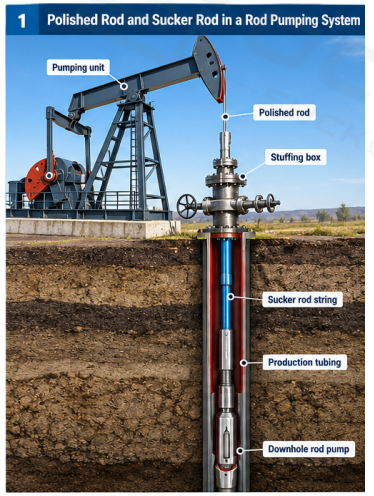
1 Polished Rod Dimensions

Surface sealing interface, size selection and rod-lift arrangement

What the polished rod must do

The polished rod transfers surface motion to the sucker rod string while passing through the wellhead stuffing box. A continuous, smooth working surface is needed wherever the packing contacts the rod.

A polished rod is not interchangeable with an ordinary sucker rod solely because the nominal diameter is similar. End connections and the sealing surface must both match the installed equipment.



Rod-pumping system: surface to downhole

Common polished rod dimensions

Nominal OD	OD (mm)	Typical lengths	Selection check
1-1/8 in.	28.58	8, 11, 16, 22 ft	Confirm stuffing-box bore
1-1/4 in.	31.75	8, 11, 16, 22 ft	Verify end connection
1-1/2 in.	38.10	8, 11, 16, 22 ft	Check load and stroke

Reference sizes only. Actual end geometry, diameter tolerances, straightness and length availability must be confirmed on the approved product drawing.

2 Sucker Rod Sizes and Grades

Rod-string geometry, mechanical performance and grade selection

Rod-string duty

Connected sucker rods transmit reciprocating movement to the downhole pump. Selection depends on well depth, pump loading, tubing clearance, corrosion exposure and the stress distribution along the complete rod string.

Common steel sucker rod dimensions

Rod OD	Metric OD	Typical length	Connection guidance
5/8 in.	15.88 mm	25 or 30 ft	Verify pin and coupling
3/4 in.	19.05 mm	25 or 30 ft	Verify pin and coupling
7/8 in.	22.23 mm	25 or 30 ft	Verify pin and coupling
1 in.	25.40 mm	25 or 30 ft	Verify pin and coupling
1-1/8 in.	28.58 mm	25 or 30 ft	Verify pin and coupling

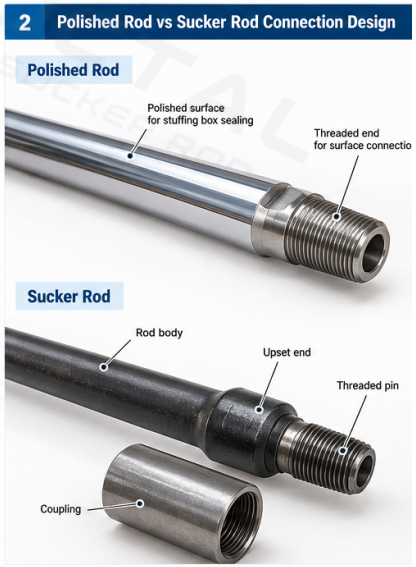
Grade selection (qualitative reference)

Grade C: moderate-strength service. Grade K: corrosion-resistant grade for suitable fluids. Grade D: higher-strength service. Grade labels alone do not establish fatigue life or corrosion suitability.

Use the contract-specified edition of API 11B and the supplied MTC for exact chemical and mechanical requirements; these are not universal manufacturer performance guarantees.

3 Connections and Assembly Compatibility

Avoid mismatched threads, adapters and coupling configurations



Polished rod, sucker rod and coupling geometry

For mixed-source assemblies, require the mating-component drawing or a documented compatibility check before releasing the purchase order.

Thread dimensions are configuration-specific; use the approved mating-component drawings.

Why connection checks matter

Nominal rod diameter does not by itself define the mating thread. Polished-rod ends, sucker-rod pins, couplings and adapters must be checked against the actual connection standard and drawing.

Inspect shoulder condition and thread damage before make-up. A compatible diameter with the wrong thread or connection geometry is not an acceptable substitute.

Assembly verification matrix

Check	Required confirmation
Rod body	Outside diameter and material grade
Polished-rod end	Thread / connection drawing
Sucker-rod pin	Pin and coupling compatibility
Coupling / adapter	Specified type and dimensions

4 Rod Loading and Dimensional Selection

Worked example for nominal axial stress; not an allowable-load rating

Simplified relationship

Nominal axial stress equals axial force divided by the cross-sectional area of the rod body. For a solid round section, the area increases with the square of diameter.

Stress = Force / Area **Area = pi × diameter² / 4**

Nominal stress at the same 50,000 N tensile load

Rod size	OD (mm)	Area (mm²)	Stress (MPa)
5/8 in.	15.88	198.1	252.5
3/4 in.	19.05	285.0	175.4
7/8 in.	22.23	388.1	128.8
1 in.	25.40	506.7	98.7
1-1/8 in.	28.58	641.5	77.9

How to interpret this table

The values are calculated examples, not API allowable stresses. Real rod-string selection must also consider dynamic loads, connection stress concentration, fatigue, bending and corrosion.

5 Inspection and Acceptance

A receiving-inspection framework for polished rods and sucker rods

What to verify before acceptance

Use the project purchase order, applicable API 11B provisions and approved manufacturer documents as the controlling requirements. The checklist below is a review aid, not a substitute for a project inspection plan.

Inspection point	Polished rod	Sucker rod
Surface	Working finish; pits or damage	Body and coupling wear
Dimensions	OD, length and straightness	OD, length, end geometry
Connections	Thread and adapter fit	Pins, shoulders, couplings
Materials	Grade / specification evidence	Grade / mechanical records
Traceability	Marking linked to records	Marking linked to records



Seal contact and coupling / tubing wear

Records to request

Approved product drawing or data sheet; material test records; relevant dimensional and surface-condition inspection results; product identification and traceability; additional NDT or coating records where specified.

Technical reference only. Confirm all dimensional limits, mechanical-property requirements, connection details and acceptance criteria against the contract-specified API 11B edition and manufacturer documentation.