

Drill Pipe Pup Joint Construction, Materials and Manufacturing Reference

PAGE 1 - CONSTRUCTION ROUTES

Construction route determines how the body, connection system and manufacturing controls are built.

INTEGRAL PUP JOINT



One-piece machined body

No body/tool-joint weld

WELDED DRILL-PIPE-STYLE PUP JOINT



Short drill-pipe body

Welded tool-joint ends

1 Body continuity

Integral construction keeps the body and end connections within one material section.

2 Bore relationship

Bore geometry must remain concentric with the connection and body axis.

3 Weld interface

Welded construction introduces a pipe-body/tool-joint transition that must remain aligned.

4 Connection end

Thread and shoulder geometry remain critical in both construction routes.

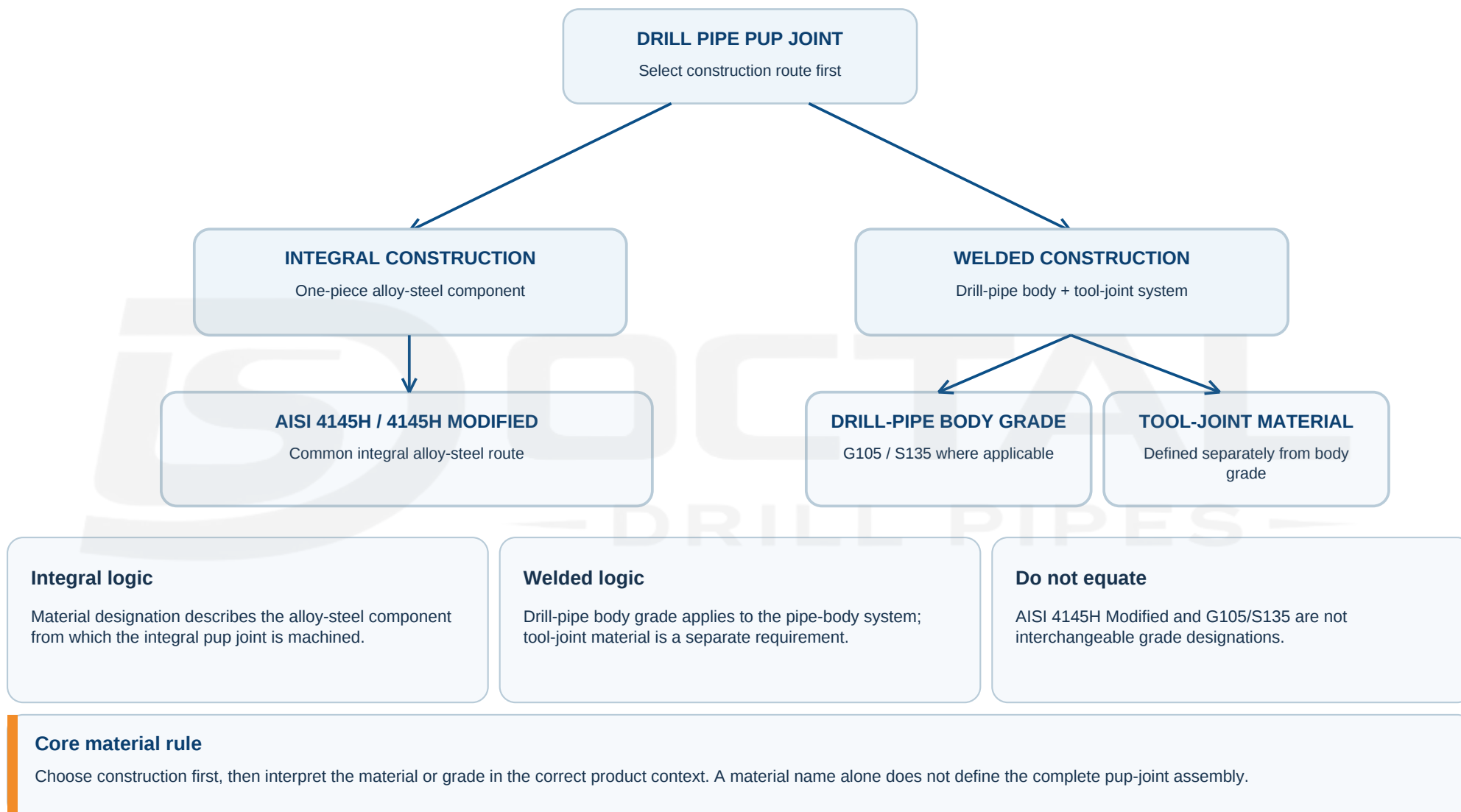
Core construction rule

Integral and welded pup joints differ first by structural route. Material and manufacturing requirements should follow that route rather than be applied as one common specification.

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PAGE 2 - MATERIAL AND GRADE LOGIC

Material names and drill-pipe grades describe different parts of the product system.

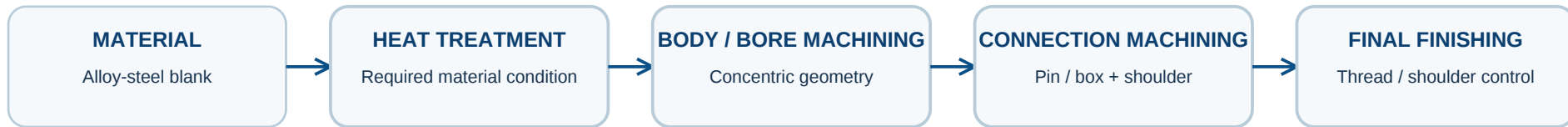


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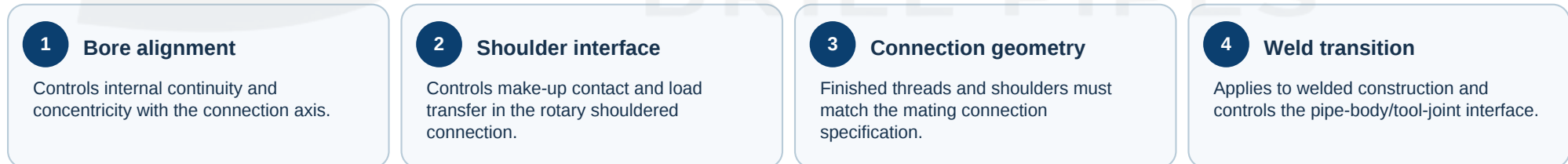
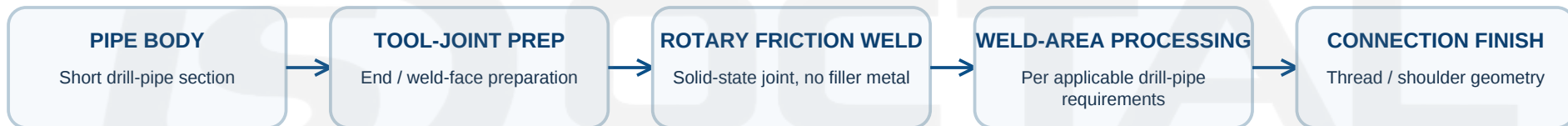
PAGE 3 - MANUFACTURING ROUTES

Manufacturing is controlled by the selected structure; the critical goal is alignment through the finished connection.

INTEGRAL ROUTE



WELDED DRILL-PIPE-STYLE ROUTE



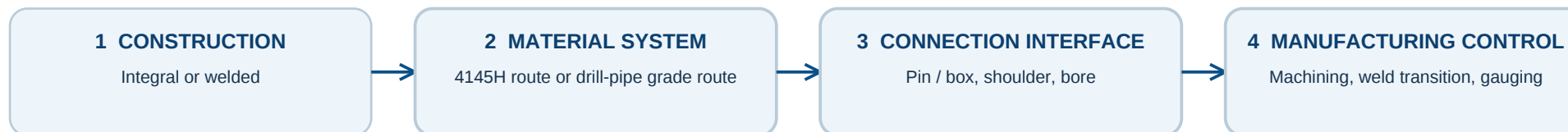
Manufacturing reference

For welded drill-pipe-style construction, rotary friction welding is a solid-state joining process performed without filler metal. Final requirements remain governed by the applicable product and connection specifications.

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PAGE 4 - TECHNICAL REFERENCE MAP

A complete pup-joint definition links structure, material system, connection interface and manufacturing control.



INTEGRAL REFERENCE

- **Structure** One-piece body and connections
- **Material logic** AISI 4145H / 4145H Modified route where applicable
- **Primary machining** Body, bore, pin/box and shoulder
- **Critical check** Concentric bore and connection geometry

WELDED DRILL-PIPE-STYLE REFERENCE

- **Structure** Short drill-pipe body with welded tool-joint ends
- **Grade logic** Drill-pipe body grade; tool-joint material defined separately
- **Joining route** Rotary friction welding where applicable
- **Critical check** Weld transition, bore continuity and final connection geometry

Reference boundary

ISO 11961 / API 5DP describe steel drill pipe with upset pipe-body ends and weld-on tool joints; API 7-2 addresses threading and gauging of rotary shouldered connections. Integral pup joints may follow a separate sub/product specification.