GLASS
INSULATION
FILM

EASYTO RARE EARTH BUILDING GLASS MEMBRANE

RARE EARTH FILM
希土類コーティング

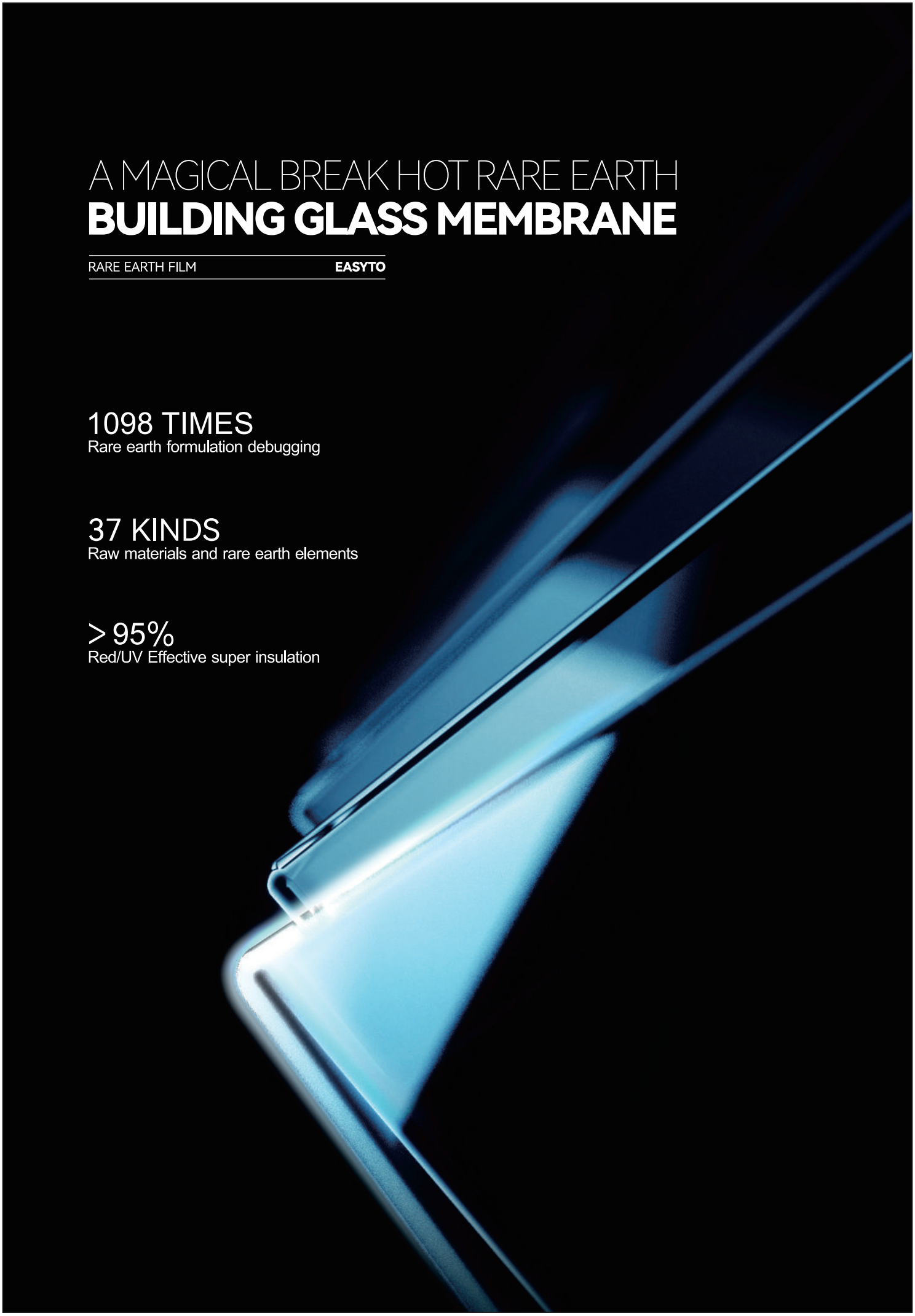
断热稀土 × 易塗

EASYTOCOATING·1098

EASYTO®
WORLD SMART INSULATION

A MAGICAL BREAK HOT RARE EARTH
BUILDING GLASS MEMBRANE

RARE EARTH FILM **EASYTO**



1098 TIMES
Rare earth formulation debugging

37 KINDS
Raw materials and rare earth elements

> 95%
Red/UV Effective super insulation

FOR EVERY SQUARE METER
PLANT TWO MORE TREES

Each square meter of coating saves CO2,
emitting about 36.1KG/ year,
and each tree can store about 18KG/ year of CO2

A MAGICAL TRANSPARENT
RARE EARTH GLASS COATING DIRECTLY
COATED ON GLASS

The data came from the authoritative test conducted by the our National Rare Earth Research Institute,
and the test place was Tianjin. Due to different electricity charges, electricity consumption and sunshine conditions,
the energy-saving data of different places were slightly different

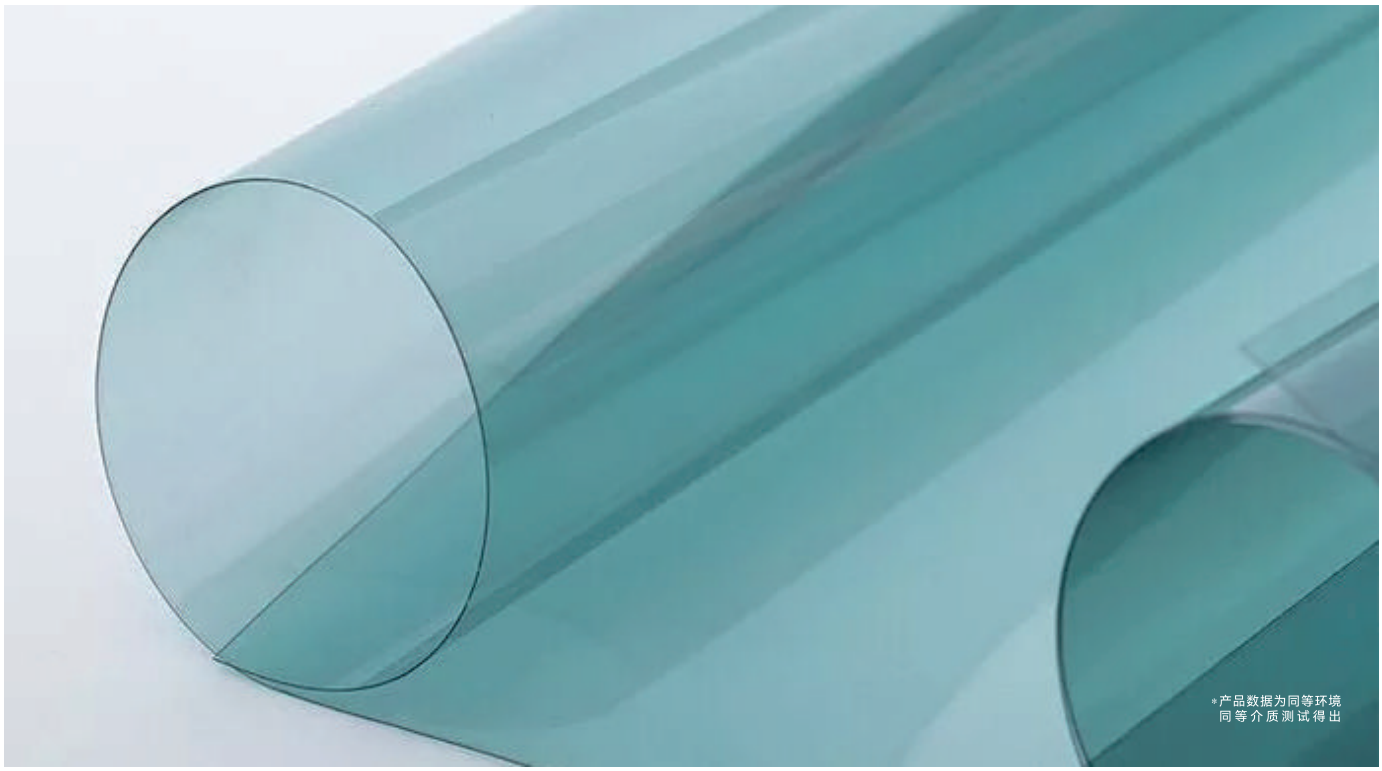
BUILDING GLASS MEMBRANE

RARE EARTH FILM **EASYTO**

PRODUCT
PARAMETERS

Lanthanum ice building glass membrance(indoor)

Easyto coating integrates the core technology of breaking heat rare earth perfectly into the traditional building membrane. While maintaining excellent heat insulation performance, the transmittance is very high, which can make the room fully enjoy the natural light, effectively block the solar radiation energy into the room, and save the electricity cost. Excellent weather resistance; It can realize targeted shielding of sunlight, which can preserve the beneficial part of sunlight, shield the strong ultraviolet rays that are harmful to human body and the near infrared rays that produce burning sensation to human body in a wide range, and maintain long-term and stable performance. Lanthanum ice building film is widely used in all kinds of buildings, such as hotels, residential buildings, commercial office buildings, exhibition centers and so on



Thickness
2.0mil

UV barrier
≥99%

Infrared barrier
92±2%

Visible light
62±2%

Total solar energy barrier
46±2%

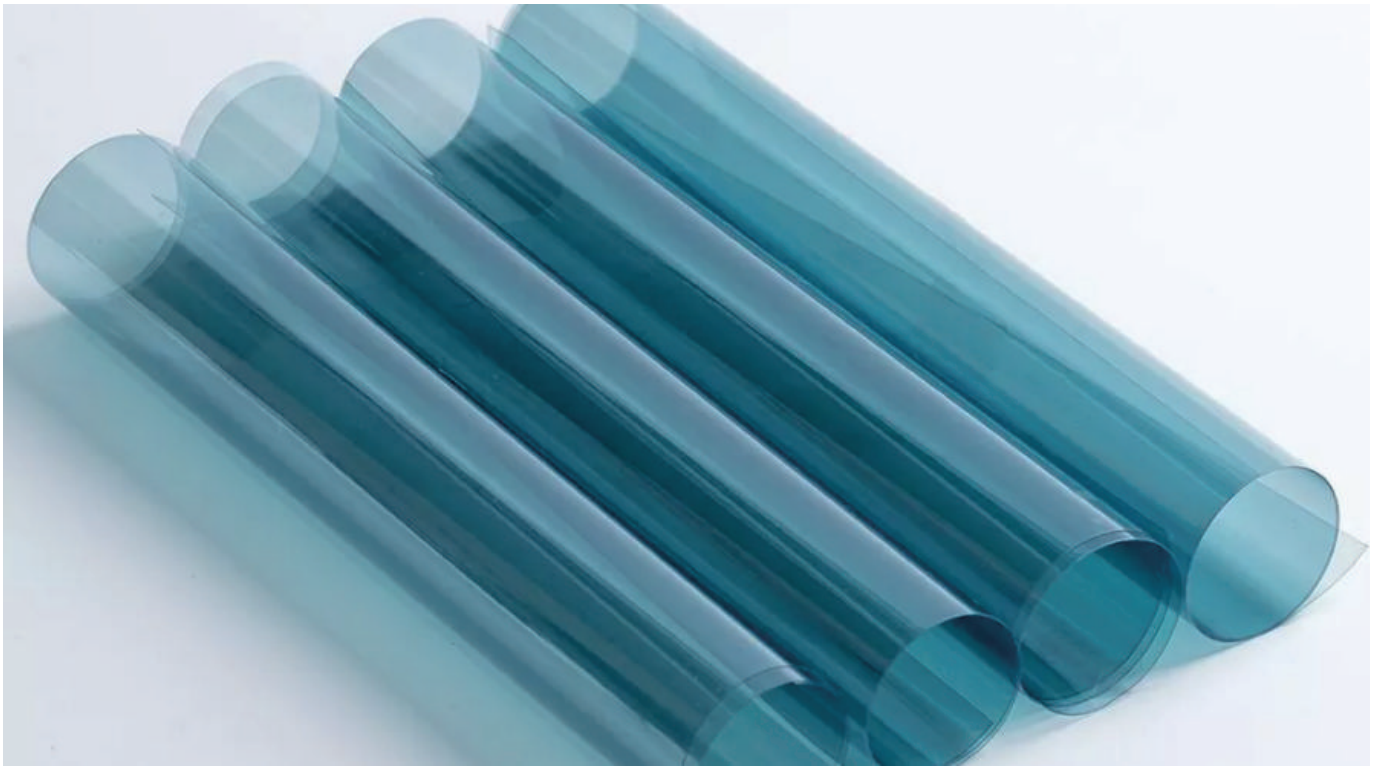
BUILDING GLASS
MEMBRANE

RARE EARTH FILM **EASYTO**

PRODUCT
PARAMETERS

Lanthanum Shield building glass membrance(outdoor)

The heat insulation performance is more excellent, can effectively protect the privacy of users, can better reduce the air-conditioning refrigeration load; It can also realize targeted shielding of solar light, which can preserve the beneficial part of the sunlight, and shield the strong ultraviolet rays that are harmful to the human body and the near infrared rays that produce burning sensation to the human body in a wide range. Lanthanum Cham building film is suitable for all kinds of places that need to protect privacy, such as offices, businesses, hospitals, schools, etc.



Thickness
7.5mil

UV barrier
≥99%

Infrared barrier
95±3%

Visible light
62±2%

Total solar energy barrier
58±2%

SOLAR
SPECTRUM

UNDERSTAND THE SOLAR SPECTRUM
ENJOY HEALTHY SUNSHINE!

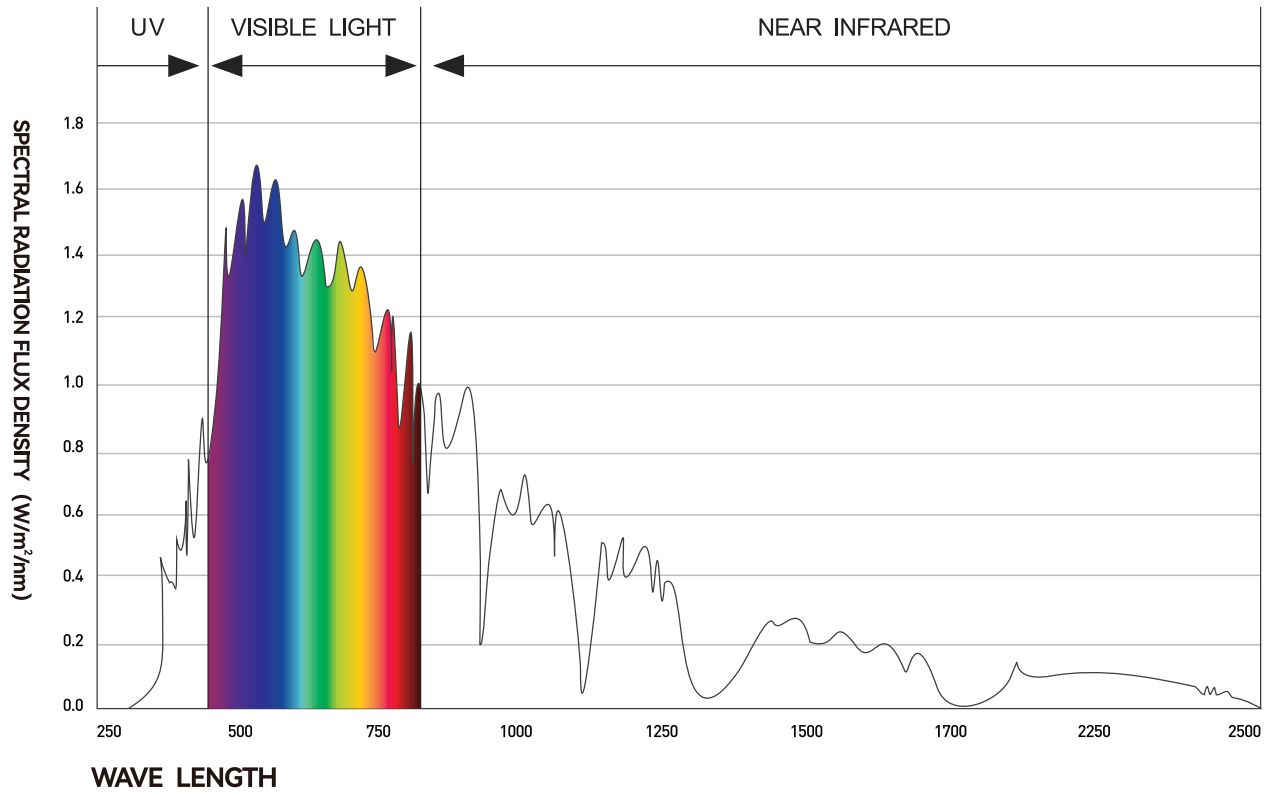
Sunlight is a continuous spectrum of different wavelengths
There are two parts: visible light and invisible light

VISIBLE LIGHT

Wavelength:400-700nm
Scattered into red, orange, yellow, green, green, blue, purple seven colors
Aggregation is white light

INVISIBLE LIGHT

The area outside red light is called infrared, Wavelength700-5300nm
The area outside violet light is called ultraviolet light, Wavelength250-400nm



Sunlight has obvious biological effects
Plants can synthesize under the action of sunlight
The skin of animals converts vitamin D in response to sunlight
Infrared ray has a great thermal effect
Strong ultraviolet light is the cause of aging of objects and skin

1mm=100nm

5%UV 300-400 nm

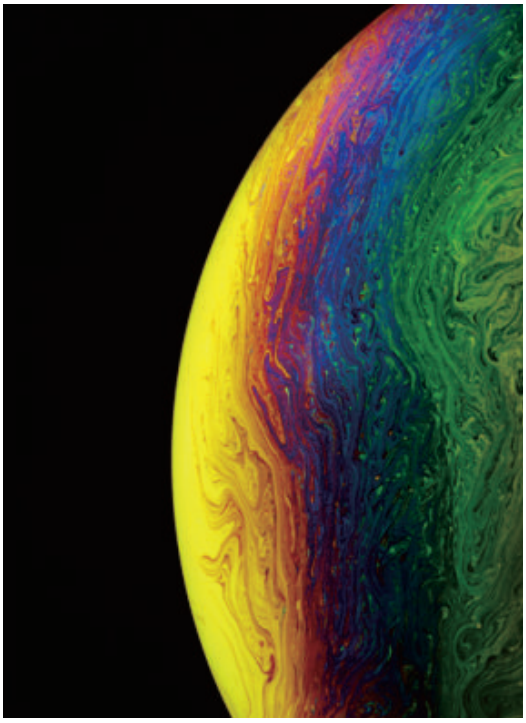
UV(290-380nm)The culprit of all objects aging and skin aging
UV(380-400nm)Promote the absorption of vitamin D and antifungal and mildew

VIS 400-700nm

Visible light: promotes photosynthesis and improves mood
Strong visible light: makes people dizzy

IR 700-2500nm

Near infrared: with directional, irradiated place will produce burning sensation and a lot of heat energy
Far infrared(beyond 3900nm): send blood circulation, enhance immunit



WHAT IS THE **RARE EARTH**

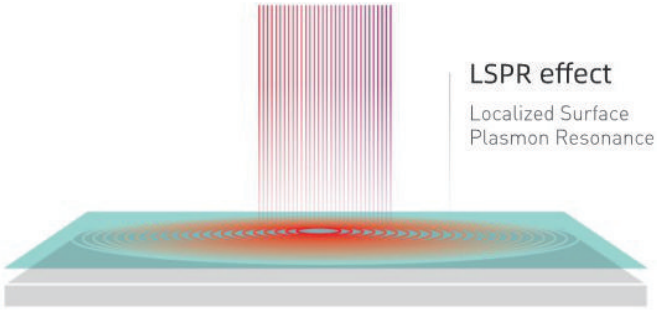
Rare earth is the general name of the lanthanide series,
scandium and yttrium in the chemical periodic table.
Usually in the form of oxides,
They are called rare earths because they are similar in color to earth and insoluble in water.
Rare earths have excellent photoelectric magnetic physical properties,
Can combine many different types of new materials with many materials groups,
Improve product quality and performance.
So rare earths are also known as the mother of new materials and industrial vitamins,
It is the key to high-end manufacturing/laser guidance/intelligent manufacturing.
If there is no thin cheese
All the high-tech products in this world remain on the drawing board of the lab.

TECHNOLOGICAL REVOLUTION AND SUBVERT TRADITION

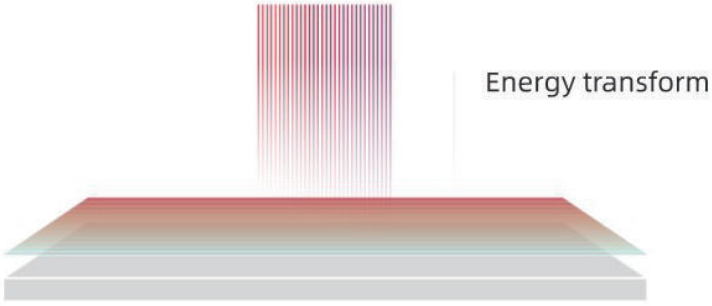
Principle of heat insulation

BY RARE-EARTH ELEMENTS

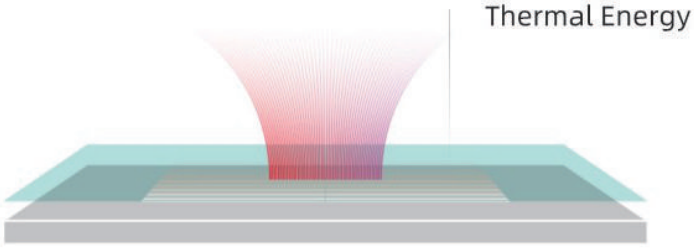
Plasma Resonance Effect between Near-Infrared Radiation Wave and Surface of Rare Earth Coating



Radiant of Heat Energy is converted to Physical Heat Energy



Heat Energy is carried away by Air Convection, achieve to lower the temperature.



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

$$\text{FORMULA} \quad K = \frac{1}{1/h1 + \frac{\delta}{\lambda} + 1/h2} \quad W(m^2 \cdot °C)$$

Where δ represents the thickness of the material, λ represents the thermal conductivity of the material, h1 and h2 respectively represent the air temperature on both sides of the medium

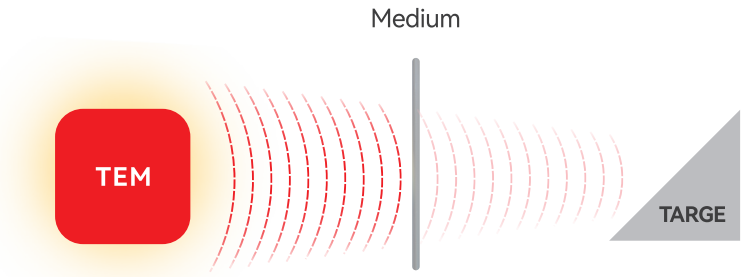
The thermal insulation performance of transparent material is suitable for R-value (irradiation heating).

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

$$\text{FORMULA} \quad R = \frac{\text{Temperature rise value (°C)}}{\text{Time*Transmittance (\%)}}$$

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



CONCLUSION

The calculation formula of K value is mainly aimed at the thermal conductivity and material thickness of non-transparent materials, rather than glass, etcIrradiation 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.

BUILDING ENERGY **CONSUMPTION SITUATION**

46%

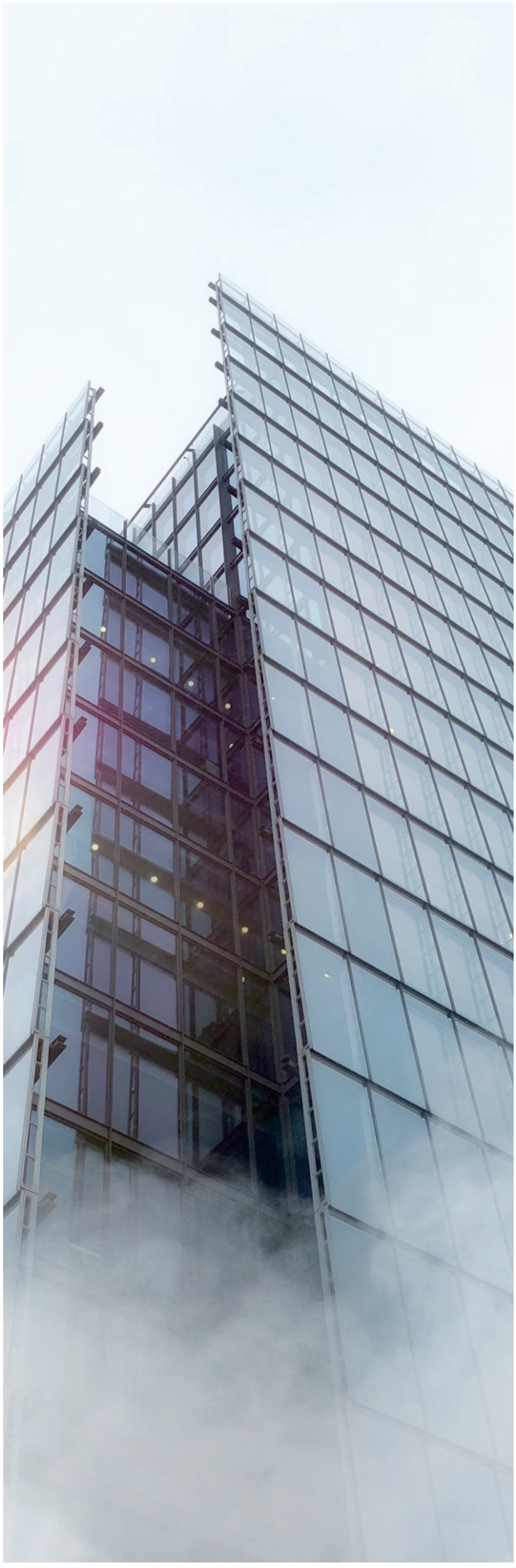
Energy consumption in buildings accounts for 46%
of China's total energy consumption
After building energy saving,
high energy consumption and serious pollution are constraints
One of the key problems of sustainable development of our economy
It is also one of the important topics of building energy conservation
under the background of carbon neutrality

95%

Our country builds a new building area of nearly 2 billion square
80% of them are energy-intensive buildings;
Of the nearly 40 billion square meters of existing buildings,
95% of them are energy-intensive.

80%

80% of a building's energy is lost through doors and Windows
And glass takes up 80 percent of the window area
To solve the heat loss of glass is to solve the
core problem of building energy saving



INSPECTION **REPORTS**

绿色低碳信用评价AAA级企业

企业信用等级证书

ISO14001

ISO45001

ISO9001


检 测 报 告

样品名称
型号规格
委托单位
生产厂家

科睿检测

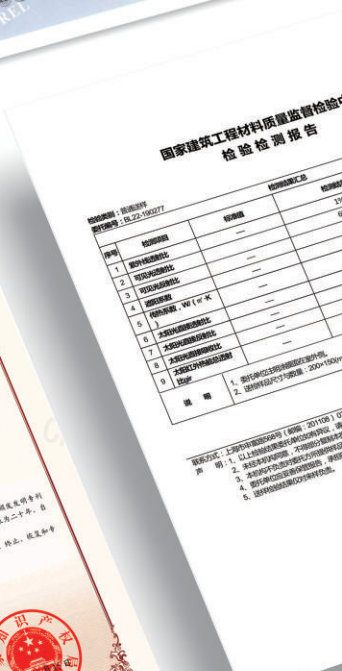

检测报告

委托单位：
生产厂家：
收样日期：
样品名称：
样品数量：
检测项目：
检测周期：
检测依据：
检测环境：
主要测试设备：
辅助设备：
检测结果：
备注：

编制：
审核：
批准：
日期：2019-07-26


1 样品描述

2 试验过程


国家建筑工程材料质量监督检验中心
检验检测报告


发明专利证书

发明名称：一种被动房用铝结露加热控温玻璃幕墙
发明人：李骥;尹锐;潘文龙;张光容;温永清;吴艳平;张晓晓;邓福利;闫金龙;赵长玉
专利号：ZL 2021 1 0509518.8
专利申请日：2021 年 05 月 31 日
专利权人：天津包钢陆上研究院有限责任公司
地址：300000 天津市东丽区华明高新技术产业区华丰路 6 号 B 座 5 号楼
授权公告日：2021 年 08 月 20 日
授权公告号：CN 113027016 B

局长
申长雨

第 1 页(共 2 页)


发明专利证书

证书号第 4486907 号

发明名称：一种高温陆上纳米隔热涂料及其制备方法
发明人：李骥;温永清;张日成;孔祥鹏;段西锐;杨占锋
专利号：ZL 2018 1 1271876.7
专利申请日：2018 年 10 月 29 日
专利权人：天津包钢陆上研究院有限责任公司
地址：300380 天津市东丽区华明高新技术产业开发区华丰路 6 号
授权公告日：2021 年 06 月 15 日
授权公告号：CN 110548014 B

局长
申长雨

第 1 页(共 2 页)

国家建筑工程材料质量监督检验中心
检验检测报告


检验检测报告

报告编号：TT226-191172

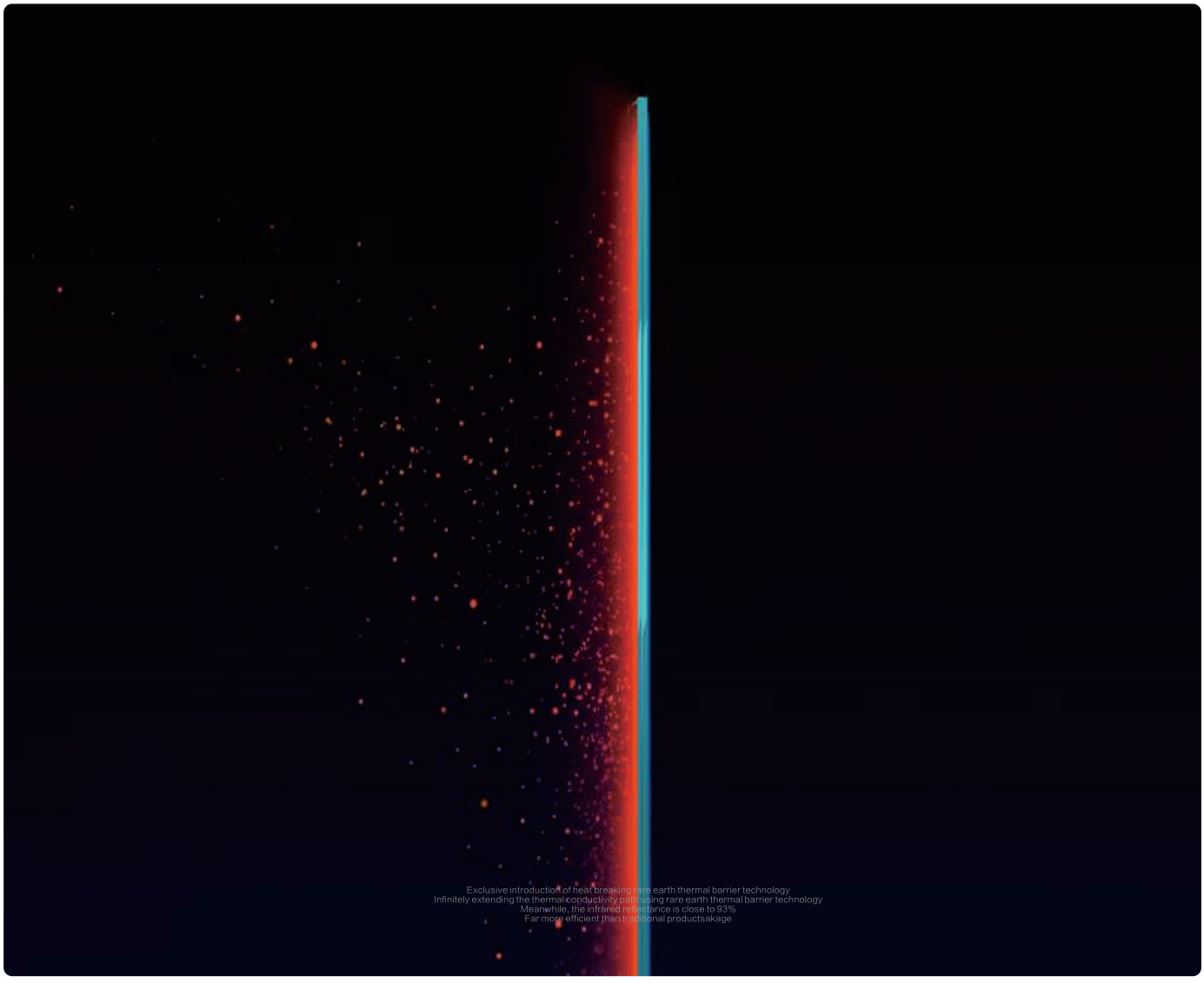
样品名称
型号规格
委托单位
检验类别

国家建筑工程材料质量监督检验中心


国家建筑工程材料质量监督检验中心
检验检测报告

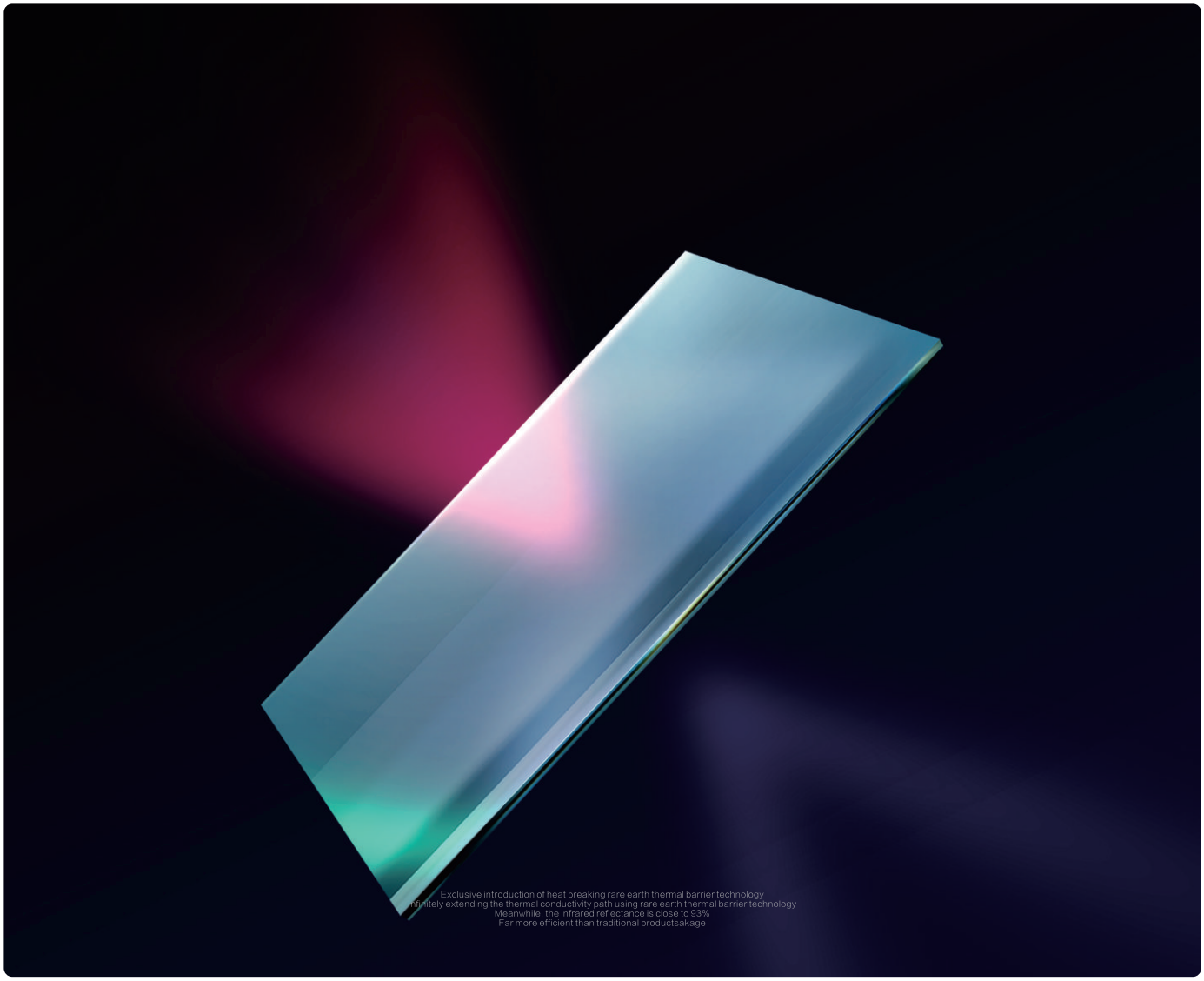
SUPER HEAT
INSULATION

AN AMAZING HEAT- BREAKING RARE EARTH CAR FILM
INTELLIGENT COLOR CHANGE ,
SUPER IMPACT RESISTANCE
SUPER HEAT INSULATION AND UV SHIELDING



TARGETED
SHIELDING

USE OF RARE EARTH ELEMENTS PARAMAGNETIC
INTELLIGENT SCREENING OF THE SUN
REFUSED TO STRONG ULTRAVIOLET WAVELENGTH RANGE OF 200 -380 NM
NONDESTRUCTIVE VISIBLE LIGHT WAVELENGTH RANGE OF 400-750 NM



ANTIGLARE
MORE FULLY

RARE EARTHS IN RARE EARTH UNIQUE CRYSTAL
CAN EFFECTIVELY FILTER THE SUNLIGHT OF THE SCATTERED LIGHT
AND BLUE LIGHT AND BLUE LIGHT AT THE SAME TIME
LOOKS MORE TRANSPARENT GLASS, THE HUMAN EYE IS MORE COMFORTABLE

SIGNAL UNOBSTRUCTED

THE TRADITIONAL GLASS MEMBRANE WITH MULTILAYER MAGNETRON SPUTTERING TECHNIQUE
UNDER THE DENSE METAL COVER MAY INTERFERE WITH COMMUNICATION SIGNALS
BREAK HOT, RARE EARTH BUILDING GLASS MEMBRANE ,
USING RARE EARTH UNIQUE WAVE CHARACTERISTICS (NM)
SHINE (MILLIMETER WAVE) BY 5 G COMMUNICATION SIGNAL

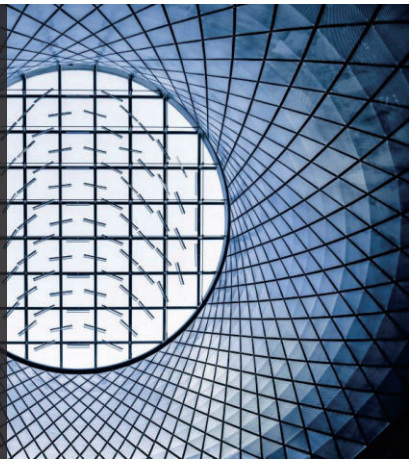
HIGH IMPACT **RESISTANCE**

ENHANCED ABILITY TO RESIST IMPACT
PREVENT SLUNGSHOT SPUTTERING
REDUCE THE SHARDS OF
GLASS SECONDARY DAMAGE

APPLICATION **SCENARIOS**

01 OFFICE BUILDINGS

02 BUSINESS CENTER

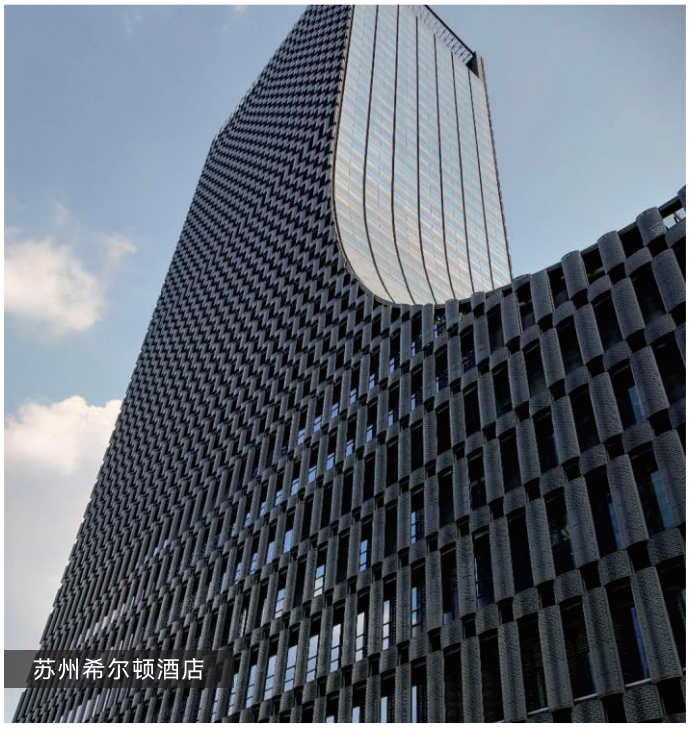


03 SUN ROOM

04 THE HOTEL AND RESIDENTIAL

05 THE EXHIBITION CENTER

THE
COOPERATION UNIT


苏州希尔顿酒店

平度高铁站


潮州财富中心商业综合体


广州天德广场


昆山市政务服务中心

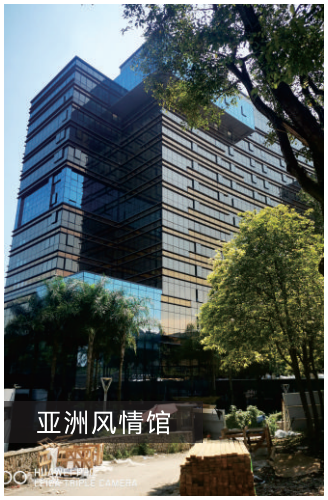

无锡海岸城


广州太古汇

莱西火车站

THE COOPERATION UNIT

THE
COOPERATION UNIT



ABOUT THE
COMPANY PROFILE

A new high-tech enterprise integrating research and development, production, promotion and sales, focusing on the research and development of rare earth application and conversion from military to civilianIts wholly-owned subsidiary "China Rare Industry Development (Tianjin) Group Co., LTD." focuses on the transformation of rare earth industry achievementsIts holding subsidiary, "Zhongxi Easy Coating (Wuxi) International Trade Co., LTD.", focuses on the global promotion and sales of heat-breaking rare earth products, and the BRIRE rare Earth Research Institute of North Rare Earth established a joint laboratory basic research and development center located in Tianjin. Application research and development center and national brand operation center are located in Chengdu, Sichuan Province

扫码关注“易小涂”

AUTHORITATIVE
MEDIA REPORTS

权威媒体报道

光明日报

一种神奇的稀土断热玻璃涂层在津问世
标志着我国在稀土高附加值下应用领域实现新的突破!

經濟日報

易塗（中国）联合稀土研究院开发出稀土玻璃节能产品
三项技术填补国内节能领域空白!

人民网 people.cn

易塗（中国）& 稀土研究院的断热稀土玻璃产品
实现了中国在稀土高科技技术领域对欧美日国家的弯道超车!

国家“十三五”科技创新成就展

2020年内蒙古自治区首批次新材料

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

万吨级高附加值稀土 采购战略协议

EASYTO易塗（中国）& BRIRE稀土研究院

断热稀土·联合实验室

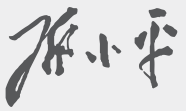
Yi Tu (China) &
Brire Rare Earth Research Institute
Joint Laboratory for off-heat Rare Earth

RARE EARTH & COATING

A MAGICAL TRANSPARENT
RARE EARTH GLASS COATING DIRECTLY
COATED ON GLASS

“中东有石油 中国有稀土”

中国的稀土资源地位可与中东石油相比，具有极其重要的战略意义。
一定要把稀土的事情办好，把我国稀土优势发挥出来！



摘自《邓小平语录》

全球专利，稀土为王

世界上每5项发明专利，必有一项跟稀土相关

稀土应用，无需崇洋

中国的稀土发明专利比全世界其他国家加起来的总和还多

立足稀土，势在易塗

易塗，致力于稀土功能材料民用领域的应用、研发、推广及成果转化
专注稀土，永不多元