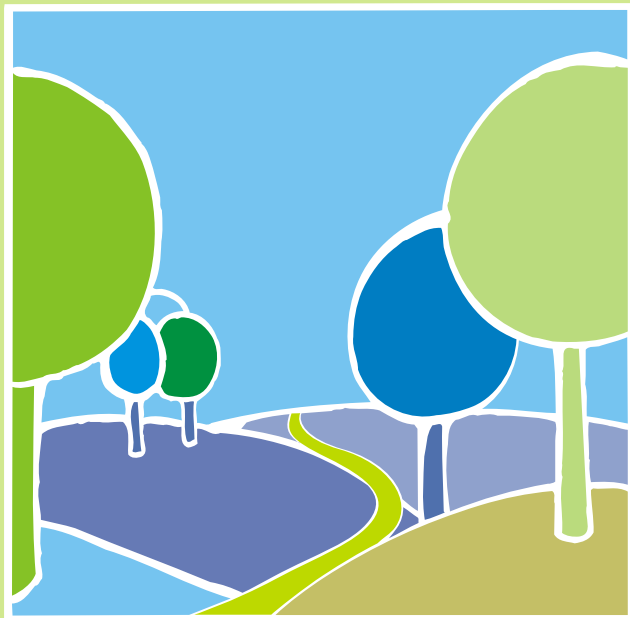


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Oceanpower
海川新材

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Oceanpower
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土木工程材料事业部



柔性彩色沥青路面
FLEXIBLE MULTICOLOR ASPHALT PAVEMENTS

Multicolors Pavements Solutions
彩色铺装整体解决方案

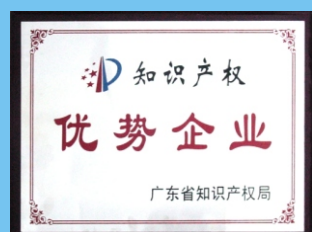
简介

海川新材料科技有限公司

深圳海川新材料科技有限公司成立于2010年10月，是由深圳市海川实业股份有限公司全资控股的海川化工、海川色彩和海川工程三个全资子公司合并重组而成，将致力于功能型添加剂的研发、生产和销售，为用户提供适应低碳绿色经济及高效工业化生产所需要的环保型添加剂产品，通过优化整合各专业子公司的优势资源，实现强强联合，提升研发、应用和销售的配套服务能力，为用户提供更优质的系统服务和产品。

海川公司亦是国内较早进行高等级路面材料研究和开发的单位，拥有自主知识产权，独立开发的高粘度沥青是铺设排水、低噪音和透水路面的最适合的材料。所铺设的排水、低噪音和透水路面在降低行车噪音污染、提高雨天行车的安全性、有效缓解城市热岛效应等方面有着十分重要的意义。海川公司整合多年积累的资源 and 经验，推出了个性化的DrainAPMax路面铺装整体解决方案，相信在针对性、适用性和实用性方面更加适合当前中国高等级路面的需要。

“应用技术和创新，为用户提供领先的一体化解决方案”是我们的服务理念和方向。海川新材料，将是您前进途中的坚实伙伴。



Oceanpower
海川新材
土木工程材料事业部

OCEANPOWER NEW MATERIALS TECHNOLOGY CO.,LTD



Shenzhen Oceanpower New Material Technology Co., Ltd., established in October 2010, by merger and reorganization of Oceanpower Chemical Engineering Co, Ltd., Oceanpower Color Technology Co, Ltd. and Oceanpower Engineering Technology Co, Ltd., which wholly owned by Oceanpower Industrial Co., Ltd., devoted itself to R&D, production and sales of functional additives and providing client with environmentally friendly additive products needed for low-carbon green economy and efficient industrial production. By optimizing the integration of advantages of professional resources of its subsidiaries, powerful combination and enhancing development, application and sales of ancillary services capabilities to provide client with better quality of system products and services.

Oceanpower also is the earlier high-grade road surface material R&D unit with independent intellectual property rights. The high viscosity asphalt developed independently is the most suitable material for drainage pavement and low noise and permeable pavement. The laying of drainage pavement and low noise and permeable pavement is of very important significance in reducing traffic noise pollution, improving traffic safety in rainy day and alleviating the urban heat island effect. With combination of the expertise of all companies and integrated resources over years, Oceanpower aim to introduce a personalized overall solution, DrainAPMax pavement, which is believed more suitable to the needs of China's current high-grade road construction.

Through application of technology and innovation to provide client with the leading integrated solutions, which creates synergy and driving forces for our developing direction and service concept, let Oceanpower New Material Technology become your one-stop destination for fulfilling your advanced technology needs. We believe we will be your loyal partners in your fast-developing process.

■ 路威[®]柔性彩色沥青路面简介

Introduction of Roadpower multicolor asphalt pavement

路威柔性彩色沥青路面所用胶结料是利用国外的先进技术，按照沥青混合料的国家标准研制而成，由于加入了高分子改性剂，在塑性方面有很大的提高，延性明显好于普通沥青。

Applying the advanced technology abroad, and following the national standard of asphalt mixture, we made the Oceanpower Roadpower series modified multicolor asphalt binder. Because of having added the polymer modified agent, it has great improvement at the aspect of plastic property, and its ductility is obviously better than the conventional asphalt.

在此基础之上，依托海川色彩科技有限公司建筑颜色设计与表示方法的雄厚实力，我们对彩色沥青铺装专用着色剂的色彩进行全方位的定位，包装和设计，使我们的产品在各个方面均能满足广大用户的要求。

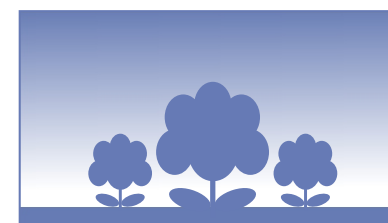
Base on it, with the solid strength of Oceanpower Color Co., Ltd. on design and method of specifying building color, we entirely locate, pack and design the color of pigments special for multicolor asphalt pavement. That makes our products meet the requirements of the customers.



由海川色彩科技有限公司独立起草的中国建筑颜色标准体系

■ 路威[®]柔性彩色沥青路面的优点

The advantages of Roadpower multicolor asphalt pavement



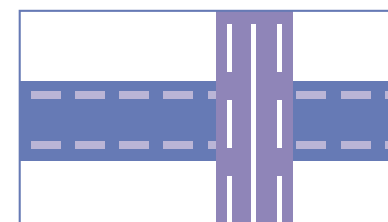
- 环保作用，降低了黑色沥青中普遍存在的3-4苯丙衍生物等致癌物质

Environmental protection, it can reduce carcinogens commonly exist in black asphalt, such as 3-4 Styrene-acrylic derivant.



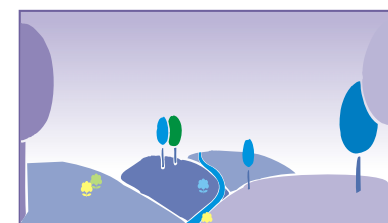
- 美化环境，给人视觉享受

Beautify the environment to give people visual enjoyment.



- 提高道路交通管制，引导交通，减少行车事故

Good for traffic management and relieving traffic to reduce accident.



- 可形成新的旅游景观，吸引更多的游客

Shape new sight that can attract more visitors.



- 彩化路面，符合城市建设“彩化、绿化、亮化”的要求

Multicolor the pavement to meet the requirements of "colorfully, greenly and lightly" in the city construction.



- 对彩色沥青的研究和应用可促进技术进步，有利于国内高新技术成果与国际接轨

The research and application of multicolor asphalt can promote the technical advancement and benefit the joint of the high-tech achievement between China and abroad.

■ 路威®彩色沥青胶结料性能指标

Technical parameter of Roadpower multicolor asphalt binder

指 标 Item		单 位 Unit	OP-50	OP-70	OP-90
针入度 (25℃, 100g, 5s) Penetration		0.1mm	40-60	60-80	80-100
延度 Ductility	15℃	cm	≥100	≥100	≥100
	10℃	cm	≥20	≥25	≥45
软化点(环球法) Softening point (Ring-ball method)	非机动车道 Cattle way	℃	≥50	≥50	≥50
	机动车道 Motor way		≥56	≥60	≥65

- 路威彩色沥青胶结料性能指标完全符合国家标准对道路石油沥青A级的要求。
- The technical parameter of Roadpower multicolor asphalt binder can completely meet the requirement of National Standard to A-grade petroleum asphaltic bitumen.



■ 路威®彩色沥青混合料性能指标

The performance index of multicolor asphalt mixture

1、路用性能指标

Pavement property

结合料用量 % Binder content	混合料用途 Application of mixture	试件击实次数 Number of blow Marshall compaction	稳定度 kN Stability	流值 0.1mm Flow value	残留稳定度 % Retained stability
6.0	非机动车道 Cattle way	双面击实50次 Double blow for 50 times	4.6	20.5	82.6
6.0	机动车道 Motor way	双面击实75次 Double blow for 75 times	6.7	29	83.5

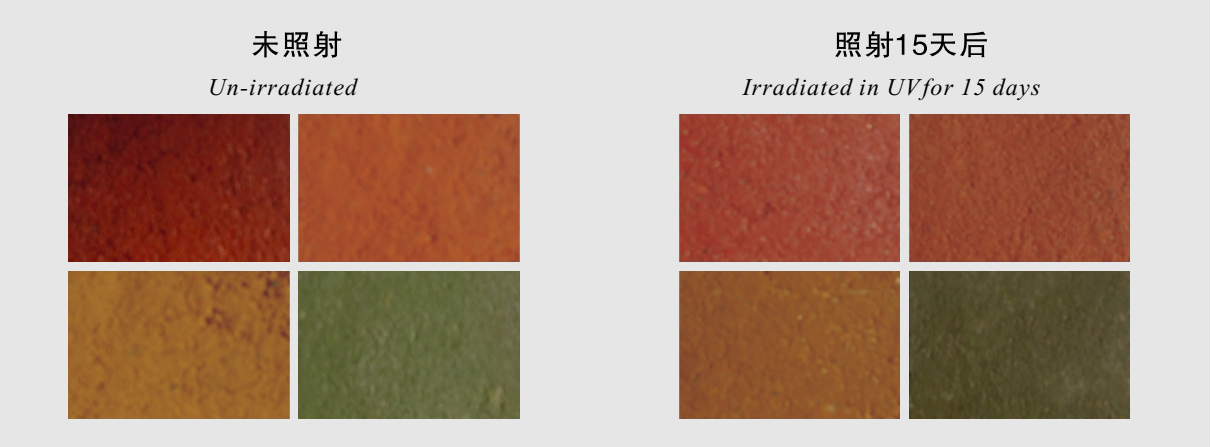
- 路威沥青混合料的各项技术指标满足公路沥青路面施工技术规范（JTG F40-2004）要求。
- All the technical parameters of Road Power asphalt mixture can meet the requirement of Technical specifications for construction of highway asphalt pavements (JTG F40-2004).

2、色彩稳定性

Color stability

用紫外光模拟太阳光照射试件，紫外光照射1小时相当于太阳光照射1天，用紫外线灯连续照射15天大约相当于太阳光照射1年。试验在密闭的环境中进行，在20w紫外老化箱中、光照强度1W/m²、环境温度保持在57℃左右，这一温度与高温季节沥青路面的地表温度基本吻合。

The test is done in the inclosed environment. Put them in 20w ultraviolet aging box. The instensity of illumination is 1w/m², temperature is 57℃, exposure time is 15 days (equally to the sun shines for 1 year).

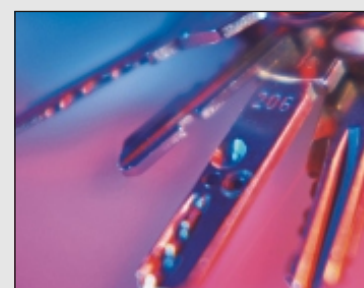




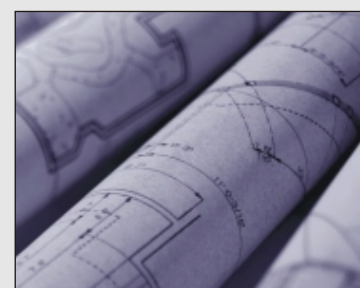
项目考察
Item investigation



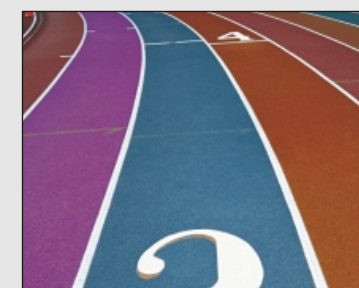
项目的色彩规划和设计
Color programming & design



选择合适的铺装材料和工艺
Choose suitable pavement materials and technologies



结构和材料的设计
Design of structure & materials



进行彩色铺装
Multicolor pavement



售后服务
After-sales service

■ 路威®柔性彩色沥青项目工作开展流程 Work process

1. 项目考察：

考察项目的特征、地形、环境等因素，充分了解客户的愿望和需求，挖掘项目的景观表现潜力。

Item investigation:

We will investigate items character, landform, environment etc., try to know customer's needs and dig up sight expressive potential of items.

2. 项目的色彩规划和设计：

海川公司中央研究开发院下设的数字色彩研究所，根据上一步考察的结果，应用当今最先进的设计软件对项目进行景观的设计和色彩的规划。

Color programming & design:

Ocean Power R&D institute owns digital color institute which can according to fore-step investigation, make sight design and color programming for items with the most advanced design software.

3. 选择合适的铺装材料和工艺：

工程技术人员根据考察成果，结合项目的特点提出最合适的铺装材料和工艺。

Choose suitable pavement materials and technologies:

The engineering technicians will combine item peculiarity to choose the most suitable pavement materials and technologies according to investigation results.

4. 结构和材料的设计：

海川中央研究开发院下设的道路技术研究所进行铺装结构设计、材料组成设计和施工工艺设计。

Design of structure & materials:

Ocean Power R&D institute owns Road & Bridge Construction Materials Institutes that design projects for pavement structure, material constituent and construction technology.

5. 进行彩色铺装：

彩色铺装项目的具体实施以及现场施工指导。

Multicolor pavement:

we will guide multicolor pavement items construction.

6. 售后服务：

对相关人员进行关于彩色铺装的保养、养护、维护等措施方面的培训及项目长期跟踪观测。

After-sales service:


we will train relevant personnel to maintain and conserve multicolor pavement, and make item long-track observation.

■ 路威®柔性彩色沥青路面设计

The design of Oceanpower multicolor asphalt pavements

1. 路面结构设计

Typical structure of Oceanpower multicolor asphalt pavements

	彩色细粒式沥青砼 (2~4cm) <i>Multicolor fine-grained asphalt concrete (2~4cm)</i>
	细粒式或中粒式沥青砼 (3~6cm) <i>Finegrained or medium-grained asphalt concrete (3~6cm)</i>
	乳化沥青或热沥青油粘层 <i>Emulsified asphalt or heated asphalt tack coat</i>
	基层 <i>Base course</i>

2. 混合料配合比设计

Asphalt mix proportioning design

彩色沥青混合料的配合比应遵循《公路沥青路面施工技术规范》(JTG-F40-2004)。

Asphalt mix proportioning design should meet the requirement of "Standard Specification for Construction and Acceptance of Highway Asphalt Pavements (JTGF40-2004)"

3. 项目的色彩规划和设计

Color programming & design

路威柔性彩色沥青路面采用海川路威彩色沥青专用着色剂, 该着色剂是海川工程科技有限公司依托海川色彩科技有限公司和中国建设部建筑涂料工程研究中心的技术力量开发的系列产品, 彩色专用着色剂具有色彩鲜明、化学性质稳定等特性。目前具有红、绿、黄等几大色系, 并可根据客户的要求进行色彩设计。例如:

- ★铁红色符合《中华人民共和国国标色GB-6.3R 4.5/5.6》
- ★桔黄色符合《中华人民共和国国标色GB-8.1YR5.5/4.8》
- ★铬绿色符合《中华人民共和国国标色GB-6.9GY 3/1.8》

Roadpower multicolor asphalt pigments are a series products manufactured by Oceanpower Engineering Technologies Co., Ltd. It is developed by the Ocean Power Color Co., Ltd. and The Engineering Research Center of Architectural Coatings, Ministry of Construction, P.R.China. At present, it has several color systems, such as red, green, yellow, etc...

- Iron red meets the requirements of "People's Republic of China State Color Standard GB-6.3R4.5/5.6"
- Saffron meets the requirements of "People's Republic of China State Color Standard GB-8.1YR5.5/4.8."
- Peak green meets the requirements of "People's Republic of China State Color Standard GB-6.9GY3/1.8"

■ 路威®柔性彩色沥青路面施工

Construction technology of multicolor asphalt pavement

1. 路威彩色沥青混合料的拌和

The mixing of multicolor asphalt mixture

拌和彩色混合料应采用间歇式沥青拌和机。使用前应将拌缸清洗干净, 其方法是将热的砂石料放入拌缸, 令其在拌缸内翻拌几分钟, 即可将拌缸清洗干净。胶结料的输送管道应另行设置, 不要使用输送沥青的管道, 以免污染。

The mixing cylinder should be cleaned out before using. The transfer piping of binder should be reinstalled to avoid pollution.



拌制彩色沥青混合料的方法同普通沥青混合料。拌和温度为160-180℃。装运彩色混合料的卡车料斗事先应擦洗干净, 尽可能减少污染。

The mixing method of multicolor asphalt mixture is the same as the conventional asphalt mixture. The mixing temperature of the binder is 160-180℃. The hopper of truck for transferring multicolor mixture should be cleaned out before using, thus to reduce pollution as possible as we can.





项目名称：重庆梁平境内高速公路生活服务区
Service area of freeway in Chongqing

2. 路威彩色沥青混合料的摊铺

The Spreading of Multicolor Asphalt Mixture

彩色沥青面层施工基本同普通沥青面层。摊铺前底层应清理干净，最好用浅色胶结料配制的粘层油涂刷少许，用量约为0.5公斤/平方米。摊铺前应将机械清理干净，摊铺中若发现有严重污染的混合料应予去除。

The construction of multicolor asphalt surface course is basically the same as the conventional asphalt surface course. Before spreading, the bottom layer should be cleaned out. It is better to be brushed with few tack coat oil, which is compounded by light-colored bonder. The use level is 0.5kg/m². The machine should be cleaned out before using. If there exist having polluted mixtures during spreading, they must be removed off.

摊铺后可以立即组织碾压，压路机采用6-8吨钢轮压路机，碾压2-3遍即可。压路机的前后光轮也应该擦干净。碾压后冷至50℃以下方可开放交通，否则染上灰尘，影响路面着色效果。

After spreading we can immediately carry out rolling. The roller is 6-8t steel-wheel roller. It only needs to be rolled for 2-3 times. The fore and after aureoles is also should be cleaned out. Make the temperature of the rolled road fall below 50 °C before opening the traffic, otherwise the pavement will be stained by dust and affect the coloring result of the pavement.

■ 彩色沥青路面的维护保养

The maintaining of the multicolor asphalt pavement

- 1 严禁漏油或带污车辆通行。
The leak oil cars or polluted cars are forbidden to pass.
- 2 搞好环境卫生，按期定时清扫、冲洗。
Keep the environment clean. Do the cleaning and washing regularly.
- 3 发现被污染路面或被损坏路面应及时维护处理。
The polluted pavement or damaged Pavement should be maintained in time.
- 4 彩色沥青路面严禁急刹车。
It is forbidden to brake hardly on the multicolor asphalt pavement.



项目名称：广州电子信息学校校区道路
Road in Guangzhou electronic information school

■ 部分工程应用实例
Part of application cases



深圳华南城



成都府城大道自行车道



合肥市科学大道



南昌市青山湖东岸



山东日照碧海路



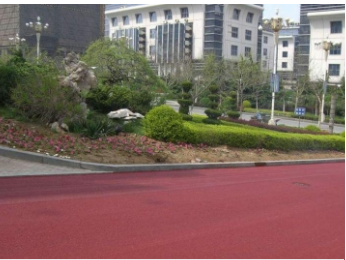
中山市博爱路



西宁人民公园环湖路



海口假日广场



大连高新区



福建泉州沿海通道



上海丽园小学



贵溪市市政府办公楼广场



江阴公路管理处院路



厦门国贸春天小区



西宁公伯峡水电站



珠海人民西路



厦门狐尾山步道



广州电子信息学校

深圳盐田区沙盐路

深圳市绿道网西丽段

深圳绿道项目宝安段

深圳市绿道网光明段

广州市科韵路临江大道

广州萝岗开发区

广州国际会议中心

广州国际会议中心广园路
非机动车道

广州亚运村

广州阅江路

广州新窖南路

广州新港东路

广州仑头生物岛

佛山南海观湖北路

佛山市顺德区滨江路

佛山市顺德区近良路
改造工程

佛山陈村绿道潭州水道

东莞黄江大屏障公园

东莞绿道网南城区

东莞道窖滨江西路

珠海斗门绿道

珠海绿道工程

罗定绿道

山西省临汾市汾河公园
景观路