



镇江长城重工科技有限公司
Zhenjiang Great Wall Group Co., Ltd.
Zhenjiang Great Wall Heavy Industry Technology Co., Ltd

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www.baileybridge.cn

COMPANY 公司简介 INTRODUCTION

镇江长城重工科技有限公司（以下简称：长城重工）坐落于江苏省镇江市，北临长江，地处长三角经济带，位于沪宁高铁，京沪高铁沿线，距镇江港30公里，距常州机场50公里，距南京机场，扬泰机场70公里。长城重工通过了ISO9001质量管理体系认证，焊接工艺和焊工通过了BV法国船级社认证，原材料以及成品通过了SGS，CCIC，CNAS等第三方认证机构的检测。长城重工还拥有多项自主研发专利。

321型(英制321型)装配式公路钢桥和200型装配式公路钢桥（贝雷桥）为长城重工主要产品，拥有整桥全套生产线。长城重工还研制了大跨径装配式D型桥，单跨可达91米，并已完成了整桥的荷载试验和工程应用。公司具有喷砂，浸漆，喷漆，热浸锌，铝粉合金涂覆等表面处理工艺，年产量逾10000吨。

长城重工与中国中交集团，中铁集团，中电建集团，葛洲坝集团，中海油等大型中央所属企业在铁路，公路，国际政府采购等项目上有均有愉快的合作，还积极支持慈善事业，比如支持香港无止桥基金会所有人行钢桥项目，支持中国陕西电视台的慈善桥梁项目等。

长城重工钢桥在国内外都享有良好的声誉，远销几十个国家，已出口到印度尼西亚，尼泊尔，刚果（布），缅甸，外蒙古，吉尔吉斯斯坦，墨西哥，乍得，美国，墨西哥，特立尼达与多巴哥，莫桑比克，坦桑尼亚，肯尼亚，厄瓜多尔，多米尼克等国家和地区。

另外，长城重工还自主研发生产方舱（集装箱）行走机构，承接重型钢结构加工以及大力发展紧固件机械镀锌工艺。长城重工的方舱（集装箱）行走机构不仅供应给国内飞机制造公司，还远销海地等国家广泛应用于机场、码头的集装箱移动需求。长城重工生产制造的钢结构箱梁，板梁，护栏等钢结构也得到了客户的认可；长城重工机械镀锌工艺对环境无污染，解决了高强螺栓无法热镀锌的困境，弥补了电镀工艺锌层厚度的局限。

长城重工以质量生命，不断总结行业内生产和质量方面的不足，积极改进生产工艺，提高生产效率，以国际标准控制生产质量，从而提高国际竞争力，以高起点，高质量，品牌化路线为客户提供最优质的产品和最贴心的服务。

长城重工将持续以对客户负责的态度，秉承企业对社会的诚信责任，踏踏实实，稳步向前。

ZhengJiang Great Wall Heavy Industry Technology Co.,Ltd (here and after called Great Wall) is located at Zhengjiang city, South of Yangtze River, belonging to Yangtze River Delta economic zone, owning railway station of Shanghai-Nanjing and Shanghai-Beijing High-speed railways; 30 kilometers away from Zhenjiang seaport, 50 kilometers away from Changzhou airport, 70 kilometers away from Nanjing airport, and Yangzhou Taizhou airport; Great Wall has passed ISO Quality Management System Certificate; its WPS and welders have passed BV certification; the raw material and finished products are accepted by International Third Testing Institute such as SGS, CCIC, CNAS etc; In addition, Great Wall has several independent R & D patents

321-Type (British Compact-100) prefabricated highway steel bridge and 200-Type prefabricated highway steel bridge (Bailey bridge) are main products of Great Wall, which has a full set of components production line for complete bailey bridge set. More than this, Great Wall has developed a kind of large span prefabricated D-Type bridge whose single span can be up to 91 meters, and has completed the load test already and engineering application of the whole bridge.

Great Wall has the surface treatment process of sand blasting, dip coating, spray painting, hot dip galvanizing, zinc aluminum alloy coating, etc with the annual output of more than 10000 tons.

Great Wall has good cooperation relationships with China Communication Group, China Railway Group, Powerchina Corporation, GEZHOUBA Group, CNOOC etc huge state-owned Key Enterprises in railway, road, international government procurement projects, and is also enthusiastic about the public welfare, such like supporting Hongkong Wu Zhi Qiao (Bridge to China) Charitable Foundation, building up all the footbridges for them and supporting China Shanxi TV building Charity Bridge for remote village.

Great Wall steel bridge is not only well-known in China, but also won good reputation overseas; the bridges made by Great Wall have been used all over the world exported to Indonesia, Nepal, Republic of the Congo, Myanmar, Mongolia, Kyrgyzstan, Mexico, Chad, USA, Trinidad and Tobago, Mozambique, Tanzania, Kenya, Ecuador, Dominica etc.

Furthermore, Great Wall has developed the container movement set independently, undertakes heavy steel structure fabricating business, promotes mechanical galvanization process for fastening parts.

The container movement set is not only supplied to domestic airplane manufacturing company, but also exported to country Haiti and so on meeting the demands of moving container in airport dock. The box girder, plate girder, guard rail such steel structures made by Great Wall are also well approved by clients. Great Wall mechanical galvanizing process made up the deficit of electroplating and hot galvanizing, showed extraordinary performance in field of environmental galvanization.

Great Wall considers the quality as company's life, always accumulates the industrial experience of production and quality, improves production technology and efficiency, follows international specifications to control the quality, improves international competition, supplies the superior products and the best service to the clients with high standard, good quality and branding strategy.

Great Wall will not let you down as long as you choose it.





生产能力

企业一流的生产设备，严密的生产组织管理体系将各生产资源进行优化配置，使我们高端的生产设备物尽其事，使我们的产品更加完善。

Production capacity
Enterprise-class production equipment, strict production and management system will optimize the allocation of production resources, so that our high-end production equipment to do its utmost to make our products more complete.



精良的生产设备 >>> EXCELLENT EQUIPMENT

长城重工，拥有独立的研发机构，实施持续质量改进，不断推陈出新。

长城重工能根据客户的个性需求独立研发、设计、制造出客户满意的机床及其他加工设备。

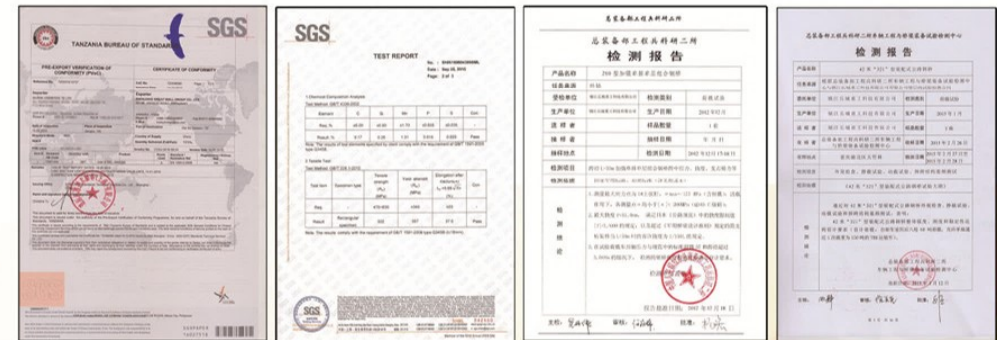
GREATWALL GROUP, with independent research and development institutions, the implementation of continuous quality improvement, it's quality.

GREATWALL GROUP in accordance with the individual needs of independent research and development, design, manufacture customer satisfaction with the machine tools and other processing equipment.



珍藏过去的荣誉 创造明日的辉煌
COLLECT HONORS THE PAST
To create a brilliant tomorrow

COMPANY 公司资质 QUALIFICATION

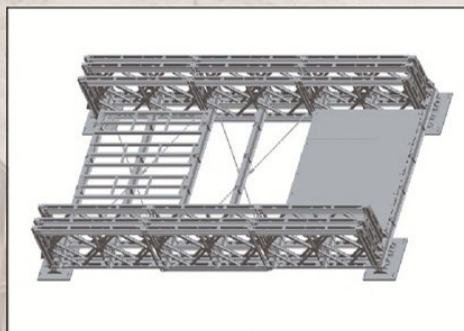
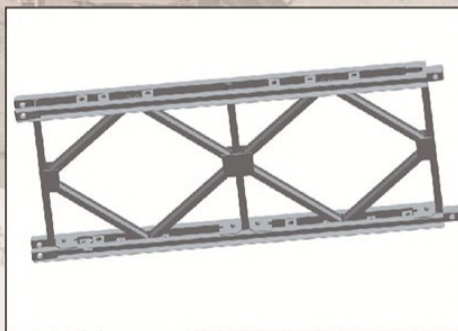


321 型贝雷钢桥

321-Type Bailey Bridge

型号别名：100型，
衍生型号：CB100, Compact-100, 英制321型；
车道净宽：4米
最大跨径：51米
桁架片尺寸：3米×1.4米（孔到孔）

Model Alias: 100-Type
Model Derived: CB100, Compact-100, British 321-Type
Bridge deck net width: 4M
Maximum Free Span length: 51M
Panel Dimension: 3000MMX1400MM (Holes center distance)



321型装配式钢桥是在原英制贝雷桁架桥的基础上结合我国国情和实际情况由交通部公路规划设计院设计的快速组装桥梁，是一种可分解的、能快速架设的制式桥梁，全桥采用高强度全焊制成，主梁为可分解的轻型桁架，桁架间用单销连接，构件互换性强，重量较轻，运输拆装方便，还可根据跨径和通载要求组装成各型装配式钢桥，是一种被广泛应用的较为完善的应急交通保障组合装配式钢桥。由于其桥面板钢材较薄，横梁尺寸较轻，一般适用于荷载较小的情况。

随着国际市场的大力开拓，部分使用方会要求按照英制尺寸制作，贝雷片尺寸为：3.048米X1.45米，国际型号为：CB100或者Compact-100，俗称为英制321型。

The 321-Type panel bridge is a type of bridge system that can be disassembled and rapidly erected. It was designed according to British Compact-100 Bailey Bridge. The whole bridge is welded with high-tensile strength steel. The girder is light weight composite panels and the panels are connected by panel connection pins. The conversion between the parts is easy and they are lightweight. It is easy to assemble or disassemble and transport them. It can also be assembled into different forms of panel bridges according to their span length and transportation requirement. So, it has been widely applied as a more developed and guaranteed panel bridges for emergency transportation. Because the deck is thin and transom beam is light, It is suitable for that when the requested bridge span or loading are small.

As the international marketing developing, some international users insist to adopt the bridge in British dimension to match the old bridges, Great Wall can also provide the special-made bridges with panel dimension on 3.048m X 1.45m (Holes center distance). It is called CB100 or Compact-100 Bailey Bridge. In China, it is called British 321-Type Bailey Bridge.



Single lane: Bridge deck net width: 3.15m.	Maximum Free Span length: 60.96m
Extra Width Single lane: Bridge deck net width: 4.2m.	Maximum Free Span length: 60.96m
Std. Double lanes: Bridge deck net width: 7.35m.	Maximum Free Span length: 45.72m

Panel Dimension: 3048MMX2134MM (Holes center distance)



The 200-Type panel bridge is similar to the 321-Type panel bridge from their appearance. The difference is its increased panel height to 2.134m. For some bridge with longer spans, it employed the method of alternating joints between Reinforcement Chords and the joints between panels. This method can decrease inelastic deformation caused by the oversized pinholes. Pre-arch method is used to additionally cut down mid-span and vertical deflection to a larger degree. Bolt-connected components use the orienting sleeve-fixing method to increase accuracy of connections. Shear is created in orienting sleeves and tension is developed in bolts, which increase the usage life of the bolts and ensure the safety of panel bridges. Wind resistant brace is made to be composite type and is connected to transom/girders to improve overall stability of panel bridges. The part between braced frame and panels is fixed through bridging so as to prevent the whole bridge from side bending. After the erection, there will be a pre-arched degree over the span of the bridge. Besides it can be assembled into single-lane bridges. The compact 200 panel bridge can also be assembled into double lane bridge, hence it broadens its application range. It is suitable for the load designs of HS-15, HS-20, HS-25 HL-93 and pedrail-50 etc.



ACCESSORIES 贝雷钢桥配件 BAILEY BRIDGE



贝雷片 / Panel



加强弦杆 / Chord Reinforcement



桥面板 / Deck



横梁 / Transom



支撑架 / Frame



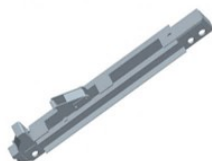
斜撑 / Raker



抗风拉杆 / Sway Brace



横梁夹具 / Transom Clamp



阴头端柱 / Female End Post



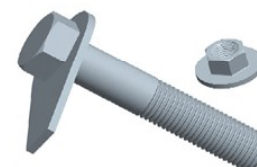
阳头端柱 / Male End Post



桥座 / Bearing



座板 / Baseplate



撑架螺栓 / Frame Bolt



弦杆螺栓 / Chord Bolt



贝雷销 / Panel Pin & Safety Clips



桥面板 U 型、L 型螺栓
Deck U, L Shaped Bolt



桥面板螺栓 / Deck Bolt & Nuts



竖向拉钩螺栓
Vertical Brace Bolt



抗风拉杆 / Sway Brace Bolt



平滚 / Plain Roller



摇滚 / Rocking Roller

BAILEY 贝雷支撑 & 平台 PLATFORM & SUPPORT

特点 / Features:

1. 重量轻，模块化拼装，安装、施工、拆除、移场简单、快捷，可有效的缩短施工工期；
 2. 承载力高，结构刚柔结合，抗冲击力较强，施工安全性好；
 3. 地基处理费用低，互换性高，通用性强，综合整体成本低，具有较为明显的经济性优势。
1. Light weight, modular assembly, installation, construction, demolition, a simple, fast, can effectively shorten construction time limit for a project;
 2. High bearing capacity, and soft combination structure, strong resistance to impact, good construction safety;
 3. Low cost of foundation treatment, high compatibility, versatility, comprehensive overall cost is low, has more obvious economic advantages.



贝雷片组合式现浇施工支架平台用贝雷片纵向联接作桥跨，用贝雷片多层叠加或用钢管作支墩，适合较大跨跨、较高墩柱桥梁的现浇施工，具有大型移动模架和钢管满膛支架所不具备的优势，在武广客运专线高速铁路、京沪客运专线高速铁路等国家重大工程中已普及应用并取得了良好的效果。

两边贝雷桁架所形成的悬臂结构来代替高架桥面上的临时支墩，以作为钢梁的两端支撑，从而形成由贝雷桁架与钢梁配合使用的施工支架平台，并对施工支架强度、刚度和稳定性起着重要作用。

Bailey panel combined support cast-in-place construction platform in Bailey panel piers to join bridge across, in panel multilayer superposition or steel pipe for piers, suitable for large span span, high pier bridge cast-in-place construction, with large mobile formwork and steel pipe bracket of full bore do not have the advantages of wuhan-guangzhou passenger dedicated line in high speed railway, beijing-shanghai high-speed railway passenger dedicated lines, and other countries has widespread application in major projects and achieved good results.

Both sides which is formed by the bailey truss temporary piers on the surface of the cantilever structure instead of a viaduct, as the ends of the steel beam support, thus formed by the bailey truss and steel beam with falsework platform, and the falsework strength, stiffness and stability plays an important role.



BAILEY 贝雷栈桥&支撑&平台 Trestle bridge,support and platform



贝雷平台 Bailey Support



贝雷平台 Bailey Platform



栈桥 Trestle Bridge



上承式贝雷桥 Deck Bridge

D型大跨径钢便桥

D-Type Big Span Steel Bridge

型号别名：CD450型；CD型；450型

D型钢桥适用范围：

标准单车道：桥面净宽：4.2m 最大跨径：82.296米

标准双车道：桥面净宽：7.35m 最大跨径：91.44米

桁架片尺寸：3048MMX2350MM

Model Alias: CD450; CD; 450

Extra Width Single lane: Bridge deck net width: 4.2m

Maximum Free Span length: 82.296m

Std. Double lanes: Bridge deck net width: 7.35m

Maximum Free Span length: 91.44m

Panel Dimension: 3048MMX2350MM



D型桥起源于德国，经由长城重工工程师对其结构的分析引进中国并进行量产，为长城重工专利产品。

D型桥的引进源于贝雷桥在技术上的壁垒与不足。众所周知，贝雷桥是一种常见的装配式钢桥结构，是由单销连接桁架单元作为桥跨结构主梁的上、下承式桥梁，具有结构简单、适应性强、互换性好等优点。但是即使在荷载不大的情况下，也只能达到60米单跨。

所以，长城重工推出了D型桥，桁架虽然采用更大的型钢，但是结构却更为简单，既具有装配式贝雷钢桥适应性强的优势，又弥补了其在跨度上的限制，提高了单跨长度，节约了桥墩成本。

D-bridge is the patent of Great Wall. It was invited from Germany and has advantage in the long-span and big loading comparing to bailey bridge. Thus, it can save cost of piers.

Its panel chord is bigger than bailey bridge panel but the panel structure is simpler. All the components are bolted so the bridge can be used as a permanent bridge because of its small deflection. The components are interchangeable and repetitively used. This kind of bridge has various structure changes to satisfy different loading capacity.



DELTA K 型桥 & 德塔桥 (CB450) BRIDGE



CB450 德塔桥是一种新型下承式半永久型紧凑型钢桥，450型大跨度装配式公路钢桥是由上弦杆、下弦杆、三角腹杆、横梁、桥面板以及连接件等构件拼装而成的下承式桥梁。构件之间的连接方式采用螺栓连接。桥面系可采用钢桥面板，也可采用混凝土桥面；桥梁两侧可额外的设计外置或内置人行道，最大单跨为81米，单车道净宽4.2米，双车道标准宽度7.35米，超宽双车道可拓展至10米（若达到10米宽车道，横梁与桥面板需要加高加厚）。

Delta (CB450) Bridge is a new kind of half-through permanent compact bridge, with the span length from 35m to 81m; carriage way is 4.2m in single or 7.35m in double. The bridge deck can be adopted steel plate and concrete, the latter deck is more suitable for the permanent bridge.

Delta (CB450) Bridge is composed by main girder, deck system and support system. The upper chord nether chord of the main panel is modularized unit with a section of H shape. Web plate is modularized unit with a section of K shape. The bridge is connected up by the high strong bolts. Delta (CB450) Bridge has the advantages of long fatigue life, great loading capability and good appearance suits to be used as a permanent bridge.



BAILEY 贝雷浮桥 PONTON FLOATING BRIDGE



浮桥，指用船或浮箱代替桥墩，浮在水面的桥梁。军队采用制式器材拼组的军用浮桥，则称舟桥。其构造并不复杂，架拆也方便，浮桥的架设具有简便、快速的特点，但维修费用高。平时可用以应急救援或作为临时性的交通设施。

Pontoon bridge, by boat or tank instead of bridge pier, the float bridge. Army together a using standard equipment, military pontoon bridge, says pontoon bridge. Its structure is not complex, open and convenient, bridge construction has the characteristics of simple, fast, but the high cost of maintenance. At ordinary times could be used in the emergency disaster relief or as a temporary traffic facilities.



BAILEY 贝雷悬索桥 SUSPENSION BRIDGE

贝雷悬索桥由贝雷形主梁+缆绳+两侧揽塔三大部分组建而成。悬索吊桥桥面板为钢桥面板，吊杆为刚性吊杆，主缆由钢绞线组成，是将桥跨吊在锚固于江河、沟谷、海湾两岸的缆索下面的一种桥梁，能充分发挥钢材受拉特性的一种长大跨桥型。

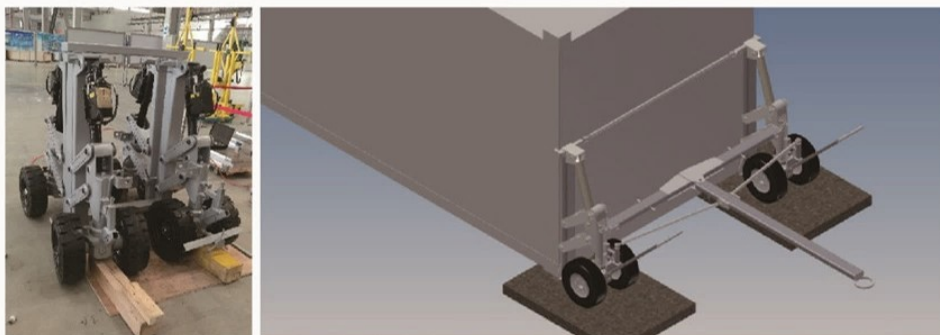
Bailey suspension bridge girder by bailey shape on both sides of the LAN cable tower three parts. suspension bridge panel is steel bridge deck, derrick is rigid boom, main cable is composed of steel strand, is a bridge to cross hanging in anchorage in rivers, valleys, bay on both sides of the cable under a bridge, can give full play to the steel tensile properties of a kind of grew up across the bridge.



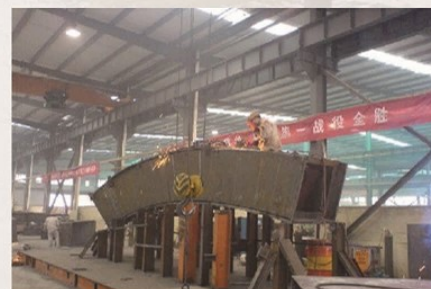
集装箱移动设备 Container Movement Set

别名：方舱行走机构，方舱运输设备，包装箱运输设备等。
集装箱移动设备是针对标准集装箱或带有标准角件物体移动而开发的产品，具有操作简单，行走方便的特点。
用于短距离、低速转移箱体包装箱、运输集装箱。

Container Movement Set for Shelters is developed for moving standard shelters or objects with standard angles, easy to operate and move.
It is used for short-distance movements of objects container or shipping container.



钢结构加工 Steel Structure Fabrication



发货与架桥 Delivery and Bridge Launching



鎮江長城重工科技有限公司
Zhenjiang Great Wall Heavy Technology Co., Ltd.

磁粉探傷記錄單

MT Crack Detection Record (Half-check)

項目名稱 Project Name	探傷部位 Inspection Part	工件名稱 Workpiece	工件編號 Workpiece No.	1-200	
工件材料 Material	Q345	工件厚度 Thickness	See Drawing	探傷方法 Welding method	GMW
接口形式 Groove form	See Drawing	接口比例 Test proportion	25%	表面狀況 Surface condition	Grinding
磁懸液型號 instrument type	IAC	磁粉類型 Magnetic powder type	黑漆細磁粉 MT-BW	磁化方式 Mode of magnetization	交叉磁化 Cross magnetization
磁化電流 Magnetizing Current	交流 Communication	磁化強度 Magnetization pick force	112mm	磁化力 Magnetizing force	45N

示圖

結論:

根據 JB/T8091 和標準, 判定合格, 無缺陷發現情況。

檢驗者 Inspector	張亞坤	日期 Date	2017年8月16日
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工程业绩 Experience



贵州带防水屋顶321型24米双排单层加强型单车道油漆人行桥

321-Type 24m DSR single lane painted pedestrian bridge with waterproof roof In Guizhou China



陕西周至县慈善桥36米双排单层加强特制单车道（2米）镀锌贝雷桥

321-Type 36m DSR single lane (2m) galvanized bailey bridge in Zhouzhi, Shangxi, China



西藏200型200米多跨单车道混合三排，四排单层加强型油漆贝雷桥

200-Type 200m Multi-spans TSR & QSR single lane painted bailey bridge in Tibet, China



西藏D型24米单车道双排单层型镀锌永久桥

D-type 24M DS one way galvanized steel permanent bridge in Tibet, China

工程业绩 Experience



重庆麻池村慈善桥15.2米特制贝雷片镀锌人行桥

15.2m pedestrian bridge with special-made panel in Machi Village,Chongqing,China



尼泊尔321型30米双排单层加强型单车道镀锌贝雷桥

321-Type 30m DSR single lane galvanized bailey bridge in Nepal



坦桑尼亚321型24米两跨双排单层单车道带人行道镀锌贝雷桥

321-Type 24m two spans DS single lane with walkway galvanized bailey bridge in Tanzania



缅甸英制321型240FT双排单层型特制单车道(3.15米)镀锌贝雷桥

Compact-100 240FT DS single lane(3.15m)galvanized bailey bridge in Myanmar

工程业绩 Experience



印度尼西亚200型15.24米单车道单排单层镀锌桥
200-Type 15.24m single lane SSR galvanized bailey bridge in Indonesia



缅甸200型1000FT 三排单层加强型双车道贝雷桥
200-Type 1000FT TSR double lanes galvanized bailey bridge in Myanmar



马来西亚200型24.384米三排单层型双车道镀锌贝雷桥
200-Type 24.384m TSR double lanes galvanized bailey bridge in Malaysia



外蒙200型150米多跨双车道三排单层加强型油漆贝雷桥
200-Type 150m multi-spans TSR two ways painted bailey bridge in Mongolia

国际视野 International Business



附录
Appendix

321 型桁架结构容许内力表
321 Type Truss Structure Allows For The Internal Force Tables

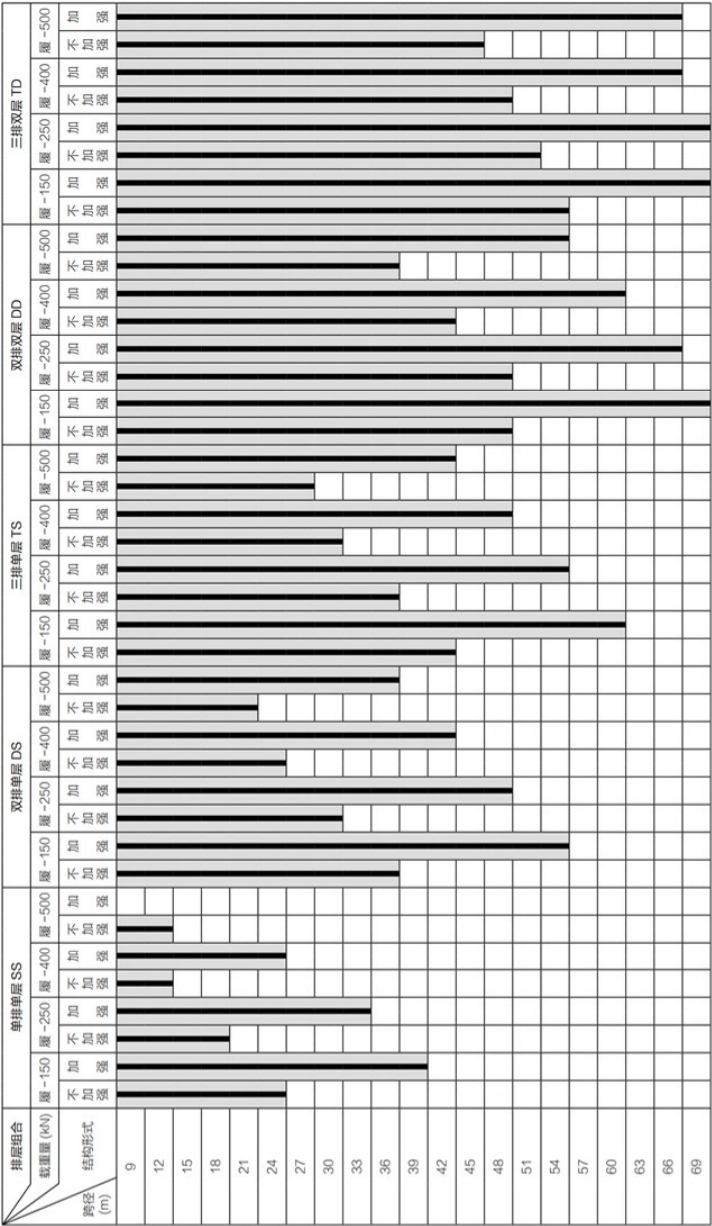
结构型式 Structural Type	标准结构型 Standard structure					加强结构型 Reinforcement Structure				
	单排单层	双排单层	三排单层	双排双层	三排双层	单排单层	双排单层	三排单层	双排双层	三排双层
	SS	DS	TS	DD	TD	SSR	DSR	TSR	DDR	TDR
弯矩 (kN·m)	788	1576	2246	3265	4653	1687	3375	4809	6750	9618
剪力 (kN)	245	490	698	490	698	245	490	698	490	698

200 型桁架容许内力 (半边桥)
200 Type Truss Allow Internal Force (Half Bridge)

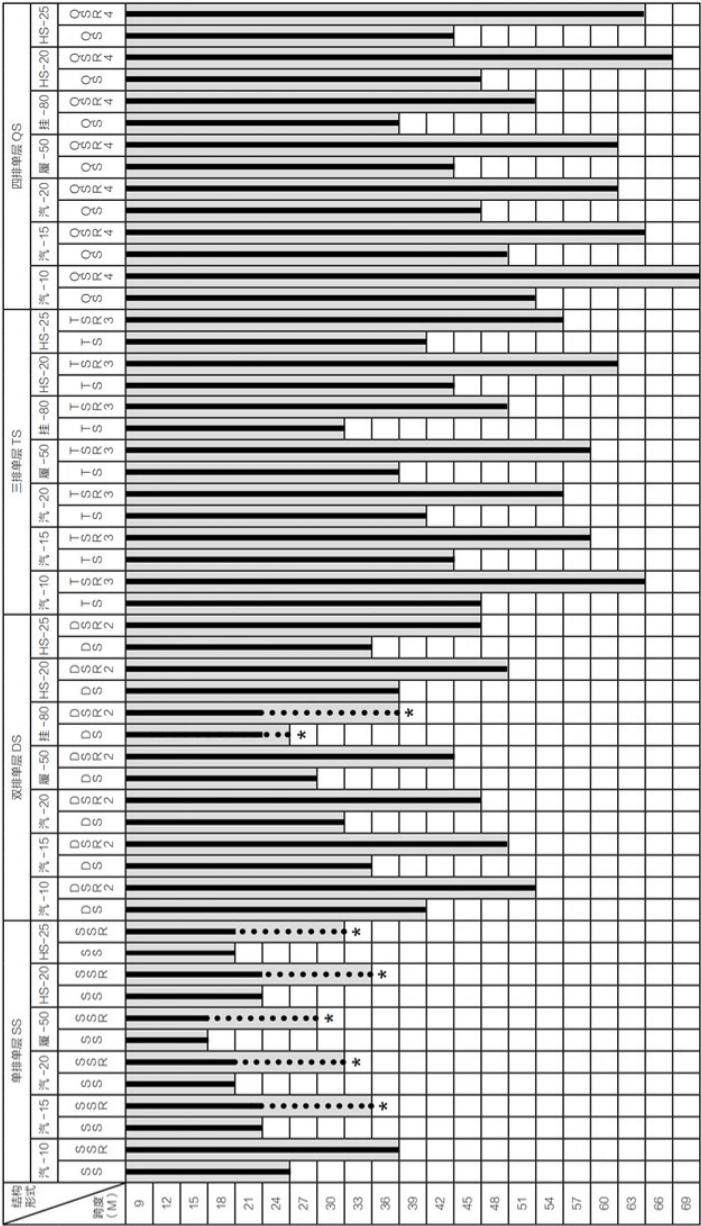
		容许弯矩 [M] (kN·m)	容许剪力 [Q] (kN)	高抗剪单元容许剪力 [Q] _h (kN)
单排单层 SS	SS	1127	257	348
	SSR	2254	257	348
双排单层 DS	DS	2525	514	696
	DSR1	3381	514	696
	DSR2	5050	514	696
三排单层 TS	TS	3800	771	1044
	TSR2	5635	771	1044
	TSR3	7600	771	1044
四排单层 QS	QS	5050	1028	1392
	QSR3	7889	1028	1392
	QSR4	10100	1028	1392

注：表中各种结构的容许内力未计入活载的偏心系数 (k₁) 和桁架受力不均系数 (k₂)。

321 型载重跨径组合表 (履带载)
321 Type Bailey Steel Bridge Span Load Combination Table (Caterpillar Load)



200 单车道桥荷载与跨径组合表
200 Single Lane Bridge Load And Span Combination Table



注：表中实线部分为不设高抗剪单元的桥梁，带 * 者为桥梁端部桥节各设一节高抗剪单元
Note: Within The Line Part Is Not A High Shear Unit Of The Bridge, With * For The Bridge End Bridge Section Of Section High Shear Truss Unit

200 双车道桥荷载与跨径组合表
200 Double Lane Bridge Load And Span Combination Table

