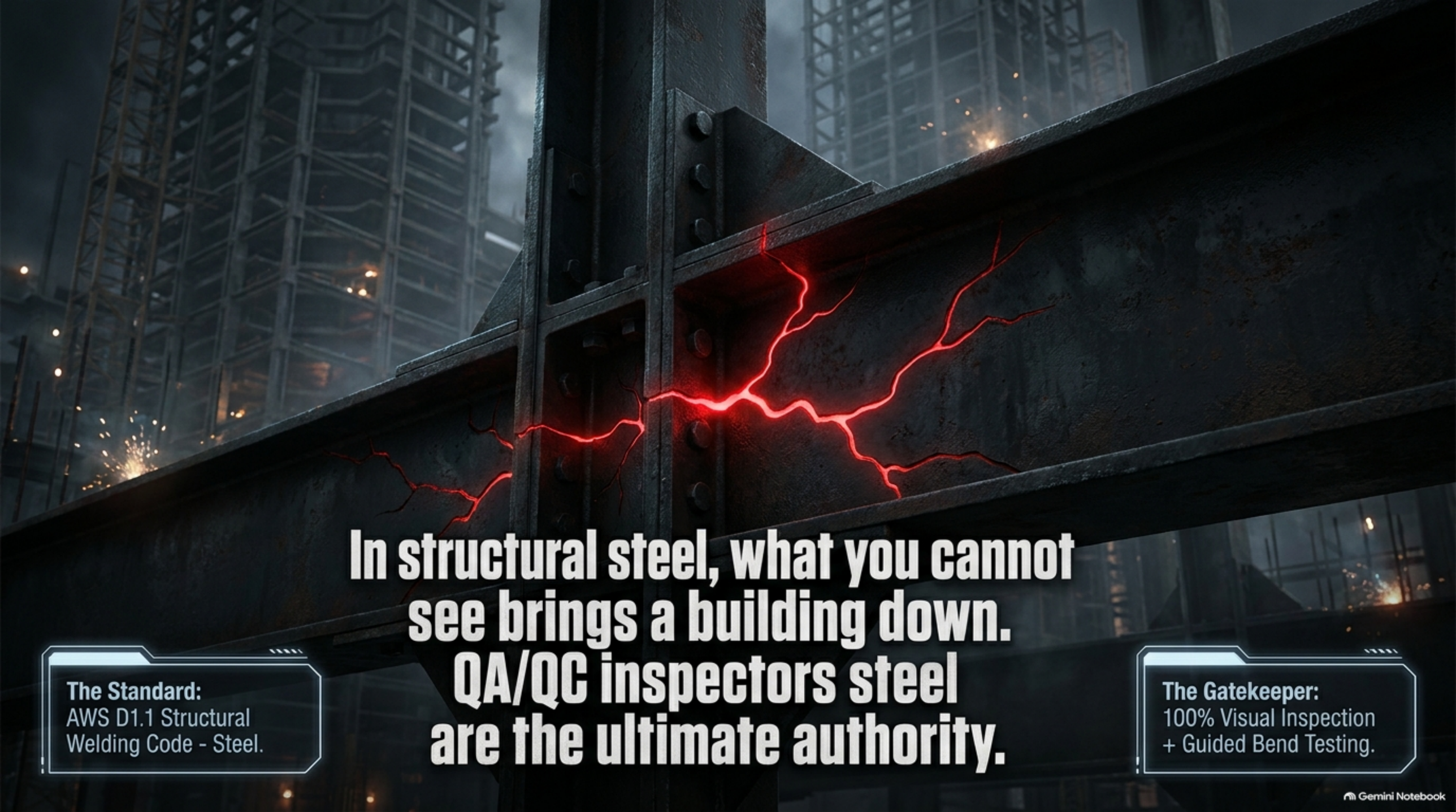
WELDER ESPORTS SEASON 3: GAME 8 - INSPECTION HUNT

MASTERING AWS D1.1 VISUAL & RADIOGRAPHIC FLAW DETECTION



Gemini Notebook


In structural steel, what you cannot see brings a building down. QA/QC inspectors steel are the ultimate authority.
The Standard:
AWS D1.1 Structural Welding Code - Steel.
The Gatekeeper:
100% Visual Inspection + Guided Bend Testing.
Gemini Notebook

The 15-Second Pressure Cooker

(00:04)

Defect Tagging - Identify porosity, undercut, slag, or crater flaws before time expires.

Toggle X-Ray (NDT) Mode - Switch from surface optics to structural radiography.

Submit Verdict - Commit to a Pass/Fail assessment.

PASS

FAIL

Gemini Notebook

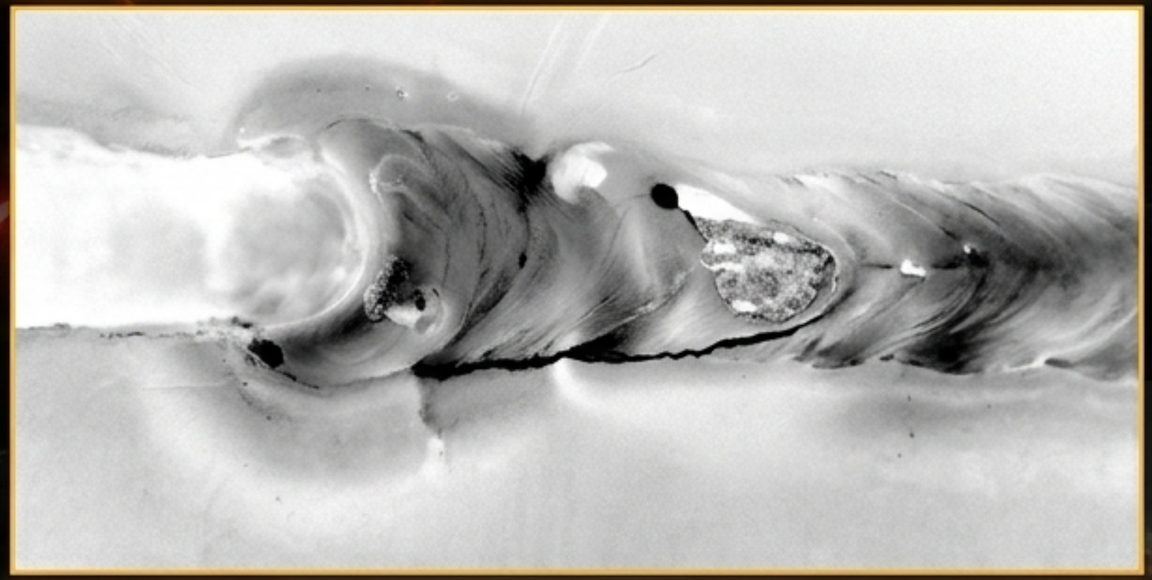
The Diagnostic Matrix: VT vs. NDT

Visual Testing (VT)



Target Anomalies: Undercut, Surface Porosity, and Crater issues.

Non-Destructive Testing (NDT / X-Ray)



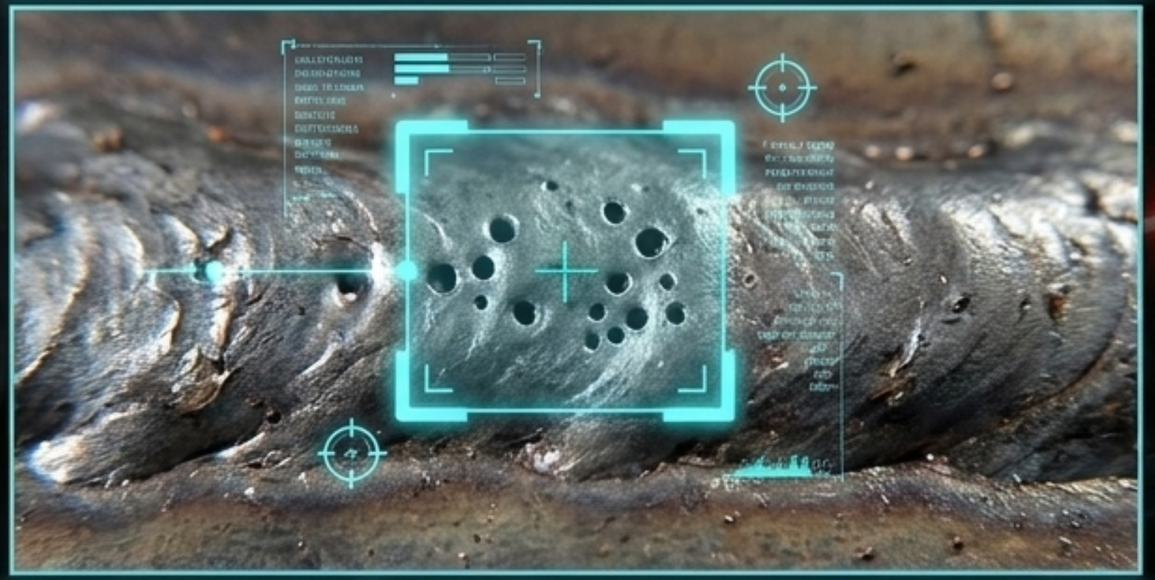
Target Anomalies: Deep Slag Inclusions, Internal Fusion Failures, and Root Cracks.

Switching vision modes is mandatory. Surface perfection frequently masks internal collapse.

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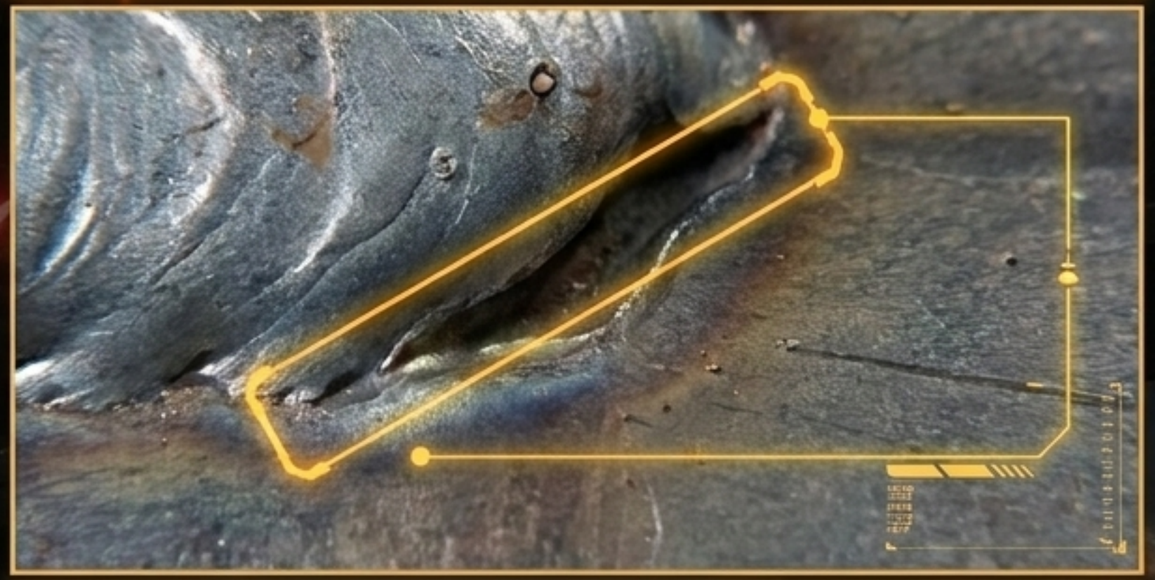
Surface Taxonomy: Porosity & Undercut

Porosity (Gas Entrapment)



AWS D1.1 Data Feed:
Table 4.11 Limit: Max pore diameter > 3/32 in.
Cause: Lack of shielding gas.

Undercut (Base Metal Erosion)

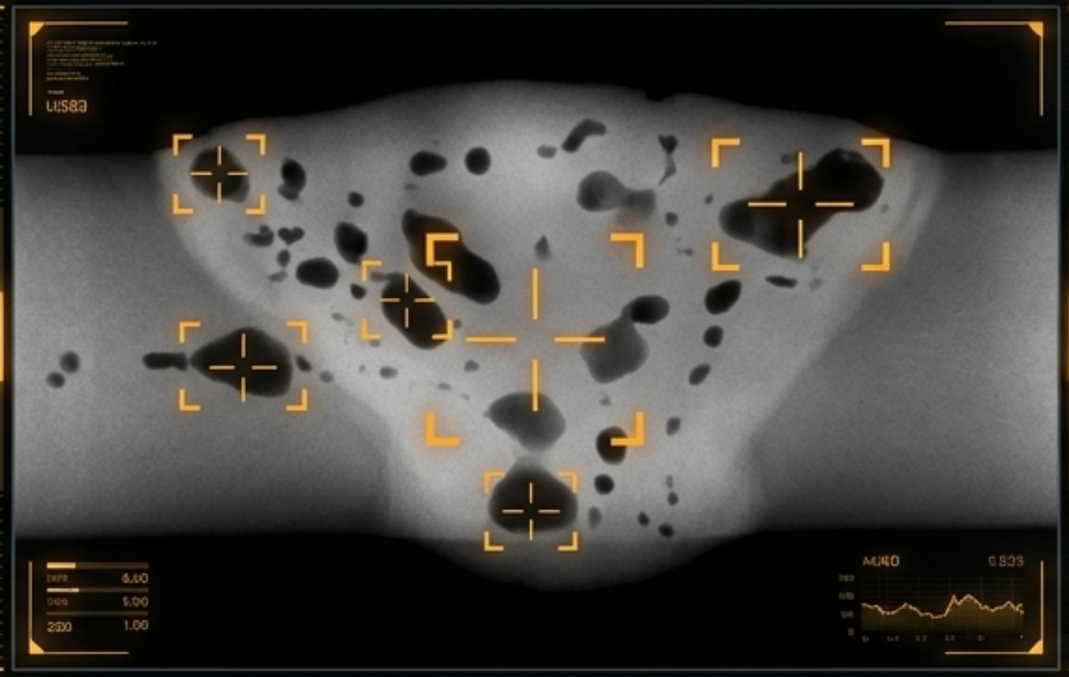


AWS D1.1 Data Feed:
Table 4.11 Limit: Depth > 1/32 in (for primary members).
Cause: Excessive travel speed / heat input.

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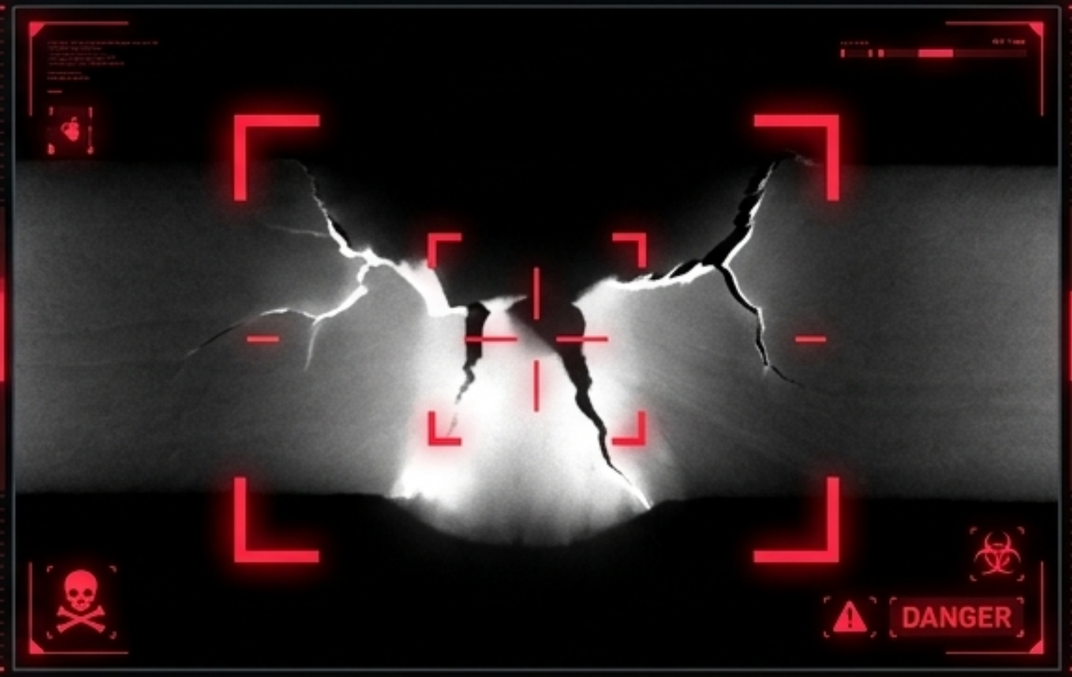
Subsurface Killers: Slag & Cracks

Slag Inclusions (Trapped Flux)



AWS D1.1 Data Feed:
Internal impurity detected. Discontinuous slag lines exceeding code length limits.

Internal Cracks (Thermal Stress)



AWS D1.1 Data Feed: CRITICAL: INSTANT FAIL.
Zero tolerance for cracking under AWS D1.1.
Cause: Hydrogen embrittlement / rapid cooling.

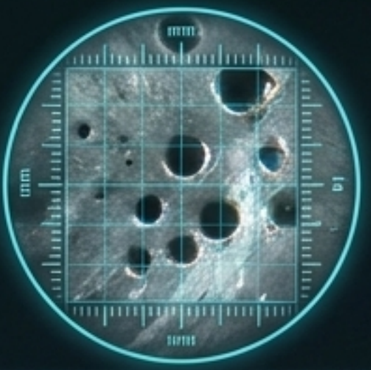
Subsurface integrity is non-negotiable. X-ray vision reveals the hidden flaws that ensure **structural collapse.**

Gemini Notebook

The HUD Flaw Scanner Anatomy



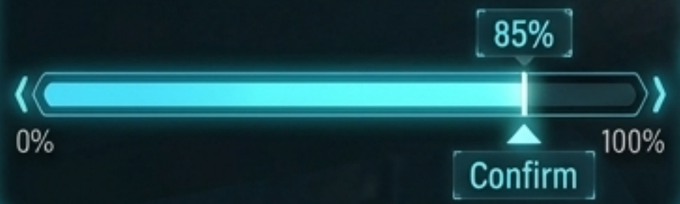
Magnification Reticle



The Defect Wheel



Confidence Slider

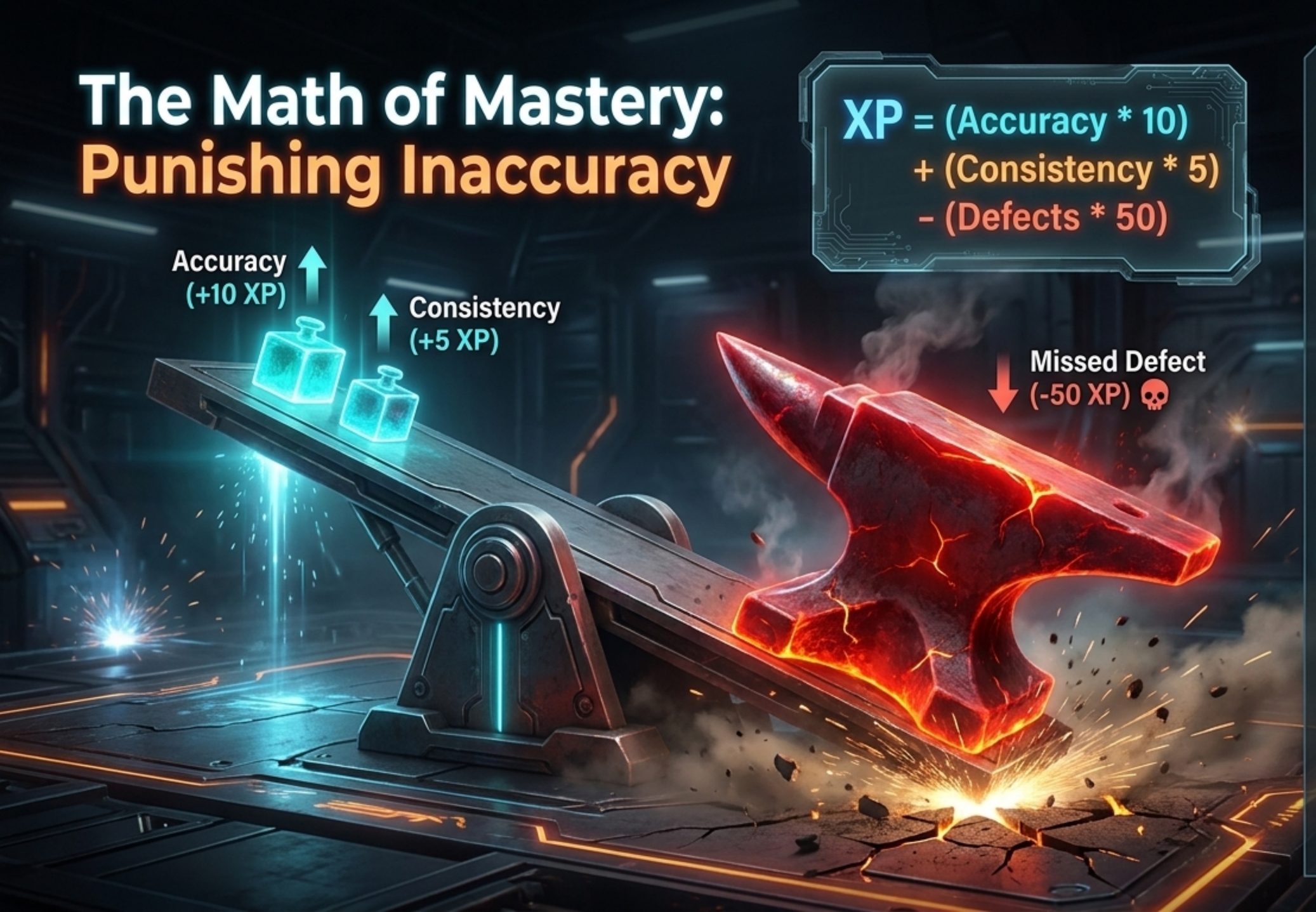


Built for rapid APM (Actions Per Minute). Instinctual muscle memory meets structural engineering.

Gemini Notebook

The Math of Mastery: Punishing Inaccuracy

XP = (Accuracy * 10) + (Consistency * 5) - (Defects * 50)





Scoring Weights:
Accuracy (40) +
Consistency (30)
+ Safety (30)

In Welder Esports, gamers are violently punished for missing a safety hazard. A single unseen flaw destroys a perfect run.

Gemini Notebook

Compiling the AWS D1.1 Codebook

Step 1: The Standard (Source)

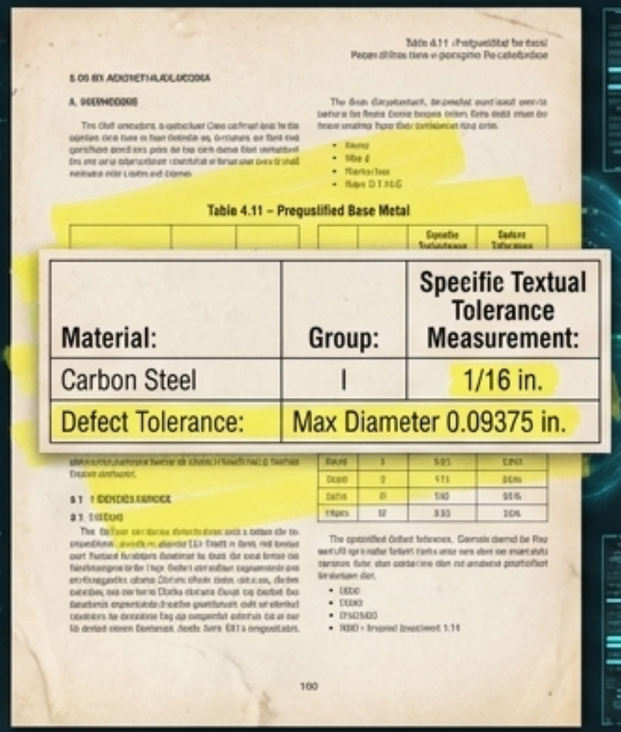


Table 4.11 – Prequalified Base Metal

Material:	Group:	Specific Textual Tolerance Measurement:
Carbon Steel	I	1/16 in.
Defect Tolerance:	Max Diameter 0.09375 in.	

Step 2: The Translation (Engine)

```
if (defect_diameter > 0.09375) {
    flag = true;
    apply_penalty(50);
}
```

Step 3: The Verdict (Output)

FAIL: Code Violation Detected

Reason: Defect exceeds permissible limit > 0.09375 in.

Built for rapid APM (Actions Per Minute). Instinctual muscle memory meets structural engineering.

Gemini Notebook

The Inspector's Loop

15.0 seconds
(Conscious Searching)



0.8 seconds
(Subconscious Pattern Recognition)

Game 8 engineers rapid cognitive transformation.
We train the eye until structural defect detection becomes pure reflex.

Gemini Notebook

The Platinum Tier: Job Ready

The Apex



The Apex

Platinum Expert Welder. Cleared Cleared for Structural Fabrication & Remote Robotic Teleoperation

The Test



The Test

AWS D1.1 3/8in Limited Thickness Qualification. Zero Defects. Live Bend Test.

Base / Gold Tier



Base / Gold Tier

90%+ Accuracy in Inspection Hunt

From pixel-perfect visual acuity to verified industrial master

Gemini Notebook