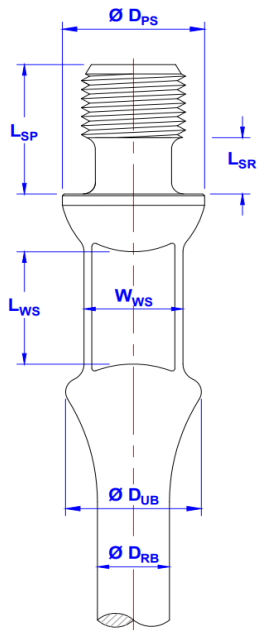
Tenaris

Sucker Rod String: Sucker & Pony Rod
PDS: SRSTABAPI
Short Name: R18
Effective Date: 16/10/2026
Previous Revision: 21/03/2025

API Grade Stabilizer Bar

Dimensions:

Nominal Size		Units	DRB	DPS	WWS	LWS	DUB	LSR	LSP
Rod	Pin								
1''	3/4''	max. in (mm)	1.009 (25.63)	1.505 (38.23)	1.031 (26.19)	-	1.504 (38.20)	0.625 (15.88)	1.500 (38.10)
		min. in (mm)	0.982 (24.94)	1.490 (37.85)	0.969 (24.61)	1.250 (31.75)	1.378 (35.00)	0.594 (15.09)	1.438 (36.51)
1''	7/8''	max. in (mm)	1.009 (25.63)	1.630 (41.40)	1.031 (26.19)	-	1.504 (38.20)	0.703 (17.86)	1.688 (42.86)
		min. in (mm)	0.982 (24.94)	1.615 (41.03)	0.969 (24.61)	1.250 (31.75)	1.378 (35.00)	0.672 (17.07)	1.625 (41.28)
7/8''	3/4''	max. in (mm)	0.883 (22.43)	1.505 (38.23)	1.031 (26.19)	-	1.504 (38.20)	0.625 (15.88)	1.500 (38.10)
		min. in (mm)	0.859 (21.82)	1.490 (37.85)	0.969 (24.61)	1.250 (31.75)	1.378 (35.00)	0.594 (15.09)	1.438 (36.51)



Sucker Rods Nominal Lengths: 3 ft (0.711 mt) or 4 ft (1.22 mt)

Steel Grades:

Different steel grades are available, depending on the type of load and the corrosion level in the wells. All these materials comply with API 11B.

Chemical Composition:

Typical chemical compositions (wt%) listed in the following table.

Grade	C	Mn	Si	S	P	Cr	Ni	Mo	Others
DA Alloy	0.40-0.45	0.75-1.00	0.15-0.35	0.025 max	0.025 max	0.80-1.10	0.25 max	0.15-0.25	-
KDS Special	0.20-0.25	0.80-1.00	0.15-0.35	0.025 max	0.025 max	0.70-0.90	1.15-1.50	0.25-0.30	V: 0.03-0.07
HA	0.36-0.43	1.00-1.40	0.20-0.40	0.025 max	0.025 max	0.50-1.00	0.30 max	0.25-0.50	V: 0.04-0.08, Nb: 0.05 max
UHS	0.29-0.37	0.70-0.95	0.15-0.35	0.025 max	0.025 max	0.80-1.40	1.20-2.00	0.15-0.30	V: 0.04-0.08

Mechanical Properties:

Mechanical properties are listed in the following table.

Grade	Yield Strength (0.2% offset)	Ultimate Tensile Stress	Elongation (8")	Reduction of area	Hardness
DA Alloy	min 95 kpsi (min 655 MPa)	120 to 140 kpsi (827 to 965 MPa)	10 % min	45% min	27 HRC
KDS Special	min 85 kpsi (min 586 MPa)	115 to 140 kpsi (793 to 965 MPa)	10% min	45% min	25 HRC
HA	min 115 kpsi (min 793 MPa)	140 to 155 kpsi (965 to 1069 MPa)	8% min	30% min	32 HRC
UHS	min 115 kpsi (min 793 MPa)	140 to 155 kpsi (965 to 1069 MPa)	10% min	40% min	34 HRC

Performance Data:
Maximum Pulling Force:

	Rod Outer Diameter		
Grade	1" pin 3/4"	1" pin 7/8"	7/8" pin 3/4"
DA Alloy	36.1 klb (16.4 t)	49.5 klb (22.5 t)	36.1 klb (16.4 t)
KDS Special	32.3 klb (14.7 t)	44.3 klb (20.1 t)	32.3 klb (14.7 t)
HA	43.7 klb (19.9 t)	59.9 klb (27.2 t)	43.7 klb (19.9 t)
UHS	43.7 klb (19.9 t)	59.9 klb (27.2 t)	43.7 klb (19.9 t)

To prevent tensile failures, the weight indicator pull on a "like new" condition rod string should not exceed 90% of the yield strength of the smallest diameter sucker rod, based on its known size and grade. Maximum pulling force values herein informed were calculated based on the 90% of the specified minimum yield strength at the smallest section of a given rod.

Beam Pumping: Maximum allowable tensile stress

It is recommended that the modified Goodman stress diagram or the simplified formula listed bellow are used in the determination of the allowable range of stress applied to a sucker rod.

$$S_a = \left(\frac{UTS}{A} + B \times S_{min}\right) \times SF$$

Applied tensions can be compared to the maximum allowable using the Goodman formula:

$$Goodman\% = \frac{S_{max} - S_{min}}{S_a - S_{min}} * 100$$

Where:

S_a = Maximum allowable stress (psi or MPa)

S_{min} = Minimum calculated or measured stress (psi or MPa)

S_{max} = Maximum calculated or measured stress (psi or MPa)

UTS = Minimum ultimate tensile strength (psi or MPa)

SF = Service factor. For corrosive environments a value of 0.9 is recommended

Coefficients A and B are listed on Table 1.

Table 1: Goodman coefficients.

Grade	A	B
DA Alloy	4	0.5625
KDS Special	4	0.5625
HA	2.8	0.375
UHS	2.8	0.375

Progressive Cavity Pumping: Effective Stress

The effective rod stress in PCP applications can be calculated using the von Mises equation:

$$\sigma_e = \sqrt{\frac{(C_1 * L^2)}{\pi^2 * D^4} + \frac{C_2 * T^2}{\pi^2 * D^6}}$$

Where:

σ_e = Effective stress (kpsi or MPa)

L = Total axial load (lbf or N)

T = Total torque (lbf. ft or N. m)

D = Rod's body diameter (in or mm)

C_1 = Constant (For imperial system= $1.6x10^{-5}$. For international system= 16)

C_2 = Constant (For imperial system= 0.1106. For international system= $7.68x10^{8}$)

Color Code:

Rod's ends are painted according to the following table:

Grade	Color Code
DA Alloy	Yellow
KDS Special	Orange
HA	Green
UHS	Purple

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Non Destructive Testing:

All raw material is carefully inspected using electromagnetic and/or ultrasonic methods to ensure the soundness of the final product.

Guides

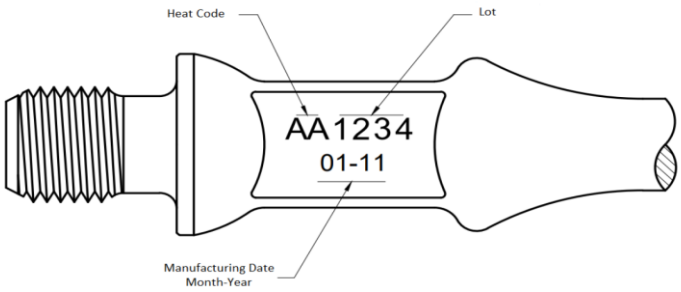
Stabilizer bars are equipped with two or three 2 7/8'' or 3 1/2'' TenFlow™ or TenFlow™ XF Sucker Rod Guides. Available materials: PPS30, PPS40, PKTS, PA6, PPA33 and UHT20.

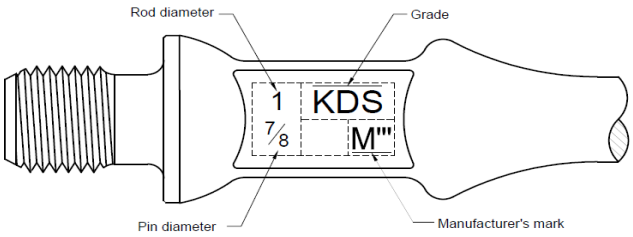
For additional details, please refer to the TenFlow™ or TenFlow™ XF Sucker Rod Guide datasheet (SRGTF or SRGTFXF).



For 4-ft rod lengths, two or three guides may be molded. For 3-ft rod lengths, a single guide may be molded at the midpoint of the rod

Marking:





Labeling:*

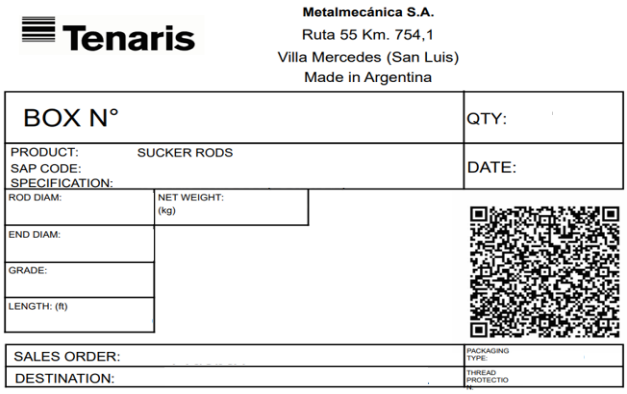


*Image for reference only.

Ordering Information:

When placing an order please attach the following information:

PDS:	SRSTABAPI
Product Family:	Sucker Rod (or Pony Rod)
Body Diameter:	1''
Pin Diameter:	3/4''
Grade:	KDS Special
Length:	4ft
Guide Model:	TenFlow™ XF
Number of Guides :	3
Tubing Diameter :	2-7/8"
Polymer :	UHT20

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