

VV Field Weld Development

Status of Weld Test Samples

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L. Dudek

J-Groove, 1/8" Root

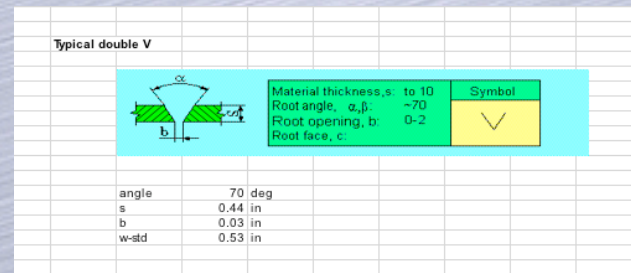


V- Groove Sample

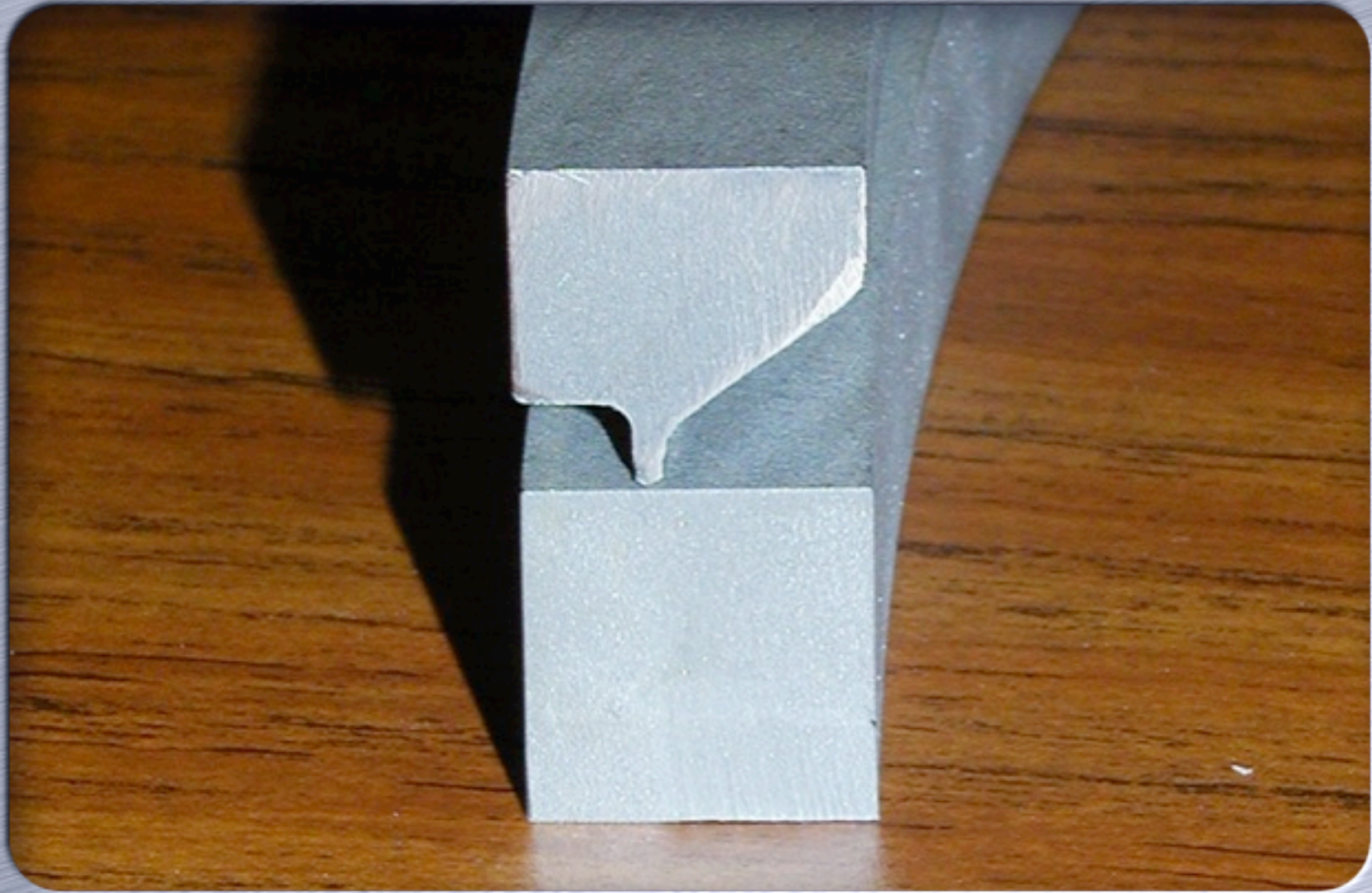
- V-Groove weld sample with backing ring
- 3/8" Thick Sample
- 1/8" Backing Ring applied



V-Groove prep, backing ring

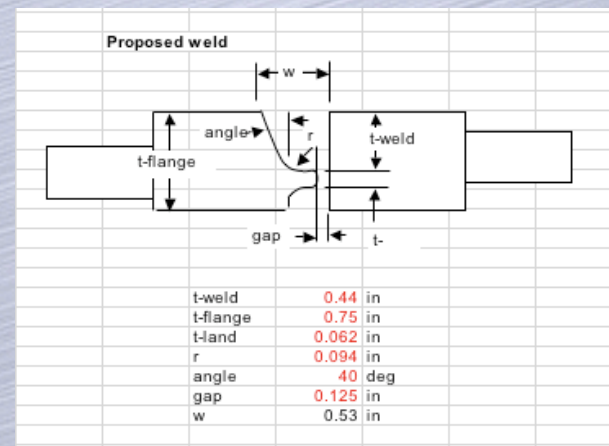
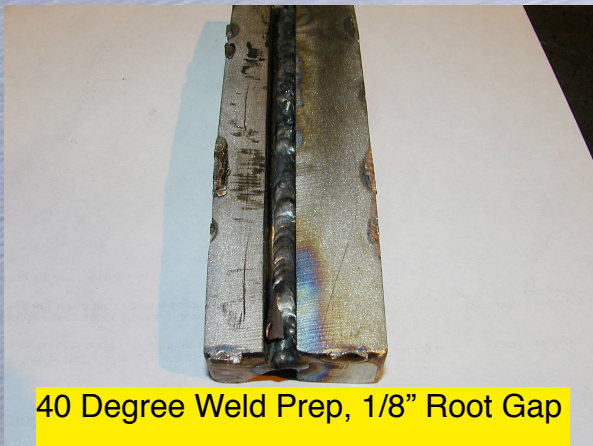


40° Bevel Prep



40° Bevel

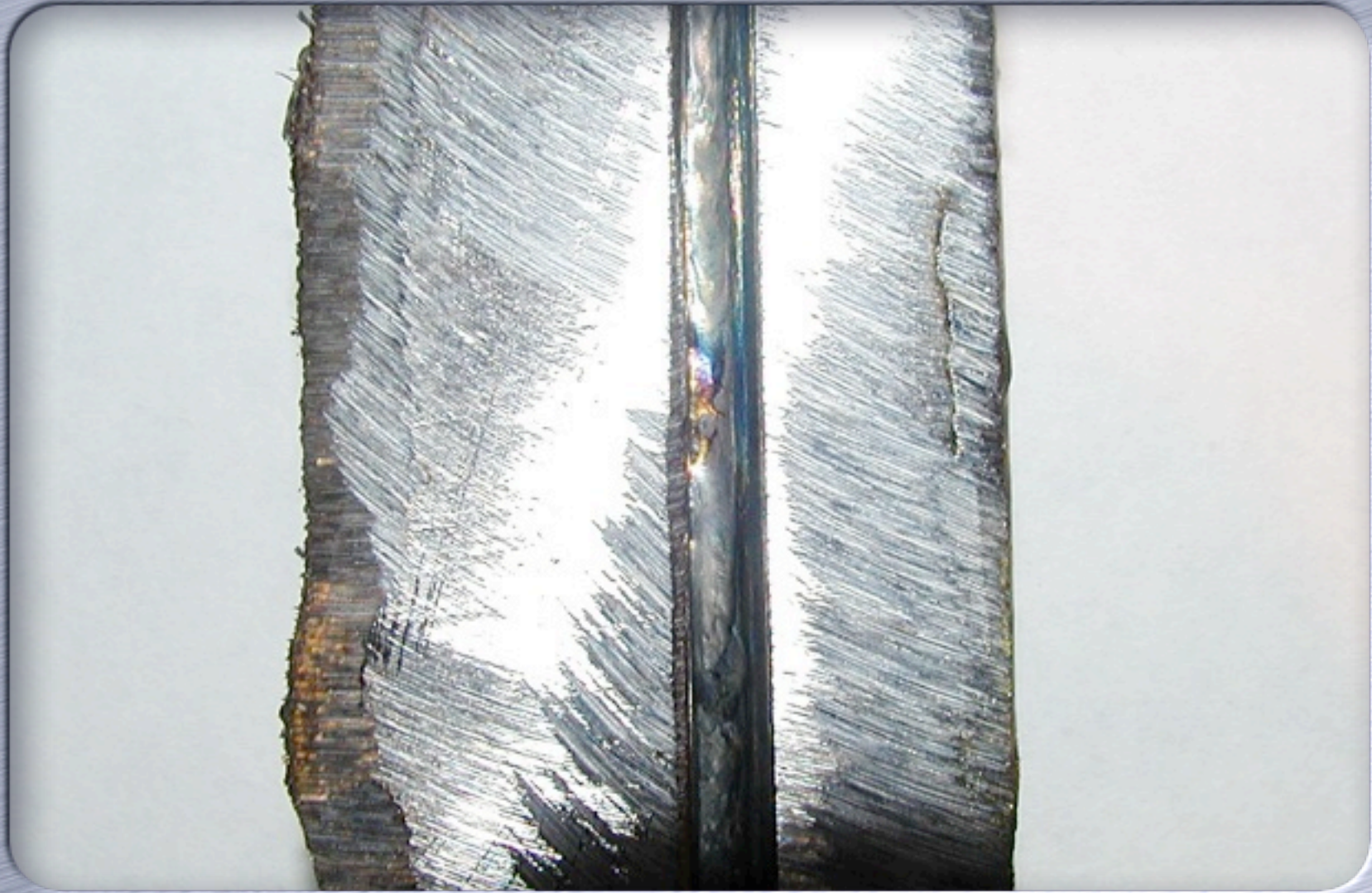
- 40 degree prep
- 1/8" root gap



40 ° Bevel, 1/8" Root



40° Bevel, Autogenous



Fatigue Tests

- Tensile load at 2x design stress
- Cycle test rate: 1 Hz
- Currently at 435,000 cycles with no signs of distress

Weld Tests

Test Item	Small Scale Test	Large Scale Test	Simplified Large Scale Test (one set of rings, segmented)
Weld shrinkage/distortion	yes	yes	yes
Temperature outside weld	?	yes	yes
Adequacy of gas seal for cover gas and leak checking	?	yes	yes
Adequacy of clamp tooling for holding the joint prior to welding, during the tacking operation	NO	yes	yes
Practice for Welders	yes	yes	yes
development of any in-vessel work platforms	NO	yes, but this could be developed during construction	yes, but this could be developed during construction
demonstration of all weld positions	yes	yes	yes