

# Rubber Dam



## Introduction of Company

Qingdao Singreat Industry Technology is the largest manufacture of rubber dam in China. As professional manufacture, we have a complete set of equipment from test machines to the production machine. During the passed ten years, we have installed more than four thousand rubber dams all over the world including Vietnam, Bangladesh, Indonesia, Iran, the united state of America and etc. Singreat's professional experience in rubber dam has received positive evaluation from customers all over the world. We will continuously develop and improve our rubber dam technology and takes pride in meeting your requirements.





## Production Equipment



## Quality control system

Qingdao Singreat has advanced testing machines to control the quality from raw material to finished production.







中国认可  
国际互认  
检测  
TESTING  
CNAS L2700

# 检 验 报 告

## INSPECTION REPORT

报告编号: HQT1-2020-03029

Item: rubber bladder

产品名称: 坝袋

Company: Qingdao Singreat Industry Technology Co.,Ltd

委托单位: 青岛鑫凯泰工业科技有限公司

检验类别: 委托检验

报告日期: 2020年04月03日

**HQT<sup>®</sup>** 青岛中化新材料实验室

石油和化学工业新材料与制品质量监督检验中心

Qingdao Zhonghua Advanced Materials Laboratory

Quality Supervision and Testing Center for Advance Materials

&Products Of Petroleum Chemical Industry


# 石油和化学工业新材料与制品质量监督检验中心

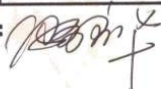
Test Report

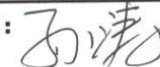
## 检 验 报 告

报告编号: HQT1-2020-03029

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样品名称 Sample	坝袋 Rubber bladder	样品编号	HQT1-2020-03029
委托单位 Company	青岛鑫凯泰工业科技有限公司	委托人	刘万方
委托单位地址	青岛黄岛区铁山工业园	样品特征	/
生产单位 Manufacture	青岛鑫凯泰工业科技有限公司	商 标	/
型号、规格、等级 Model	JBD2.5-160140-2 合格品	检验类别	委托检验
抽样地点	/	抽样方式	/
样品基数	/	到样数量	1 段
到样日期 Date	2020 年 03 月 25 日	抽样人	/
样品状态	完好		
检验依据 Standard 及判定原则	SL 554-2011《橡胶坝坝袋》 SL 554-2011 RUBBER DAM STANDARD		
检 验 项 目	1. 胶布经向拉伸强度 2. 胶布纬向拉伸强度 3. 热空气老化后胶布经向拉伸强度 4. 热空气老化后胶布纬向拉伸强度 5. 内覆盖胶与浸胶帆布层间粘合强度 6. 外覆盖胶与浸胶帆布层间粘合强度 7. 浸胶帆布布层间粘合强度 1. Tensile strength in warp direction 2. Tensile strength in weft direction 3. Tensile strength in warp direction after hot air 4. Tensile strength in weft direction after hot air 5. Adhesion strength between internal rubber and fabric 6. Adhesion strength between outer rubber and fabric 7. Adhesion strength between fabrics		
检测主要仪器	HQL 150 伺服系统卧式材料试验机 HQL 240 伺服拉力机 HQL 185.5 老化箱		
检测起止时间	Test Time: 2020 年 03 月 25 日至 2020 年 04 月 03 日		
检 验 结 论	<p>依据 SL 554-2011 标准, 共检 7 项, 7 项合格, 综合结论为该样品所检项目合格。</p> <p>All tested items are qualified according to SL554-2011</p> <p style="text-align: right;">             检验专用章            (检验专用章)            2020 年 04 月 03 日         </p>		
备 注	实验室环境: 温度 22℃、湿度 50%		

批准: 

审核: 

编制: 

石油和化学工业新材料与制品质量监督检验中心

# 检 验 报 告

报告编号: HQT1-2020-03029

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序号	检 验 项 目	标准/技术要求	检验结果	单项判定
1	胶布经向拉伸强度, kN/m	$\geq 256$	307	合格
2	胶布纬向拉伸强度, kN/m	$\geq 224$	264	合格
3	胶布经向拉伸强度, kN/m (100℃×96h 热空气老化后)	$\geq 205$	281	合格
4	胶布纬向拉伸强度, kN/m (100℃×96h 热空气老化后)	$\geq 179$	251	合格
5	内覆盖胶与浸胶帆布层间粘合强度, kN/m	$\geq 6.0$	7.1	合格
6	外覆盖胶与浸胶帆布层间粘合强度, kN/m	$\geq 6.0$	7.8	合格
7	浸胶帆布布层间粘合强度, kN/m	$\geq 6.0$	9.5	合格
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备注				

# Construction of Rubber Dam

As an innovation hydraulic structure, the rubber dam project mainly consists of four parts:

- i) concrete foundation;
- ii) rubber fabric bladder and anchor fittings;
- iii) control house including mechanical and electrical equipments;
- iiii) pipe system

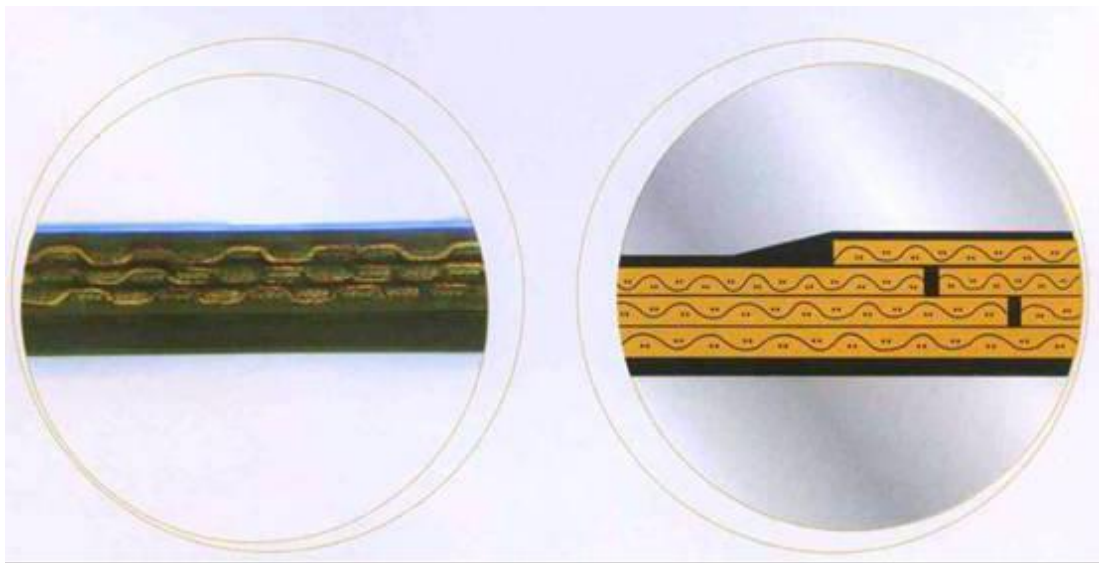
## 1. Concrete foundation





## 2. Rubber fabric bladder and anchor fittings

2.1 The rubber bladder is made of high strength fabric and rubber layers. The fabric serves as the force-bearing frame of the dam with good flexural stress resistance and excellent adhesion function. The rubber layers consist of out-layer, middle-layer and inner-layer to protect the canvas.



## Physical properties of the rubber material of rubber bladder

Item		Unit	Outer layer	Middle laver inner layer	Cover rubber sheet	Test standard
Tensile strength at break≥		Mpa	14	12	6	GB/T528-2009
Elongation at break ≥		%	400	400	250	GB/T528-2009
Permanent deformation at break≤		%	30	30	35	GB/T528-2009
Hardness (shore A)			55~65	50~60	55~65	GB/T531.1-2008
Brittleness temperature≤		℃	-30	-30	-30	GB/T1682-1994
Hot air aging (100℃*96h)	TB	Mpa	12	10	5	GB/T3512-2001
	EB	%	300	300	200	GB/T3512-2001

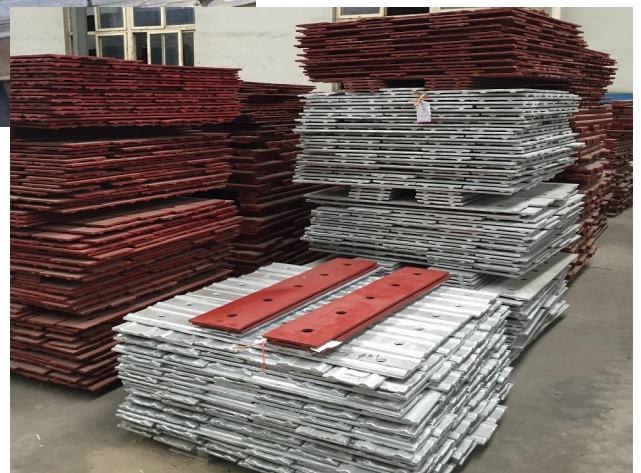
## 2.2 Anchor fittings:

The clamping plate is made of casting steel and the anchor bolt is made of carbon steel with following property:

having good rust resistance, and the specifications apply to a wide range of models

having high strength and high safety factor

easy installation and low price





### 3. Control house:

The control house includes mechanical and electrical equipments. The inflation and deflation devices are installed in the control house. And air blower or water pump and ancillary device are used for inflate air or water to rubber dam respectively.



The rubber dam can be operated manually or automatically . The automatic control system consists of computer software technology, PLC control technology, communication and transmission technology and sensor test technology etc. The system can automatically adjust the inflation and deflation according to the water level or internal pressure, which can be used in daily operation and flood emergency control for the safety of the dam.



#### 4. Pipe system:

The pipe system is served for the rubber dam to fill water or fill air into rubber bladder. It can be supplied according to the water filling rubber dam or air filling rubber dam.

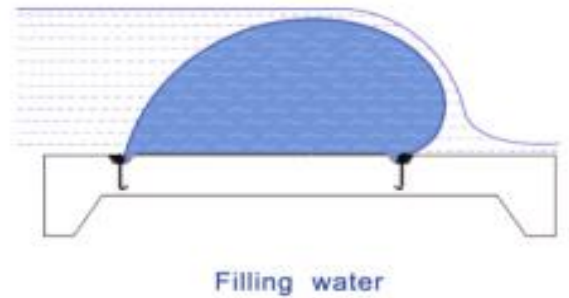




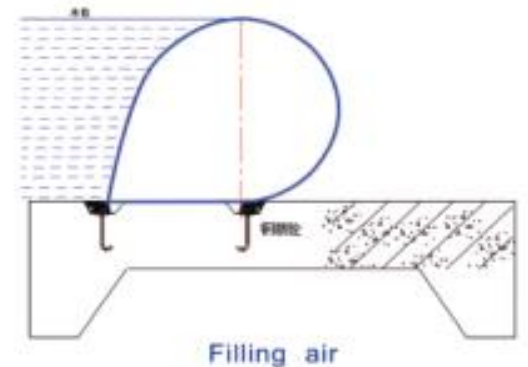
## Type of rubber dam

1) According to the medium filled, rubber dam is divided into air inflatable rubber dam and water filling rubber dam:

**Water filling rubber dam:** it can reduce the temperature of bladder to extend its service life in summer.

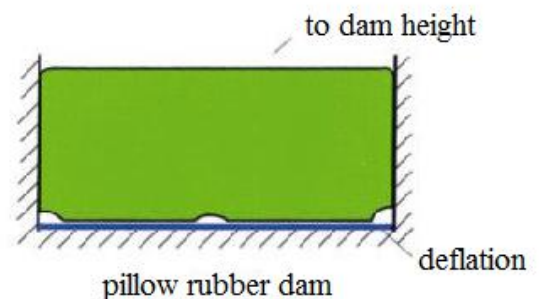


**Air inflatable rubber dam:** it will not be frozen in the cold region.

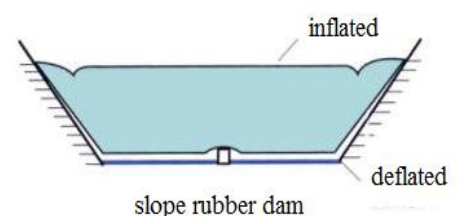


2) According to the slope, rubber dam is divided into pillow rubber dam and inclined rubber dam:

**Pillow rubber dam:** It is not fixed the rubber bladder on the side wall, but fixed the dam head to fix on the side wall



**Inclined dam:** the rubber bladder matches the cross section of river, and can be fixed on the side wall.



3) According to the anchor method, rubber dam is divided into single anchor dam and double anchor dam:

**Single anchor dam:** apply to air inflatable rubber dam and low dam ( the dam height is not higher than 2m).



**Double anchor dam:** apply to the dam which the height is higher than 2m.



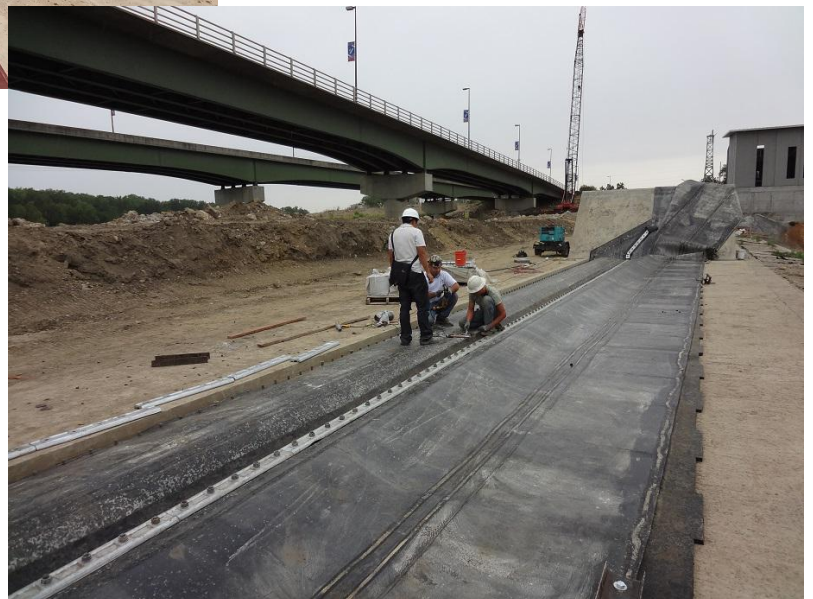
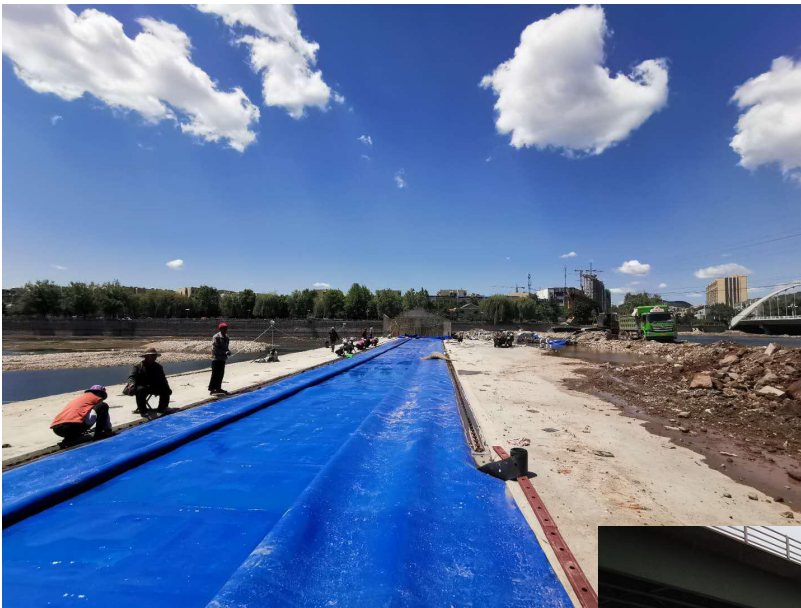
**Fin rubber dam:** The cross-section of fin rubber dam looks like a book with smooth appearance. The fin erects when inflated to form a rising angle to raise the water head during a certain overflow, and eliminate vacuum underneath the dam with certain depth of flow water, thus reducing the vibration and wearing out of the rubber bladder.



## After Service

We could arrange installation engineers to supervise the installation  
After finishing the installation, we could provide necessary technical service per customer's request.

The expected service life of rubber dam is more than 15 years. During the warranty periods, We is responsible for repairing or replacing damage caused by manufacturing defects, damaged materials and improper technical design of rubber dam materials





## Sample Projects









Qingdao Singreat Industry Technology Co.,Ltd.

Add: Shuangzhu Road, Huangdao District, QD, China

Tel: 0086-532-85133117

Fax:0086-532-85133117

Website: <http://www.oilspillprevent.com>

Email: [info@oilspillprevent.com](mailto:info@oilspillprevent.com)