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电泳涂料

Electrophoretic Coating

高边缘防腐解决方案

HIGH-EDGE CORROSION SOLUTIONS



应对您在材料端的挑战

DEAL WITH YOUR CHALLENGES IN MATERIAL ASPECT.



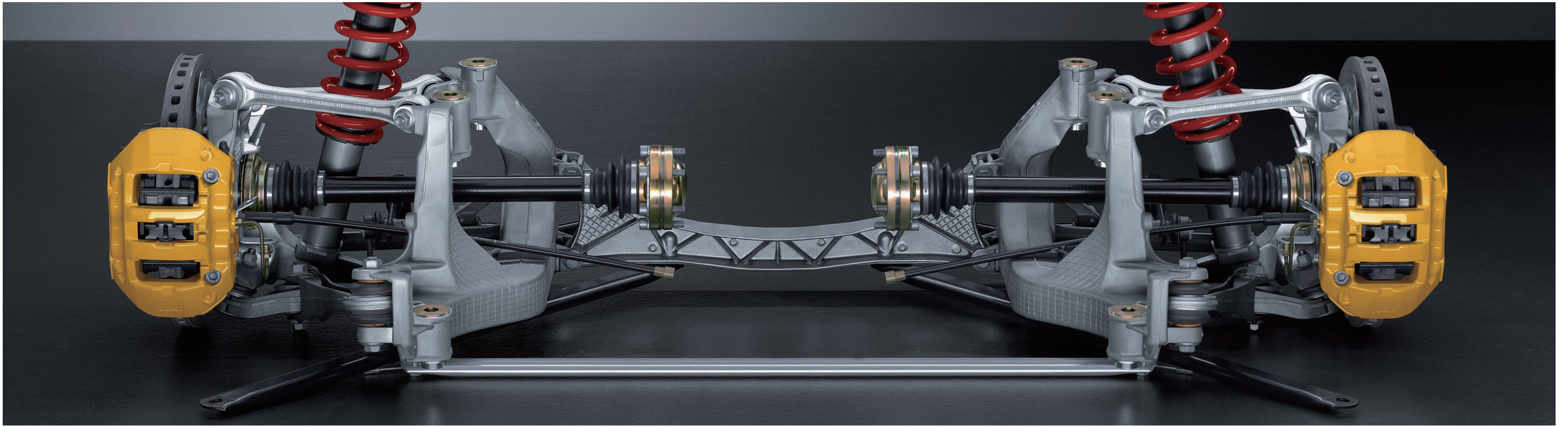
浩力森

品质无坚不摧

INDESTRUCTIBLE QUALITY

防腐先锋，持久如新

ANTI-CORROSION PIONEER, LASTING AS NEW



E-coating Introduction

电泳涂装概况

电泳涂装（ED）是由电泳涂料通过电化学反应在金属材料表面形成涂膜，比普通喷涂更致密附着力更强，并且具有超强的耐盐雾、耐湿热性能，其防腐能力也远高于其他类型的防腐底漆。操作安全、简单、高效、节能。

Electrophoresis coating (ED) is an electrophoretic coating by electrochemical reaction on the surface of metal materials to form a coating film, more dense and has more adhesion than ordinary spraying, as well as super salt spray resistance, moisture and heat resistance performance, its corrosion resistance is much higher than other types of anti-corrosion primer. Operation safe, simple, efficient and energy saving.

浩力森阴极电泳涂装工艺经过近 20 年的发展，以其优异的理化性能被应用到各种涂装领域中，已经成为底漆涂装的先进成熟技术厂家之一。能适应防腐、环保、节能和顾客的多样化性能要求，阴极电泳涂料的开发也取得了快速发展，阴极电泳涂料给整个涂装行业呈现出：较低的溶剂含量；较低的烘烤固化温度；不含铅、镉、汞等有害重金属；较低的涂膜密度和加热减量；高泳透力性能；耐候性、平滑性及高边缘防腐性等特殊产品要求。

HLS cathode electrophoresis coating process, with its excellent physical and chemical performance is applied to a variety of coating fields, has become one of the advanced mature technology manufacturers of primer coating after 20 years of development. We can adapt to anti-corrosion, environmental protection, energy saving and customer's diverse performance requirements, cathode electrophoresis coating development has also made rapid development, it presents these specification to the entire coating industry: lower solvent content; lower curing temperature; no lead, no cadmium, no mercury and other harmful heavy metals, lower coating density and heating reduction, high throwing power; weather resistance; high leveling and edge corrosion resistance etc. special requirements.

DEAL WITH YOUR CHALLENGES IN MATERIAL ASPECT

应对您在材料端的挑战

Product Introduction

Product Introduction

产品介绍

由于汽车零部件的耐腐蚀性直接影响车辆的使用年限、顾客满意度和品牌价值，因此提升车辆的防腐蚀性能显得尤其重要。为了有效地提高汽车零部件的耐腐蚀性能，尤其是边缘防腐蚀性能，我们通过在涂料树脂中引入硅系聚合物组分和片状防腐填料，提高涂膜与各类基材的湿附着力，有效屏蔽腐蚀介质，延缓腐蚀速度，提高涂膜的耐腐蚀性能。同时通过添加特殊的流变助剂以控制涂膜的流动状态，抑制电泳涂料在烘烤固化过程中的缩边现象，达到增加工件边缘涂膜厚度和涂膜覆盖率，满足车辆对防腐蚀性能的要求。HLS-17 系列产品是浩力森的明星产品之一，以其超强的耐盐雾性能表现得到诸多国内外汽车零部件厂商的使用认可。实际现场使用数据显示证明，不但能达到耐中性盐雾 1200 小时，并且能同时满足大众、福特、沃尔沃、通用的循环腐蚀交变的要求；同时，其他各项物理及化学性能指标都位于行业前列。

Improving the vehicle's corrosion resistance is especially important because corrosion resistance of automotive components directly affects vehicle life, customer satisfaction and brand value. In order to effectively improve the corrosion resistance of automotive components, especially the edge corrosion resistance, we improve the wet adhesion of coatings and various substrates by introducing silicon polymer components and flaky anti-corrosion fillers into coating resins, effectively shielding corrosion media, slowing corrosion speed and improving corrosion resistance of coatings. At the same time, by adding special flux additives to control the flow state of the coating film, inhibit the shrinkage phenomenon in the baking curing process of E-coating, to increase the thickness of the workpiece edge coating film and coating coverage, to meet the requirements of the vehicle anti-corrosion performance. The HLS-17 series is one of HLS's star products, with its excellent salt and fog performance by many domestic and foreign auto parts manufacturers recognized. Actual field use data show that not only can meet the neutral salt spray 1200 hours, but also can meet the volkswagen, Ford, Volvo, GM's cycle corrosion change requirements; At the same time, various physical and chemical performance indicators are in the forefront of the industry.

1.
Advantage

防腐性优异
EXCELLENT CORROSION RESISTANCE

2.
Advantage

高泳透力
HIGH THROWING POWER

3.
Advantage

超低固化温度
ULTRA-LOW CURING TEMPERATURE

1 Advantage 防腐性能优异 EXCELLENT CORROSION RESISTANCE



SERIES PRODUCTS

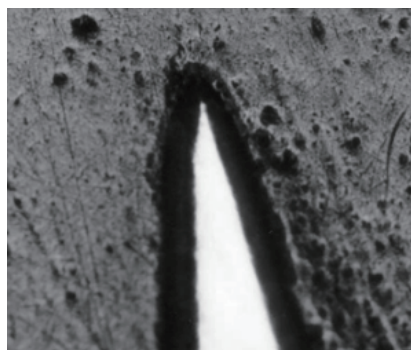
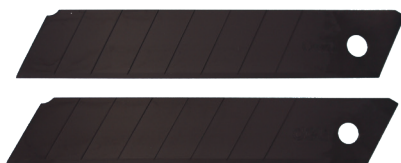
HLS-17 系列产品通过引入具有超支化结构的超大分子量树脂组分，调节涂膜固化流变性能，有效的提高了涂膜的边缘覆盖性，涂膜具备优异的边缘保护性能。

HLS-17 series products, adjust the curing current performance of the paint film through the introduction of ultra-large molecular weight resin components with overspending structure, effectively improve the edge coverage of the paint film, paint film has excellent edge protection performance.

边缘保护性能优异（刀片） Excellent edge protection performance (blade)

SERIES PRODUCTS

刀片 240h 无锈点 Blade 240h rust-free point



随着防腐性能要求越来越高，对工件尖锐金属的边缘保护性能的要求也随之增高，采用标准刀片进行测试，涂膜膜厚在 20-22 μ m，刀锋处最薄膜厚达到 9-10 μ m，测试中性盐雾 240h，刀片边缘无锈点，具备优异的边缘保护性能，完全满足了市场对工件边缘保护性能的要求。

With the increasing anti-corrosion performance requirements, the protection performance of the edge of the sharp metal of the workpiece is also increased, using standard blade testing, paint film thickness in 20-22 μ m , the most thin film thickness at the cutting edge up to 9-10 μ m , test neutral salt mist 240H, blade edge rust-free point, with excellent edge protection performance, fully meet tool edge protection performance requirement on the market.

耐中性盐雾实验 Resistance to neutral salt spray

SERIES PRODUCTS

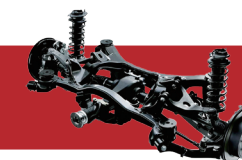
1200h

标准磷化板

STANDARD PHOSPHATING PLATE

标准硅烷板 / 陶化板

STANDARD SILANE PLATE/CERAMIC PLATE



HLS-17 系列产品与环保性皮膜前处理和磷化皮膜前处理均有良好的配套性，且耐腐蚀性能优异。采用标准硅烷板 / 陶化板和标准磷化板测试，电泳涂膜膜厚 20-22 μ m，测试中性盐雾 1200H，配套环保性皮膜前处理和磷化皮膜前处理的涂膜单边腐蚀宽度均小于 2.0mm，且板面无明显起泡和生锈，边缘保护也十分优异。

HLS-17 series products and pottery pretreatment and phosphating pretreatment have a good matching, and excellent corrosion resistance. Using standard ceramic plate and standard phosphating plate test, electrophoretic lacquer film thickness 20-22 μ m, test neutral salt spray 1200H, supporting the pre-ceramic treatment and phosphating pre-treatment of the paint film unilateral corrosion width is less than 2.0mm, and the surface is no obvious foaming and rust, edge protection is also very excellent.

SERIES PRODUCTS

标准磷化板 1200h

单边腐蚀 1.4mm, 板面无起泡、生锈

Standard Phosphating Plate 1200H

single side corrosion 1.4mm, surface no foaming, rusty



标准硅烷板 / 陶化板 1200h

单边腐蚀 1.8mm, 板面无起泡、生锈

Standard Silane Plate/Ceramic Plate 1200H

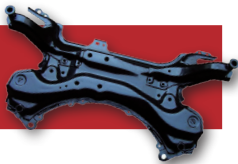
single side corrosion 1.8mm, surface no foaming, rusty



循环交变实验 Cycle cross-change salt spray

SERIES PRODUCTS

60 CORROSION OF ALTERNATING
循环交变腐蚀



随着防腐性能要求越来越高，单一条件的腐蚀测试已不适应于大多主机厂的防腐要求，循环腐蚀交变可以模拟不同自然天气的状况，高端主流技术要求，HLS-17 系列产品可以满足大众循环腐蚀交变 60 循环测试，不仅在国内品牌涂料中处于领先，与诸多国际一线品牌涂料相比亦毫不逊色。

With the increasingly high anti-corrosion performance requirements, a single condition of corrosion testing has not adapted to most of the auto manufacturers' corrosion requirements, cycle corrosion alternating can simulate different natural weather conditions, gradually become the high-end mainstream, HLS-17 series products can meet the mass cycle corrosion alternating 60 cycle testing, not only leading in the domestic brand, compare to many international first-line brand also is competitive.

SERIES PRODUCTS

标准磷化板 60 交变

单边腐蚀 1.3mm, 板面无起泡、生锈

Standard Phosphating Plate 60 cross-change
Single side corrosion 1.3mm. no blistering, no rust



标准硅烷板 / 陶化板 60 交变

单边腐蚀 1.4mm, 板面无起泡、生锈

Standard Silane Plate/Ceramic Plate 60 cross-change
Single side corrosion 1.4mm. no blistering, no rust



2 Advantage
高泳透力
HIGH THROWING POWER

四枚盒泳透力
By 4 BOX Text

60%

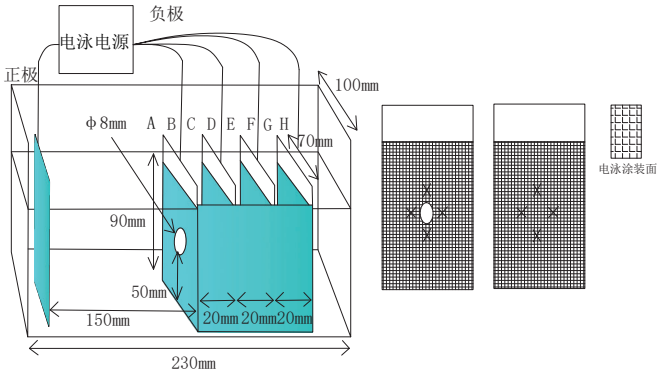
SERIES PRODUCTS

HLS-17 系列产品具有高泳透力特点，可以满足复杂结构的汽车零部件内部上膜要求，四枚盒法实验泳透力可达 60% 以上，在保证零件各部分有效成膜的同时，还能提高涂料的利用率和生产效率。在电泳涂装过程中使背离电极的被涂物表面涂上漆的能力称之为泳透力，也表示电泳涂膜在膜厚分布上的均一性，故又称泳透性，它是电泳涂料的重要特性之一。

HLS-17 series products with high throwing power characteristics, can meet the complex structure of automotive components internal film requirements, throwing power can be up to 60% by four box method experimental, improving the utilization of coatings and production efficiency while ensure that parts of the effective film. The ability of throwing power that deviates from the electrode in the process of electrophoresis coating to paint the surface is called throwing power, which also indicates the homogeneity of E-coating film in the thickness distribution of the membrane, so it is also known as throw power, which is one of the important characteristics of E-coating.

四枚盒泳透力测试 By 4 BOX Test

SERIES PRODUCTS



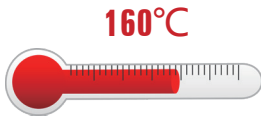
四枚盒法实验参数
4 BOX throwing power tests

3

Advantage

低固化温度

LOW CURING TEMPERATURE



SERIES PRODUCTS

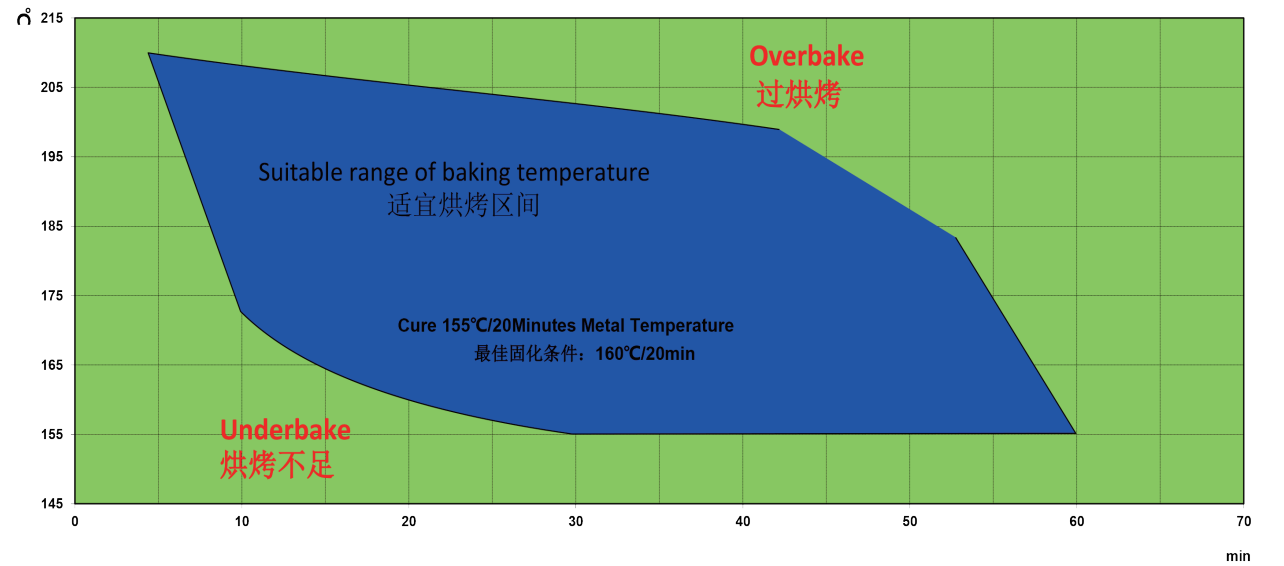
电泳涂装时，涂膜烘干环节确保了涂膜固化后的最佳性能，同时也是高能耗与高排放的主要环节。据相关数据统计，涂膜烘干固化温度每降低 10℃，大约减少能耗 10%。HLS-17 系列产品具备 160℃ /20min 的固化水平，在汽车零部件涂装行业处于领先地位。

When E-coating, the coating drying link ensures the best performance after coating curing, on the other hand it is high energy consumption and high emissions link. According to statistics, the drying and curing temperature of the paint film is reduced by about 10% by lower every 10℃ . The HLS-17 series is a leader in automotive parts coating with a drying level of 160 ℃ / 20min.

固化窗口

Solidification window

SERIES PRODUCTS



Experimental Data

实验数据

涂膜性能指标 FILM PERFORMANCE INDEX

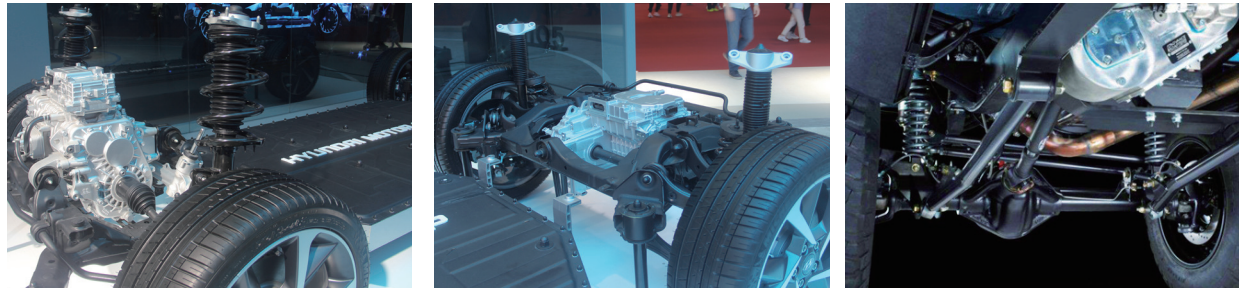
项目 PROJECT		指标 INDICATOR	检验标准 TEST STANDARD
外观 Appearance	正常 / 异常 Normal / abnormal	正常 Normal	目测 Ocular estimate
膜厚 Film thickness	μm	15-60	GB/T 13452.2
硬度 Hardness	≥	2H	GB/T 6739
杯突 Cup drawing	mm, ≥	6	GB/T 9753
附着力 Adhesion	Level 级	0	GB/T 9286
柔韧性 Flexibility	mm	1	GB/T 1731
冲击 Impact	kg·cm	50	GB/T 1732
光泽 Gloss	60°	40 - 80	GB/T 9754
耐水性 Water resistance	h, (23±2)℃ , ≥	480	GB/T 1733
耐酸性 Acid resistance	h, (0.1N H ₂ SO ₄), ≥	72	GB/T 9274
耐碱性 Alkali resistance	h, (0.1N NaOH), ≥	72	GB/T 9274

Application Area

应用领域

HLS-17 系列产品适合于防腐要求高的行业，具有优异的边缘防腐性能，广泛应用于汽车底盘件，座椅，轮毂，铸造件等高防腐领域。

Hls-17 series products are suitable for industries with high anti-corrosion requirements, and have excellent edge anti-corrosion performance. They are widely used in automobile chassis parts, seats, wheel hub, casting parts and other high anti-corrosion fields.



Honor Qualification

资质荣誉

浩力森经过多年精心研发，从顾客现在要求至顾客未来需求，秉承着顾客至上的宗旨，服务着各行各业。目前浩力森旗下 HLS-17 系列产品已经通过上汽大众认证、北美福特认证，北美通用汽车认证，北汽福田汽车认证，与各大汽车主机厂有着战略合作。面对未来，初心不改。浩力森将一如既往地秉承振兴民族工业的伟大梦想，用实际行动致力于可持续发展模式。

HLS from customer requirements to the future needs of customers, adhering to the purpose of customer first, serving all walks of life after many years devoting in research and development. At present, the Group HLS-17 series of products have passed the SAIC VOLKSWAGEN Certification, North American Ford certification, North American General Motors certification, Foton China certification, strategic cooperation with the major automotive manufacturer. Facing the future, never changed. HLS will, as always, uphold the great dream of revitalizing national industry, committed to sustainable development model with practical action.



Customer Service
服务顾客

浩力森是国内率先进入尖端环保表面材料应用领域的自主品牌之一。目前，电泳涂料、水性涂料、低碳涂料、粉末涂料、新材料等各类产品，广泛应用于汽车及汽车零部件行业，工程机械行业，轨道交通行业，航天海运行业，摩电行业，电梯行业，集装箱行业，家电家居行业，3C 电子行业，重防腐行业等众多领域。

HLS is one of the first domestic brands who is first to enter the field of cutting-edge environmentally friendly surface materials applications. At present, E-coating, water-based coating, low-carbon coating, powder coating, new material etc. products' applications cover automobile and auto parts industry, construction machinery industry, rail transit industry, air and sea transportation, motorcycle and electric vehicle industry, elevator industry, container industry, home appliances industry, home furnishing industry, 3C electronics industry and heavy duty etc.



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更可参加浩力森不定期推出的各类活动。

Consultation method:

Scan customer service QR code to add WeChat to communicate
with customer service staff online.
Can participate in a variety of activities from time to time HLS.



浩力森客服：Lily
Customer service: Lily

