

D 116 /

JULY 87

WIRE IRON

D FUYU

19W. 12N

30-40 cm.

Round rod with curved end 1.0g magnetic

Dark brown, corroded, adhering sand grains.

SAMPLES: Metallographic samples D 116 a, b. transverse and longitudinal sections. Diamond sawn, cold mount, ground, 1/4 μ diamond polish. 2% Nital etch. 10x

metal: Inhomogeneous, banded strongly with variable C content. (186). Kinetic core, pearlitic exterior. Voids and oxide stringers in core associated ferrite.

Ferrite areas: Very minor grain boundary cementite and pearlite. Equiaxed crystals. Numerous etch pits (?), oxide ppt (?). $\leq 0.1\% C$ ~ ASTM 6-4 (occasionally).

Grades through zone of Widmanstätten ferrite to pearlitic areas.

Pearlite areas: 0.7% C max. Grain boundary allotriomorphs of α . Some Widmanstätten plates. Fine pearlite (partly spheroidized?). Sub-grain boundaries within ferrite & grain delineated by cementite strips. (185). γ ~ ASTM 4

Carbon: Average $\pm 0.3\% C$, carburized, & ferrite stabilized by inclusions (P content high?). No visible banding under IC.

Inclusions:

1. Oxide stringers, especially near voids. No sand inclusions. Grades into network of oxide very irregular oxide patches.
2. Strips of very small rounded, often fractured 1 phase inclusions.
3. Elongated, granular-looking irregular banded stringers. Numerous tiny caponets.
4. A few 2 phase blobs, rounded light blob - darker matrix.