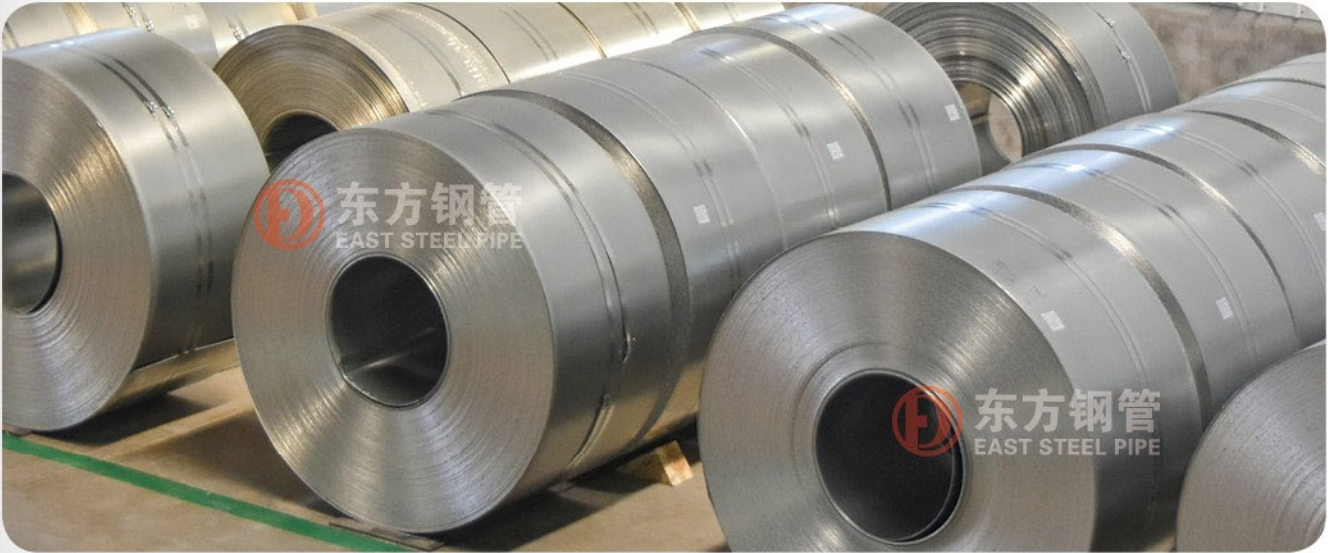


品质 安全 环保
QUALITY SECURITY GREEN



锌铝镁钢板系列产品 SERIES OF ZINC-ALUMINUM-MAGNESIUM STEEL PLATE PRODUCTS

 **潍坊东方钢管有限公司**
WEIFANG EAST STEEL PIPE CO.,LTD.

世界级钢材防腐整体解决方案提供商
WORLD-CLASS PROVIDER OF COMPREHENSIVE SOLUTIONS FOR ANTI-CORROSION OF STEEL MATERIALS



COMPANY PROFILE

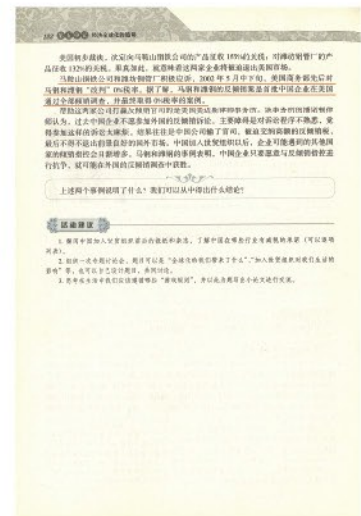
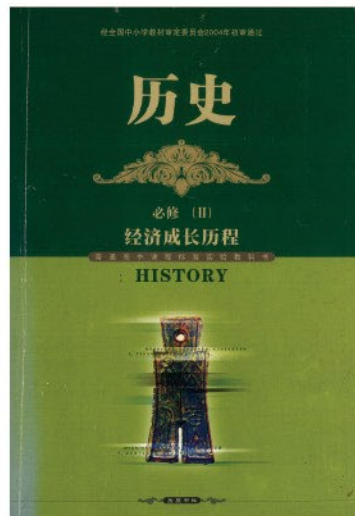
Weifang East Steel Pipe Co., Ltd. is a high-tech enterprise integrating production, research and development, manufacturing, sales, import and export trade, new material research, and high-end equipment manufacturing.

With the total assets of 2 billion yuan and an annual comprehensive production capacity of 1 million tons, the company has more than 800 employees, including over 200 senior technical personnel and has established long-term collaborative partnerships in the field of industry-academia-research with 2 academicians, 2 overseas talents, and 2 Taishan Scholars.

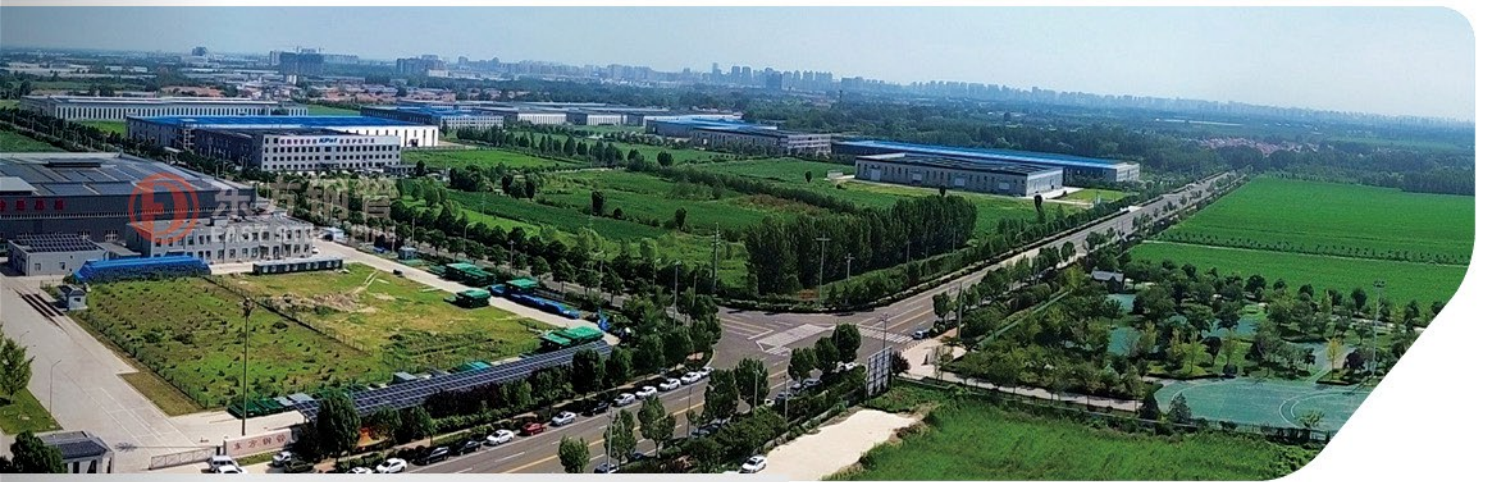
Dedicating to the research and development of anti-corrosion technology for steel for more than 4 decades, it has developed the academican Hou Baorong workstation and academican Mao Xiping workstation, and becomes a provincial-level technology center. Meanwhile, it also has national torch plan projects and has become a key unit in the national low-carbon environmental protection technology promotion catalog. It is also an experimental base for the National Marine Corrosion Protection Engineering Technology Research Center. In 2002, the company won the first case of the United States' anti-dumping lawsuit against Chinese steel after China's accession to the World Trade Organization (WTO), which was recorded in the compulsory history textbooks^① for high school students and became a model that scholars taught, businesses emulated, and the Chinese people admired.

The main products of the company include zinc-aluminum-magnesium plates, new-energy steel structures (brackets and Square&Rectangular pipe), new type of environmental guardrails for highways, environmental Large diameter long-distance water supply pipeline, power cable protection pipeline, and EMT building cable protection conduit. These products have been applied in domestic industries such as new energy, transportation, water conservancy, power, and municipal construction and exported to countries like the United States, Canada, Japan, Israel, etc.

The mission of our company is “lead and focus on steel corrosion protection, extend the lifespan of steel, and become a green manufacturer”. the vision is to be “A world-class provider of comprehensive solutions for steel corrosion protection”, and the purpose is to “Operate integrity and sell quality”.



Note: ① On May 17, 2002, the company won the first anti-dumping case against the United States in the domestic steel industry since China's accession to the WTO, which was recorded in the high school history textbooks.

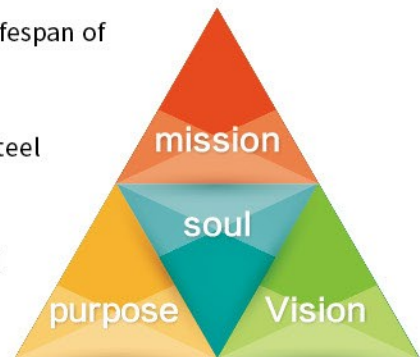


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COMPANY BUSINESS PHILOSOPHY

- **SOUL**—Innovation towards goodness
- **MISSION**—Lead and focus on steel corrosion protection, extend the lifespan of steel, and become a green manufacturer
- **VISION**—A world-class provider of comprehensive solutions for steel corrosion protection
- **VALUES**—While pursuing the material and spiritual well-being of all employees, Contributing to the development of human society
- **PURPOSE**—Operate integrity&sell quality



PARTICIPATION IN STANDARD COMPILATION

- ISO8353 《商品级、冲压级和结构级用连续热浸镀锌铝镁合金镀层钢板及钢带》（International Standard）
- GB/T 18226—2015 《高速公路交通工程钢构件防腐技术条件》
- GB/T31439.1—2015 《波形梁钢护栏第一部分两波形梁钢护栏》
- GB/T31439.2—2015 《波形梁钢护栏 第二部分 三波形梁钢护栏》
- GB/T31447—2015 《预镀锌公路护栏》
- T/CECS10088—2020 《波形梁合金钢护栏》
- DL/T 802.10—2020 《电力电缆用导管技术条件》
- CJ/T120—2016 《给水涂塑复合钢管》
- GB/T5135.20-2010 《自动喷水灭火系统》
- GB/T 32120—2023 《钢结构氧化聚合型包覆腐蚀控制技术》
- GB/T 32119—2023 《海洋钢制构筑物复层矿脂包覆腐蚀控制技术》
- T/CISA108—2021 《给排水用承插管柔性接口防腐钢管》
- T/CSCS—2023 《给排水用承插柔性及搭接焊接口防腐钢管》

SOCIAL HONORS AND CONTRIBUTIONS



The only supplier of hot-dip plastic steel pipes used for the electrical power engineering of 2008 Beijing Olympics



Zhangjiakou Chongli Ski Resort Project of 2022 Winter Olympics



The only supplier of engineering cable protection pipes for the G20 Summit



The Water Supply Project for the Beijing Yanqi Lake International Convention and Exhibition Center of 2014 APEC Summit



Auxiliary Project for South-to-North Water Diversion Project



Beijing-Urumqi Expressway Project



HONORARY CERTIFICATES

国家重点节能低碳技术推广目录

序号	节能技术名称	适用范围	主要技术内容	典型项目		预计未来5年				
				适用的技术条件	建设规模	节能推广比例 (%)	预期推广比例 (%)	总投入 (亿元)	可形成的年节能能力 (万 tCO ₂ e)	
16	树脂沥青复合体系 (RPS) 钢桥面铺装技术	交通运输行业 桥面铺装	树脂沥青可在常温条件下反应固化, 作为胶结材料拌合复合材料无需加热。同时, 复合材料现场摊铺在常温条件下进行, 整个工艺流程均不需加热。与传统桥面铺装技术相比, 由于不需加热, 可大大减少二氧化碳排放。	桥面铺装, 特别老江河、海洋等潮湿环境下钢桥面铺装	钢桥面铺装总面积约 11 万 m ²	416	1	30	0.05	23
17	环氧沥青复合体系 (EAS) 钢桥面铺装技术	交通运输行业 公路桥面、桥梁及输电线路塔等钢结构防腐与美化	该技术采用粉末涂料和材料体系与粉末处理工艺, 在金属表面形成可修复的致密的涂层, 与传统的环氧沥青技术相比, 能显著降低, 并减少金属的消耗。同时, 环氧沥青复合体系防腐与美化, 可减少二氧化碳排放。	具有水、电、煤气及大型厂房等潮湿环境下的环氧沥青复合体系防腐与美化	防护面积 5 万 m ² 立柱 10 万 m ²	51800	1	12	1.6	31
18	建筑垃圾中微细粉再生利用技术	建筑行业 建筑垃圾再生利用	以建筑垃圾为原料, 利用固体废物在机械力作用下发生物理变化, 获得再生骨料, 使骨料表面具有较高的表面能, 利用碱性化学激发剂对处于介稳状态的再生骨料进行表面活化作用, 在化学激发剂形成的化学力与机械力协同作用下, 显著提高再生骨料材料的水化活性和胶凝率, 以此制得高性能矿物掺合料, 可以替代部分水泥, 从而实现减排。	城市建筑垃圾再生骨料利用	年处理 200 万 t 建筑垃圾, 100 万 t 工业废渣	300000	3	10	6.5	300

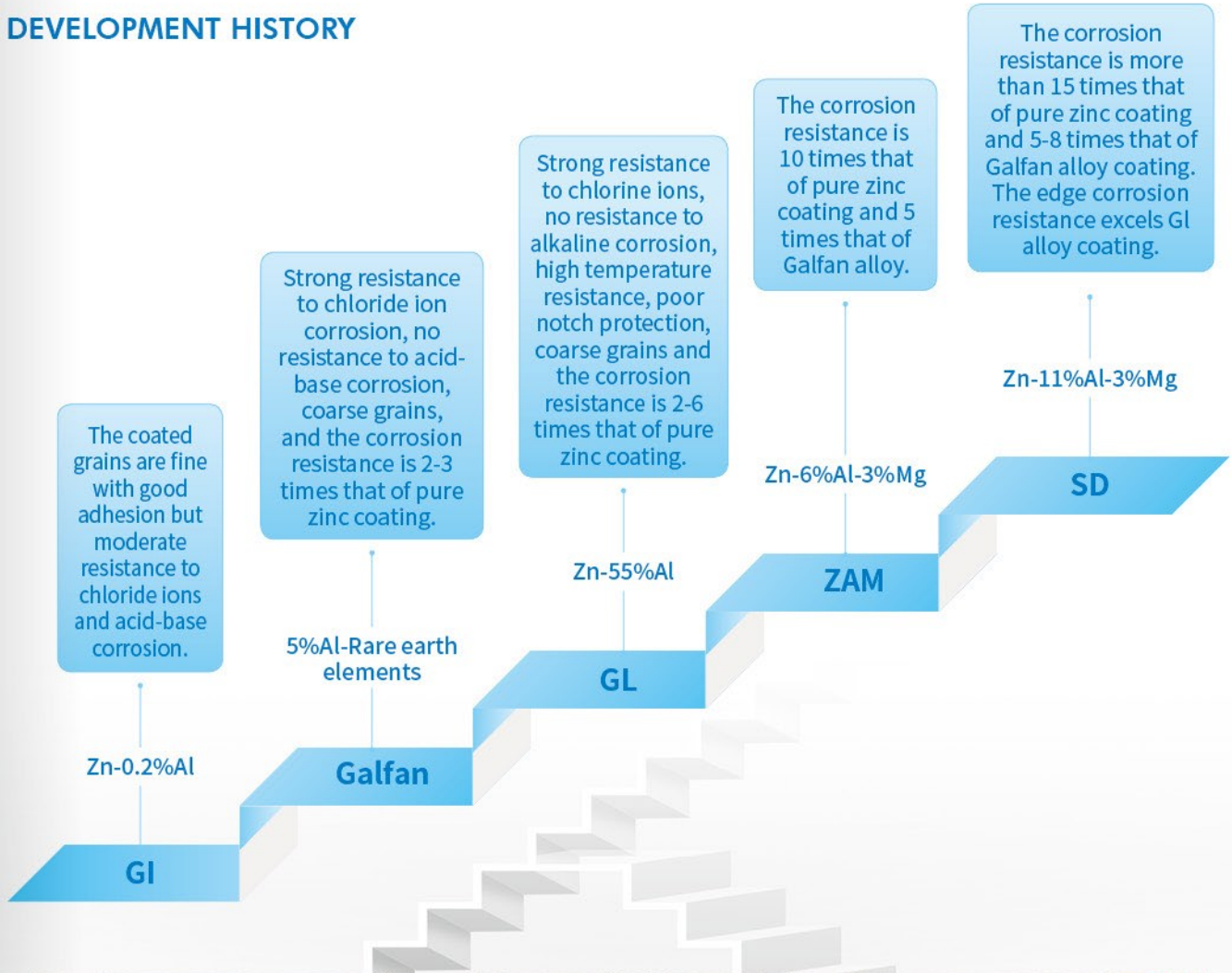
2017 年入选《国家重点节能低碳技术推广目录》

National Key Energy Conservation and Low Carbon Technology Romotion Catalogue of 2017



SERIES OF ZINC-ALUMINUM-MAGNESIUM PRODUCTS

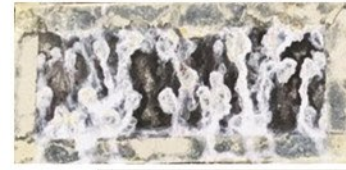
DEVELOPMENT HISTORY



ZINC-ALUMINUM-MAGNESIUM PERFORMANCE

SUPERIOR CORROSION RESISTANCE

SUPERIOR CORROSION RESISTANCE			
Types of coatings	Coating mass	Coating thickness	Time of rust appearance
Pure zinc coating	600/600	85/85	712
11Al3Mg	140/140	22/22	> 5000



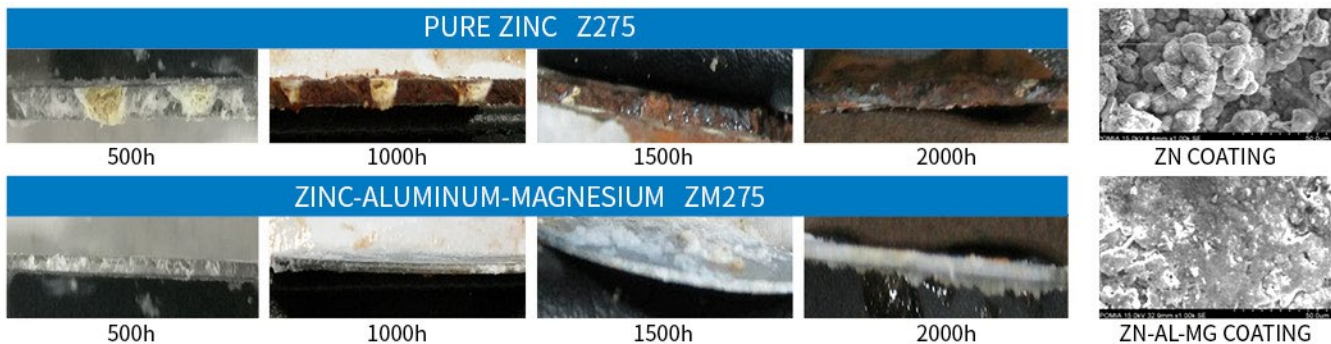
Corrosion morphology

SUPER HIGH COST PERFORMANCE					
Zinc layer code	Types of coatings	Coating mass (Double-sides g/m ²)	Neutral salt mist test Corresponding pure zinc coating mass(g)	Salt mist test in drying and watering cycles Corresponding pure zinc coating mass(g)	Salt mist test in alkaline environment Corresponding pure zinc coating mass(G)
ZM30	2.5Al-1.5Mg	30	240	90	60
ZM30	6Al-2Mg	30	390	120	90
ZM30	11Al-3Mg	30	480	150	120
ZM60	2.5Al-1.5Mg	60	480	180	120
ZM60	6Al-2Mg	60	780	240	180
ZM60	11Al-3Mg	60	960	300	240
ZM80	2.5Al-1.5Mg	80	640	240	160
ZM80	6Al-2Mg	80	1040	320	240
ZM80	11Al-3Mg	80	1280	400	320

NOTCH SECTION SELF-REPAIRING

The edge corrosion resistance of zinc-aluminum-magnesium coating is better than that of ordinary galvanized plate.

After salt mist and cyclic corrosion tests, a layer of compact colloidal corrosion product with $Zn_5(OH)_8Cl_2 \cdot H_2O$ as the main component will be coated on the trimmed position of the zinc-aluminum-magnesium coating. The corrosion product has been proved to be very stable and not easy to decompose .



LONG SERVICE LIFE SPAN

COMPARISON OF THE EXPECTED SERVICE LIFE SPAN OF THE SAME ZINC-ALUMINUM-MAGNESIUM AND PURE ZINC COATINGS				
Application environment level	C1-C3 under normal atmospheric conditions	C4 in highly-corrosive atmospheric environment	C5 in a really highly corrosive environment	CX in extreme atmospheric corrosive environment
Typical application scenarios	Offices, shopping malls, villages, general cities, food processing workshops, laundries, breweries, dairy factories, vegetable greenhouses, etc.	Heavily-polluted cities, industrial areas, seashores splashed by seawater, industrial plants, swimming pools, livestock farms, etc.	Heavily-polluted industrial zones, sheltered beaches, mines, unventilated factory buildings, and high humidity condensation and contamination occurrence areas.	Heavily polluted industrial zones in subtropical and tropical regions, seashores, unventilated factories with high temperatures and humidity such as oxides and corrosive particles, etc.
Pure zinc coating	1	1	Not recommended	Not recommended
Zinc-aluminum-magnesium coating (Low magnesium)	3-4times	2-3times	Not recommended	Not recommended
Zinc-aluminum-magnesium coating (Medium magnesium)	4-5times	3-4times	2-3times	Not recommended
Zinc-aluminum-magnesium coating (High magnesium)	5times and above	4times and above	3times and above	More than 300 grams of zinc-aluminum-magnesium coating

PV BRACKETS

The advantages of zinc-aluminum-magnesium photovoltaic brackets include light weight, corrosion resistance, high strength and rigidity, easy processing and molding, environmental protection and energy saving, and notch protection, etc., making them more and more popular in the photovoltaic power plant industry.

1. Lightweight design: It has the characteristics of light weight and high strength, greatly reducing the weight of the bracket by about 30%, and lowering the cost of transportation, installation and maintenance.

2. Excellent corrosion resistance: Its performance is more outstanding especially in humid environments. It effectively avoids corrosion and oxidation issues, and extends the service life span.

3. High strength and rigidity: With high strength and rigidity, it can bear relatively large load and wind pressure.

4. Easy processing and molding: With good plasticity and malleability, it can be processed and molded by deep drawing, bending, cutting, etc.

5. Environmental protection and energy saving: Compared with traditional steel products, using zinc-aluminum-magnesium can reduce the impact on the environment while reducing energy consumption and carbon emissions.

6. Notch protection: In a humid and corrosive environment, the coating material near the notch continuously migrates and infiltrates into the exposed notch position through the water film attached to the exposed metal surface, forming a compact protective film (white rust) composed of zinc hydroxide, alkaline zinc chloride, and magnesium hydroxide, which can prevent further corrosion and damage, and fill in defects such as cracks or scratches in the coating.

U-SHAPE BRACKETS

Thickness (mm)	1.5-3.0
production specifications (mm*mm)	41*41、41*52、41*62、41*72

C-SHAPE BRACKETS

Thickness (mm)	1.5-3.5
production specifications (mm*mm)	(C50-C160) X(C30-C70) X (C10-C20)

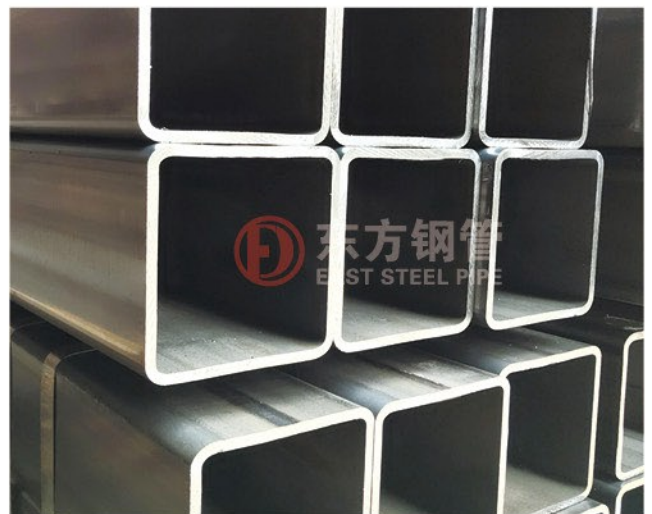


PIPE PRODUCTS

1. Its better corrosion resistance is several to ten times higher than that of galvanized pipes within a certain range.
2. Its low friction coefficient and stable friction characteristics are conducive to stamp, and can reduce the abrasion loss of the coating, reducing the lack of roughness of the parts.
3. It has good welding performance. Adding magnesium can reduce splash near the weld during laser welding and then improve welding performance.

ZINC-ALUMINUM-MAGNESIUM ROUND PIPE	
Thickness (mm)	1.0-6.0
Production specifications (inch)	1/2"、3/4"、1"、1-1/4"、1-1/2"、2"、2-1/2"、3"、4"、5"

ZINC-ALUMINUM-MAGNESIUM SQUARE&RECTANGULAR PIPE	
Thickness (mm)	1.0-6.0
Production specifications (mm*mm)	20*20、25*25、30*30、40*40、50*50、60*60、80*80 100*100、20*40、30*50、40*60、40*80、50*100、80*120



PREFABRICATED BUILDING PURLINS

Purlin, as an important link in steel structure buildings, is divided into roof purlin and wall purlin. The roof purlin carries the weight of the roof panel, including the load bearing in constructing the roof panel, the load generated by roof maintenance, etc. Meanwhile, the floor support plate is used as the floor support plate system. Zinc-aluminum-magnesium steel purlin is an innovative new material in the construction industry with excellent corrosion resistance, self-repairing ability, and easy processing performance. In corrosive environments, especially in special geographical environments such as offshore, salt lakes, high salt deposition, high condensate, etc., the anticorrosive performance is 10-15 times that of the galvanized.. Its application in building purlins, keel ceilings, perforated panels, and cable trays can improve corrosion resistance and fire prevention effects.

C-TYPE STEEL FOR PREFABRICATED BUILDING STRUCTURES

Thickness (mm)	1.5-3.5
Production specifications (mm*mm)	(C50-C160) X(C30-C70) X (C10-C20)



TRINITY OVERALL SOLUTION OF ALLOY STEEL COIL + FORMING EQUIPMENT + END PRODUCT

COLD-BENDING EQUIPMENTS



Photovoltaic bracket production equipment



Welded pipe production equipment

COMPOSITE COATING PRODUCTS

Composite coating products that meet the needs of each scenario are provided according to different purposes, different climates, and different usage scenarios.



APPLICATION SCENARIOS

ZINC-ALUMINUM-MAGNESIUM RARE EARTH ALLOY COIL



PHOTOVOLTAIC INDUSTRY



PREFABRICATED BUILDINGS



LIVESTOCK BREEDING



THREE-DIMENSIONAL GARAGE



EARTHQUAKE-RESISTANT BRIDGE



ENERGY STORAGE BOX AND POWER DISTRIBUTION CABINET



MARINE PHOTOVOLTAICS



TESTING EQUIPMENTS



Electronic universal testing machine



SPECTRO direct-reading spectrometer



Laser particle size distribution instrument



Metallographic microscope



Impact tester



High and low temperature humid test chamber

世界级钢材防腐整体解决方案提供商
WORLD-CLASS PROVIDER OF COMPREHENSIVE SOLUTIONS FOR ANTI-CORROSION OF STEEL MATERIALS



OPERATE INTEGRITY
SELL QUALITY





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印次：2023.9

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