

# WIRELINES & TOOLS FOR WELL INTERVENTION APPLICATIONS

A leading supplier of Wirelines and Slicklines  
to the oil and gas industry



EXCELLENCE COMES AS STANDARD

[www.danumwellservices.com](http://www.danumwellservices.com)



SPECIALISTS IN THE INTERPRETATION OF WIRELINE OPERATORS' REQUIREMENTS... A "ONE STOP" SOURCE FOR SLICKLINES, BRAIDED STRANDS & DOWN-HOLE TOOLS.

The Company

Formed in 1993, Danum Well Services has quickly become established as one of the World's most respected suppliers of equipment for the oil and gas well intervention industry.

Operating from its Head Offices in Doncaster U.K. Danum Well Services supplies products to many of the World's leading oil and gas operators and the wireline operators who service them.

Acting not merely as a supplier, the company also collaborates closely with its clients on both commercial and technical levels with a view to establishing long term partnerships.



All statements, technical information and recommendations contained herein are believed to be reliable, but no guarantee is given as to their accuracy and/or completeness. The user must determine the suitability of the product for his own particular purpose, either alone or in combination with other products and shall assume all risk and liability in connection therewith.

Whilst every attempt has been made to ensure accuracy in the content of the tables, the information contained in this catalogue does not form part of any contract.



Quality Assurance

Danum Well Services is approved and registered to BS EN ISO 9001-2008.

Furthermore, all Slicklines and Strands are tested and certified by an independent laboratory to BS EN 10204 2004.



A "ONE STOP" SOURCE FOR SLICKLINES, BRAIDED STRANDS & DOWN-HOLE TOOLS



## Product Range

The Company offers a comprehensive range of Slicklines to suit all well conditions, from basic Carbon, through Stainless to the most specialised of Alloys. For heavier duty applications, the Company has available an unequalled selection of conventional and high strength "formed" Strands in a variety of material grades to cover all well media.

Electro Mechanical cables are also available together with an extensive range of the most up to date down-hole tools.

We are dedicated to the development and sourcing of the highest quality raw materials with which to expand our product range to suit the needs of our customers.



## Help for the Operator

The Company's personnel boast many years of experience in servicing the oil and gas industries. Amongst our staff we have fully qualified individuals with practical experience of the products and of their applications. These individuals are on hand to offer advice and lend on site assistance when required.

To further support its activities, the Company has access to laboratory and metallurgical facilities vital to ensure ongoing quality, performance and product development.

As a special service to its clients, the Company offers a free of charge interim inspection service whereby wires in use can be inspected and assessed to ensure they are still fit for purpose. In many cases, such inspections have resulted in longer working life, thereby saving costs.

Well Service Strands



# CARBON, STAINLESS AND ALLOY SLICKLINES - PHYSICAL PROPERTIES



MINIMUM BREAKING LOADS											
Wire Size		Carbon		316 Stainless		GD22 Duplex		GD31M0 Alloy		Pulley Size	
ins	mm	lbf	kN	lbf	kN	lbf	kN	lbf	kN	ins	mm
0.082	2.08	1239	5.50	1100	4.89	1235	5.49	1230	5.46	10	250
0.092	2.34	1547	6.88	1430	6.36	1600	7.12	1550	6.89	11	280
0.108	2.74	2109	9.38	1960	8.72	2400	9.79	2170	9.56	13	330
0.125	3.18	2794	12.42	2640	12.23	3350	12.41	2850	12.68	15	380
0.140	3.56	3578	17.79	3325	14.79	3370	14.99	3400	15.12	17	430
0.160	4.06	4606	20.36	4175	18.57	4300	19.12	4400	18.86	19	480

NET WEIGHTS											
Wire Size		Carbon IPS		316 Stainless		GD22 Duplex		GD31M0 Alloy		Wire Size	
ins	mm	lbs/1000'	kg 100m	lbs/1000'	kg 100m	lbs/1000'	kg 100m	lbs/1000'	kg 100m	mm	ins
0.082	2.08	18.00	2.68	18.10	2.70	18.00	2.68	18.50	2.75	2.08	0.082
0.092	2.34	22.70	3.37	22.90	3.40	22.50	3.35	23.40	3.48	2.34	0.092
0.108	2.74	31.10	4.63	31.50	4.70	31.00	4.61	32.20	4.79	2.74	0.108
0.125	3.18	41.90	6.24	42.20	6.29	41.50	6.18	43.20	6.42	3.18	0.125
0.140	3.56	52.00	7.74	53.00	7.89	52.00	7.89	54.00	8.05	3.56	0.140
0.160	4.06	68.50	10.19	69.20	10.30	68.00	10.13	70.70	10.52	4.06	0.160

Carbon Slicklines are supplied in continuous lengths free from welds, on painted steel reels individually packed suitable for shipping. Independently tested & certified in accordance with BS EN 10204 2004.

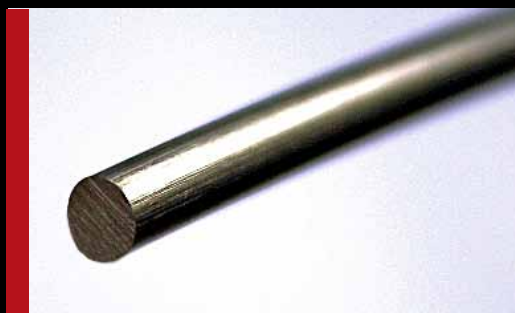
# CARBON STEEL SLICKLINES TO API9A FOR SWEET WELL CONDITIONS

## CHEMICAL COMPOSITION RANGE

ELEMENT	MIN	MAX
<b>C</b>	0.80	0.85
<b>Si</b>	0.15	0.35
<b>Mn</b>	0.50	0.70
<b>P</b>	N/A	0.02
<b>S</b>	N/A	0.02
<b>Cr</b>	N/A	0.08
<b>Mo</b>	N/A	0.02
<b>Ni</b>	N/A	0.10
<b>Cu</b>	N/A	0.10

Basic Carbon Steel Slickline recommended for use only in sweet well conditions. May be used with inhibitors where levels of HS2 and/or CO2 are extremely low.

Supplied on steel drums-Tested and Certified to BS EN 10204 2004



## MECHANICAL PROPERTIES

Diameter +/-0.001"		Approx Weight		Nominal B/Load			Pulley Dia**
				IPS	EIPS	UHT	
ins	mm	lbs/1000	kg/100m	lbs	lbs	lbs	ins
0.072	1.83	14.00	2.08	961*	1150*	1270	9**
0.082	2.08	18.80	2.80	1239*	1460*	1610	10**
0.092	2.34	22.90	3.40	1547*	1830*	1980	11**
0.108	2.74	31.55	4.70	2109*	2490*	2730	13**
0.125	3.18	42.20	6.28	2794*	3300*	3660	16**
0.140	3.57	52.40	7.80	3578	4002	4600	16**
0.160	4.06	68.40	10.18	4606	5107	6005	20**

Provided that Wirelines are purchased from reputable suppliers they should arrive at the user complete with full certification. This acts as a guarantee to the purchaser that the wireline has been manufactured to a specific quality standard and exhibits the properties recorder on the Test Certification. Unfortunately with time the combined effect of operating under high tensile, bending fatigue stresses and often in corrosive media at high temperatures causes Wireline ductility to become gradually impaired. Consequently those properties originally certified no longer apply and quality assurance becomes dependant on the experience of the operator and on his/her 'feel' of the wire. The availability of Linetech Portable Wireline Tester can assist in checking the ductility this should be used as part of a full testing programme. Torsion testing is especially useful when operating API Wirelines in conditions where small amounts of H2S may exist since line failure can occur in as little as 12 hours exposure.

\*Sizes/Grades covered by API9A. \*\*Recommended Minimum.

# STAINLESS & SPECIAL ALLOY SLICKLINES.

GRADE DATA SHEET.											
		C	Mn	Si	P	S	Cr	Mo	Ni	N	Cu
316	MIN						16.50	2.00	10.00		
	MAX	0.07	2.00	1.00	0.045	0.030	18.50	2.50	13.00	0.11	
GD22	MIN						21.00	2.50	4.50	0.10	
	MAX	0.03	2.00	1.00	0.035	0.015	23.00	3.50	6.50	0.22	
GD31MO	MIN						19.00	6.00	24.00	0.15	0.50
	MAX	0.02	1.00		0.03	0.010	21.00	7.00	26.00	0.25	1.50

RECOMMENDATIONS FOR USE	
316	For Sweet Wells with CO <sub>2</sub> , no H <sub>2</sub> S and low Chlorides.
GD22	For Wells with medium concentrations of CO <sub>2</sub> , H <sub>2</sub> S and low Chlorides.
GD31MO	For Wells where CO <sub>2</sub> , H <sub>2</sub> S and Chlorides are present.



TYPICAL PHYSICAL PROPERTIES			
	316	GD22	GD31MO
UNS Number	S31600	S32205	N08926
Euro norm Number	1.4401	1.4462	1.4529
PREN	25-27	31-38	45-49
Density	8.00g/cc	7.80g/cc	8.10g/cc
Modulus of Elasticity	190gpa	200gpa	185gpa
Thermal Conductivity at 100degC	16.3W/m-K	19W/m-K	13W/m-K





# GRADE 316 STAINLESS SLICKLINES FOR LESS CORROSIVE WELL MEDIA.

Material grade: UNS S S31600/W1.4401.

Stainless 316 is a cost effective alternative with good resistance to pitting & crevice corrosion in sweet well conditions with CO<sub>2</sub>, no H<sub>2</sub>S & low Chlorides.

CHEMICAL COMPOSITION RANGE		
Element	Min	Max
Ni	10.5	14.0
Cr	16.0	18.0
Mo	2.0	3.0
Si		1.0
Mn		2.0
N	0.04	0.06
C	0.04	0.06
P		0.045
S		0.010



MECHANICAL PROPERTIES		
Diameter	Nom.B/Load	Approx.WT
ins	lbs	lbs/1000ft
0.092	1430	23
0.108	1960	31
0.125	2640	43
0.140	3325	53
0.160	4220	69

Stainless 316 is an austenitic stainless steel with an addition of Molybdenum which gives it an increased resistance to general corrosion. However, warm Chloride environments can cause pitting and crevice corrosion. There is also a susceptibility to stress corrosion cracking at temperature levels above around 60deg Centigrade. To assist the user in obtaining optimum working life from his Slicklines, DWS offers a tailor-made wire management system whereby actual working data is recorded for subsequent detailed analysis and report. As part of the system, an operator can return a piece of wire in use for quick analysis by independent laboratory. A report on the condition of the wire and its suitability for further use is then issued. High cost savings have been made through the use of this system.

All slicklines are guaranteed weld free 100% non destructive tested, certified in accordance with EN 10204 2004 by an Independent Laboratory.

TYPICAL PHYSICAL PROPERTIES	
Diameter	Nom.B/Load
Density	8.0g/cc
Modulus Of Elasticity	190Gpa
Hardness Rockwell B	95
PRE=24 TO 27	



A "ONE STOP" SOURCE FOR SLICKLINES, BRAIDED STRANDS & DOWN-HOLE TOOLS

# GD 22 SLICKLINES FOR MEDIUM SOUR WELLS.

Material grade UNS S S32205/W1.4462

GD22 Slicklines combine high strength with excellent resistance to corrosion, pitting and stress corrosion in wells with medium concentrations of CO<sub>2</sub>, H<sub>2</sub>S and Low Chlorides.

CHEMICAL COMPOSITION RANGE		
Element	Min	Max
Ni	4.5	6.5
Cr	21.10	23.0
Mo	22.5	3.5
Si		1.0
Mn		2.0
N	0.14	0.20
C		0.03
P		0.030
S		0.020



MECHANICAL PROPERTIES		
Diameter	Nom.B/Load	Approx.WT
ins	lbs	lbs/1000ft
0.092	1600	23
0.108	2400	31
0.125	3350	43
0.140	4100	68
0.160	4220	69

TYPICAL PHYSICAL PROPERTIES	
Diameter	Nom.B/Load
Density	7/8g/cc
Modulus Of Elasticity	200gpa
Hardness Rockwell B	105
PRE=31 TO 38 PRE=%CR+3.3X%MO+16XN	

GD22 is an austenitic-ferritic Stainless Steel with Molybdenum addition. Made up of approximately equal amounts of Ferrite and Austenite, it combines higher tensile strength with excellent resistance to localised inter-granular corrosion, pitting, crevice corrosion and chloride stress corrosion cracking. It performs well in environments with can cause early failure in standard austenitic grades. To assist the user in obtaining optimum working life from his Slicklines, DWS offers a tailor made wire management system whereby actual working data is recorded for subsequent detailed analysis and report. As part of the system, an operator can return a piece of wire in use for quick analysis by our independent laboratory. A report on the condition of the wire and its suitability for further use is then issued.

High cost savings have been made through the use of this system.



# GD31MO ALLOY SLICKLINES FOR HIGHLY CORROSIVE WELL MEDIA.

Material grade UNS N 08926/W1.4529

GD31MO offers extraordinarily high stability against corrosion, stress corrosion & inter-granular corrosion in wells where CO<sub>2</sub>, H<sub>2</sub>S and Chlorides are present.

## CHEMICAL COMPOSITION RANGE

Element	Min	Max
Ni	24.5	25.5
Cr	20.0	21.0
Mo	6.0	6.8
Cu	0.8	1.5
Mn		1.0
N	0.15	0.25
C		0.02
P		0.03
S		0.005

## MECHANICAL PROPERTIES

Diameter	Nom.B/Load	Approx.WT
ins	lbs	lbs/1000ft
0.092	1550	23
0.108	2170	31
0.125	2900	43
0.160	4400	70

## TYPICAL PHYSICAL PROPERTIES

Diameter	Nom.B/Load
Density	8.1g/cc
Modulus Of Elasticity	185gpa
Hardness Rockwell B	90
PR=45 TO 49 PRE=%CR+3.3X%MO 30XN	

GD31MO is an austenitic stainless alloy well suited for work in highly corrosive wells especially where pitting, crevice corrosion and stress corrosion cracking are likely to occur. Increased levels of chromium and nickel ensure excellent general corrosion resistance whilst a higher than normal nitrogen content increases tensile and yield strength.

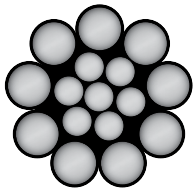


# BRAIDED WELL SERVICE STRANDS CONVENTIONAL & FORMED.

A range of well servicing products in high Carbon, Stainless and special Alloy Steels.

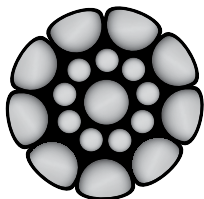
Continuous lengths on drums-Tested & Certified to BS EN 10204-2004

1 X 16(9/6/1) LH Lay  
Conventional to API9A



Strand Diameter		Rec. Flow Tube Diameter Measure Line to Confirm		Approx Weight lbs/1000ft	Minimum Breaking Load (lbs)			Minimum Pulley dia
ins	mm	ins	mm		Galv	316	GD31MO	
3/16"	4.76	0.196	4.98	70	4960	3990	4400	12*
7/32"	5.56	0.228	5.79	100	6610	5400	5960	14*
1/4"	6.35	0.263	6.68	130	8640	7030	7750	16*
5/16"	7.94	0.330	8.38	196	13490	11000	12110	20*

1 X 19 (9.9.1)  
RH Lay Formed / Compacted



Strand Diameter		Rec. Flow Tube Diameter Measure Line to Confirm		Approx Weight lbs/1000ft	Minimum Breaking Load (lbs)			Minimum Pulley dia
ins	mm	ins	mm		Galv	316	GD31MO	
3/16"	4.76	0.196	4.98	85	6170	4940	5060	12*
7/32"	5.56	0.228	5.79	110	8370	6500	6110	14*
1/4"	6.35	0.263	6.68	150	11200	8640	8700	16*
5/16"	7.94	0.330	8.38	235	17550	13560	13470	20*

\*Minimum pulley Dia: Figures shown are recommendations for reasonable fatigue life.



## TESTING OF WIRELINE IN SERVICES.

A range of well servicing products in high Carbon, Stainless and special Alloy Steels.

Continuous lengths on drums-Tested & Certified to BS EN 10204-2004



### Carbon Steel.

Provided that the new Wirelines are purchased from reputable suppliers, they should arrive complete with full test certification. This guarantees that the wireline has been manufactured to a specified quality standard and exhibits the properties recorded on the test certificate. With the passage of time, due to combined effect of high tensile and bending fatigue stresses, Wireline ductility becomes gradually impaired. Consequently, the certified "new" properties no longer apply and quality assurance depends solely on the experience of the operator and on his assessment of the "feel" of the wire.

The availability of the portable Wireline Ductility Tester provides the operator with the facility to test, hence evaluate the quality of the wireline throughout its working life. In service failure of Wirelines due to impairment of their ductility, can in many cases be pre-empted by the adoption of a full testing programme.

Torsion testing is especially useful when running Carbon Wirelines in conditions where small quantities (just a few PPM) of H<sub>2</sub>S may be present, since line failures can occur in as little as 12 hours exposure. It is strongly recommended that all Wirelines be tested prior to commencement of down-hole operations.

### Stainless & Special Alloy.

Unlike Carbon Steel Wirelines, the ductility of stainless and special alloy wires cannot be determined by using the torsion test. These materials exhibit very low numbers of twists to failure (typically 2 to 4 twists on an 8" gauge length), and grade 1 type fracture characteristics dependent on the inherent ductility of the wire. Consequently it is recommended that for these types of wireline wire ductility is evaluated by means of a simple wrap test. In this test, the wire is wrapped in a tight helix around a mandrel of the same diameter. In practice this is achieved by wrapping the wire around itself.

Care must be taken not to twist the wire at a localised point since under these conditions failures have been experienced within rotation through 180 degrees. It is considered that a wire which has survived 10 x 360 degree wraps around its own diameter, without fracture or signs of surface cracking has passed the test and is suitable for use.

Although this test is not covered by specification AP19A, it is recognised by competent wire manufacturers as being a good indicator of wire ductility. With this test extremely high strains are generated on the surface of the wire, strains which in all but most ductile materials, would cause immediate failure.



# PORTABLE WIRELINE DUCTILITY TESTER.



**Wire Size Range.**

Up to and including 0.125" (3.175mm) - can be extended to 0.160mm (4.06mm) by provision of optional base plate.

**Wire Gauge Length.**

Pre set at 8" (203mm) to comply with API9A Test Specification.

**Construction.**

The machine is of sectional construction fabricated in light weight, high strength and corrosion resistant materials.

The machine jaws are carefully designed to prevent damage to the wire during testing thereby minimising invalid test results

Powerful torque is applied by means of a 9" (229mm) "bolt on" handle (which is stored within the tester when not in use). The rotating jaw features a combination of precision thrust and needle roller-bearings designed to provide a smooth and wear free operation. The fixed jaw is mounted on a preset spring loaded end plate which ensures that the change of wire length during is not prevented. This feature also eliminates the need for bulky back tension weights.

An internal wire guide accessory is provided to enable wrap testing of stainless steel alloy Wirelines around their own diameter (the recommended ductility test for such materials)

**Instruction for use.**

A comprehensive manual is provided, giving details of operational procedure fracture classification and maintenance requirements.

DIMENSIONS		
Length	14.5"	370mm
Width	4.5"	115mm
Depth	3.0"	76mm
Weight Unpacked		3 Kilos

# V1000 WIRELINE INHIBITOR – SAFTEY DATA PART 1 OF 2

V1000 has been specially formulated for the purposes of inhibiting, sealing and lubricating Wirelines and Logging cables. It is produced from a blend of high quality esters enhanced with an additive package designed to give outstanding protection against such corrosive gases as hydrogen sulphide and carbon dioxide. In addition to its excellent corrosion resistance, V1000 has a high viscosity index, a high flash point and is easy to apply. Under current legislation it poses no hazard to health or to the environment.

**Material Safety Data.**

Identification of substance & hazards:  
 Product name & number-DWS V1000  
 Lubricant/D0873

**First Aid Measures**

If inhaled, move the exposed person to fresh air at once if ingested mouth thoroughly and drink plenty of water. For skin contact remove the affected person from the source of contamination and wash the affected parts. For eye contact, make sure to remove any contact lenses before rinsing the eyes. Promptly wash eyes with plenty of water while lifting the eyelids. Continue to rise for at least 15 minutes.

**In all cases get medical attention if discomfort persists & never make an unconscious person vomit or drink fluids!**

**Fire fighting measures:** the product is not flammable, use fire fighting media fit for surrounding area.

**Accidental release measures:** Stop leak if possible without risk, absorb in vermiculite, dry sand or earth and place into containers. Flush area with plenty of water. Do not contaminate water.

**Handling & Storage:** Store at ambient temperature & protect from water. Wherever possible, store undercover, in line with COSHH



**Ingredients are classified OES (occupational exposure standard)**

**Engineering measures:** Provide adequate general & local exhaust ventilation.

**Eye Protection:** If risk of splashing, wear safety goggles or face shield

**Other protection:** Wear appropriate clothing to prevent skin contact.

**Hygiene Measures:**

**Do not smoke in work area!**

Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Promptly remove any contaminated clothing and use appropriate skin cream to prevent drying of skin.



COMPOSITION INFORMATION ON INGREDIENTS			
Name	Ec No	Cas No	Content
Amines C11-14 Branched			1-10%
Alkyl, Monohexyl, Dihexyl	279-632-6	80939-62-4	
Phosphates			Less Than 1%
Benzenamine Reaction Product		68411-46-1	
Risk Classification Xi R36/38 (Irritating To Eyes & Skin)			
N R51/53 Toxic To Aquatic Organisms			

# V1000 WIRELINE INHIBITOR-SAFTEY DATA PART 2 OF 2

### Stability & Reactivity

**Stability:** Stable under normal temperature conditions.

**Conditions to avoid:** Avoid excessive heat for prolonged periods of time.

**Hazardous Products:** In decomposition, fire produces Carbon dioxide CO<sub>2</sub> and Carbon Monoxide CO.

### Toxicological Information

**Inhalation:** May cause irritation to the respiratory system.

**Ingestion:** May cause discomfort if swallowed.

**Skin Contact:** May cause sensitisation by skin contact.

**Eye Contact:** Dust may cause transient eye irritation.

### Disposal Considerations

Disposal of waste and residue should be in accordance with the requirements of the local authority.

### Transport Information

**ADR Classification:** Not classified as hazardous for transportation.



PHYSICAL & CHEMICAL PROPERTIES	
Appearance	Liquid
Colour	Amber
Odour	Characteristic
Relative density	0.920 typical at 20degC
Viscosity	1,000 cSt at 40 degC
Flash Point degC	Min 290degC

### Regulatory Information

**Risk Phrases:** NC Not Classified.

**Safety Phrases:** p13 Safety data sheet available on request.

**UK Regulatory Directives:** Health & safety at work act 1974.

**EU Directives:** System of specific information relating to dangerous preparations 2001/58/EC.

**Statutory Instruments:** Chemicals (Hazard Information & Packaging for supply regulation 2002 CHIP3)

**Approved code of practice:** Classification & labelling of substances and preparations dangerous for supply.

**Guidance notes:** CHIP for everyone HSG108, workplace exposure limited EH40.



## DOWN-HOLE RUNNING & PULLING TOOLS.

In collaboration with our oil tool Manufacture's, Danum Well Services offers a comprehensive range of down-hole tools for well intervention. Included in the range are the standard products listed below. The more special, customised, tools are also available on a one-off basis. All tools are supplied with a hard copy of an operation and service manual (OSM). The OSM provides the user, in the field, with a comprehensive outline of product details, including physical layout drawings, Pictorial 3D illustrations of assembly and disassembly procedures, running and pulling procedures, assembly and part numbers, etc...

### Wirelines.

Standard Wireline Tool strings  
 Accelerator Sub  
 Adjustable Spring Jar  
 Braided Line Rope Socket  
 Compact tool string  
 Heavy duty pulling tool  
 Heavy duty GS type pulling tool  
 High angle roller-wheel sub  
 Multi reach running/pulling tool  
 Non releasable overshot  
 Non releasable spear  
 Releasable overshot  
 Releasable spear  
 Rotary wire cutter set  
 Side wall cutter  
 Sleeved expandable wire finder  
 Tubing stop  
 Universal dummy fish neck  
 Wire finder grab  
 Wire finder/retriever

### Coiled Tubing.

Basic BHA Tools  
 Double flapper check valve  
 Dual circulating sub  
 External slip connector  
 Flo release heavy duty pulling tool  
 Flo release pulling tool  
 Flo release spear  
 Flo release overshot  
 Flo release heavy duty GS Tool  
 Hydraulic disconnect  
 "Limar" International torque thru connector  
 Jetting nozzles  
 Motor head assembly

### Hex Flat Make up/ Break up feature.

During the makeup & break up of threaded tools, there is always a risk of injury from either a pipe-wrench slipping or cuts and abrasions from sharp burrs caused by the pipe wrench jaw. The known hazard is often identified during the pre-risk assessment, but still too many incidents occur. To help reduce this risk of exposure to the user, a 6 faced HEX makeup /break up feature is standard on all Limar tooling. The hexagonal flats are milled to a width which easily accommodates the pipe wrench jaw. Connections are also QPQ treated to harden the hexagonal faces and thereby prevent any burrs or splinters. Overall this simple feature assists in minimising the risk of injury to personnel and at the same time improves the working life of the tools .



# STEEL WIRE ROPES FOR ROTARY DRILLING TO API SPEC 9A.

6X19 (9/9/1) "Seale" or 6X26WS Construction, regular lay with I.W.R.C.

Nominal Diameter		Approx weight		Nominal Breaking Strength					
				Improved plough steel			Extra improved plough steel		
ins	mm	lbs/ft	kg/m	lbs	kn	Tonnes	lbs	kn	Tonnes
1	26	1.85	2.75	89800	399	40.7	103400	460	46.9
1.1/8	28	2.34	3.48	113000	503	51.3	130000	578	59.0
1.1/4	32	2.89	4.30	138800	617	63.0	159800	711	72.5
1.3/8	35	3.50	5.21	167000	743	75.7	192000	854	87.1
1.1/2	38	4.16	6.19	197800	880	89.7	228000	1010	103.0
1.5/8	42	4.88	7.26	230000	1020	104.0	264000	1170	120.0

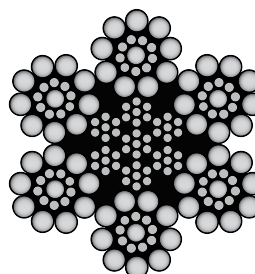


Manufactured, tested & certified to the standards laid down by the American Petroleum Institute.

Produced from specially selected materials of the highest quality

Lubricated internally & externally with eco friendly lubricant.

In collaboration with the travelling & crown blocks, through which it is reeved, the drill line carries out a huge amount of lifting and lowering required during the daily operation of the rig. The conditions in which the drill line operates are not ideal; this application calls for a rope which can best withstand fatigue caused by bending at speed around sheaves, whilst retaining the ability to resist abrasion and crushing. The optimum mix of these properties is found in a wire rope of basic 6 strand construction, most notably 6X19 (9/9/1) & 6X26(10/5+5/5/1).



# STEEL WIRE SAND, SWABBING & CORING LINES TO API SPEC 9A.

6x7(6/1) Construction, regular lay with natural or synthetic fibre core.

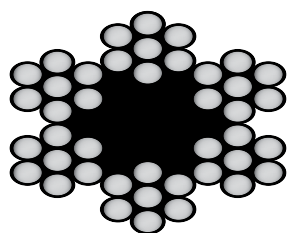
Nominal Diameter		Approx Weight		Nominal breaking strength					
				Plough Steel			Improved Plough steel		
ins	mm	lbs/ft	kg/m	lbs	kn	Tonnes	lbs	kn	Tonnes
3/8	9.5	0.21	0.31	10200	45.4	4.63	11720	52.1	5/32
7/16	11.5	0.29	0.43	13800	61.4	6.26	15860	70.5	7.20
1/2	13.0	0.38	0.57	17920	79.7	8.13	20600	91.6	9.35
9/16	14.5	0.48	0.71	22600	101	10.30	26000	116	11.80
5/8	16.0	0.59	0.88	27800	124	12.60	31800	141	14.40
3/4	19.0	0.84	1.25	36900	176	18.00	45400	202	20.60

Manufactured, tested & certified to the standards laid down by the American Petroleum Institute.

Produced from specially selected materials of the highest quality, lubricated internally & externally with eco-friendly lubricant.

Used to lower tools into the hole for cleaning out or coring, these ropes benefit from having large diameter outer wires, well suited to resist abrasive wear in harsh conditions.

The use of galvanised ropes is recommended in sour wells or in conditions where salt water may be present.







# DWS

DANUM WELL SERVICES LTD

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