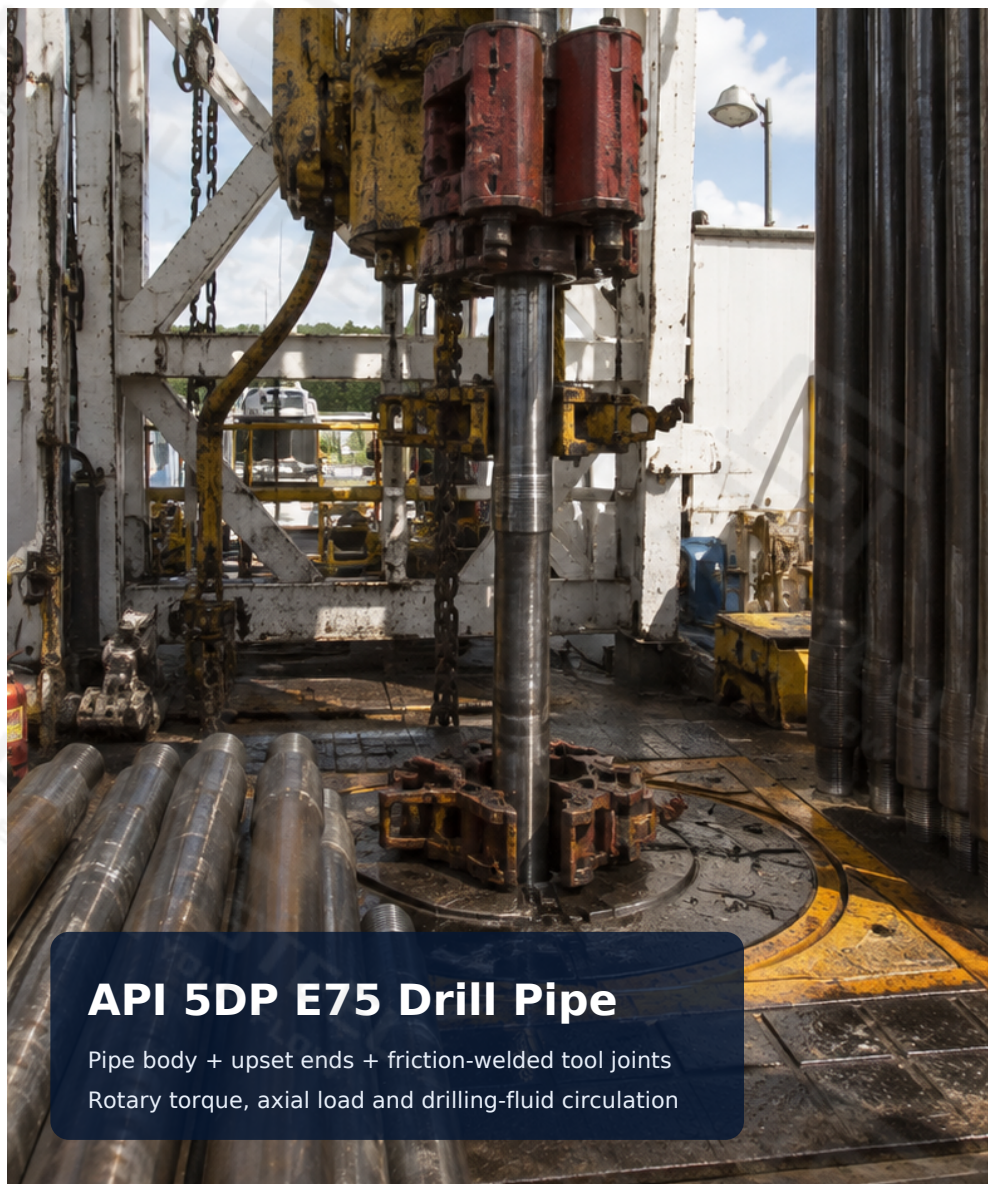




API 5DP E75 Drill Pipe

Pipe body + upset ends + friction-welded tool joints
Rotary torque, axial load and drilling-fluid circulation

Grade and Product Baseline

E75 is the Grade E pipe-body strength class used in API 5DP drill pipe. The finished joint is selected as an assembly: pipe OD, nominal weight, wall thickness, upset, tool-joint OD/ID, rotary-shouldered connection, length and inspection level must be released together.

Yield-strength window

75-105 ksi

517-724 MPa; pipe-body material acceptance.

Minimum tensile strength

100 ksi

689 MPa; pipe-body tensile baseline.

Grade E chemistry limits

P 0.030% max

Sulphur 0.020% max; heat chemistry reported on MTC.

Weld-zone hardness

37 HRC max

Surface and mean through-wall limit for Grades E/X/G/S.

Standard basis

- **API Spec 5DP, 2nd Ed. (May 2020)**
Drill-pipe manufacture and technical delivery; Addendum 1 issued Jan 2025.
- **ISO 11961:2018 + Amd 1:2020**
Steel drill pipe with upset body ends and weld-on tool joints; PSL-1/2/3.
- **API Spec 7-2 / ISO 10424-2**
Threading and gauging of rotary-shouldered tool-joint connections.
- **API RP 7G**
Performance properties and drill-stem design / operating limits.

Nominal weight is a pipe-body designation, not the finished joint weight after upsetting and welding tool joints.

Pipe OD	Nominal wt. lb/ft	Wall in / mm	Body ID in / mm	Connection reference*
2-3/8 in 60.3 mm	6.65	0.280 7.11	1.815 46.1	NC26
2-7/8 in 73.0 mm	10.40	0.362 9.19	2.151 54.6	NC31
3-1/2 in 88.9 mm	9.50	0.254 6.45	2.992 76.0	Project specific
3-1/2 in 88.9 mm	13.30	0.368 9.35	2.764 70.2	NC38
3-1/2 in 88.9 mm	15.50	0.449 11.40	2.602 66.1	Project specific
4 in 101.6 mm	14.00	0.330 8.38	3.340 84.8	NC40
4-1/2 in 114.3 mm	13.75	0.271 6.88	3.958 100.5	Project specific
4-1/2 in 114.3 mm	16.60	0.337 8.56	3.826 97.2	NC46

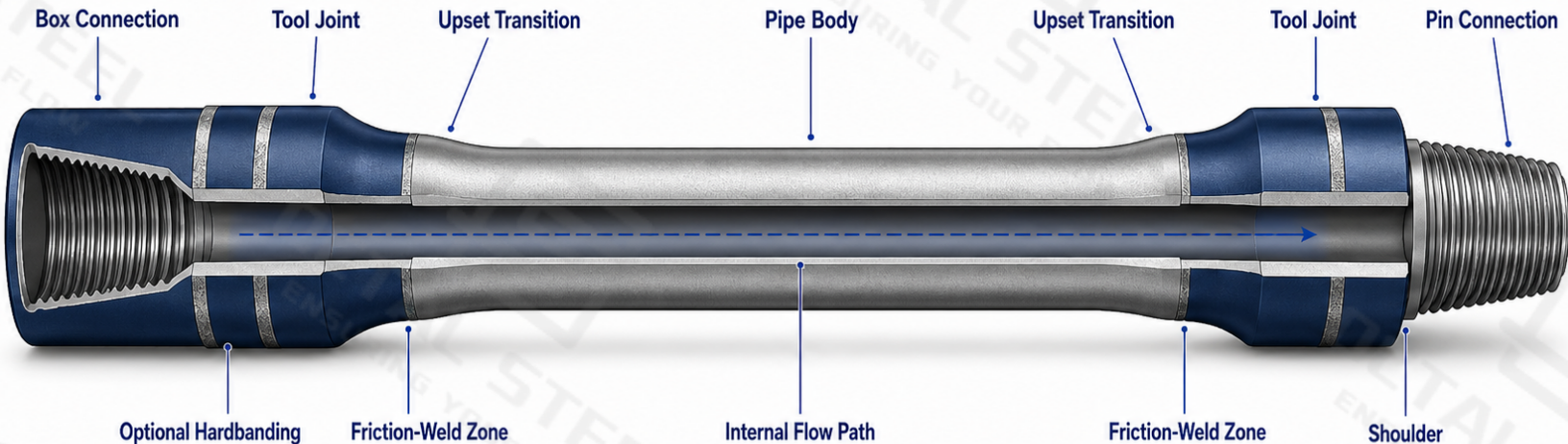
* Connection entries are common references only. Final connection, upset, tool-joint OD/ID, drift and torsion-strength ratio must follow the approved product data sheet.

Pipe OD	Nominal wt. lb/ft	Wall in / mm	Body ID in / mm	Connection reference*
4-1/2 in 114.3 mm	20.00	0.430 10.92	3.640 92.5	NC46 / specified
5 in 127.0 mm	19.50	0.362 9.19	4.276 108.6	NC50
5 in 127.0 mm	25.60	0.500 12.70	4.000 101.6	Project specific
5-1/2 in 139.7 mm	21.90	0.361 9.17	4.778 121.4	5-1/2 FH / specified
5-1/2 in 139.7 mm	24.70	0.415 10.54	4.670 118.6	Project specific
6-5/8 in 168.3 mm	25.20	0.330 8.38	5.965 151.5	6-5/8 FH
6-5/8 in 168.3 mm	27.70	0.362 9.19	5.901 149.9	6-5/8 FH / specified

Selection priorities

- Smaller OD: Check minimum tool-joint ID, drift passage and circulating pressure loss.
- Larger OD: Check annular clearance, rig handling and tool-joint OD.
- Same OD, heavier wt.: More body section but smaller bore; recalculate hydraulics and string weight.
- Connection reference: Not automatic; final tool-joint OD/ID and torque basis must be approved.

E75 Drill Pipe Structure



Selection item	What changes	Procurement check
IU / EU / IEU	End-bore and external upset geometry.	Confirm drift, hydraulic clearance and weld-section design.
Tool-joint OD	Torque section, wear envelope and annular clearance.	Check casing / hole clearance and hardbanding location.
Tool-joint ID	Flow restriction and downhole-tool passage.	Confirm minimum bore and drift before release.
Connection	Interchangeability, make-up behavior and shoulder load transfer.	Match subs, motor, BHA and existing drill string; gauge per API 7-2.
Hardbanding	Tool-joint OD wear and casing contact.	Specify alloy, band position, dimensions and casing-wear constraints.

Manufacturing, Inspection and Traceability

Process release must connect pipe-body heat, tool-joint heat, weld lot and finished marking



Critical release controls

Control area	What must be verified	Release evidence
Pipe body	Grade E heat/lot identity; OD, wall, straightness; chemistry and tensile results.	MTC + tensile / dimensional report
Upset transition	Internal profile, external geometry, alignment and wall continuity in areas not covered by automated inspection.	Upset dimensional report
Tool joint	Separate material identity, OD/ID, shoulder condition and specified hardness.	Tool-joint inspection record
Friction-weld zone	Alignment, flash removal, weld profile, NDT and hardness. For Grades E/X/G/S, surface and mean through-wall hardness must not exceed 37 HRC.	Weld-lot + NDT + hardness record
Pin and box	Rotary-shouldered thread form, taper, shoulder face and gauge result.	API 7-2 gauging record
Final joint	Length, drift / minimum bore, marking, protectors, quantity and bundle identity.	Final inspection + packing list

Traceability chain



Application Boundary & Release Checklist



Reassess E75 when the program includes:

Long horizontal sections, severe doglegs, heavy overpull, frequent jarring, aggressive milling, high torque-and-drag, major wall loss, connection limitation or H2S exposure without a qualified material route.

Project configuration and release checklist

Pipe OD / nominal weight	
Grade	E75
Tool-joint OD / ID	
Length range	R1 / R2 / R3
Hardbanding	Alloy + position + dimensions
PSL / supplementary requirements	
Third-party inspection	

Where E75 commonly fits

Surface-hole / short string

Moderate suspended load and drag; verify vibration, connection torque and hydraulic clearance.

Vertical intermediate section

Near-vertical profile with controlled torque and overpull; review fatigue across repeated doglegs.

Controlled drill-out / cleanout

Defined torque and overpull for shoe-track, plug or wash-down work; reassess repeated stalls or jarring.

Short sidetrack / low dogleg

Moderate torque and drag; include rotation count through the curved interval in fatigue review.

Specified wall / minimum bore

Upset type

IU / EU / IEU

Connection

Drift requirement

Internal coating

Type / coverage / repair

NDT / witness points

Document package

MTC / NDT / gauge / final / packing

References: API Spec 5DP, 2nd Ed. (May 2020), Addendum 1 (Jan 2025); ISO 11961:2018 (confirmed 2024) + Amd 1:2020; API Spec 7-2 / ISO 10424-2; API RP 7G. Reference size combinations require final approved data-sheet confirmation.