

API SPEC 7-1 Product Scope and Ordering Matrix

Rotary Drill Stem Elements, Ordering Data and Release Evidence

SCOPE DEFINITION

API SPEC 7-1 applies to covered rotary drill stem elements used to transmit torque, add weight or stiffness, connect drill-string members, stabilize the BHA, or provide drilling/coring tool interfaces.

Scope boundary: standard drill pipe is normally reviewed under API SPEC 5DP. Rotary shouldered connections should be checked under API SPEC 7-2.

API 7-1

Product scope

Covered drill stem elements

API 7-2

Connection control

Threading and gauging

API 5DP

Drill pipe control

Pipe body, grade, PSL

DRILL-STRING / BHA SCOPE VIEW



API 7-1 product body

HWDP / drill collar / stabilizer

API 7-2 connection

rotary shouldered connection

API 5DP drill pipe

pipe body / grade / PSL

BOUNDARY RULE

Define product group, geometry, material, connection, inspection scope and release evidence before production starts.

PROCUREMENT LOGIC A product name alone is not enough. Convert every order into measurable acceptance fields.

Product Function Map

Grouped by engineering function in the drill string and BHA, not by name alone.



Weight and stiffness control

Examples: Drill collars, HWDP

Inspection focus: Verify OD/ID, length, heat treatment, hardness, NDT, straightness, drift and traceability.



Torque drive

Examples: Square and hexagonal Kellys

Inspection focus: Verify drive section size, straightness, connection accuracy, surface condition, NDT and marking.



Connection and crossover

Examples: Drill stem subs, bit connections

Inspection focus: Verify pin/box combination, shoulder style, API 7-2 gauging, dimensional report and packin...



API SPEC 7-1 Covered Rotary Drill Stem Elements



BHA stabilization

Examples: Stabilizers, spiral drill collars

Inspection focus: Verify blade OD, spiral profile, groove condition, hardfacing, NDT, connection gauging and final marking.



Pressure or valve interface

Examples: Kelly valves

Inspection focus: Verify valve type, bore, material record, pressure-related inspection when specified, connection...

Ordering rule: product group + geometry + material + connection + inspection scope + release evidence. A product name alone is not enough for technical acceptance.

API SPEC 7-1 Product Group Summary

Quick procurement view of product role, order data and release evidence.



Drill Collars

Add BHA weight and stiffness.

ORDER

OD, ID, length, material, connection.

EVIDENCE

MTC, HT, hardness, NDT, dimensions, gauging.



Non-Magnetic Drill Collars

Reduce magnetic interference near surveying tools.

ORDER

Non-mag grade, magnetic property, OD/ID, connection.

EVIDENCE

Material identity, magnetic verification, NDT, marking.



Spiral Drill Collars

Reduce continuous wall contact in the borehole.

ORDER

Spiral profile, OD over body, groove condition.

EVIDENCE

Spiral geometry, hardness, NDT, straightness.



Heavy Weight Drill Pipe - HWDP

Stiffness and weight transition above drill collars.

ORDER

Welded/integral, tube OD/ID, TJ OD/ID, drift.

EVIDENCE

Traceability, weld/transition check, drift, gauging.



Square & Hexagonal Kellys

Transfer rotary table torque to the drill string.

ORDER

Kelly type, drive section size, length, connection.

EVIDENCE

Drive section dimensions, straightness, NDT, marking.



Kelly Valves

Provide valve function at the kelly assembly.

ORDER

Valve type, connection, bore size, material.

EVIDENCE

Material record, dimensional check, connection gauging.



Drill Stem Subs

Adapt connection types or provide crossover function.

ORDER

Sub type, OD/ID/length, pin/box combination.

EVIDENCE

Thread gauging, hardness/NDT where required, packing trace.



Stabilizers

Centralize or stabilize the BHA.

ORDER

Blade type, blade OD, body OD/ID, hardfacing.

EVIDENCE

Blade OD, hardfacing, NDT, connection gauging.



Bit Connections

Provide drilling or coring tool interface.

ORDER

Connection type, shoulder condition, gauge requirement.

EVIDENCE

Thread form, shoulder condition, gauging record.

RELEASE FOCUS

Every group needs physical marking, heat/lot traceability, dimensional confirmation and matching release documents.

Load and Stiffness Elements

Product cards show function, order data and release evidence without crowding.



Drill Collars

Add BHA weight and stiffness; provide a rigid transition above the bit or stabilizer assembly.

ORDERING DATA

- OD / ID / length
- Material grade
- Slick or spiral body
- Connection / bore

RELEASE EVIDENCE

- MTC by heat number
- HT record
- Hardness / NDT
- Dimensions + straightness
- Connection gauging



Non-Magnetic Drill Collars

Reduce magnetic interference around directional and surveying tools while maintaining BHA weight and stiffness.

ORDERING DATA

- Non-magnetic grade
- OD / ID / length
- Connection
- Magnetic property

RELEASE EVIDENCE

- Material identity
- Chemical + mechanical records
- Magnetic verification
- NDT + dimensional inspection
- Traceable marking



Spiral Drill Collars

Provide drill-collar weight while reducing continuous wall contact compared with a full-round body.

ORDERING DATA

- Spiral profile
- OD over body / ID
- Length / connection
- Groove surface finish

RELEASE EVIDENCE

- Spiral geometry review
- OD/ID control
- Groove condition
- Hardness / NDT
- Straightness + gauging



Heavy Weight Drill Pipe - HWDP

Provide a stiffness and weight transition between drill pipe and drill collars to reduce abrupt stiffness changes.

ORDERING DATA

- Welded/integral construction
- Tube OD/ID
- Tool-joint OD/ID
- Center upset / connection
- Hardbanding / drift

RELEASE EVIDENCE

- Material traceability
- Heat-treatment record
- Weld/transition inspection
- Hardness / NDT
- Drift + connection gauging

Interface, Control and Stabilization Elements

Separate drive, valve, crossover, stabilizer and bit interfaces before inspection.



Square and Hexagonal Kellys

Transfer rotary table drive torque through a square or hexagonal drive section.

ORDER

- Kelly type
- Drive section size
- Overall length
- Connection

EVIDENCE

- Drive dimensions
- Straightness
- Connection accuracy
- NDT + marking



Kelly Valves

Provide a drill-string valve function at the kelly assembly for pressure control and operational safety.

ORDER

- Upper/lower valve
- Connection
- Bore size
- Material

EVIDENCE

- Material record
- Pressure-related inspection
- Dimensional check
- Connection gauging



Drill Stem Subs

Connect drill-string members, adapt connection types or provide crossover and handling functions.

ORDER

- Sub type
- OD / ID / length
- Pin/box combination
- Shoulder style

EVIDENCE

- Compatibility
- Thread gauging
- Dimensional report
- Hardness/NDT if required



Stabilizers

Centralize or stabilize the BHA and control borehole-wall contact.

ORDER

- Blade type
- Blade OD
- Body OD/ID
- Connection

EVIDENCE

- Blade OD verification
- Hardfacing condition
- Body inspection
- NDT + gauging



Drilling and Coring Bit Connections

Provide the connection interface between drill-string components and drilling or coring tools.

ORDER

- Connection type
- Connection size
- Shoulder condition
- Gauge requirement

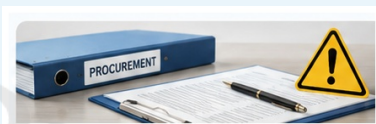
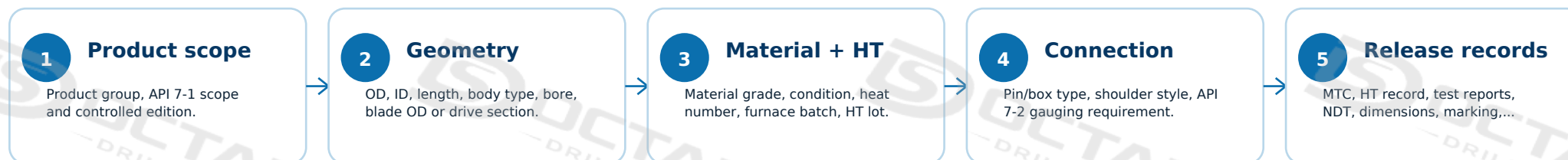
EVIDENCE

- Thread form review
- Shoulder condition
- Gauging record
- Dimensional inspection

Control point: interface products need clear pin/box combination, shoulder style, connection compatibility, dimensional inspection and traceable marking before release.

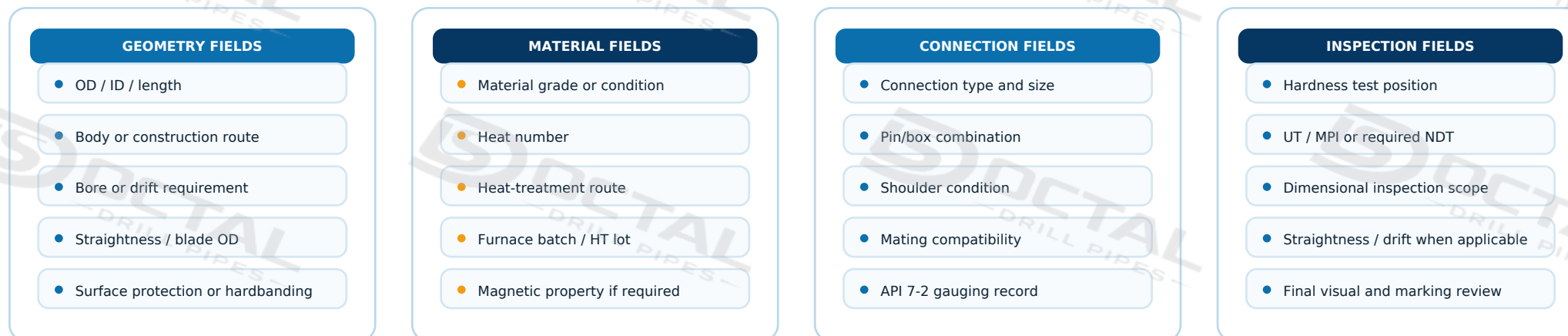
Ordering Data Map

Convert product names into measurable RFQ and PO fields.



RFQ data must be measurable, not descriptive only

The purchase order should identify product group, geometry, material condition, connection requirement, inspection scope and document package before production starts.



Practical rule: do not rely on a general name such as drill collar or HWDP. State the product group, measurable geometry, connection requirement, inspection scope and release document package.

Release Evidence Matrix

Typical evidence linking the physical product, heat number, inspection records and shipment documents.



SHIPMENT
RELEASE

MTC

HT record

Hardness

NDT

Dimensions

Drift / Straightness

API 7-2 gauge

Marking

Product group	MTC	HT	Hardness	NDT	Dimensions	Drift/ Straight	API 7-2 Gauge	Marking	Packing
Drill collars	OK	OK	OK	OK	OK	OK	OK	OK	OK
Non-mag collars	OK	OK	OK	OK	OK		OK	OK	OK
Spiral collars	OK	OK	OK	OK	OK	OK	OK	OK	OK
HWDP	OK	OK	OK	OK	OK	OK	OK	OK	OK
Kellys	OK	OK		OK	OK	OK	OK	OK	OK
Kelly valves	OK			ITP	OK		OK	OK	OK
Drill stem subs	OK	OK	ITP	ITP	OK		OK	OK	OK
Stabilizers	OK	OK	OK	OK	OK		OK	OK	OK
Bit connections					OK		OK	OK	OK

OK = normally required for release review. ITP = required when specified by product type, project ITP or approved inspection procedure.

Scope Confirmation and Final Release Dashboard

Use before RFQ release, inspection plan approval and final document review.

Question	Required confirmation	Document / inspection evidence
Covered API 7-1 item?	Confirm it belongs to API 7-1 scope, not standard drill pipe.	Product name, drawing, PO line
Product group named?	State drill collar, HWDP, kelly, sub, stabilizer, kelly valve or bit connection.	RFQ/PO description
OD, ID, length defined?	Specify measurable geometry and construction route.	Approved drawing / dimension sheet
Connection stated?	Define pin/box type, shoulder style and mating compatibility.	Connection drawing / API 7-2 gauging
Material and HT records?	Keep material grade, heat number, furnace batch and HT lot traceable.	MTC / HT record / lot map
NDT, hardness, dimensions?	Control hidden defects, hardness condition and fit-up dimensions.	NDT / hardness / dimensional reports
Marking and packing traceable?	Link physical product to inspection records and shipment documents.	Marking photo / final inspection / packing list

FINAL RELEASE LOGIC



Minimum release traceability chain



The release package should prove that the delivered item, material heat, inspection records, connection review, final marking and packing list refer to the same product or lot.