



Grade selection should be based on the actual well condition, not only the price or strength level. The same casing or tubing size may perform very differently depending on grade, heat treatment, pressure load, corrosion condition, connection type and inspection scope.

API 5CT Grade Selection by Well Condition

API 5CT Grade Group	Typical Well Condition / Selection Logic
H40 / J55 / K55	Suitable for shallow wells, surface casing and standard production service where pressure and load are moderate.
N80-1 / N80Q	Used for medium-depth wells requiring higher strength; N80Q is a quenched-and-tempered route.
L80 / C90 / T95	Selected where controlled strength, hardness and sour-service review are required.
P110	Used in deep wells, high-pressure sections and higher-load casing or tubing strings.
Q125	Designed for ultra-deep wells, HPHT sections and severe-load applications.
13Cr / Super 13Cr / Duplex / CRA	Used for CO ₂ , chloride-bearing or corrosion-sensitive wells.

Key Selection Parameters

Selection Parameter	Buyer Focus
Yield Strength	Confirms the basic load-bearing level of the casing or tubing body.
Collapse / Burst Rating	Critical for casing strings exposed to external pressure, internal pressure and cementing loads.
Hardness Control	Important for L80, C90, T95 and sour-service applications.
Heat Treatment	Affects strength stability, toughness and pipe-body reliability, especially for N80Q, P110 and Q125.
Corrosion Condition	CO ₂ , H ₂ S, chloride content and temperature may require 13Cr, Duplex or CRA materials.
Connection Type	STC, LTC, BTC, NU, EUE or premium connections should match the well load and sealing requirement.
Inspection Records	MTC, heat number traceability, drift test, thread inspection, NDT and hydrotest records should be reviewed before shipment.

Technical selection logic:

Grade controls strength and service suitability; connection controls make-up and sealing reliability; drift controls tool passage; and the document package proves the delivered joints match the approved PO, ITP and receiving inspection requirements.



Buyer note:

A higher grade is not always the safest choice. The correct grade should match the well depth, pressure profile, corrosion condition, connection design and inspection requirement.