



Glass Fiber Reinforced Thermosetting Resin Pipelines System

玻璃纤维/环氧复合材料管道系统

CHANGZHOU CTC PIPELINES SYSTEM CO.,LTD

常州天常管道系统有限公司

企业简介 Company Introduction:

常州天常管道系统有限公司，位于江苏省常州市武进经济开发区腾龙路3号,是玻璃纤维/环氧复合材料管道、管件产品的全球领先制造商。

公司拥有多条先进的管道缠绕、管件缠绕生产线以及加工设备；同时公司还拥有先进的检验、试验仪器以及严格的产品质量保证体系。

公司生产的玻璃纤维/环氧复合材料管道、管件系列产品主要应用于陆地和海上，从低压到高压的各种腐蚀控制系统。

我们的管道系统使用不同的环氧树脂配方，使用纤维缠绕工艺生产并达到高强度，高性能的管线产品；并根据需要，使实际应用的耐腐蚀达到最佳性能效果。

我们提供任何管道系统材料最广泛的管件选择。配合四种连接系统，保证精确的安装，最佳的系统性能，和无与伦比的简单装配。



Changzhou CTC Pipelines System Co., Ltd which is established in 2011 (hereafter called CTC Pipelines System) is a leading designer and manufacturer worldwide of fiberglass reinforced thermosetting resin pipe and fittings.

CTC Pipelines System is equipped with advanced pipe and fitting filament winding machines and employs inspection procedures and quality assurance systems to provide reliable fiberglass reinforced pipe products.

Pipe and fittings products from CTC Pipelines System are used primarily for onshore and offshore applications and provide improved corrosion resistance as compared to steel for a variety of low to high pressure applications.

Our Pipelines System employs a variety of epoxy resins and, where necessary, corrosion barriers to achieve the optimum performance characteristics for virtually any application.

We offer the widest selection of fittings available for any pipe. Four joining systems offer options to ensure precise installation, optimum system performance, and unmatched ease of assembly.



价值观 VALUES

尊重 Respect

一切都以人为本，尊重员工和顾客

We are people-oriented and respect our employees and customers.

创新 Innovation

通过不断创新，使社会和公司得以持续发展

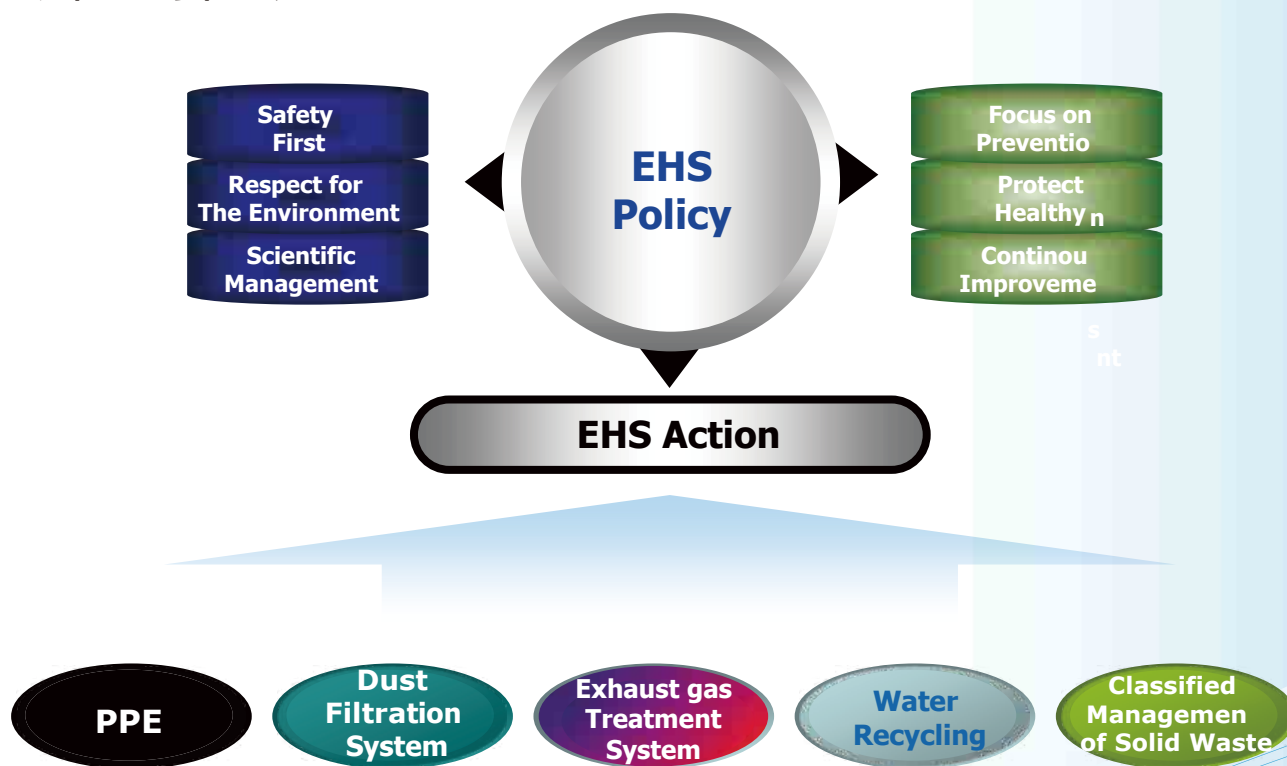
We are innovative and can maintain sustainable development of our company and the community in which we operate.

责任 Responsibility

我们希望每位员工均具有责任感，并将可持续发展对经济、社会和环境的责任纳入战略。

We are a responsible corporation and focus on economic, social and environmental responsibility in our company strategy.

环境/健康/安全 EHS





CTC Pipelines System

玻璃纤维/环氧复合材料管道系统

有效的质量保证体系

Effective Quality Assurance system

严格过程质量控制（固化度分析、水压试验、外观、尺寸检验）

Strict Process control (Tg test and DSC analysis, Hydrostatic test, Appearance, Dimension control)

100%管道、管件水压试验

100% Hydrostatic test

预制成品的水压控制（100% 水压测试）

Hydrostatic test for prefabricated parts



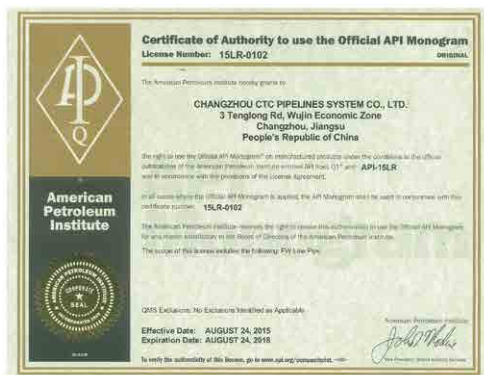
质量保证和产品认证

Quality Assurance & Product Certificates:



常州天常管道系统有限公司只使用最优质的原材料为我们的客户提供高性价比的产品和服务！严格按照IMO A.753(18)、ISO 14692和API相关的标准要求进行产品的设计、制造、检验并取得相应的产品认证和工厂认证。所有我们公司生产销售的管道和管件不含石棉成分并且取得了产品的无石棉认可证书。

CTC Pipelines System employs high grade raw materials to provide customers with high performance products. Strict requirements during product design, manufacturing, and testing, in accordance with IMO, ISO and API standards, provides a reliable pipe and fitting system. CTC Pipelines System has got a lot of certificates of product or plant approval from Class. All our products are Asbestos-free and got Approval Certificate of Asbestos-free Product from CCS. Also the GRE Pipe and Fittings are qualified by API and got the certificate.





CTC Pipelines System

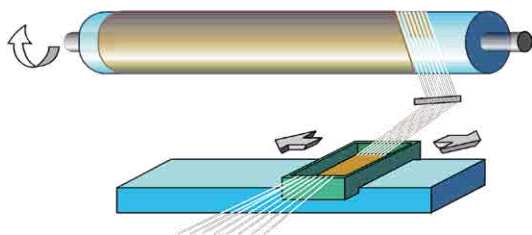
玻璃纤维/环氧复合材料管道系统



产品标准 Product Standards

IMO A. 753(18)	国际海事组织 753 标准 – 船上使用塑料管道指南 Guidelines for the Use of Plastic Pipes on Ships
IMO A. 653(16)	经改进的舱壁、天花板和甲板的饰面材料的表面可燃性耐火试验程序建议 Recommendation on Improved Fire Test Procedures for Surface Flammability of Bulkhead, ceiling and Deck Finish Materials
ASTM D2996	纤维缠绕“玻璃纤维”（玻璃纤维增强热固树脂）管规格 Standard Specification for Filament-Wound “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) pipe
ASTM D2992	玻璃增强热固树脂（玻璃纤维）管及配件用液压或压力设计基础的获得规程 Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for “Fiberglass” (Glass-Fiber-Reinforced Thermosetting-Resin) pipe and fittings
ASTM D1599	塑料管、管道及管配件的短时间耐液压强度的试验方法 Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings
ASTM F1173	船用热固树脂玻璃纤维管系统规格 Standard Specification for Thermosetting Resin Fiberglass Pipe Systems to Be Used for Marine Applications
API-15LR	低压玻璃纤维管线管和管件技术规范 Specification For Low Pressure Fiberglass line Pipe and Fittings
ISO 14692	石油天然气工业—玻璃钢（GRP）管线 Petroleum and natural gas industries —Glass-reinforced plastics (GRP) piping

纤维缠绕工艺 The Filament Winding Process:



Continuous Roving Glass Fibers are Pulled Through a Resin Bath Under Controlled Tension
玻璃纤维在一定张力下经过树脂槽拉出

Placement Head & Comb Transfers Along Mandrel as Rotating
芯轴旋转时，纤维分配器沿芯轴方向往复缠绕

Typical Winding Angle is 54.75 degrees
典型缠绕角度：54.75°

The Filament Winding Process with internal Curing Technique
采用先进的内固化缠绕工艺技术，5阶段温区阶梯固化技术！



CTC Pipelines System

玻璃纤维/环氧树脂复合材料管道系统

产品特点 Features of Product:

耐腐蚀性能好

Resists corrosion in most environments

水力学性能优良

Improved flow characteristics

防污抗蛀

Resists scale/Paraffin build-up

重量轻，安装、运输方便

Lightweight, easy installation and transport

降低安装成本

Low installation cost

减少维护费用

Low Maintenance Cost



耐腐蚀性能好

Resists corrosion in most environments

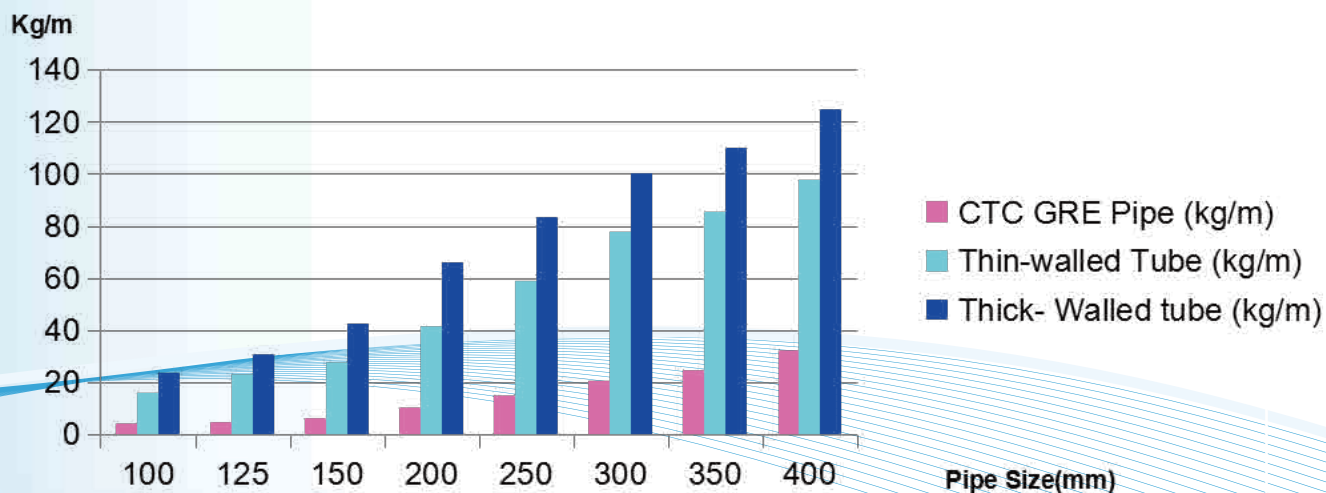
使用玻璃纤维/环氧树脂复合材料管，所有腐蚀被降低

All Forms of Corrosion are Eliminated with the use of GRE Pipe!

重量轻

Lightweight

复合材料管道与钢管对比 Comparison 16BAR GRE to XS Carbon Steel :



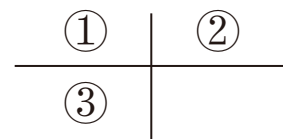
产品的主要技术指标 Product Technical Parameter:

管道规格 Product Range:	25~1000mm (1"~40", 其中一期为 1.5"~18")
压力等级 PressureRating:	10bar—50bar
温度范围 TemperatureRange:	93°C/200°F
比 重 Specific Gravity:	1.8-2.2
泊 松 比 Poisson's ratio:	0.38
流动系数 Flow Characteristics:	150
导电特性 Conductive Pipe System:	导电 / 非导电 Non-Conductive and Conductive versions
防腐性能 Inner Corrosion Barrier:	树脂内衬 20 mil, 0.5mm resin rich liner 0.5mm
耐火能力 Fire-resistance:	MO A.753(18) 所规定的 L3 防火等级、OTI 95634 所规定的 Jet Fire 防火等级 L3 by IMO A.753(18) and Jet Fire by OTI 95634
连接方式 Joining methods:	法兰连接 Flanged Joint, 套管连接 Straight socket, "O" 型圈密封连接 O rings Joint, 包绕连接 Taped Joint etc



产品类别 Product Category:

管道产品 (Standard Pipelines 40-1000mm)

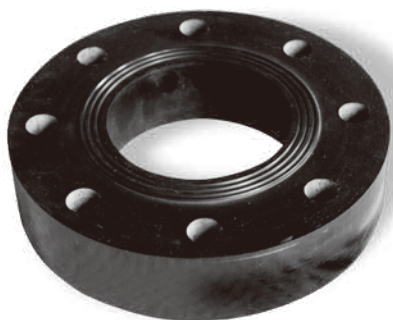


- ① 导电型管道 Conductive Pipe
- ② 通用型管道 Standard Pipe
- ③ 防火型管道/防火导电型管道 Fire-proofing Pipe

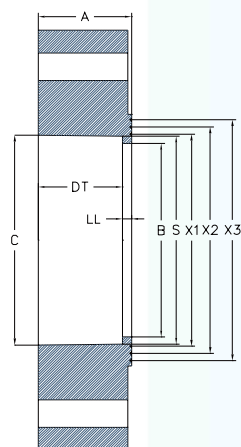
Technical Datasheet 标准管道产品数据

管道规格		内径		外径		最小机构层壁厚		内衬层厚度		容量	
mm	in	mm	in	mm	in	mm	in	mm	in	L/m	ft ³ /ft
40	1.5	42.2	1.66	49.2	1.94	3.0	0.12	0.5	0.02	1.4	0.02
50	2	53.3	2.10	60.9	2.40	3.3	0.13	0.5	0.02	2.2	0.02
65	2.5	69.1	2.72	77.1	3.04	3.5	0.14	0.5	0.02	3.7	0.04
80	3	81.8	3.22	89.8	3.54	3.5	0.14	0.5	0.02	5.3	0.06
100	4	105.4	4.15	115.0	4.53	4.3	0.17	0.5	0.02	8.7	0.09
125	5	132.1	5.20	141.7	5.58	4.3	0.17	0.5	0.02	13.7	0.15
150	6	159.0	6.26	169.6	6.68	4.8	0.19	0.5	0.02	19.8	0.21
200	8	208.8	8.22	221.8	8.73	6.0	0.24	0.5	0.02	34.2	0.37
250	10	262.9	10.35	278.3	10.96	7.2	0.28	0.5	0.02	54.3	0.58
300	12	312.1	12.29	330.2	13.00	8.5	0.34	0.5	0.02	76.4	0.82
350	14	337.6	13.29	357.6	14.08	9.5	0.37	0.5	0.02	89.5	0.96
400	16	385.8	15.19	408.8	16.10	11.0	0.43	0.5	0.02	116.9	1.26
450	18	433.8	17.08	458.8	18.06	12.0	0.47	0.5	0.02	147.7	1.59
500	20	482.1	18.98	509.3	20.05	13.1	0.52	0.5	0.02	182.4	1.96
550	22	530.6	20.89	560.4	22.06	14.4	0.57	0.5	0.02	221.0	2.38
600	24	578.6	22.78	611.0	24.06	15.7	0.62	0.5	0.02	262.8	2.83
650	26	650.0	25.59	686.2	27.02	17.6	0.69	0.5	0.02	331.7	3.57
700	28	700.0	27.56	739.0	29.10	19.0	0.75	0.5	0.02	384.7	4.14
750	30	750.0	29.53	791.6	31.17	20.3	0.80	0.5	0.02	441.6	4.75
800	32	800.0	31.50	844.4	33.24	21.7	0.85	0.5	0.02	502.4	5.41
900	36	900.0	35.43	949.8	37.39	24.4	0.96	0.5	0.02	635.9	6.84
1000	40	1000.0	39.37	1055.2	41.54	27.1	1.07	0.5	0.02	785.0	8.45

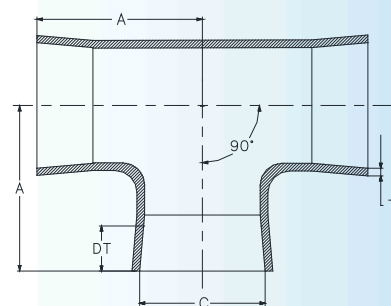
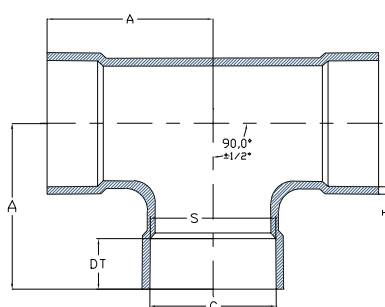
管件产品 (Fittings 40-1000 mm)



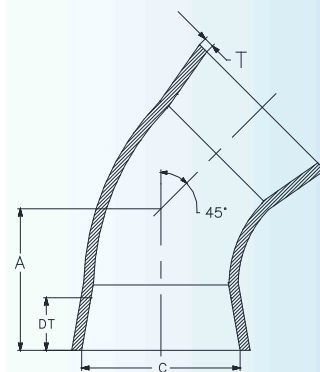
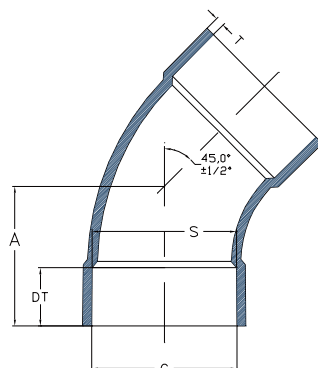
■ 管件Fitting (法兰Flange)



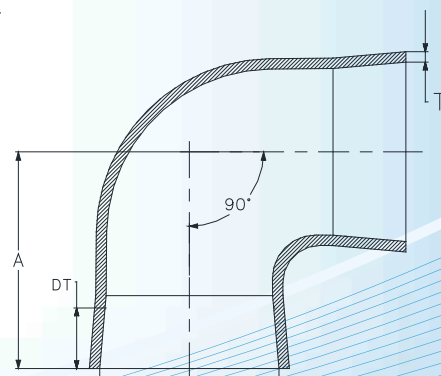
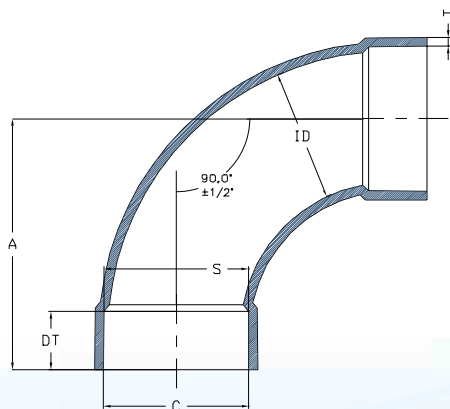
■ 管件Fitting (三通Tee)



■ 管件Fitting (45°弯头 Elbow)



■ 管件Fitting (90°弯头 Elbow)





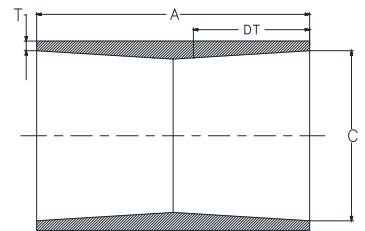
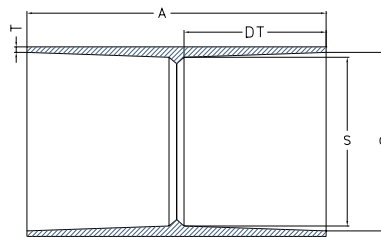
CTC Pipelines System

玻璃纤维/环氧树脂复合材料管道系统

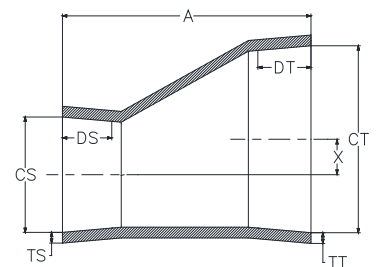
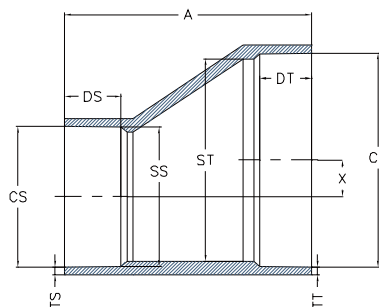
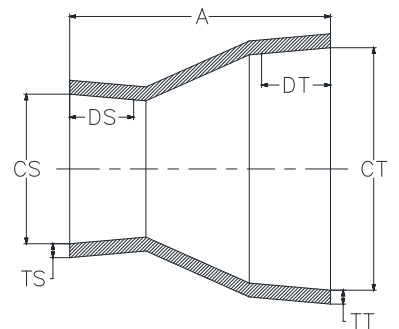
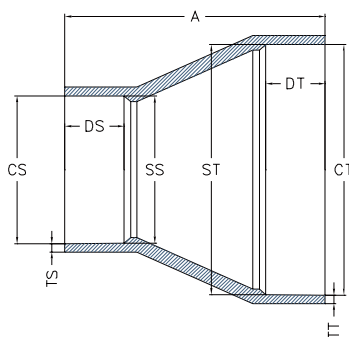
管件产品 (Fittings 40-1000 mm)



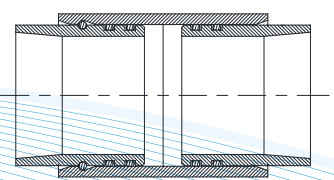
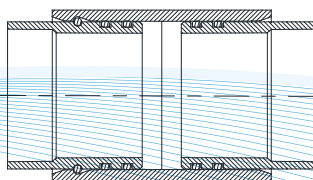
■ 管件Fitting (管箍Coupling)



■ 管件Fitting (异径 Reducer)



■ 管件Fitting (膨胀接头 Expansion Coupling)



精准的管道系统预制

Precise pipelines system prefabrication





CTC
Pipelines System

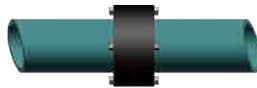
玻璃纤维/环氧复合材料管道系统

管道系统解决方案 Pipelines System Solution

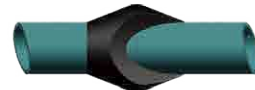
连接方式 Connections



Socket Joint
套管连接



Standard Flanged Joint
标准法兰连接



Butt & Wrap Laminated Joint
包绕连接



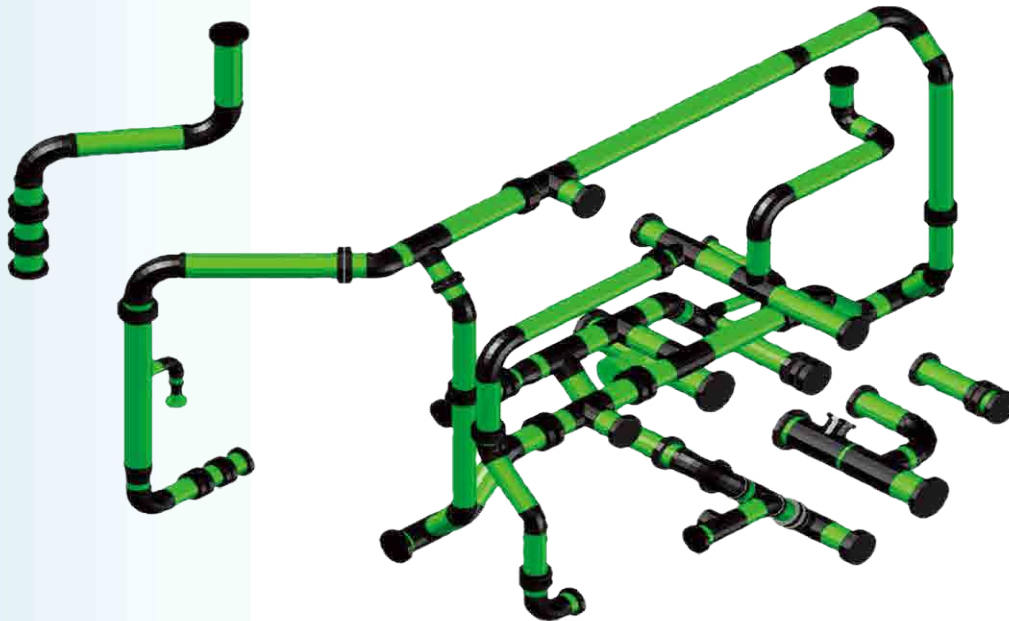
Expansion Coupling
膨胀接头



Double O-ring Joint (DOF)
双O型圈接头 (DOF)



Straub Coupling Joint
斯特劳勃卡箍链接



产品应用 Product Applications:



海洋工程与船舶

化工

其它

消防

Fire Protection

Others



CTC Pipelines System

玻璃纤维/环氧复合材料管道系统

海洋工程与船舶应用

Offshore and Marine

天常BL16系列管道系统是为海洋工程和船舶系统应用提供专门设计、安装的高性能管道系统产品，加之产品有耐磨损、耐腐蚀的内衬，尤其为海洋工程使用的消防管道和压舱管道提供了更高的安全系数，完全满足海洋环境的使用。

CTC BL16 Pipeline Series supplies high performance pipes for the offshore market. This design provides an extra safety factor for offshore fire protection. The pipe products are manufactured with an inner corrosion/erosion barrier that provides maximum corrosion resistance and can withstand the harsh offshore environment.



压力等级 Pressure Rating:	16bar
导电特性 Conductive Pipe System:	导电/非导电 Non-Conductive and Conductive versions
防腐性能 Inner Corrosion Barrier:	树脂内衬 20 mil, 0.5mm resin rich liner 0.5mm
耐火能力 Fire-resistance:	IMO A.753(18) 所规定的L3防火等级、OTI 95634 所规定的Jet Fire防火等级 L3 by IMO A.753(18) and Jet Fire by OTI 95634
产品范围 Size Range:	1.5"(40mm)- 40" (1000mm)
连接方式 Joining methods:	法兰连接 Flanged Joint, 套管连接 Straight socket, "O"型圈密封连接 O rings Joint, 包绕连接 Taped Joint etc

海洋工程与船舶应用领域

Offshore/Marine Applications

Ballast Systems	压载系统	Oil-Water Separators	油水分离
Bilge Systems	舱底系统	Sounding Tubes	探测管
Fuel Oil Systems	燃油系统	Tank Washing Systems	清洗系统
Inert Gas Systems	惰性气体系统	Vent Systems	通风系统
Sanitation Lines	卫生系统	Certain parts of Fire Protection	
Vital and non-vital Water Systems		Systems	防火系统

化工行业应用

Chemical Applications

天常CTC-GL系列玻璃纤维/环氧树脂复合材料管道系统广泛应用于化学工业抗腐蚀管道系统，例如化工生产的工艺过程管线、化学处理管线、轻质化学品输送管线以及工艺供水管线。

The GL Series GRE pipeline products for Chemical Industry corrosion resistant applications are suitable for chemical process, chemical handling, light duty chemical and process water systems.



压力等级 Pressure Rating:	常压 Normal-40 bar
温度范围 Temperature Range:	Up to 93°C /200°F
产品范围 Size Range:	1.5"(40mm)- 40" (1000mm)
防腐性能 Inner Corrosion Barrier:	树脂内衬 20 mil , 0.5mm resin rich liner 0.5mm
耐火能力 Fire-resistance:	IMO A.753(18) 所规定的L3防火等级L3 by IMO A.753(18)
连接方式 Joining methods:	法兰连接 Flanged Joint, 包绕连接 Taped Joint etc
介质条件 Chemical Service:	酸Acids, 碱Alkali、盐Salt、溶剂Solvent、腐蚀剂Caustics etc等

化工行业应用领域

Chemical Applications

Chemical Process	化学工艺管线
Chemical handling lines	化学处理管线
Solvents	化学溶剂输送管线
Process water	工艺供水管线

...



CTC Pipelines System

玻璃纤维/环氧树脂复合材料管道系统

消防工程应用

Fire Protection Applications

经过特殊工艺处理的玻璃纤维/环氧树脂材料RL系列防火管道系统广泛应用消防领域。

The RL series GRE pipeline products are manufactured with special techniques to provide fire protection solutions.



压力等级 Pressure Rating:	10-50 bar
产品范围 Size Range:	1.5"(40mm)- 40" (1000mm)
防腐性能 Inner Corrosion Barrier:	树脂内衬 20 mil, 0.5mm resin rich liner 0.5mm
耐火能力 Fire-resistance:	IMO A.753(18) 所规定的L3防火等级、OTI 95634 所规定的Jet Fire防火等级 L3 by IMO A.753(18) and Jet Fire by OTI 95634
连接方式 Joining methods:	法兰连接 Flanged Joint, 包绕连接 Taped Joint etc

消防工程应用领域

Fire Protection Applications

Certain parts of Fire Protection Systems	海洋平台消防供水系统
Firewater System for Marine	船舶防火供水系统
Sprinkler System for Marine	船舶喷水灭火系统
Firewater System for Chemical Industry	化工消防供水系统
Firewater System for LNG station	近海天然气站消防供水系统

案例应用 Case Study

Case 1 JU2000E (Drilling Rig in SWS (CSSC))



Case 2 Chemical & Asphalt Tanker in AVIC:
GRE pipelines system used in Ballast Cargo Area,
Cargo Tank gas Freeing, Ventilation and Air Drying, Tank Cleaning



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常州天常管道系统有限公司

Changzhou CTC Pipelines System Co., Ltd

中国江苏省常州市武进经济开发区腾龙路3号

3 Tenglong Rd, Wujin Economic Zone, Changzhou,

Jiangsu, China 213145

Tel: +86 519 81687886

Fax: +86 519 81687889

