



轨道交通应用

RAIL TRANSIT APPLICATIONS

摩腾科技(上海)有限公司
Morteng International Limited Co., Ltd



公司介绍 Company Profile

作为享誉全球的先进碳材料生产技术及研发公司，摩腾科技十几年来一直致力于为客户提供碳技术及衍生产品的定制解决方案，使其产品和流程更高效、更可靠、更耐久。公司坐落于上海大虹桥板块毗邻上海虹桥机场，上海虹桥站以及国家会展中心，车程仅15分钟。员工170余名，其中具有本科及以上学历的员工占研发部总人数的90%以上。

摩腾公司积极引进消化欧洲具有领先地位的制造技术和生产工艺，在上海建立了自主完备、全流程，更高效的生产工艺控制系统。与此同时，摩腾公司严格遵照中国及欧洲的类型试验实验大纲建立了上海研发中心和实验中心，并拥有全球专业团队和本地领先研发团队的技术应用支持。公司恪守致力于以贴近客户为本，本着正直、诚信为广大客户提供产品和服务。

摩腾公司期待您的莅临指导和考察！

As a world-renowned company in the production, technology and research and development of advanced carbon materials, Morteng Technology has been committed to providing customers with customized solutions for carbon technology and derivative products to make its products and processes more efficient, reliable and durable. The company is located in Shanghai Hongqiao area adjacent to Shanghai Hongqiao Airport, Shanghai Hongqiao Station and the National Convention and Exhibition Center, only 15 minutes by car. There are more than 170 employees, among which employees with a bachelor degree or above account for more than 90% of the total number of R&D departments.

Moteng actively introduces and digests European leading manufacturing technologies and production processes, and has established an independent, complete, and more efficient production process control system in Shanghai. At the same time, Morteng has established a Shanghai R&D center and an experimental center in strict accordance with China and Europe's type test experiment outline, and has technical application support from a global and local professional teams.

We look forward to your visit!

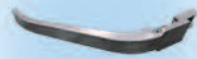


铁路及城轨应用产品线

Railway Application Product Line



碳滑板
Pantograph



羊角
End horn



软连线组件
Soft wire component



第三轨集电靴
The third rail collector shoe



牵引及接地碳刷
Traction and grounding brush



轴端接地装置
Shaft earth device



齿轮箱接地装置
Gearbox earth device



铁路滑环
Railway slip ring

摩腾研发实验室 Morteng R & D Lab

公司建立有国内领先的产品型式试验室，可以针对客户包括铁标要求产品性能进行各项型式试验，确保产品质量能满足客户的需求。

We have established the domestic leading laboratory, We can conduct various type tests for the product performance for customers, including railway standard requirements, to ensure that the product quality can meet the needs of customers.



- 电流温度特性试验

Current and temperature characteristic test

- 挠曲延伸试验（机械性能）

Flexural elongation test (mechanical properties)

- 弯曲特性试验（机械性能）

Bending characteristic test (mechanical properties)

- 剪切强度（高低温，常温）

Shear strength (high and low temperature, normal temperature)

- 粘接电阻 碳条性能 硬度

Bonded resistance, hardness, performance of strip

- 自动降弓装置性能（流动连续性）

Performance of automatic bow lowering device (flow continuity)

- 自动降弓装置性能（密封完整性）

Performance of automatic bow lowering device (seal integrity)

- 自动降弓装置性能（动作性能）

Performance of automatic bow lowering device (operating performance)

- 磨耗...

Abrasion,...



材料性能介绍 Product Introduction

● 碳滑板材料推荐牌号

Recommended grades of carbon skateboard materials

牌号 Grade	描述 Description	应用 Application	典型运行电流密度 Typical operation current density (A/mm)	典型静态电流密 Typical quiescent current density (A/mm)	电阻率 Resistivity ($\mu\Omega \cdot m$)	体积密度 Bulk density (g/cm ³)	抗折强度 Flexural strength (Mpa)	抗压强度 Compressive strength (Mpa)	硬度 Hardness (肖氏)
EK10	纯碳石墨 Pure graphite	动车、机车碳滑板和城市电车滑块 high speed train, locomotive Pantograph and city tram contact	8	1	38	1.6	35	55	75
OK80	碳基浸金属材料, 渗铜量较少, 较轻质 Carbon based metal impregnated material, less copper infiltration, relatively light	电流承载要求相对较低的动车、电力机 车碳滑板 for high speed train and electric locomotive with relatively low current bearing requirements.	10	2	8	2.2	60	140	105
OK50	碳基浸金属材料, 良好的导电、强度和密度 carbon based material-impregnated material, good conductivity, strength, and density	广泛应用于各类地铁、高铁、动车 widely used on various underground and high speed train.	14	2.3	5	2.5	85	180	95
OK20	OK50的改进版, 有更加高的强度和更加低的电阻 Improved grade for OK50 with higher strength and lower resistivity.	适用于环境恶劣, 承载电流大的机车、 动车碳滑板 It is suitable for pantograph of locomotive and train with bad environment and high current.	18	2.7	2	2.7	75	180	85
牌号 Grade	描述 Description	应用 Application	典型运行电流密度 Typical operation current density (A/mm)	典型静态电流密 Typical quiescent current density (A/mm)	电阻率 Resistivity ($\mu\Omega \cdot m$)	体积密度 Bulk density (g/cm ³)	抗折强度 Flexural strength (Mpa)	抗压强度 Compressive strength (Mpa)	硬度 Hardness (肖氏)
OKT	浸金属碳, 有更加高的强度和更加低的电阻 It is suitable for the pantograph of locomotive and train with bad environment and high current	地铁、矿山、工厂、码头等的第三、 第四轨和架空线滑块 Underground, Mine, Factory, port 3 rd and 4 th rail, overhead line pantograph	13	7	9	2.3	75	140	92
OKR	粉末冶金材料, 电阻率相比碳基材料低, 但对网络保护弱于碳基材料 Powder metallurgy materials, the resistivity is lower than carbon-based materials, but the protection of the network cable is weaker than carbon-based materials	地铁、矿山、工厂等的第三、第四轨 Underground, Mine, Factory' s 3 rd and 4 th rail.	20	12	0.20	8.0	120	185	35
OKH	电阻率非常低 Very low resistivity	单轨地铁、第三轨、第四轨集电靴 Single rail, 3 rd rail, 4 th rail collector shoe	25	16	0.08	6.2	85	80	10

静态密度值基于以下条件:

单根碳滑板与接触线间加载4KG (8.8IBS) 接触压力, 截面为107mm²单根有些磨损的接触线, 接触线温度最大150°C。在特定状态下可以获得更加高的操作值, 典型运行和静态电流密度仅供参考。如需了解详情, 请与我们的工程师联系。所有数据可能变更, 恕不另行通知, 此产品单页不具法律效力, 也不作为无证条件下的任何专利发明许可或建议, 仅供参考研究和核实。

The static density value is based on the following conditions:

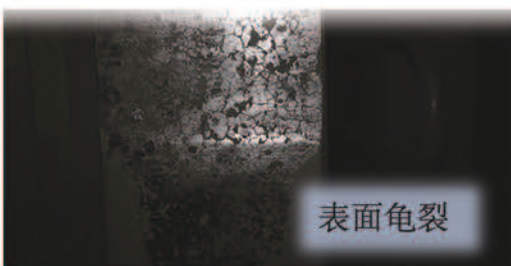
4KG (8.8IBS) contact pressure is loaded between a single carbon sliding plate and the contact line, for load surface is 107mm² and with a little worn single contact line, its highest temperature is 150°C, under certain conditions it can obtain higher operating values, typical operation and quiescent current density are for reference only. For more details, please contact our engineers. All data may be changed without notice. This catalogue does not have legal validity, also under unlicensed conditions it is not used for any patented invention license or suggestion, it is for research and verification reference only.

● 接地装置碳刷和牵引装置碳刷牌号推荐

Grade suggestion for grounding device brush and traction device brush:

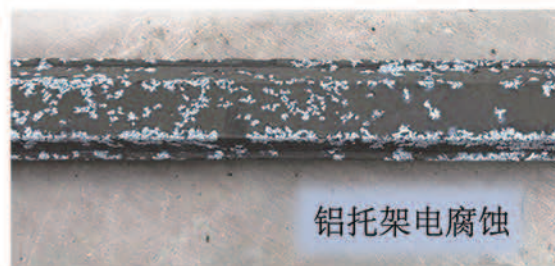
牌号 Grade	应用 Application	电阻率 Resistivity ($\mu\Omega \cdot m$)	抗折强度 flexural strength (Mpa)	硬度 Hardness (肖氏)	体积密度 Bulk density (g/cm^3)	接触压降 Contact drop (V)	摩擦系数 Friction (μ)	额定电流 Rated current (A/cm ²)	允许圆周速度 Speed (m/s)	
MK90	轴端接地碳刷 Shaft earth brush	0.25	65	10	5.5	0.2	0.12	25	30	
MK70	齿轮箱接地碳刷 Gearbox earth device brush	0.14	67	20	4.3	0.9	0.1	22	35	
MK50	滑环和接地 Slip ring and grounding	1.5	29	25	2.8	1	0.1	15	35	
PK0	发电机用碳刷 Carbon brush for generator	14	22	37	1.73	1	0.1	12	50	
PK63	通用性牵引电机用碳刷 General traction motor brush	57	28	64	1.65	1.5	0.1	12	50	
PK65	长寿命碳刷 Long life brush	通用性牵引电机用碳刷 General traction motor brush	55	38	77	1.78	1.5	0.1	12	50
PK67	换向性好 Good commutation performance	通用性牵引电机用碳刷 General traction motor brush	52	28	60	1.68	1.6	0.1	12	50
PK69	承载大电流 Big current	通用性牵引及油井电机用碳刷 General traction motor brush and oil well motor brush	50	33	70	1.68	1.5	0.1	14	50

典型问题图例 Typical Problem



表面龟裂

Cracked surface



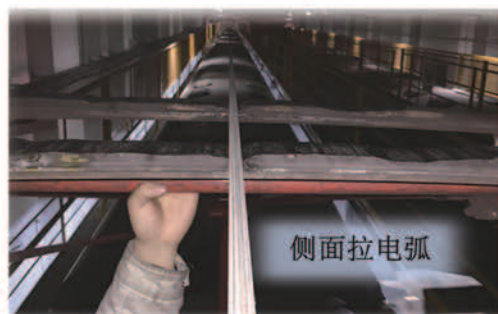
铝托架电腐蚀

Aluminum bracket galvanic corrosion



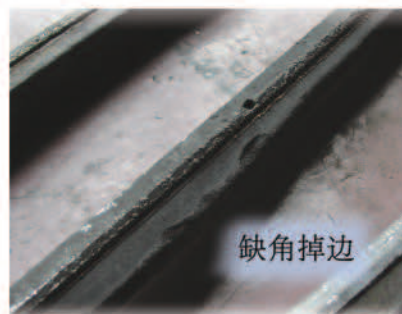
单根碳滑板偏磨

single carbon contacts Partial wear



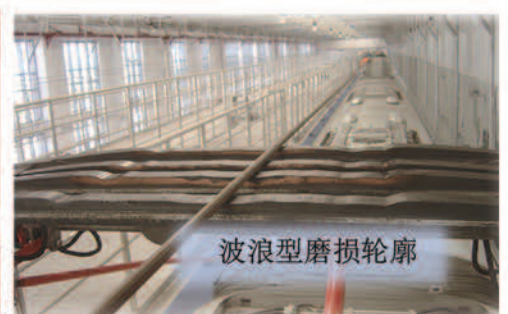
侧面拉电弧

Side arc



缺角掉边

Missing corners, broken



波浪型磨损轮廓

Wavy wear

故障查询参比表 Fault Query Reference Table

A	碳材料表面龟裂或烧蚀 Cracked or ablated surface of carbon
B	滑板上有不均匀磨损 Uneven wear of Pantographstrip
C	滑板间有不均匀磨损 Uneven wear between Pantographstrip
D	凹槽 Groove
E	边缘碎裂 Chipped edges
F	碳裂纹 Crack
G	护套上有电火花灼伤 Spark burns on the sheath
H	护套过热 Sheath overheated
I	使用寿命缩短 Shrink of life
J	碳材料松动 Loose of carbon material
K	碳材料破损 Break of carbon material
L	碳材料缺失 Missing of carbon material
M	托架或碳材料侧面喷铜状 Bracket or carbon material side sprayed copper

使用此表时，
请首先选择系统所显示的征兆
在表格中找到相应的列
注意带有黑点的行
每行左侧的文字表示可能的成因
右侧文字则是可能的纠正措施。

可能的原因 possible reason	M	L	K	J	I	H	G	F	E	D	C	B	A	可能的纠正措施 Possible corrective act	
1 电流过载 Current flow	●	●		●	●	●	●			●			●	降低电流负荷 Reduce current load	1
2 接触力过低 The contact force is too low	●			●	●	●	●		●		●		●	如有可能，提高接触力 If possible, increase contact force	2
3 接线条件太差 Wiring conditions are too poor	●		●	●	●		●	●	●			●		检查架空 Check overhead	3
4 电流通路情况较差 Poor current path	●			●		●	●				●	●	●	检查电流通路 Check current path	4
5 材料有误 Incorrect material		●	●		●	●		●	●				●	检查电流负荷 Check current load	5
6 路拉出值不足 Insufficient line pull value		●			●						●		●	检查拉出值 Check the pull-out value	6
7 受电弓状态 Pantograph status	●	●	●	●	●						●	●	●	检查机械装置 Check the mechanism	7
8 吊索 slings	●	●	●	●	●		●	●	●				●	吊索类型 Sling type	8
9 分段绝缘器设置 segment insulator settings	●	●	●	●			●	●	●				●	检查设置 Check settings	9
10 摆动角 swing angle					●							●		修正摆动角 Correct swing angle	10
11 顶部重量 Top weight	●	●	●	●	●		●	●	●	●	●			降低重量 Reduce weight	11
12 混合材料 mixed materials					●	●					●	●	●	改为碳材料 Change to carbon material	12
13 混合运行 mixed operation					●		●							采用一种牌号 Use a grade	13
14 天气条件 weather conditions	●	●	●	●	●		●	●	●				●	检查天气模型 Check the weather model	14
15 碳材料装配情况不良 Carbon material assembly condition is not good		●	●	●	●	●	●	●		●		●		检查装配情况 Check the assembly	15
16 碳材料部件过小 Carbon material parts are too small		●	●		●	●								增大碳材料部件 Enlarged carbon material parts	16
17 碳材料部件过大 Carbon parts are too large					●									缩小碳材料部件 Reduced the carbon material department	17
18 接触力过大 Too big contact force		●	●						●	●				如有可能，减少接触力 If possible, reduce contact force	18
19 受电弓速度 Pantograph speed	●	●	●		●		●		●		●		●	检查受电弓的空气动力学性能 Check the aerodynamics of electricity	19

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