?

Lack of sidewall fusion + slag
What's the defect?
Lack of sidewall fusion + slag

Radiographic Interpretation of Welds
Radiographic Interpretation of Welds

What’s the defects?

Lack of root penetration

Burn through

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Radiographic Interpretation of Welds

Cluster porosity throughout weld

What’s the defect?

Note: Re-shoot lead letters in weld area
Radiographic Interpretation of Welds

What’s the defect?

Crater crack or Star crack
Radiographic Interpretation of Welds

What's the defect?

- Worm holes
- Hard stamping

Do you see anything else?

What's the defect?
What’s the defect?

HAZ crack
**Radiographic Interpretation of Welds**

What’s the defects?

- Lack of root penetration
- Copper inclusions
- Lack of root penetration

MAG Process

What’s the defects?
Radiographic Interpretation of Welds

What's the defect?

Excess root penetration

Root undercut

Note: Grinding marks throughout
What's the defect?

Radiographic Interpretation of Welds

Crater cracks + crater pipe
No weld metal

What's the defect?
Radiographic Interpretation of Welds

What’s the defect?

- Lack of root penetration
- Root undercut
- Unfused filler wire
Radiographic Interpretation of Welds

What’s the defect?

Excess penetration

Flush weld

What’s the defect?
Radiographic Interpretation of Welds

What’s the defect?

Silica inclusions

MAG Process

What’s the defect?
What’s the defect?

Cluster porosity
What’s the defects?

- Arc strike
- Cap undercut

Radiographic Interpretation of Welds
What’s the defects?

Excess Root Penetration

Spatter / Debris

Do you see anything else?
What’s the defects?

Piping

Gas pore

What else can you see?

Spatter
What's the defects?

Root undercut
What’s the defects?

- Burn Through
- Lack of Root Penetration
- Copper inclusions
- MAG Process

Can you see anything else?
What’s the defects?

- Lack of root fusion
- Incomplete filled groove
- Lack of root penetration
- Lack of root penetration
What's the defects?

- Lack of Root Penetration
- Cap Undercut
- Wormholes/piping
Radiographic Interpretation of Welds

What defects can you see?

- Parallel slag lines
- Porosity
What defects can you see?

- Porosity
- Crack
- Lack of sidewall fusion
Radiographic Interpretation of Welds

Interpass slag inclusions

What’s the defects?
Radiographic Interpretation of Welds

Re-Shoot Lead letter in weld area

Porosity
Excess penetration

Transverse Cracks

What’s the defects?
What’s the defects?

- Lack of root penetration
- Incomplete filled groove
- Copper inclusions
- Incomplete filled groove
Radiographic Interpretation of Welds

What’s the defects?

Tungsten inclusions

TIG Process

What’s the defects?
Radiographic Interpretation of Welds

Herringbone porosity

What’s the defects?
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Note: Grinding marks

What's the defects?

- Root concavity
- Note: weld repair
- Arch strike

Note: weld repair

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Note: Re-shoot lead letter in weld area

- Lack of root penetration
- Excess penetration
- Tungsten inclusions

What’s the defects?
What's the defects?

Radiographic Interpretation of Welds

- Gas cavities
- Slag inclusions
- Concave root intermittent

What's the defects?
Radiographic Interpretation of Welds

What’s the Artefact?

Light Fog
Light Leaks
What’s the Defect?

- Cap undercut

What’s the Artefact?

- Yellow Fog
Crimping Mark
After Exposure

What’s the Artefact?
What’s the Artefact?

Film Scratch

What’s the Artefact?
Radiographic Interpretation of Welds

What’s the Artefact?

Static Discharge
Radiographic Interpretation of Welds

What’s the Artefact?

Chemical Mark
What’s the Artefact?

Chemical Mark
What’s the Artefact?

Water Marks
Radiographic Interpretation of Welds

What’s the Artefact?

Dust/Grime Marks
Reticulation

What’s the Artefact?
What’s the Artefact?

Diffraction Mottle
Any Questions?