

# NATIONAL WELDING CORPORATION

## Steel Pipeline-Weld-After-Backfill Application



### WAB AND PROJECTS

- Weld-After Backfill (WAB)
- Coatings and Welding

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NATIONAL WELDING CORP.



## Weld After Backfill-Sequence

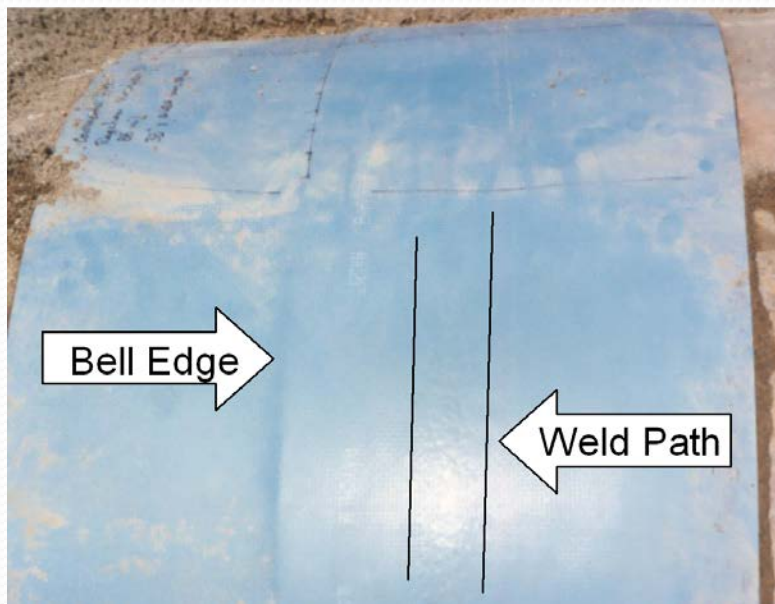
- W-A-B has been used for the past 16 years on projects ranging from 36" pipe in San Diego to 120" pipe in Charlotte.
- Safety, Constructability and Pipeline Integrity are principle reasons to use W-A-B
- 1<sup>st</sup> project using W-A-B was the Lake Texoma 72" line built in 1989
- More than 50 major projects have been constructed using W-A-B in the past 16 years



# Weld After Backfill

## Typical Applications

- Weld After Backfill is a sequence used to improve overall installation rate for steel pipe.
- Pipe is laid and welded outside (if required).
- Joint coating is applied, usually a shrink sleeve.
- Pipe is backfilled.
- The inside weld is made later.



Shrink Sleeve



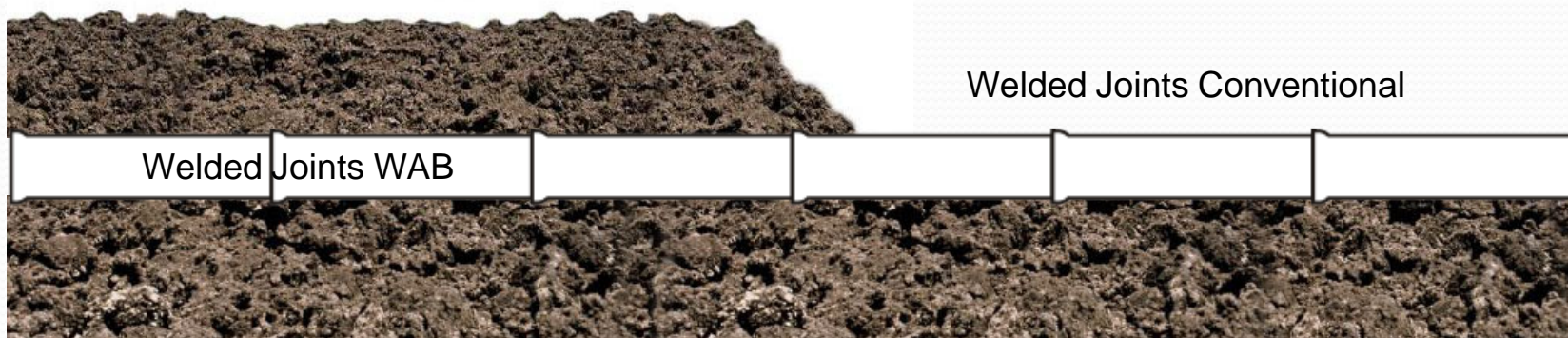
Evaluate under actual conditions



# Weld After Backfill-Benefits

The W-A-B benefits the contractor, designer and owner

- Improved safety during construction (Owner)
  - Fewer obstructions inside pipe
  - Less risk from open trench outside pipe
- Improved Pipeline Integrity (Design)
  - Reduced thermal stress
  - Consistent backfill
- Improved Production (Contractor)
  - Installation will be independent of welding
  - No interruptions for expansion joints
  - Reduces shoring needs

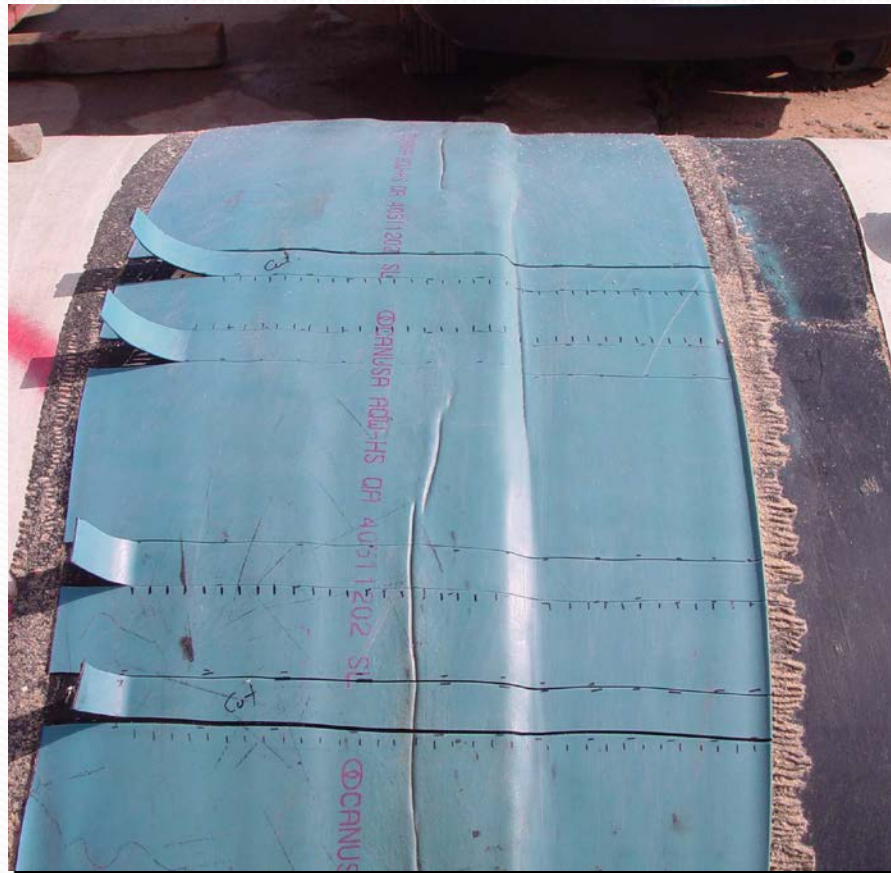






## Weld After Backfill-Key Items

- Heated backings expand, then contract as they cool. Backfill pressure keeps the sleeve in place. **Never weld a shrink-sleeved joint without backfill**
- Excessive gap in the pipe joint may allow heat flow-through which can affect the sleeve at the bell edge. **Respect minimum stabs depth and fit all joints to within the tolerances of 1/8".**
- **Minimum stab depth should be 2"** after any pipe alignment pull





## Weld After Backfill-Errors

Nonflammable materials must be specified and poor fit-up will cause big problems

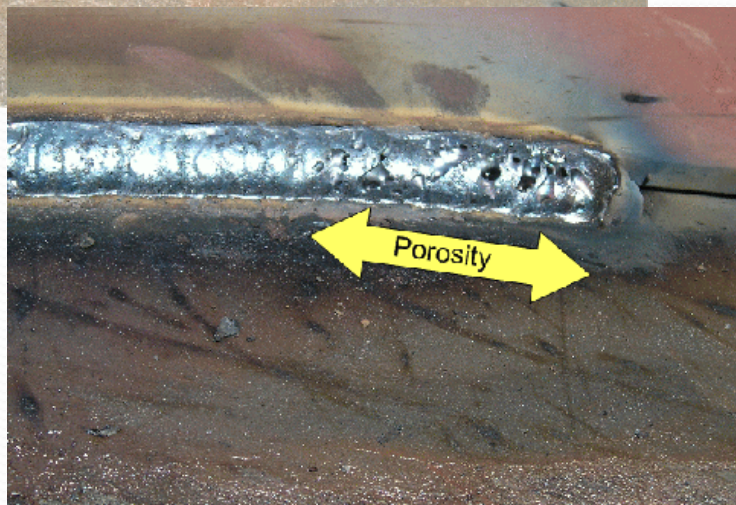
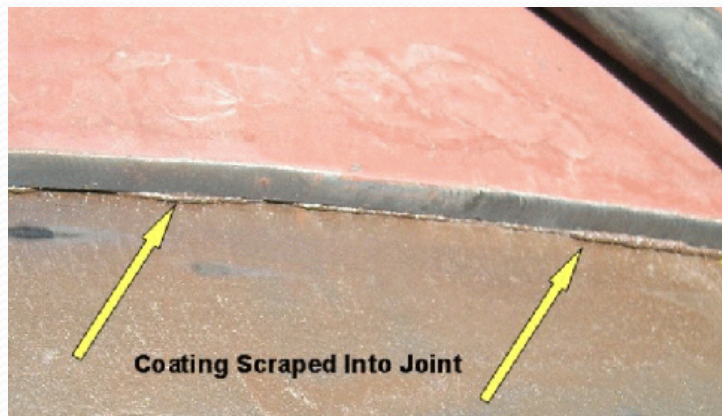






# Coatings and Welding

Pipe primers, coatings and overspray are not weldable





## Weld After Backfill allows immediate backfilling of difficult areas







# Weld After Backfill great benefits using proper methods

