

Application, Care, and Use of Wire Rope for Oil Field Service

API RECOMMENDED PRACTICE 9B
THIRTEENTH EDITION, OCTOBER 2011

ERRATA, APRIL 2012
ERRATA 2, JANUARY 2013



AMERICAN PETROLEUM INSTITUTE

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Upstream Segment

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Application, Care, and Use of Wire Rope for Oil Field Service

1 Scope

This recommended practice (RP) covers typical wire rope applications for the oil and gas industry.

Typical practices in the application of wire rope to oil field service are indicated in Table 1, which shows the sizes and constructions commonly used. Because of the variety of equipment designs, the selection of constructions other than those shown is justifiable.

In oilfield service, wire rope is often referred to as wire line or cable. For the purpose of clarity, these various expressions are incorporated in this recommended practice.

Table 1—Typical Sizes and Construction of Wire Rope for Oilfield Service

Service and Well Depth	Wire Rope Diameter		Wire Rope Description
	(in.)	(mm)	
Rod and tubing lines	1/2 through 1 1/8	13 through 29	6×26WS RR or LR IWRC 6×31WS swaged RR or LR IWRC
Rod hanger lines	1/4	6.5	6×19 RR FC
Sand lines	1/4 through 5/8	6.5 through 16	6×7 bright or galvanized RR FC 5×7 bright or galvanized RR FC 5×7 swaged bright or galvanized FC
Drilling lines	7/8 through 2	22 through 52	6×19S RR IWRC 6×26WS RR IWRC (May have compacted strands and/or be plastic impregnated.)
Winch lines	5/8 through 1 1/8	16 through 29	6×26WS or 6×31WS or 6×36WS RR IWRC
Horsehead pumping-units lines	1/2 through 1 1/8	13 through 29	6×19 class or 6×36 class FC or IWRC
Offshore anchorage lines	7/8 through 2 3/4	22 through 70	6×19 class bright/galvanized/drawn galvanized RR IWRC
	1 3/8 through 4 3/4	35 through 122	6×36 class bright/galvanized/drawn galvanized RR IWRC
Mast raising lines	Up through 1 3/8	Up through 35	6×19 class RR IWRC
	Over 1 3/8	Over 35	6×36 class RR IWRC 8×36 class compacted strand RR IWRC
Guideline tensioner line	3/4	19	6×25FW RR IWRC
Riser tensioner lines	1 1/2 through 3	38 through 76	6×36 class RL IWRC 8×36 class RL IWRC (May have compacted strands and/or be plastic impregnated.)

These are general recommendations and may be modified due to operating conditions, rig requirements and/or rope characteristics. Consult your rope supplier for assistance.

Abbreviations:

FW	Filler wire	RR (sZ)	Right regular lay ^a	LL (sS)	Left lang lay ^b	FC	Fiber Core
S	Seale	LR (zS)	Left regular lay ^c	RA (aZ)	Right alternate lay ^d	IWRC	Independent wire rope core
WS	Warrington Seale	RL (zZ)	Right lang lay ^e	LA (aS)	Left alternate lay ^f		

^a Sometimes referred to as right-hand ordinary (designated RHO) and right regular lay (designated RRL).

^b Sometimes referred to as left-hand langs (designated LHL) or left lang lay (designated LLL).

^c Sometimes referred to as left-hand ordinary (designated LHO) and left regular lay (designated LRL).

^d Formerly designated RAL.

^e Sometimes referred to as right-hand langs (designated RHL) or right lang lay (designated RLL).

^f Formerly designated LAL.