



*NISTM ~ Ohio Storage Tank
Conference*

A decorative graphic consisting of a horizontal line with a color gradient from dark blue on the left to bright yellow on the right, ending in a large, dark brown, teardrop-shaped shadow that tapers to the right.

Storage Tank Welding



Modern Welding Company

Welding Fabricator
since 1932

- Storage Tanks
- Pressure Vessels
- Structural Steel

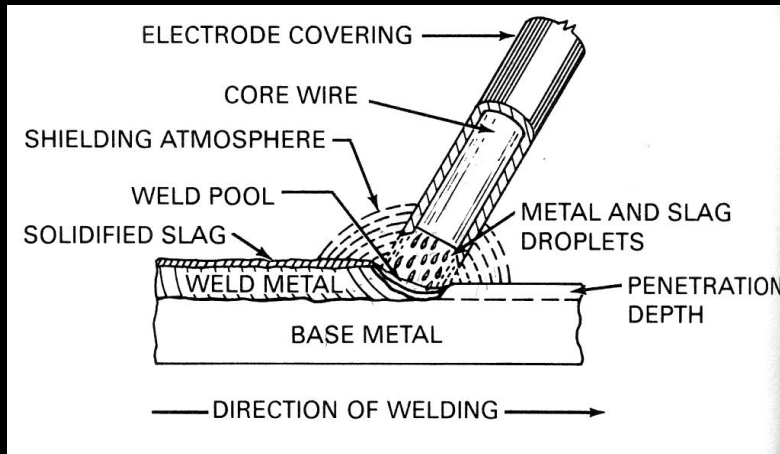
Presented by:
Phil Grimm



Welding Processes

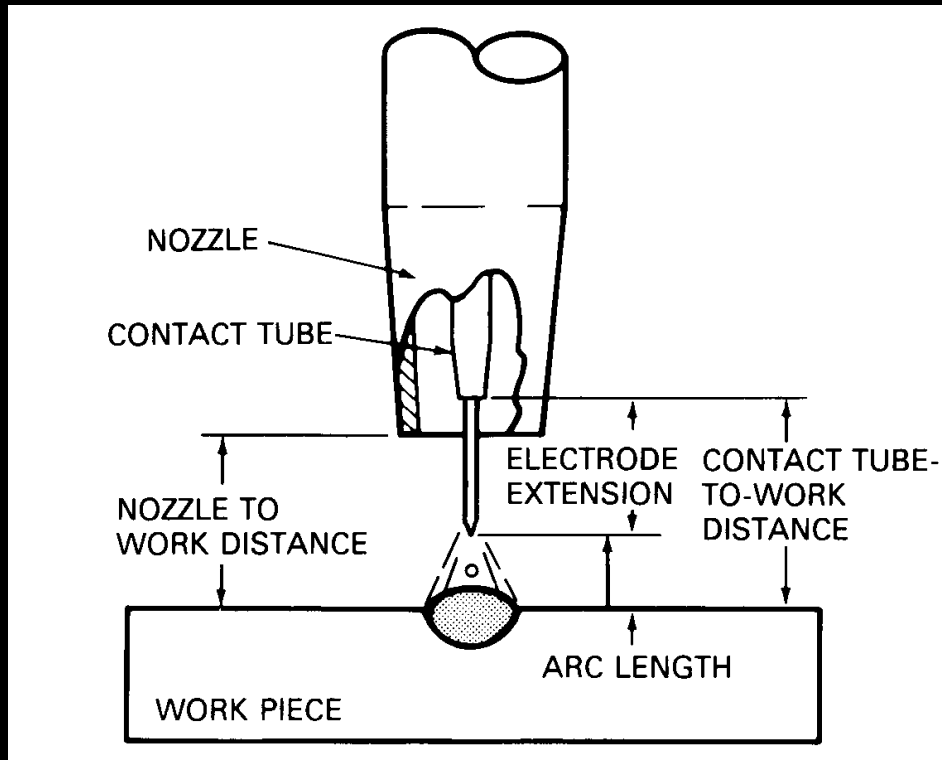
- SMAW ~ Shielded Metal Arc Welding
- GMAW ~ Gas Metal Arc Welding
- FCAW-G ~ Flux Cored Arc Welding – Gas Shield
- SAW ~ Submerged Arc Welding – Machine
- Filler Metal Tensile Strength Matches Base Metal Tensile Strength

SMAW Shielded Metal Arc Welding



- Welder Friendly
- All Positions
- Portable
- Least cost efficient
- Frequent stops

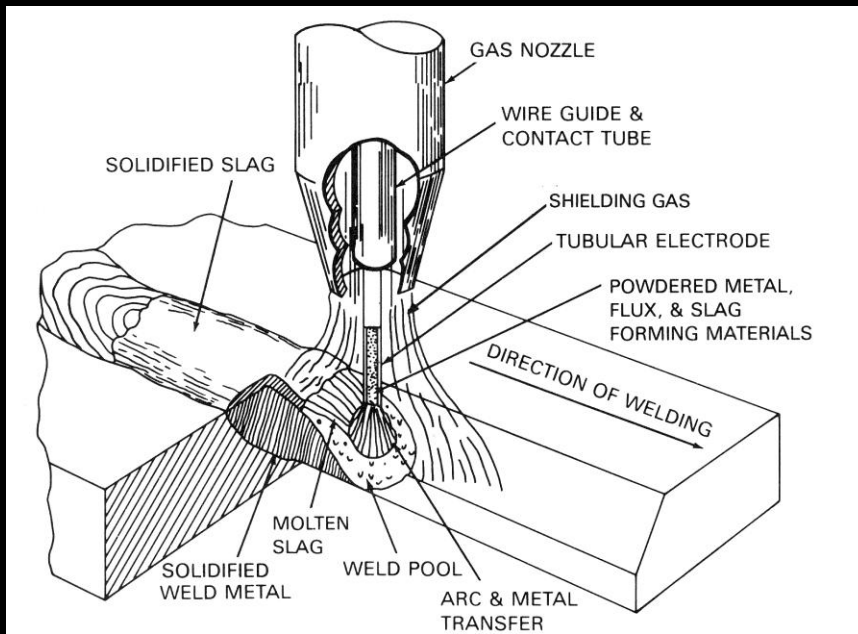
GMAW-S Gas Metal Arc Welding ~ Short-Circuiting



- High Deposition Rate
- All Positions
- Continuous Welding
- Low Penetration

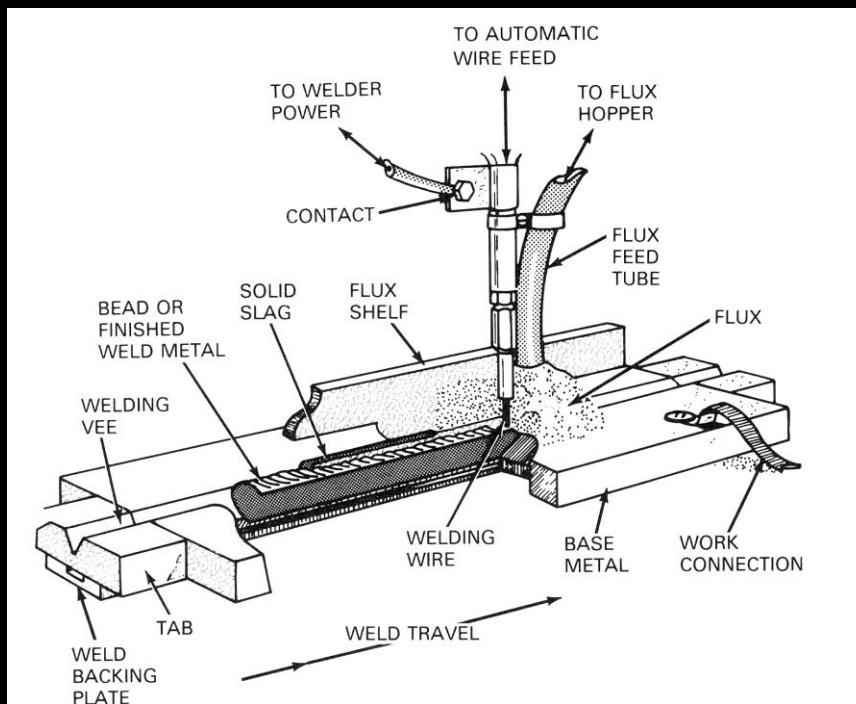
FCAW-G Flux Cored Arc Welding

~ Gas Shielding



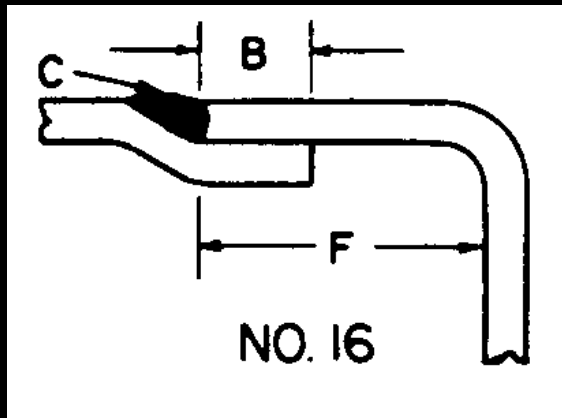
- Slag Supports Weld Bead
- All Positions
- Continuous Welding
- Good Penetration

SAW Submerged Arc Welding

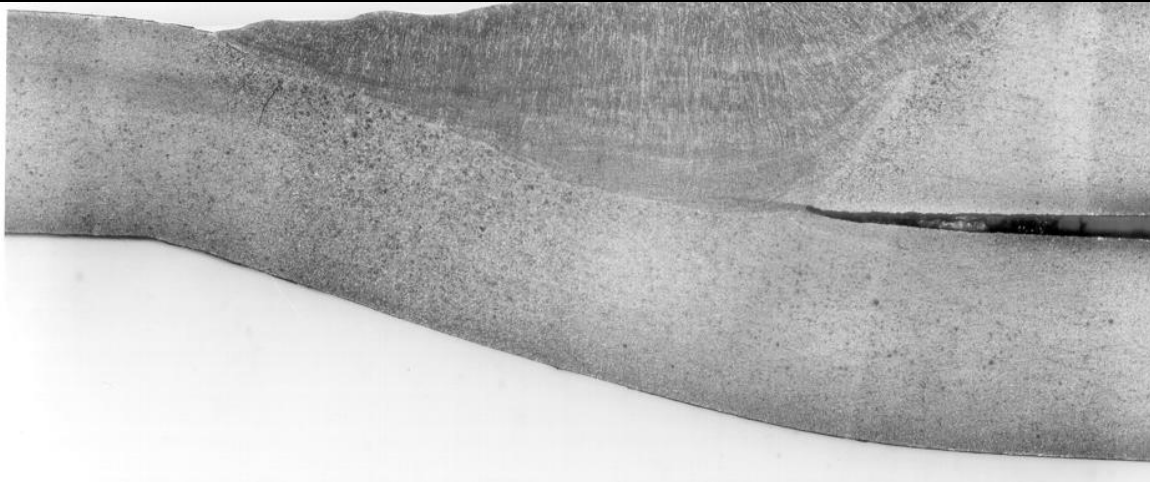


- Machine Welding
- Cost Efficient
- High Quality
- Flat Position Only

Machine Welding

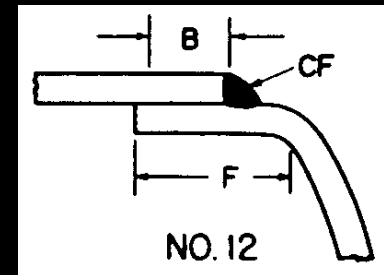
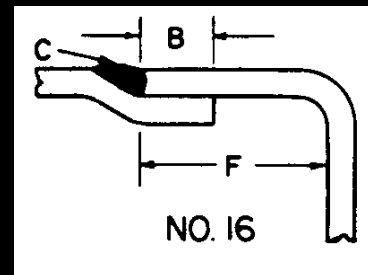
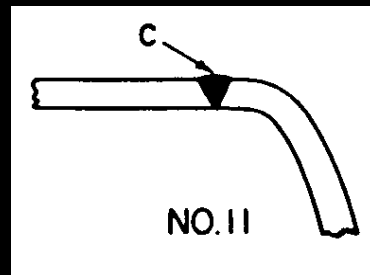
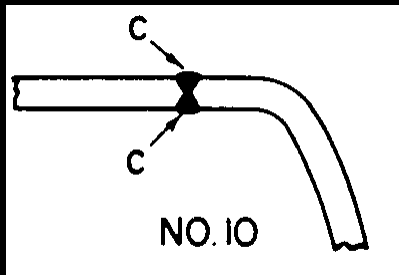


- Joggle Joint
- Welding With Backing
- CP One Side

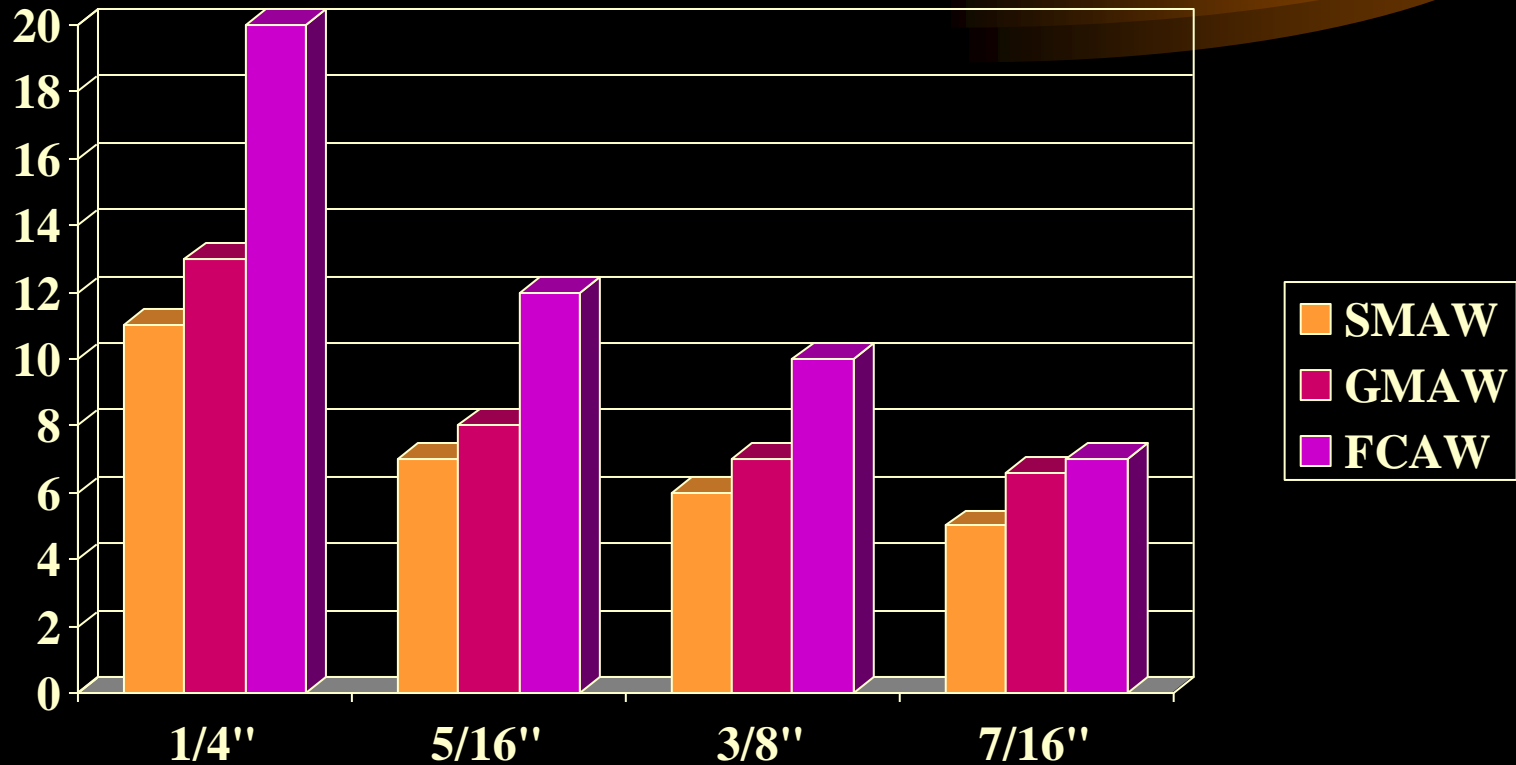


Properties of a Welded Joint

- Full Penetration
- Complete Fusion
- Filler Metal Compatibility
- Position of Electrode

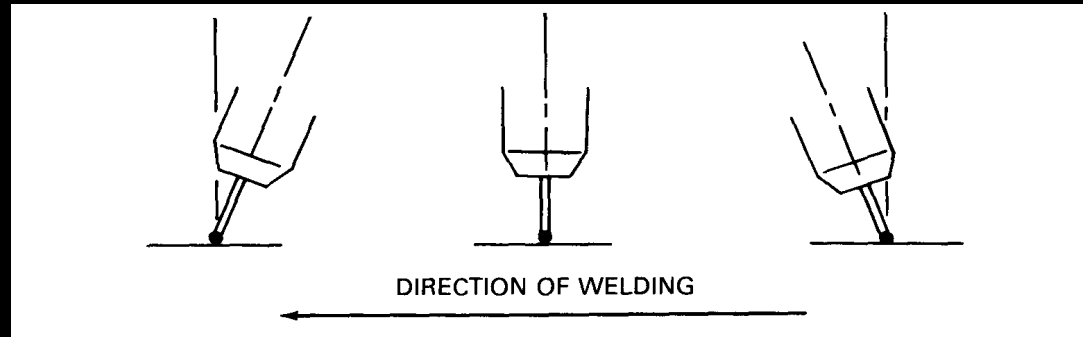


Welding Process Productivity Manual and Semi-Automatic



The WPS should list all Technical Requirements

- Nozzle Placement
- Position
- Filler Metal
- Base Metal
- Volts & Amps
- Temperature
- Gas ~ if required
- Flux ~ if required
- Electrical Characteristics
- Electrode Direction



Welding Procedure Qualification



ANSI/AWS B2.1-98 “Specification for
Welding Procedure and Performance
Qualification”

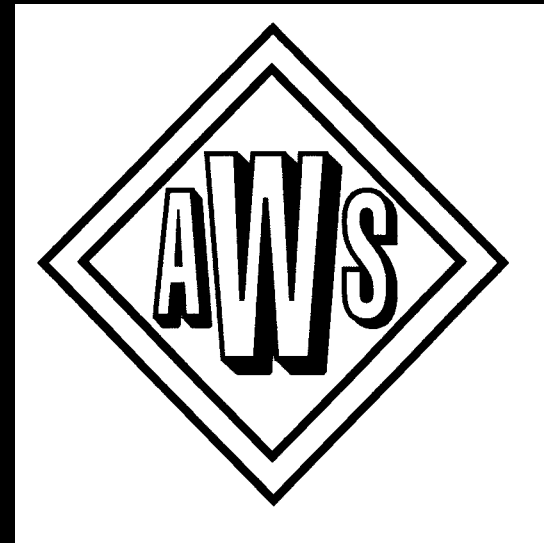
- Standard Welding Procedures
- Pre-Qualified Welding Procedures
- Qualified WPS to B2.1

AWS D1.1

“Structural Welding Code”

- AWS Pre-qualified
Welding Procedure
Specification in D1.1.

- American Welding
Society



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