THERMAL
RARE EARTH

1098 GLASS COATING

THERMAL RARE EARTH × EASYTO
RARE EARTH & COATING

http://www.easyto1098.com

易涂(中国)
EASYTO(CHINA)

中稀易涂科技发展有限公司
全国服务热线：400-963-1098

联合研制:
EASYTO易涂(中国)&BRIRE稀土研究院

生产基地:
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营销总部:
成都市武侯区星狮路818号大合仓星商界1幢3-201

EASYTO 易塗

ONE SQUARE METER PER PAINT PLANT TWO MORE TREES

Each Coating Of 1 Square Meter Saves CO_2
Emissions Of About 36,1kg/ Year
Each Tree Can Absorb Or Store
About 18kg/ Year Of CO_2

*数据来自国家林士研究院权威测试，测试地点为天津 因电费、用电量与日照条件不同，各地节能数据略有差异

APPLY DIRECTLY TO THE GLASS COOL IN SUMMER

5-11℃ In Summer, 40% Energy Saving In Winter

RARE EARTH & COATING
A MAGICAL TRANSPARENT
RARE EARTH GLASS COATING DIRECTLY
OATED ON GLASS

1098 TIMES
RARE EARTH FORMULATION DEBUGGING

37 KINDS
Raw Materials And Rare Earth Elements

> 95%
Red/UV Effective Super Insulation

01 DEFINITION
AND FORMULA

THE TRADITIONAL DETECTION METHOD IS K VALUE

THE DEFINITION AND FORMULA OF K VALUE

The Temperature Difference Between The Air On Both Sides Of
The Enclosure (Glass/wall) Is 1 Degree (K Or C) Heat
Transferred Per Unit Time Through Per Unit Area

公式：$K=\frac{1}{(1/h_1+\delta/\lambda+1/h_2)}\ W(m^2\cdot℃)$

Where δ Represents The Thickness Of The Material, λ Represents
The Thermal Conductivity Of The Material, Hi And H2 Respectively
Represent The Air Temperature On Both Sides Of The Medium

THE THERMAL INSULATION PERFORMANCE OF TRANSPARENT MATERIAL IS SUITABLE FOR R-VALUE (IRRADIATION HEATING)

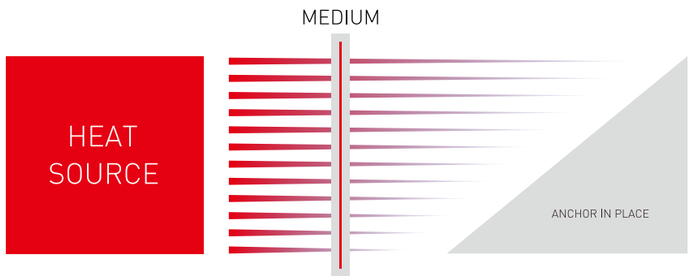
THE DEFINITION AND FORMULA OF R VALUE

The Ratio Of A Certain Temperature To The Required Time Reached By An Anchor
Through A Transparent Medium Of The Same Transmittance Under The Same Irradiation Conditions

公式：$R=\frac{升温值(℃)}{时间(t)*透光率(\%)}$

THE SMALLER THE R-VALUE, THE BETTER, BUT WHEN THE TRANSMITTANCE IS 0,
THAT IS, R=0, IT INDICATES THAT THE MEDIUM IS NON-TRANSPARENT MATERIAL

RARE EARTH &
COATING



CONCLUSION

- The calculation formula of K value is mainly aimed at the thermal conductivity and material thickness of non-transparent materials, rather than glass, etc Irradiation properties of transparent materials.
- The thickness of transparent materials has little correlation with irradiation temperature rise, so K value is used to test the heat insulation of transparent materials such as glass And energy saving is not rigorous.
- Heat radiation is 30 times more efficient than heat conduction! The main means of heat insulation and energy saving of transparent materials such as glass is to prevent thermal radiation
- Comparing K value or U value and other indicators are all data obtained by means of testing the performance of the glass medium itself. The testing standard is complex, and the measured effect cannot be judged. While R value is more intuitive and easy to detect, and the effect of measured data is obvious

46 %

China's Dimension Span Is Large, The Northern Winter Weather Is Cold, The Southern Region With Warm Winters And Hot Summers, China's Building Energy Consumption Accounts For 46% Of The Total Social Energy Consumption Building Energy Conservation Lag, High Energy Consumption, Serious Pollution Is Restricting China's Economy One Of The Key Issues Of Sustainable Development Is Also Building In A Carbon Neutral Context One Of The Important Topics Of Energy

80 %

80% Of A Building's Energy Is Lost Through Doors And Windows, And Glass Occupies The Window Surface 80% Of The Product, To Solve The Glass Heat Loss Is To Solve The Most Core Building Energy Saving The Problem Of The Heart

95 %

China's Annual New Housing Area Of Nearly 2 Billion Square Meters, Of Which 80% High Energy Consumption Buildings; Of The Nearly 40 Billion Square Meters Of Existing Buildings, 95% Are Energy-intensive Build

PRODUCT
PARAMETERS

THERMAL RARE EARTH ·1098 GLASS COATING

It Is A Transparent Coating That Can Be Applied Directly To The Glass To Achieve Sun Protection And Thermal Insulation, Solar Radiation Under The Action Of The Rare Earth Material, The Near Infrared Ray And The Surface Of The Material Have Plasma Interaction Vibration Effect, Radiation Heat Energy Is Converted Into Physical Heat Energy. Heat Concentrates On The Surface Of The Glass, And Is Carried Away By Air Convection In Large Quantities To Achieve The Purpose Of Rapid Cooling.

02

PRODUCT
PARAMETERS

PRODUCT NAME	1098 Glass Coating
COLOR	Rare earth blue
DENSITY(g/ml)	0.9
AVERAGE PARTICLE(nm)	75
VISIBLE LIGHT TRANSMITTANCE(%)	≥ 67 %
BLOCKED INFRARED-LIGHT(%)	≥ 95 %
BLOCKED UV-LIGHT(%)	≥ 98 %
SHADING FACTOR	0.49
CONDUCTIVITY W/(m² ·K)	2.4
DIRECT SUNLIGHT ABSORPTION RATIO	72 %
TRANSMITTANCE OF SOLAR INFRARED THERMAL ENERGY	28 %
PRIMARY INSULATING MEDIUM	Thermal Rare Earth Materials
PRINCIPLE OF HEAT INSULATION	Local Surface Plasmon Resonance (LSPR phenomenon)

03

SOLAR SPECTRUM

SOLAR SPECTRUM

UNDERSTANDING THE SOLAR SPECTRUM, ENJOY HEALTHY SUNSHINE

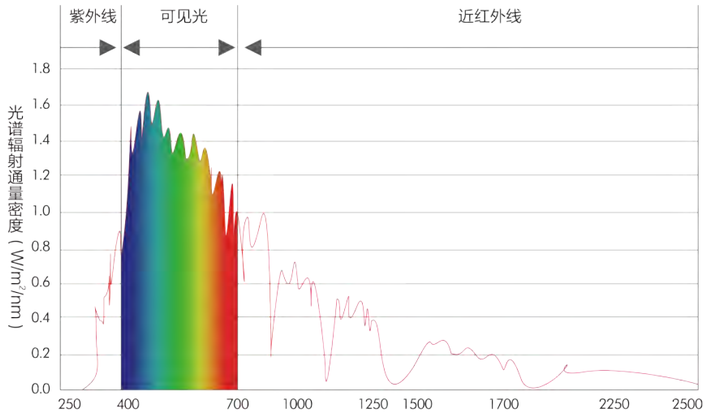
Sunlight Is A Continuous Spectrum Of
Different Wavelengths Divided Into
Visible And Invisible Light

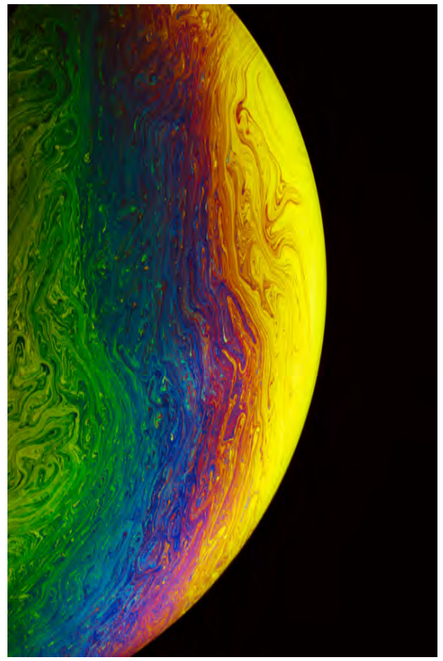
VISIBLE LIGHT

Wave Length 400-700nm
Scattered Into Seven Colors: Red, Orange, Yellow, Green,
Green, Blue, Purple Aggregation Is White Light

INVISIBLE LIGHT

Outside Red Light Is Called Infrared,
Wavelength 700-5300nm
Outside Violet Light Is Called Ultraviolet,
The Wavelength 250-400nm





1mm=100nm

5% UV 300-400nm

High UV (290-380nm)
The Culprit Of All Objects Aging And Skin Aging.

Low UV (380-400nm)
Promote vitamin absorption and antiseptic mildew.

43% VIS 400-700 nm

Visible light: promotes photosynthesis and good mood in plants.
Strong visible light: causes dizziness.

52% Mid-IR 700-2500 nm

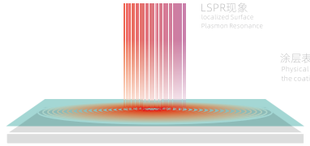
Near infrared:
directional, irradiation will produce a burning sensation and a lot of heat.

Far infrared
(above 3900nm) improves blood circulation and enhances immunity.

04

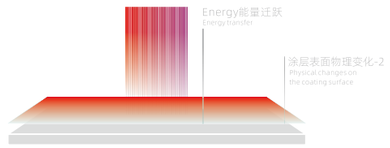
CONTENT
PRINCIPLE

Traditional Low-e Glass And Solar Film On The Glass Surface Technology, Are The Use Of Metal Coating Layer To Reprocess The Glass, Through The Light Wave Reflection Principle To Achieve The Principle Of Glass Heat Insulation, While The Rare Earth Is The Use Of Rare Earth Elements Rich In 4f Electron Layer Orbit, And Red/ultraviolet Plasma Resonance Effect. Easy Coating Improves The Thermal Insulation, Sun Protection And Energy Saving Of Traditional Glass By Several Orders Of Magnitude!



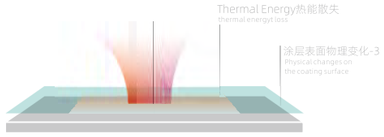
近红外辐射波与涂层发生
等离子体共振效应
Near-infrared Radiation Wave And Plasmonresonance
Effect Of Coating

太阳辐射热能在稀土新热材料的作用下
红外线在材料表面发生共振(局域表面等离子体共振)



辐射热能被转化成物理热能
Radiant Heat Energy Is Converted
Intophysical Heat Energy

将辐射热能转换成物理热能
降低玻璃的热能通透与冷热交换,有效节能30%以上



热能被空气对流大量带走
Heat Energy Is Largely Taken Awayby
Air Convection

热能聚集在玻璃表面
并被空气对流大量带走，以达到快速降温的目的

WHAT ISTHE
RMAL BREAK RARE RARTH

What Are Rare Earths ?

Rare Earth Is The Chemical Periodic Table Of Lanthanides And Scandium, Yttrium A Total Of 17 Metal Elements, Generally Exist In The Form Of Oxides, Because The Color And Earth Are Similar And Insoluble In Water, So They Are Collectively Called Rare Earth.
Rare Earth Has Excellent Photoelectric Magnetic Physical Properties, And Can Be Combined With Many Materials To Synthesize A Variety Of Different New Materials To Improve The Quality And Performance Of Products.
Therefore, Rare Earth Is Also Known As The Mother Of New Materials And Industrial Vitamins, And Is The Life Door Of High-end Manufacturing/laser Guidance/intelligent Manufacturing And Other Fields.

Without Rare Earths

All The High-tech Products In The World Would Have Remained On Laboratory Drawings

05

INSPECTION REPORT
COMPANY HONOR

AUTHORITATIVE MEDIA REPORT

A magical rare earth heat-breaking glass coating has been developed in Tianjin
It marks a new breakthrough in the application field of rare earth with high added value in China!

—— 光明日报 GUANGMING DAILY

Yitou (China) joint Rare Earth Research Institute developed rare earth glass energy-saving products
Three technologies to fill the gap in the field of domestic energy conservation!

—— 经济日报 ECONOMIC DAILY

Easyto coat (China)& Rare Earth Research Institute's rare earth glass products
Realized China's corner overtaking of Europe, the United States and Japan in the field of rare earth high-tech technology!

—— 人民网 people.cn PEOPLE'S DAILY


第十二届稀土国际论坛主推的七大稀土新产品之一


2020年内蒙古自治区首批次新材料


国家"十三五"科技创新成就展


万吨级高附加值稀土采购战略协议


工信部第十七届中博会专精特新小巨人企业新材料领域单项冠军


第六届中知杯天津市创新发明与设计大赛一等奖

PATENTS AND HONORS

Ministry Of Industry And Information Technology 17th China Expo Specialized Special New Small Giant Enterprise New Material Single Champion

National 13th Five-year Plan Scientific And Technological Innovation Achievement Exhibition

The 12th China Baotou Rare Earth Industry International Forum

First Prize Of Tianjin Intellectual Property Innovation, Entrepreneurship, Invention And Design Competition

Innovative Smes In Sichuan Province

Science And Technology Small And Medium-sized Enterprises In Sichuan Province

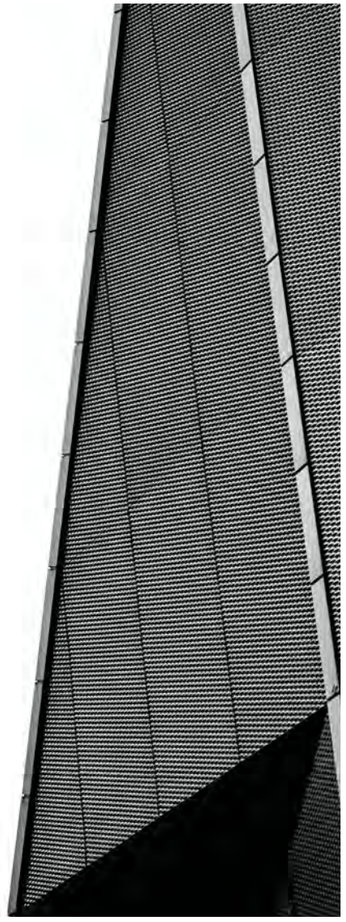
Rare Earth Society Governing Unit

FROM THE TECHNICAL LEVEL

WE SOLVED THE TRADITIONAL LOW-E GLASS
AND THE THREE PAIN POINTS OF THE FILM

镀膜金属层依靠光波反射原理
不具光谱选择性

无法享受健康的阳光 甚至不能养活花草
全波段屏蔽 致其金属物阻隔手机信号



光污染和节能之间
无法做到统一

如果想要取得良好的隔热节能效果
就必须提高玻璃的折射率

让玻璃颜色(透光率)迅速降低并出现
巨大的光污染

Low-e镀膜玻璃易失效
远远低于玻璃的寿命

在线Low-e耐候性好 效果差
离线Low-e效果好 但极易老化

ENABLING CARBON NEUTRALITY

CONTRIBUTE CHINA'S STRENGTH TO THE CAUSE OF WORLD ENERGY CONSERVATION

SUPERENERGY K VALUE
SUPERENERGY THERMAL INSULATION FACTOR
PERFECT TRANSFORMATIO

WAVE ABSORPTION PRINCIPLE

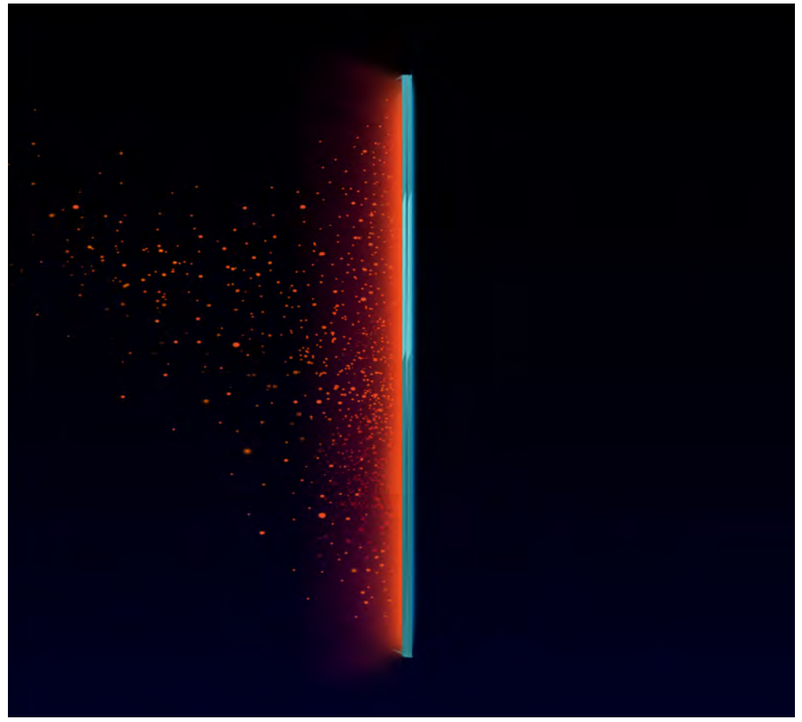
The Principle Of Rare Earth Wave Absorbing Coating
On The Surface Of Stealth Fighter Is Adopted

Rare earth is known as the modern "industrial vitamin", with excellent optical, electrical, thermal, magnetic and other properties,
Is an indispensable part of all high-tech products, products manufactured with rare earth, its durability will often be greatly improved!
Rare earth is widely used, stable performance, melting point as high as 2700℃,
and will not decay and produce radiation

SUPER INSULATION

Rare Earth Materials Efficient Heat Removal

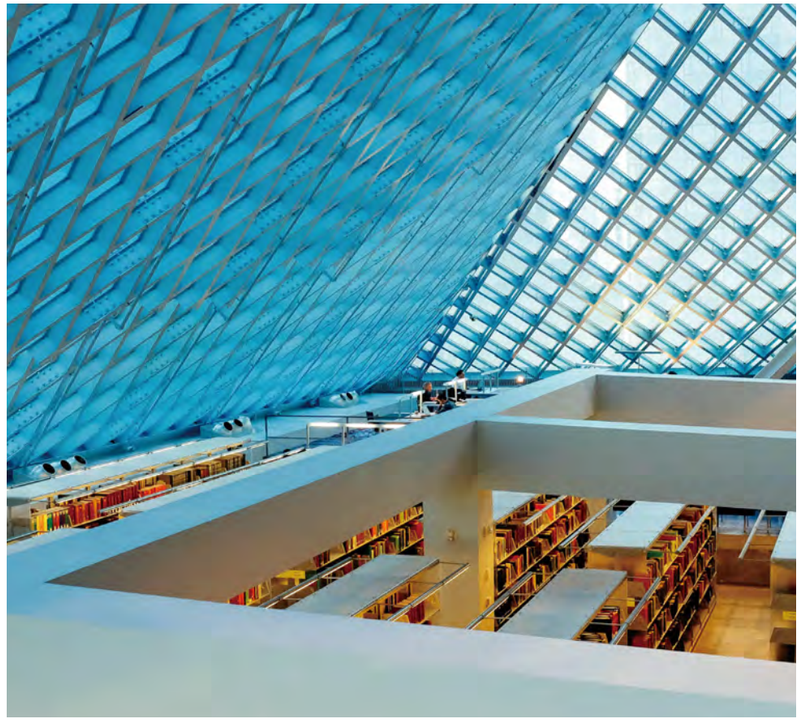
Using 4f Electron Shell Orbits Of Rare Earth Elements
Plasma Resonance Effect With Solar Incident Photons (Lspr Phenomenon)
Heat Accumulates On The Glass Surface
And A Large Number Of Air Convection Away,
To Achieve Rapid Cooling Purposes



TARGETED SHIELDING

Intelligent Screening Of Sunlight By
Paramagnetism Of Rare Earth Elements

Reject Strong Ultraviolet Light Wavelength Range 200-380nm,
Visible Light In The Lossless Wavelength Range 400-750nm.
Effectively Block Household Items Caused By Sun Exposure,
Discoloration And Aging Of Clothing Floor



CONVENIENT CONSTRUCTION

No need to replace the glass directly on the glass

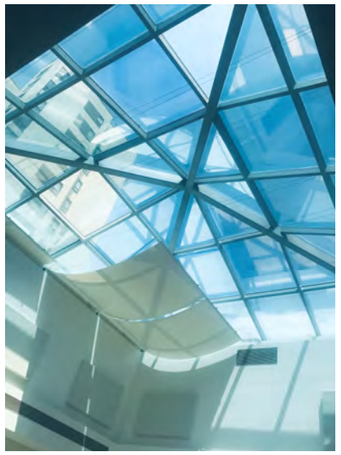
RARE EARTH & COATING

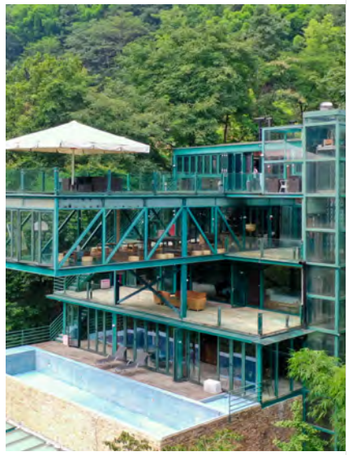
断熱 | 稀土塗层

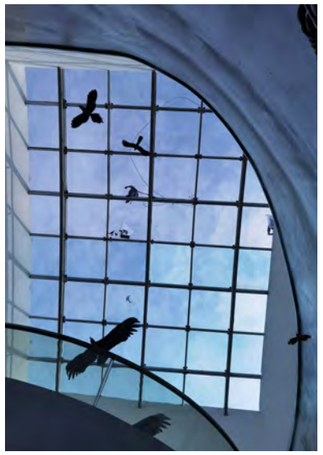
EASYTO 易塗 .1098

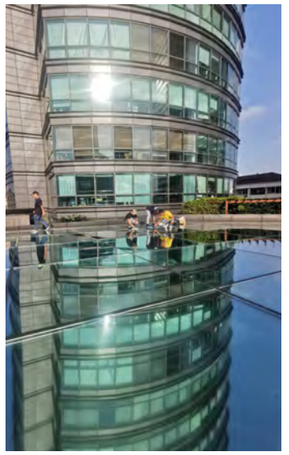
06

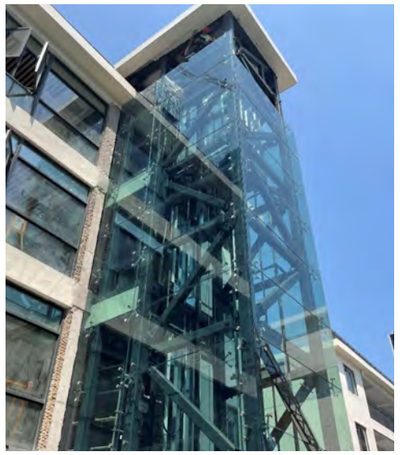
CASE SHOW
(PART)

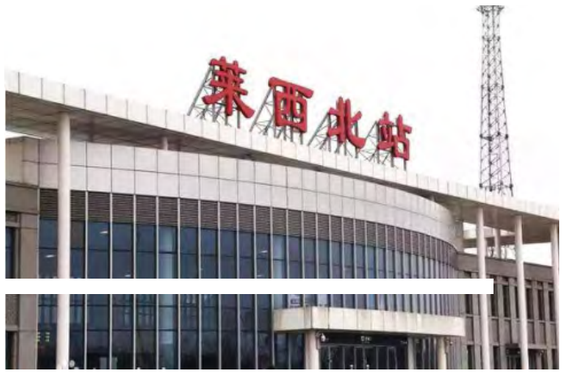












CASE SHOW
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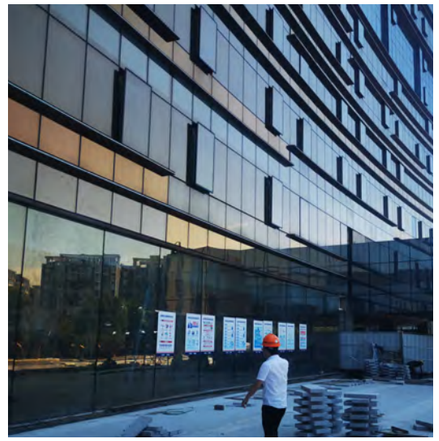

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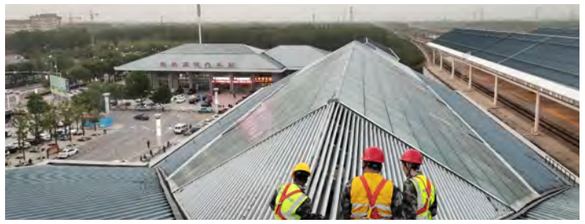
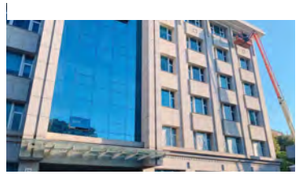
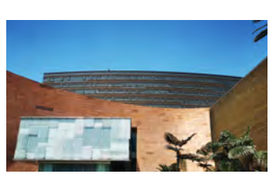
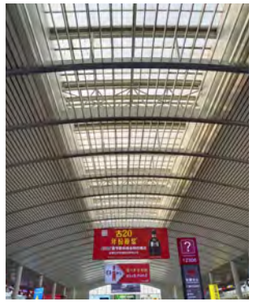
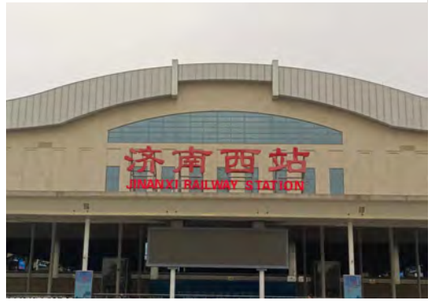
(PART)











As Of January 2023, The Products Have Been Applied To Nearly 100 Projects

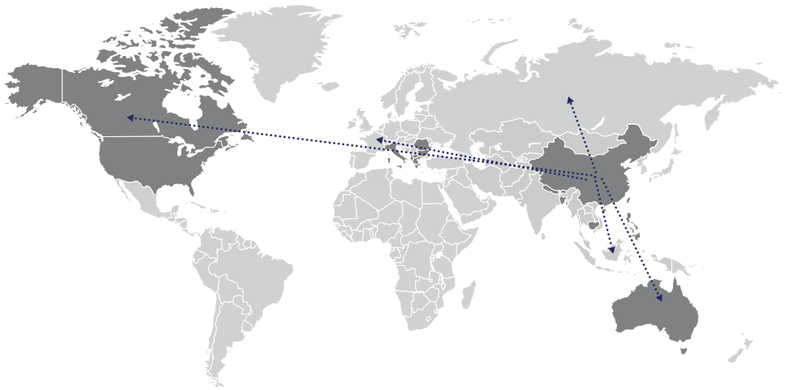
The Total Completed Area Is 120,000 Square Meters

The Application Projects Are Distributed To Zhangjiagang In Jiangsu Province

In The East And Kashgar In Xinjiang In The West

South To Sanya, Hainan, North To Urumqi, Xinjiang

It Has Good Performance In All Kinds Of Climatic Zones In China.



07 COOPERATING ORGANIZATION

COMMAND BUILDING OF AN AIR BASE OF THE PEOPLE'S LIBERATION ARMY

SHENZHEN NATIONAL GENE BANK

BAOTOU STEEL GROUP COMPANY INFORMATION BUILDING

SHANGHAI SHUN YUAN MANSION / HILTON SUZHOU / WUXI COAST CITY

GUANGZHOU TAIKOO HUI/GUANGZHOU OCT / GUANGZHOU POLY FISH PEARL PORT

GUANGZHOU FORTUNE CENTER

KUNMING GOVERNMENT AFFAIRS SERVICE CENTER / ZHENJIANG PHOENIX SQUARE, XINJIANG

JINAN WEST RAILWAY STATION / PINGDU HIGH-SPEED RAILWAY STATION

CHANGYI HIGH-SPEED RAILWAY STATION

TENGZHOU HIGH-SPEED RAILWAY STATION / LAIXI HIGH-SPEED RAILWAY STATION

扫码关注"易小涂"

EASYTO

CHINA'S FIRST HIGH-TECH ENTERPRISE FOCUSING ON THE INNOVATION AND DEVELOPMENT OF RARE EARTH FUNCTIONAL MATERIALS INVENTOR OF THERMAL RARE EARTH

A Set Of Research And Development, Production, Promotion, Sales As One, Focusing On Rare Earth Application Research And Development,
Military Conversion To Civilian New High-tech Enterprises
Sichuan Province Innovative Small And Medium-sized Enterprises, Sichuan Province Science And Technology Small And Medium-sized Enterprises,
Rare Earth Society Director Unit Its Wholly-owned Subsidiary "China Thin Industry Development (Tianjin) Group Co., Ltd." Focuses On The Transformation Of Rare Earth Industry Achievements
Its Holding Subsidiary "Zhongxi Easy Coating (Wuxi) International Trade Co., Ltd." Focuses On The Global Promotion And Sales Of Rare Earth Products
A Joint Laboratory Was Established With Brire Rare Earth Research Institute Of Northern Rare Earth
The Basic R&d Center Is Located In Tianjin, The Application R&d Center And The National Brand Operation Center Are Located In Chengdu, Sichuan Province

"THE MIDDLE EAST HAS OIL, CHINA HAS RARE EARTHES"

The position of China's rare earth resources can be compared with that of Middle East oil, which has extremely important strategic significance
We must do a good job in rare earth affairs and give full play to China's advantages in rare earth

邓小平

摘自《邓小平语录》

Chairman Deng

GLOBAL PATENT, RARE EARTH IS KING
ONE OUT OF EVERY FIVE INVENTION PATENTS IN THE WORLD IS RELATED TO RARE EARTHS

RARE EARTH APPLICATION, NO NEED TO WORSHIP THE OCEAN
CHINA HAS MORE RARE EARTH INVENTION PATENTS THAN THE REST OF THE WORLD COMBINED

BASED ON RARE EARTH, THE POTENTIAL IS EASY
YITU IS COMMITTED TO THE APPLICATION,
RESEARCH AND DEVELOPMENT,
PROMOTION AND ACHIEVEMENT TRANSFORMATION
OF RARE EARTH FUNCTIONAL MATERIALS IN THE CIVIL FIELD
FOCUS ON RARE EARTHS, NEVER DIVERSIFIED

CONTRIBUTING CHINA POWER TO
WORLD ENERGY CONSERVATION

EASYTO易涂(中国) &
BRIRE稀土研究院

断热稀土·联合实验室

BRIRE RARE EARTH RESEARCH INSTITUTE
JOINT LABORATORY FOR OFF-HEAT RARE EARTH