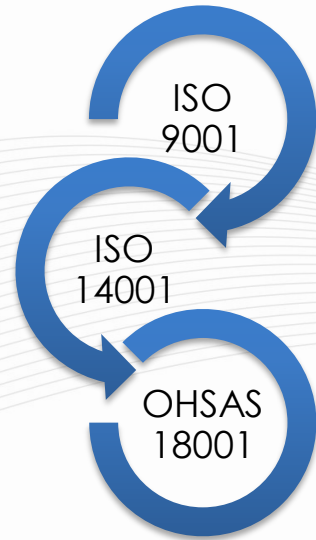


# Tubería & Conexiones



Shengli Oilfield Highland Petroleum Equipment Co., Ltd

# Certificaciones



API 4F • API 7K • API 8A • API 5CT • API 5D  
API 11E • API 11B • API 11AX • API 15H5



## Instalaciones



Edificio Corporativo  
COPESA



Centro de Convenciones

Oficinas Operativas



4 Parques Industriales y Taller de Plataformas

## En China

La estrategia de Highland es la producción de equipo petrolero a nivel internacional, y proveer productos, servicios y soluciones de vanguardia para satisfacer la demanda de los clientes

## Coatzacoalcos: Potencial geográfico

### Situación geográfica:

- Posición estratégica y conectividad al sureste de la República Mexicana (Golfo de México e Istmo de Tehuantepec).
- Cercanía con los principales yacimientos petroleros.
- Puerto industrial y comercial de intercambio nacional e internacional.

### Conectividad con los principales mercados:

- Ofrece ventajas para un mayor aprovechamiento de los tratados de libre comercio de México con otros países.

- Conexión con los principales mercados nacionales y extranjeros, principalmente de Centroamérica, Norteamérica, Sudamérica y Europa.
- Conexión hacia los mercados asiáticos por la cercanía del Golfo de México al Océano Pacífico.

### Industria Petroquímica.

- Coatzacoalcos, municipio pionero en el asentamiento de la industria petroquímica en México, en él se ubica el Cluster Petroquímico más importante de Latinoamérica, generando el 90% de productos petroquímicos nacionales.
- Principal productor de petroquímicos básicos, procesamiento y transformación de hidrocarburos líquidos, derivados de etano, propano, butano y aromáticos.

## Coatzacoalcos: Infraestructura

**Portuaria.** Administración Portuaria Integral con vocación petrolera, industrial, agrícola y comercial; 352 Has. del recinto portuario (122 Has. en tierra y 230 en agua); 6,152 m lineales para obras portuarias de protección; 2,387 m lineales para obras portuarias de atraque; 9,908 m lineales para áreas de almacenamiento; 6 canales de navegación, con una longitud de 9,868 m; Áreas disponibles para la instalación de naves industriales; Agua, combustibles y energía eléctrica. (Es el único puerto de la costa de México que cuenta con terminal de ferro buques y ruta directa al mercado de los Estados Unidos a través de Mobile-Alabama y New Orleans, Louisiana)



**Terrestre.** Facilidad de acceso al centro del país; Facilidad de acceso al centro del país; menor distancia carretera entre el Golfo de México y el Océano Pacífico (Puerto de Salina Cruz, Oaxaca).

**Férrea.** Red ferroviaria Coatzacoalcos- Salina Cruz (Océano Pacífico) con una longitud de 143 km; Red ferroviaria Coatzacoalcos-Mérida (Caribe Mexicano) con una longitud de 700 km; 23 km de vías férreas locales; capacidad de almacenamiento superior a 500 unidades de ferrocarril.

**Aérea.** El aeropuerto de Canticas (Zona Coatzacoalcos-Minatitlán), en proceso de internacionalización, se encuentra a aproximadamente 15 km de la ciudad, desde donde se pueden realizar las conexiones necesarias a todo el país.



## HOT-ROLLED PRECISION SEAMLESS STEEL PIPE

The hot-rolled precision seamless steel pipe production line adopts advanced Arccu-Roll mill to produce casing, tubing, drill pipe, pipeline and fluid piping in 2 3/8" to 7" diameters and with pipe length up to 13 m. The annual capacity is about 150 thousand metric tons.

## TUBERÍAS SIN COSTURA REFINADAS

La cadena de producción de tuberías sin costura refinadas aplica al grupo maquinario avanzado ARCCU-ROLL, se puede producir tubería de camisa, tubería de petróleo, varilla perforadora, tuberías de transportación y tuberías de fluido. Esta cadena tiene capacidad de producción de 150,000 toneladas anuales de especificación de 60mm-180mm, de longitud máxima de 13m.



## TUBING, CASING AND DRILL PIPE

Tubing, casing and drill pipe are produced in accordance with API specifications. The heat-treatment lines are complete with advanced equipments and detecting instruments and can handle drill pipes in 2 5/8" to 5 1/2" diameters, casing in 5 1/2" to 13 3/8" diameters and tubing in 2 3/8" to 4 1/2" diameters. The annual heat-treatment capacity is about 150 thousand metric tons. The thread machining line can handle all API steel grades tubing, casing, couplings and screen pipes in 2 3/8" to 20" diameters and with annual capacity of 300 thousand metric tons. The drill pipe line can produce all API steel grades drill pipes in 2 3/8" to 5 1/2" diameters and with annual capacity of 10 thousand metric tons.

## SL-CQ GAS-TIGHT PREMIUM THREADS

SL-110CQ gas-tight premium thread has passed the test and evaluation by Xi'an Tubular Goods Research Center of CNPC. It is superior in sealing performance, excellent in collapse and buckle resistance and convenient for make-and-break. The premium thread has been successfully applied on tubular goods and used in key domestic oilfields such as Daqing, Shengli and Zhongyuan etc.

### Features:

1. Double metal seal at cone face and end face, leading to desirable sealing property;
2. Torque shoulder design with excellent torque resistance;
3. High connecting strenght of the thread, excelling that of API buttress thread;
4. Low thread distortion and high anti-galling performance,
5. Streamline design with decreased energy loss;
6. Suitable for gas well or directional well applications.

## Tuberías de petróleo, camisa y varilla

La empresa cumple con las normas estristas API y produce las tuberías, camisas y varilla. La cadena de producción de tratamiento térmico cuenta con los instrumentos de inspección avanzados para tratar de varilla de  $\Phi 60 \sim \Phi 139\text{mm}$ , camisas de  $\Phi 114 \sim \Phi 340\text{mm}$ , y tuberías de  $\Phi 60 \sim \Phi 114\text{mm}$ . La capacidad anual de proceso es de 150.000 toneladas. La cadena de producción de rosca puede procesar todos los productos de tubería, camisa, fijadores, cenizas de  $\Phi 60 \sim 508\text{mm}$  de estándar de API, la capacidad de producción es de 300.000 toneladas anuales. La cadena de producción de varilla puede fabricar todas las varilla de acero de estándar API de  $\Phi 60 \sim 139\text{mm}$  con capacidad de producción de 10.000 toneladas.

### Hebilla especial selladora SL-CQ

La empresa diseña hebilla especial selladora SL-CQ y se ha aprobado por Instituto de Tuberías de Xian del Grupo de Petróleo y Gas Natural de China. Tiene ventajas como mejor capacidad selladora, resistencia alta a deformación, fácil de manejar. Este producto se ha aplicado en diferentes campos como Daqing, Shengli y Zhongyuan.

### Características de hebilla selladora:

1. Aplica sello de cónico metal y extremo metal, con mejor capacidad selladora;
2. Aplica hombro de torque, es muy resistente al torque;
3. Alta resistencia de enlace por rosca, mejor resistencia de enlace API;
4. Deformación reducida, resistente a pegado;
5. Diseño de aerofluido, reduciendo pérdida de energía;
6. Se aplica en pozo de aire y pozo de fijación de dirección.



## H2S CORROSION RESISTANT TUBULAR GOODS

H2S corrosion resistant tubular goods in SL series have passed the H2S Resistance Along Test for Tubing and Casing by Material Corrosion Test and Evaluation Center in Sour Gas and Oil Fields of CNPC Sichuan Petroleum Administration. The tubes are clear steel smelted, hot-rolled precisely, heat-treated specifically and cut with premium threads, featuring strong H2S resistance and excellent sealing property.

### Features:

1. Low-alloy steel billets with low content of P and S and impurity strictly controlled;
2. Even and fine grains with grain size of 7 grade above, showing low stress on pipe body;
3. Connections cut with SL Premium Thread, showing strong tensile strength and reliable sealing property;
4. Superior H2S corrosion resistance, applicable for middle to deep wells with H2S environment.

## TUBERÍA DE PETRÓLEO RESISTENTE A H2S

La empresa diseña y desarrolla tubería resistente a Azufre SL, y se ha aprobado por el Buró de Administración de Petróleo de Sichuan y el ensayo imitador resistente a H2S. Se aplica el acero puro, con técnica refinada de proceso, tratamiento térmico especial por herramientas especiales de rocas. Cuenta con características resistentes a corrosión, mejor capacidad selladora, etc.

### Características:

1. Adobe de baja aleación bajo contenido de azufre, control rígido de impurezas;
2. Tasa de granos inferior a 7 grados, fino y pequeño, fuerza correspondiente dentro del tubo es bajo;
3. Se aplica enlace especial de rosca SL, mejor y fiable capacidad selladora;
4. Cuenta con capacidad resistente a corrupción H2S, se aplica en pozo medio y profundo.









Tubular Goods



Shengli Oilfield Highland Petroleum Equipment Co., Ltd

## Tubing, Casing, and Drill pipe



### **SL-110CQ Gas-tight Premium Threads**

The self-developed SL-110CQ gas-tight premium thread has passed the test and evaluation by Xi'an Tubular Goods Research Center of CNPC. It is superior in sealing performance, excellent in collapse and buckle resistance and convenient for make-and-break.

The premium thread has been successfully applied on tubular goods and used in key domestic oilfields such as Daqing, Shengli and Zhongyuan etc.

### **Features:**

1. Double metal seal at the cone face and end face, leading to desirable sealing property.
2. Torque shoulder design with excellent torque resistance.
3. High connecting strength of the thread, excelling that of buttress thread.
4. Low thread distortion and high anti-galling performance.
5. Streamline design with decreased energy loss.
6. Suitable for gas well or directional well applications.

# Fiberglass Reinforced Composite Pipe



## High Pressure FRP Pipe

Surface high FRP pipe adopts 5B external upset standardized long screw connection which improves sealing property with wearproof combined thread. The advantage is that installation is so rapid and convenient that extends life. Downhole FRP pipe is high efficient and super-strengthened which is controlled to twist accurately by computer. Advanced successive filament winding composition ensures axial modulus and resistance to tension with downhole operation.

The max operation pressure of surface high pressure FRP Pipe is 40MPa while downhole high pressure FRP Pipe is 27Mpa. The max work temperature is 82°C with anhydride petrified epoxy-FRP, 100°C with aromatic amine petrified. It can be at 120 °C under long-term work for surface high FRP pipe made of special heat-resistant epoxy resin system. Maximum operating temperature of 149 °C products has been made in order to meet some special application conditions which is according to 15HR specification. All of pipes win the trust of customers with high performance.

## Main Advantage:

1. Low weight, approximately is the steel stock 1/4;
2. Quick and easy installation in any weather without bond;
3. Inside wall is smooth with excellent flow characteristics;
4. Excellent corrosion resistance and extremely long working life;
5. Low installation cost;
6. Little paraffin and deposition accumulation.

## Specification and Parameter (surface) :

Monimal Diameter	Pressure Rank Pa	Inside Diameter mm	Outside Diameter mm	Wall Thickness mm	Weight g/m	Weight Kg/P	Bending Radius m	Thread Size in
DN50	3.5	48.2	51.8	1.78	0.97	8.9	62.1	2 <sup>3</sup> / <sub>8</sub>
	5.5	48.2	51.8	1.78	0.97	8.9	62.1	
	7	48.2	51.8	1.78	1.01	9.2	62.1	
	8.5	48.2	52.5	2.16	1.17	10.7	63.0	
	10	48.2	53.3	2.56	1.20	11.0	64.0	
	12	48.2	54.4	3.11	1.27	11.6	65.3	
	14	48.2	55.5	3.67	1.46	13.3	66.7	
	16	48.2	56.7	4.25	1.66	15.2	68.0	
	18	48.2	57.9	4.84	1.87	17.1	69.5	
	20	48.2	59.1	5.45	1.90	17.4	70.9	
	22	48.2	60.4	6.08	2.14	19.6	72.4	
	25	48.2	62.3	7.06	2.56	23.4	74.8	
28	48.2	64.4	8.09	3.01	27.5	77.3		
32	48.2	67.3	9.55	3.53	32.3	80.8		
DN65	3.5	62.5	66.1	1.78	1.17	10.7	79.3	2 <sup>1</sup> / <sub>2</sub>
	5.5	62.5	66.1	1.78	1.27	11.6	79.3	
	7	62.5	67.1	2.28	1.50	13.7	80.5	
	8.5	62.5	68.1	2.80	1.53	14.0	81.7	
	10	62.5	69.1	3.32	1.56	14.3	83.0	
	12	60.2	68.0	3.88	1.96	17.9	81.6	
	14	60.2	69.4	4.59	1.99	18.2	83.2	
	16	60.2	70.8	5.31	2.29	20.9	85.0	
	18	60.2	72.3	6.05	2.66	24.3	86.8	
	20	60.2	73.8	6.81	2.96	27.1	88.6	
	22	60.2	75.4	7.60	3.23	29.5	90.5	
	25	60.2	77.8	8.82	3.71	33.0	93.4	
28	60.2	80.4	10.11	4.07	37.2	96.5		

# Specification and Parameter (surface) :

Monimal Diameter	Pressure Rank Pa	Inside Diameter mm	Outside Diameter mm	Wall Thickness mm	Weight g/m	Weight Kg/P	Bending Radius m	Thread Size in
DN80	3.5	76	79.6	1.78	1.54	14.1	95.5	3½
	5.5	76	80.3	2.16	1.61	14.7	96.4	
	7	76	81.6	2.78	1.85	16.9	97.9	
	8.5	76	82.8	3.40	2.17	19.8	99.4	
	10	76	84.1	4.04	2.26	20.7	100.9	
	12	70	79.0	4.52	2.57	23.5	94.8	
	14	70	80.7	5.33	2.86	26.1	96.8	
	16	70	82.3	6.17	3.12	28.5	98.8	
	18	70	84.1	7.03	3.45	31.5	100.9	
	20	70	85.8	7.92	3.72	34.0	103.0	
	22	70	87.7	8.84	4.37	39.9	105.2	
25	70	90.5	10.26	5.16	45.9	108.6		

## Tubing, Casing and Drill pipe



### **Specialty Casing for Heavy Oil Thermal Recovery**

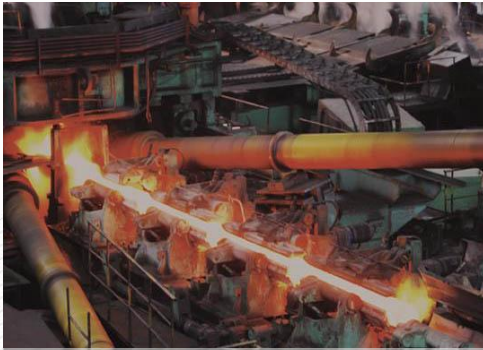
This type of specialty casing is a brand new patent product and self-developed as a non- pipe for heavy oil thermal recovery applications. The pipe body is made of Cr - Mo steel.

The high thermal stability and collapse resistance features of such material lead to better field performances, such as high connection strength, good thermal distortion resistance and reliable gas tightness.

It can survive more than 6 cycles of steam injections, which doubles the conventional casing working life in thermal recovery wells.

This product proves to be a better solution for the high casing damage rate existed in thermal recovery applications.

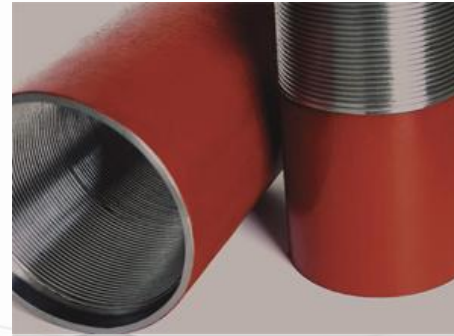
- ° Hot-rolled Precision Seamless Steel Tube.
- ° Tubing, Casing, and Drill pipe.



### **Precision Hot Rolled Seamless Steel Tube**

Production line of the precise hot rolling seamless steel pipe adopts the leading technology ARCCU ROLL rolling system, which can manufacture the raw pipe for the casing, tubing, drill pipe body, coupling, line pipe and etc.

The production line is build by Shengli oilfield highland petroleum equipment Co. Ltd. and Changzhou Darun steel pipe Co. Ltd which is designed productive capacity is 150 kt per year, the productive range from  $\Phi 60\sim 180\text{mm}$ , and the maximum length is 13m.



### **Casing, Tubing And Drill Pipe**

The production line of heat treatment equipped with the advanced machining equipments and monitoring instruments ,which is one of few domestic advanced production lines, can heat treated annually more than 150,000 tons of pipes to calculate polish rod only. All kinds of drill pipes with diameter of  $\Phi 60.3\text{—}\Phi 139.7\text{mm}$  and steel grade of G105、 S135 can be produced in drill pipe workshop. Seven advanced flow production line had been established in machining workshop and are able to machine 300,000 tons of tubing, casing, couplings, sieve tube etc with the sizes of  $\Phi 60.3\sim \Phi 508\text{mm}$  and grades of J55, K55, N80, L80, P110 annually.



## Specifications Of Tubing And Casing(Including Couplings):

No.	Outside diameter		Wall Thickness		Type of end-finish	Grade	Type of Pipe
	inch	mm	inch	mm			
1	2 $\frac{3}{8}$	60.3	0.190	4.83	NUE, EUE	J55, N80, L80, P110, N80Q, L80-1	Seamless
2	2 $\frac{3}{8}$	73.0	0.217	5.51	NUE, EUE	J55, N80, L80, P110, N80Q, L80-1	Seamless
3	3 $\frac{1}{2}$	88.9	0.254	6.45	NUE, EUE	J55, N80, L80, P110, N80Q, L80-1	Seamless
4	4 $\frac{1}{2}$	114.3	0.205	5.21	STC	J55, N80Q, L80-1	ERW
5			0.224	5.69	STC, BTC	J55, N80Q, L80-1	ERW
6			0.224	5.69	STC, BTC	J55, K55, N80Q, L80-1, P110	Seamless
7			0.250	6.35	STC, LTC, BTC	J55, N80Q, L80-1	ERW
8			0.250	6.35	STC, LTC, BTC	J55, K55, N80, L80, P110, N80Q, L80-1	Seamless
9			0.290	7.37	LTC, BTC	N80, L80, P110, N80Q, L80-1	Seamless
10			0.337	8.56	LTC, BTC	N80, L80, P110, N80Q, L80-1	Seamless

## Specifications Of Tubing And Casing(Including Couplings):

No.	Outside diameter		Wall Thickness		Type of end-finish	Grade	Type of Pipe
	inch	mm	inch	mm			
11	5½	139.7	0.244	6.20	STC	J55, N80Q, L80-1	ERW
12			0.275	6.98	STC, LTC, BTC	J55, N80Q, L80-1	ERW
13			0.275	6.98	STC, LTC, BTC	J55, K55, N80Q, L80-1, P110	Seamless
14			0.304	7.72	STC, LTC, BTC	J55, N80Q, L80-1	ERW
15			0.304	7.72	STC, LTC, BTC	J55, K55, N80, L80, P110, N80Q, L80-1	Seamless
16			0.361	9.17	LTC, BTC	N80, L80, P110, N80Q, L80-1	Seamless
17			0.415	10.54	LTC, BTC	N80, L80, P110, N80Q, L80-1	Seamless
18	7	177.8	0.231	5.87	STC	J55, N80Q, L80-1	ERW
19			0.272	6.91	STC	J55, N80Q, L80-1	ERW
20			0.317	8.05	STC, LTC, BTC	J55, N80Q, L80-1	ERW
21			0.317	8.05	STC, LTC, BTC	J55, K55, N80, L80, P110, N80Q, L80-1	Seamless
22			0.362	9.19	STC, LTC, BTC	J55, N80Q, L80-1	ERW
23			0.362	9.19	LTC, BTC	J55, K55, N80, L80, P110, N80Q, L80-1	Seamless
24			0.408	10.36	LTC, BTC	N80, L80, P110, N80Q, L80-1	Seamless

## Specifications Of Tubing And Casing(Including Couplings):

No.	Outside diameter		Wall Thickness		Type of end-finish	Grade	Type of Pipe
	inch	mm	inch	mm			
25	8 $\frac{5}{8}$	219.1	0.264	6.71	STC	J55	ERW
26			0.304	7.72	STC	J55	ERW
27			0.304	7.72	STC	J55, K55	Seamless
28			0.352	8.94	STC, LTC, BTC	J55	ERW
29			0.352	8.94	STC, LTC, BTC	J55, K55	Seamless
30			0.400	10.16	STC, LTC, BTC	J55	ERW
31			0.400	10.16	STC, LTC, BTC	J55, K55, N80, L80, P110	Seamless
32			0.450	11.43	LTC, BTC	N80, L80, P110	Seamless
33	9 $\frac{5}{8}$	244.5	0.312	7.92	STC	J55	ERW
34			0.352	8.94	STC, LTC, BTC	J55	ERW
35			0.352	8.94	STC, LTC, BTC	J55, K55	Seamless
36			0.395	10.03	STC, LTC, BTC	J55	ERW
37			0.395	10.03	STC, LTC, BTC	J55, K55, N80, L80, P110	Seamless
38			0.435	11.05	STC, LTC, BTC	N80, L80, P110	Seamless
39			0.472	11.99	STC, LTC, BTC	N80, L80, P110	Seamless

## Specifications Of Tubing And Casing(Including Couplings):

No.	Outside diameter		Wall Thickness		Type of end-finish	Grade	Type of Pipe
	inch	mm	inch	mm			
40	10%	273.1	0.279	7.09	STC	J55	ERW
41			0.350	8.89	STC、BTC	J55	ERW
42			0.350	8.89	STC、BTC	J55、K55	Seamless
43			0.400	10.16	STC、BTC	J55	ERW
44			0.400	10.16	STC、BTC	J55、K55	Seamless
45			0.450	11.43	STC、BTC	J55、K55、N80、L80	Seamless
46	13%	339.7	0.330	8.38	STC	J55	ERW
47			0.380	9.65	STC、BTC	J55	ERW
48			0.380	9.65	STC、BTC	J55、K55	Seamless
49			0.430	10.92	STC、BTC	J55	ERW
50			0.430	10.92	STC、BTC	J55、K55	Seamless
51			0.480	12.19	STC、BTC	J55、K55、N80	Seamless
52			0.514	13.06	STC、BTC	N80	Seamless

## Specifications Of Drill Pipe:

No.	Outside diameter		Grade
	inch	mm	
1	2 <sup>3</sup> / <sub>8</sub>	60.3	G105、 S135
2	2 <sup>7</sup> / <sub>8</sub>	73.0	G105、 S135
3	3 <sup>1</sup> / <sub>2</sub>	88.9	G105、 S135
4	4	101.6	G105、 S135
5	4 <sup>1</sup> / <sub>2</sub>	114.3	G105、 S135
6	5	127.0	G105、 S135

# Tubing, Casing, and Drill pipe



**Φ95mm\*6.5mm casing**

## 1. Technical parameters:

Casing basic dimensions: Tube diameter: 95.25mm  
Wall thickness: 6.5mm Length: 9-11m Coupling OD:  
108-110mm Connection thread: 3 1/2 special external  
upset tubing thread Yield compressive strength of  
body : 160Mpa Threaded antiskid load: more than  
950KN (The above data from Mechanical Engineering  
Laboratory test, the China University of Petroleum)

## 2. Usable range:

- 1.Slim hole sidetrack drilling and well completion.
- 2.Replace the general 3 1/ 2 "and 4"tube as liner pipe to restore casing etc.

- 3.No less than 4,500m in downhole depth.
- 4.All kinds of oil /gas wells with pressure no more than 90Mpa.

## 3. Advantages:

- 1.Inner drift diameter meets tubing, packer and other downhole tools with 3 3/8 " diameter.
- 2.Inner drift diameter meets perforator gun with 68, 73, 102 and enhanced-perforator and so on, and resolves restriction of perforator gun caused by 3 1 / 2 sidetracking drilling and completion.
- 3.Allowed existing Reservoir Saturation Tool (RPM) such as Pulsed Neutron Decay (PND) through slim hole casing.
- 4.Allow the selection of 76cm packer to ensure 3 3/8 "pipe slicing or inject water.
- 5.Allowed to adopt 76cm bridge plug to achieve upwelling production.
- 6.Allowed to design 44cm, 38cm tubing pump and continued sucker rod to produce in deep wells.
- 7.Degrade the cementing difficulty, improve cementing quality and decrease procedure of sidetracking and reaming relative 4 " tubing.

# Tubing, Casing, and Drill pipe



## H2S Corrosion Resistance Petroleum Pipes

At present, there are 1/3 oil and gas wells containing H<sub>2</sub>S gas all over the world. In china, there are several oil fields (such as Sinkiang, Szechwan) containing H<sub>2</sub>S gas. H<sub>2</sub>S gas can cause Stress Corrosion Cracking of casings and tubings, which can result in huge loss. We developed SL H<sub>2</sub>S Corrosion Resistance Petroleum Pipes associating with foreign companies in order to solve the hereinbefore problem. The test showed this casing type can be used in wells with content of 8% H<sub>2</sub>S gas and could well-solve corrosion cracking.

### Product Features:

- 1.Low alloy pipe stock, low content of P, S.
- 2.Grain Size > level 7, equality and thinness.
- 3.Apply SL premium threading connection, good strength and reliable sealing.
- 4.Excellent H<sub>2</sub>S corrosion resistance, applied by middle/deep wells containing H<sub>2</sub>S gas.

# Fiberglass Reinforced Composite Pipe



## Reinforced Compound Pipe

The reinforced compound pipe is composed of three layers compounded through special technology. The inner layer is modified PVC, which is corrosion proof, heat-resistant, anti-friction and anti-seepage. The middle layer is thermoset tempered glass, which has high strength and good rigidity. The outer layer is plastic, which is protective layer and can resist impact and aging. There are metal and nonmetal joint through screw in both ending of the pipe, moreover, adding insulation layer is available according to the special request of consumer.

It has excellent performances of both thermoplasticity and thermoset and can be used widely in petroleum, chemical engineering, providing water and gasses industry taken the place of steel tube and parts of stainless steel tube specially as corrosive medium.

### Main Advantages:

1. Excellent resistance to corrosion and long work life.
2. Low coefficient of heat conductivity and high insulating property.
3. Inside wall smoothing and little fluid resistance.
4. Oxygen index  $\geq 35$ , outstanding flame retardant.
5. Low weight and high intensity, easy transportation, installation and maintenance, outstanding engineering synthesise benefit.



