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2018 年
4 月 版

DUOWEI
Metal Cladding System
Product Manual

多维金属围护系统
产品画册

诚意正心　知行合一

SINCERE THOUGHT AND RIGHTEOUS HEART
THE UNITY OF KNOWLEDGE AND ACTION

VISION

Building the most valuable steel structure system
To become a respected industry leader

企业愿景

营造最具价值的钢结构建筑系统
打造成为备受尊敬的行业引领者

核心价值观

对客户负责
对员工负责
对股东负责

CORE VALUES

Responsible for customer
Responsible for employees
Responsible for shareholders

核心竞争力

为客户提供差异化的服务
超越竞争对手的学习能力

CORE COMPETENCE

Provide differentiated services to customers
Ability to learn beyond competitors

企业简介
INTRODUCTION

多维联合集团创始于 1983 年，注册资本 3.16 亿元，总部位于北京市中关村科技园丰台园区总部基地，是以绿色建筑钢结构系统与金属围护系统为主导产业，集“设计研发、精益制造、施工管理、国际贸易”于一体的综合服务商。

目前，多维联合集团在北京、天津、上海、河北、沈阳、哈尔滨、乌鲁木齐、西安等地拥有研发制造基地及子公司，年产工业建筑钢结构、多高层钢结构、设备框架钢结构、公共建筑钢结构、住宅钢结构等绿色建筑钢结构 30 万吨，防火岩棉 / 玻璃棉夹芯板、聚氨酯节能夹芯板等绿色建筑板材 500 万平方米，预制金属围护板材 3000 万平方米，钢筋桁架楼承板 300 万平方米，年施工面积 400 万平方米。集团在哈萨克斯坦、委内瑞拉、埃塞俄比亚、马来西亚、蒙古等国设有海外公司，产品行销全球 50 多个国家与地区，年销售收入逾 50 亿元，其中海外收入超 20 亿元。

多维联合集团是住建部首批颁发的房屋建筑工程（钢结构）施工总承包一级资质及国家装配式建筑产业基地企业，拥有建设工程（建筑行业）设计甲级资质、钢结构工程专项设计甲级资质、钢结构制造特级资质、钢结构工程专业承包一级资质、建筑幕墙工程专业承包贰级资质、金属屋（墙）面设计施工特级资质、对外工程承包资质，并荣膺国家高新技术企业、北京市企业技术中心、中国建筑钢结构与金属幕墙夹芯板行业十强。

多维联合集团钢结构及金属围护产品通过了美标 AISC、美国 FM、欧标 CE 及俄罗斯 GOST 认证，并通过了 ISO9001 质量管理体系认证、ISO14001 环境管理体系认证、OHSAS18001 职业健康安全管理体系认证。并先后参编近 30 项国家标准、行业标准，形成了近百件国家授权知识产权。

多年来，多维联合集团成功服务于宝马汽车、三星电子、京东方电子、中国中车、中国石油、宇通客车等知名企业，并参建了国家大火箭、国家大飞机、空客 A330 天津基地、APEC 会议中心等重点项目。在国家“一带一路”战略引领下，我们承接了埃塞俄比亚工业园、加纳空军机库、哈萨克斯坦世博主场馆、委内瑞拉国家新三色项目、斯里兰卡军队营房等海外项目。

多维联合集团始终专注于绿色建筑钢结构行业，持续为客户创造价值，并始终致力于营造最具价值的钢结构建筑系统，打造成为备受尊敬的行业引领者。

Duowei Union Group Co., Ltd. is a manufacturer of eco-friendly building steel structures and metal claddings and an integrated service provider of design and R&D, lean manufacturing, construction management, and international trade. It was founded in 1983 at Fengtai District,Zhongguancun Science and Technology Park, with RMB 316,000,000 of registered capital.

DUOWEI has set up a number of R&D and manufacturing bases and subsidiaries in Beijing, Tianjin, Shanghai, Hebei, Shenyang, Harbin, Urumqi and Xi'an etc.,annually producing 300,000 tons of steel structures for industrial buildings, multi-story and high-rise buildings, equipment frames steel structure, public buildings, residential building, and other eco-friendly buildings, 5,000,000 sq. m. of eco-friendly building sandwich panels e.g.fire-proof rock wool or glass wool sandwich panels and polyurethane energyefficient sandwich panels, 30,000,000 sq. m.of prefabricated metal cladding boards, 3,000,000 sq. m. of steel bar truss decks,and 4,000,000 sq. m. of construction areas per year. DUOWEI has also set up overseas branches in Kazakhstan, Venezuela, Ethiopia, Malaysia and Mongolia. Its products are sold to over 50 countries and regions, which, in return, bring in more than 5 billion yuan of annual sales revenue, including more than 2 billion yuan of overseas income in China's steel structure industry.

Duowei Union Group is of the first enterprises being approved with the Grade A qualification of general contractor of the housing construction project (steel structure) and being approved as the national prefabricated building base by the Ministry of Housing and Urban-Rural Developement. Duowei has Grade A qualifi cation for construction project (construction industry) designing and special steel structure project designing, Grade A qualification for professional steel structure project contracting, Building Curtain Wall Construction Professional Contracting Qualifi cation Grade II, special-level qualification for steel structure manufacturing and architectural metal roof (wall) designing, as well as qualification for foreign project contracting. Duowei has been awarded the National High-tech Enterprise, Beijing Municipal Enterprise Technology Center, and China's top 10 building steel structure & metal curtain wall sandwich panel industries.

Duowei steel structures and metal claddings have passed the American AISC and FM certification, EU CE and Russian GOST certifications, as well as the ISO9001 quality management system, the ISO14001 environment management system, and the OHSAS18001 occupation health safety management system certification. DUOWEI has involved in the compilation of 30 national and industrial standards and possesses approximately100 state-authorized intellectual property rights.

For years, DUOWEI has succeeded in providing services to well-established companies such as BMW, Samsung Electronics, BOE Technology Group Co., Ltd., CRRC Corporation Limited (CRRC), PetroChina, and Yutong Group, and participated in establishing several major projects, such as National Large-Scale Rocket Project, National Large Aircraft Project, Tianjin Airbus A330 Base, and APEC Conference Center. Led by the central government's "One Belt and One Road" strategy, DUOWEI has carried out many overseas projects, for instance, the industrial park in Ethiopia,the air force hangar in Ghana, the main pavilion of Kazakhstani World Expo, the new three-color project of Venezuela, and Sri Lanka's military barracks etc.

DUOWEI is constantly committed to eco-friendly building steel structures industry, and continuously adding values to customers, and always creating the most valuable steel structure construction system, and making itself a well-respected leader of the industry.

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10.5 Generation TFT-LCD Project of BOE Hefei Display Technology Co., Ltd.
Metal Curtain Wall Sandwich Panel System 170000m²

HIGH-QUALITY PREPAINTED STEEL SHEETS
高品质的彩色涂层钢板

彩色涂层钢板的推荐
Recommendation of prepainted steel sheets

通常我们会为客户推荐与建筑用途、建筑使用年限相匹配的涂层、镀层和基板。
彩色涂层钢板是以热镀锌钢板或镀铝锌钢板为基板经过表面脱脂、磷化、铬酸盐处理后，涂上有机涂料经烘烤而制成的产品。
彩色涂层钢板的常用涂料有聚酯（PE）、硅改性树脂（SMP）、高耐候聚酯（HDP）、氟碳（PVDF）等。
彩涂钢板可分为一般用、结构用，具体牌号有 TDC51D、TS280GD、TS300GD、TS350GD、TS550GD。
涂层构成一般为二涂二烘，正面涂层厚度大于等于 20μm，背面 5-12μm。彩色涂层钢板执行的标准为：中国标准 GB/T12754-2006，美国 ASTM A755（镀锌）、ASTM A792（镀铝锌），欧洲 EN/10169，日本 JIS G3322，韩国 KS D3506。

Usually we would recommend our customers the coating, zinc content, and base plate which match with the usage and service life of buildings.
Color-coated steel sheet are products that using hot dipped galvanizing or galvalume steel plate as substrate after surface degreasing, parkerizing and chromating, baked with organic coatings.
The commonly used coating materials for color-coated steel sheets are PE, SMP, HDP, PVDF etc.
Color-coated steel sheet can be classified as general usage and structural usage steels. The specific grades are TDC51D, TDC52D, TS280GD, TS330GD, TS350GD, TS550GD.
The coating structures usually is twice-baking-after twice-painting coat, with the coating thickness of over 20μm for the outside sheet, and 5-12μm at the back side. The current operative standards of the color-coated steel sheet include: Chinese GB/T 12754-2006, America ASTM A755 (galvanized), ASTM A792 (galvalume), Japan JIS G3322, Europe EN/10169, and South Korea KS D3506.

通常我们会特别关注，彩色涂层钢板的下列性能
We will pay special attention to the following performance of prepainted steel sheets

- 涂层类型和涂层厚度
- 铅笔硬度及光泽度
- T 弯试验及反向冲击性能
- 机械性能（屈服强度、抗拉强度、延伸率）
- 抗腐蚀（盐雾）性能
- 抗褪色、粉化性能
- 抗灰尘粘附性能

- The type and the thickness of coating
- The hardness and glossiness of pencil
- T-bending test and impact test
- Mechanical property (yield stength,tensile strength,elongation)
- Anti-corrosion (salt fog) property
- Anti-fading and anti-pulverability property
- Anti-dust property

彩色涂层钢板面漆涂层分类
Classification of topcoat of color-coated steel sheet

聚酯（PE）
附着力良好，在成型性和室外耐久性方面范围较宽，耐化学药品性能中等。
Nice adhesion property;Wide range of molding and outdoor durability;Medium chemical endurance.

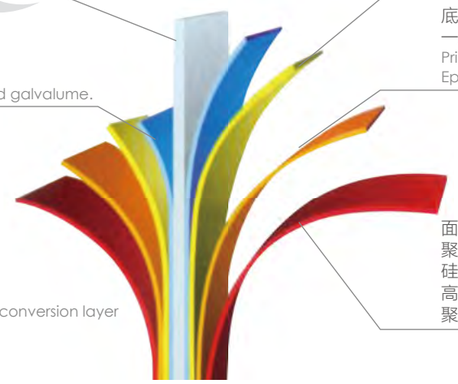
硅改性聚酯（SMP）
涂膜的硬度、耐磨性和耐热性良好，并具有良好的外部耐久性和不粉化性，光泽保持性和柔韧性有限。
Nice coating rigidity, abrasive-resistant and heat-resistant performance, as well as nice exterior durability and anti pulverability; limited gloss retention ability and flexibility.

高耐久性聚酯（HDP）
抗紫外线性能优良，具有很高的耐久性，主要性能介于聚酯和氟碳之间。
Nice uvioresistant ability and excellent durability;Main performance is between PE and PVDF.

聚偏氟乙烯（PVDF）
具有良好的成型性和色彩保持性、优良的室外耐久性和粉化性、抗溶剂性。色彩有限。
Nice molding ability, color stability, outdoor durability, pulverability, and solvent-resistant ability;Limited colors.
以上面漆涂层使用寿命由上至下逐步提升。
The service life of the above paintings is increasing from top to bottom

基板：
主要指标为厚度、屈服强度、延伸率等。
Base plate:
Main indicators are thickness, yield strength, elongation etc.

镀层：
主要有镀锌、镀铝锌。
Coating:
Mainly includes galvanizing and galvalume.



化学转化层：
保证钢板与油漆之间的附着力
Chemical conversion layer:
Ensuring the adhesive force between steel plate and paint

底漆：
一般为环氧树脂
Primer:
Epoxy resin generally

面漆：Finishing coat:
聚酯 PE
硅改性聚酯 SMP
高耐久性聚酯 HDP
聚偏氟乙烯 PVDF

基板 Base plate
镀层 Coating
化学转化层 Chemical conversion layer
底漆 Primer
面漆 Finishing coat

ROOF SYSTEM
现场复合屋面系统

河套酒业工业园
DW-19 金属屋面系统 320000m²
四面企口幕墙夹芯板系统 90000m²
建筑钢结构 20000T

Hetao Liquor Industry Park
DW-19 Metal Roof System 320,000m²
Curtain Wall Sandwich Panel System with All-rounded Groove 90,000m²
Steel Structure of Building 20,000T

DUOWEI®

DW-19 直立锁缝金属屋面系统
DW-19 Standing Seam Metal Roof System

+

VLOCK™ 维罗 ™ 铝镁锰屋面系统
VLOCK™ Al-Mg-Mn Alloy Roof System

+

VFROOF™ 维普 ™ 柔性防水屋面系统
VFROOF™ Flexible Waterproof Roof System

DW-19 STANDING SEAM METAL ROOF SYSTEM

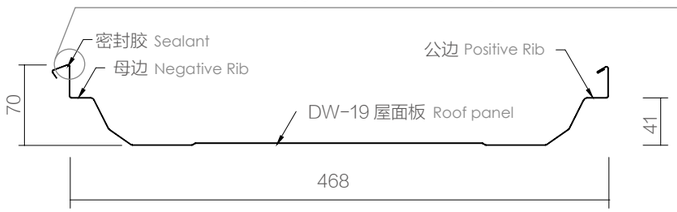
DW-19
直立锁缝金属屋面系统

FM APPROVED

沈阳利源轨道交通装备有限公司
DW-19 金属屋面系统 80000m²
金属幕墙夹芯板系统 95600m²

Shenyang Liyuan Rail Traffic Equipment Co., Ltd.
DW-19 Metal Roof System 80,000m²
Metal Curtain Wall Sandwich Panel System 95,600m²

金属板锁缝预注密封胶技术：
母肋中预注密封胶，极大提升金属屋面气密性与水密性。
Technology of pre-injecting sealant into metal plate standing seam:
Sealant pre-infusing in the ribs,greatly enhance the air tightness and water tightness of metal roof panel.



DW-19 金属屋面板技术参数 Roof panel technical data

有效覆盖宽度（mm）	Effective width	468	
肋高（mm）	Height of major rib	70	
屋面板利用率	Use ratio of roof panel	0.78	
原材料屈服强度（MPa）	Yield strength of raw material	350	
板厚（mm）	Thickness of steel sheet	0.5	0.6
每平米重量 (kg/m²)	Unit weight per square meter	2.355	2.826
截面惯性矩（cm⁴ /m）	Moment of inertia	32.63	39.16
截面抵抗矩（cm³/m）	The sectional resistance moment	6.04	7.25

DUOWEI

防水、保温、抗风揭性能优异的金属屋面系统
Metal roof system with excellent performance in waterproof, heat insulation and wind uplift resistance

多维 DW-19 直立锁缝金属屋面系统，是由多维联合集团创新研发的具有国际领先水平的 360° 直立锁缝金属屋面系统。屋面板通过 360° 锁缝的方式将板与板紧密锁合在一起，采用特制的可滑移支架与屋面檩条连接，同时对檐口、屋脊、山墙、洞口等节点部位进行专项设计，有效地防止了由于温度变化所引起的屋面热胀冷缩变形，从而使该屋面系统具有优异的防水、保温、抗风揭等性能。

多维 DW-19 直立锁缝金属屋面系统，已获得北京市科委“北京市新技术新产品”科技认定，并获得美国 FM 抗风揭认证。

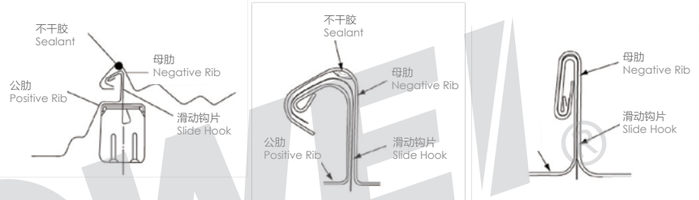
Duowei DW-19 standing seam metal roof system is a 360° standing seam metal roof system researched and developed by Duowei Union Group with leading technology in the world. The roof panels are tightly locked via 360°seam, along with the special sliding clips which are connected with the roof purlin. Besides, with the specialized design for joint connections of the eave, ridge, gable and openings, in order to prevent deformation caused by thermal expansion and contraction, thus the roof system can achieve better performance in terms of waterproof, heat insulation and wind uplift resistance.

Duowei DW-19 metal roof system has been approved with the "Beijing New Technology & Product" certificate from Beijing Municipal Science & Technology Commission and US FM wind uplift resistance accreditation.

01

新型 360° 金属锁缝防水、抗风揭技术
Waterproof and wind uplift resistance technology of New-type 360° metal standing seam

360° 机械锁口过程
360° mechanical locking process



不损伤涂层、镀层的咬合节点示意图
Connection schematic（no damage on coats）

- 锁缝构造 80%由压型设备预先辊压完成，现场锁缝变形量小，提高了锁缝质量、避免损伤防腐涂层。
- 屋面系统无穿透式螺钉连接，大幅提高屋面系统的防水性能及耐久性。
- 独特的公、母肋设计，具有良好的自锁功能，施工安全便捷。
- 母肋预注丁基不干胶，强风下水密性能、气密性能优异，避免积雪融化及雨水漫过屋面板波峰后造成渗漏。
- 360° 锁缝及完善的系统设计，极大增强整体屋面系统的抗风揭性能。
- 多维联合集团创新研制 DW-19 金属屋面板压型专用设备，可压制彩色涂层钢板、不锈钢板，并专项开发 360° 咬口机，确保屋面板加工精度。

- 80% of seam structure is completed via advanced rolling of profiling equipment. Seam deformation at site is small, which improves seam quality and avoids damaging corrosion resistant coating.
- The roof system has no penetrated screw connected which can greatly improve waterproof performance and durability.
- With unique male and female ribs structure, it ensures excellent self-locking, and construction safety and convenience.
- Main rib pre injected butyl adhesive has excellent water tightness and air tightness under strong wind conditions, which can prevent the leakage of rainwater and molten snow after overflowing wave crest of roof panel.
- With 360° standing seam and complete design system, which greatly improves the wind uplift resistance performance of roof system.
- The special DW-19 metal roof panel profiling equipment researched and developed by Duowei can profile color-coated steel sheets, stainless steel plate. Besides, Duowei also specially developed 360° seaming machine to ensure the profiling precision of roof panel.

高风压地区板肋锁缝处增设专用抗风揭夹具，大幅提高抗风性能。
Special wind uplift resistance fixtures are provided for seam of plate ribs in high wind pressure region, which greatly improves wind-resistant performance.

DW-19 STANDING SEAM METAL ROOF SYSTEM

DW-19

直立锁缝金属屋面系统

可靠的滑移能力

Reliable sliding ability

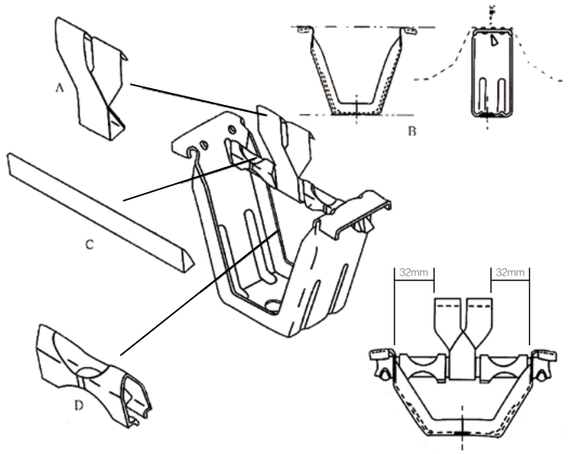
- 有效地防止了由于温度变化所引起的屋面热胀冷缩变形。
- 支座释放热胀冷缩的相对滑移能力达 64mm。
- 屋面可适应温差较大的工程区域。
- 屋面最大单坡可达 66m。

- Effectively prevent deformation from thermal expansion and contraction caused by temperature changes.
- Greatly increase the sliding ability of 64mm under expansion and contraction conditions.
- Roof panel is adaptive to the environment with larger temperature difference.
- Maximum single pitch of roof can reach 66m.

研制专用可滑移支座，特制隐藏式螺钉屋面连接结构，确保屋面热胀冷缩时整体滑动，避免屋面撕裂而漏水。同时，可滑移支座加装隔热块，增强阻断冷桥的功能。

With slidable support and special concealed screw roof connection structure, it can be ensured that roof can slide as a whole during expansion and contraction, so that water leakage caused by roof tearing can be avoided. Meanwhile, the slidable support is provided with a heat-insulating block to strengthen the function of blocking cold bridge.

可滑动标准支座
Sliding standard clip



02

新型可滑动标准支座技术

New sliding standard clip technology

DW-19 金属屋面可滑动标准支座使支座将屋面板与支撑结构安全地连接在一起，同时允许整个屋面随着温度的变化而热胀冷缩。

DW-19 metal roof sliding standard clip safely connects the clip and roof panel with bearing structure. Meanwhile, it allows the whole roof to expand and contract along with temperature variation.

A 高强 304 不锈钢制造的滑动连接片套在三角形金属杆上，以避免与连接件底座分离。为保证防水性能，滑动连接片紧紧地折叠在屋面板锁缝中。

A: Slip sheet made of high-strength 304 stainless steel is set on triangular metal bar to avoid separating from roof clamp. To ensure waterproof performance, the thin stainless steel materials are tightly folded in abutted seam.

DW-19 STANDING SEAM METAL ROOF SYSTEM

DW-19
直立锁缝金属屋面系统

B 连接件底座以带有增强凹槽的 Q345 低合金高强钢设计而成。屋面板安全地放置在扼夹的平面上，支撑架被折弯，而且每一边都是光滑的，以消除磨损并允许平滑运动。

C 一个特殊的三角形金属杆使滑动连接片可以轻松地滑动，一个薄薄的镀铬涂层为金属划片的移动提供了一个光洁润滑的表面。金属杆被固定在连接件底座的上部（在屋面板下 3mm 处），减小屋面板运动时的摩擦力。

D 自动中心定位的塑料卡片使滑动连接片完美地定位于连接件底座的中央。当整个屋面板开始移动时，塑料卡片将被挤脱，使金属连接片和屋面板能够在 64mm 长度上移动，使屋面最大单坡可达 66m 而不需要设置伸缩缝，从而确保屋面系统在热胀冷缩两种工况下均能有效滑动。

DW-19 金属屋面可滑动标准支座
DW-19 Metal roof sliding standard clip

B: The connector base is designed with a Q345 low-alloy high-strength steel with enhanced grooves. Roof panel is safely placed on clamp panel, and the support frame is bent and each edge is smooth so as to eliminate abrasion and allow smooth movement. On plane, support is bent, but each edge is smooth, so that abrasion can be eliminated and smooth movement is allowed.

C: A special triangular metal bar that allows sheet metal to slide easily. A thin chromium plating coating can provide a bright and lubricant surface for metal scribing. Metal bar is placed on the top of roof clamp (3mm below roof) to eliminate the adhesive effect during the movement of roof.

D: Automatic center-positioned plastic card make the sheet metal precisely position in the middle of roof clamp. When the whole roof panel moves, plastic card will be crushed, so that metal clip and roof can move within the length of 64mm, which makes the maximum single pitch of roof reach 66m without expansion joint provided. In this way, it can be ensured that roof system can effectively slide under expansion and contraction conditions.

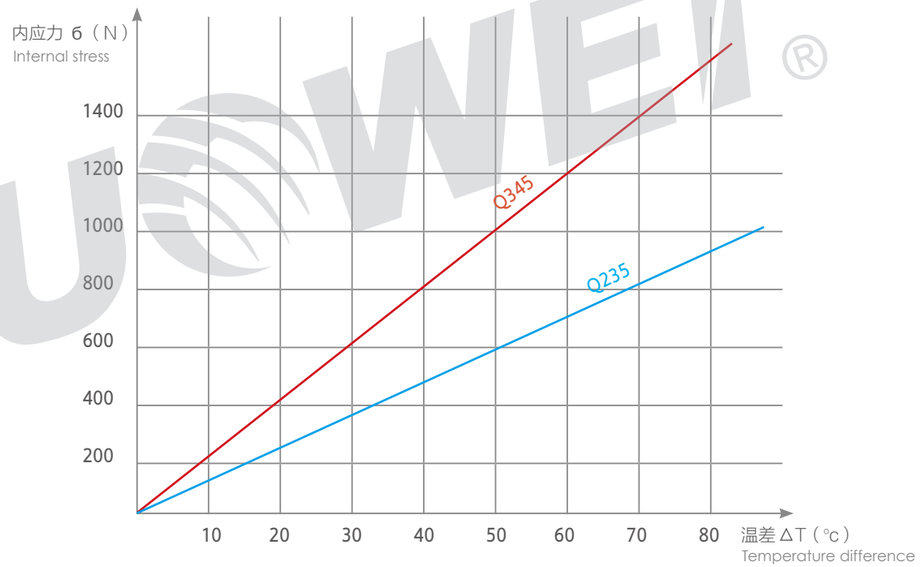
屋面系统的热胀冷缩
Roofing system of thermal expansion and contraction

屋面在当地最高气温或最低气温与安装时的温差作用下，会产生热胀冷缩。
热胀冷缩量△ L 的计算公式 △ L=α • △ T•L
公式中：
α=1.2×10^{-5}/℃ 屋面板的线膨胀系数
△ L=32mm 滑动支座每侧滑动量 32mm
△ T=40℃ 屋面板可能遇到的温差℃
L 屋面板长 m
L= △ L/(α • △ T)=32/(1.2×10^{-5}×40)=66m

The roof will have thermal expansion and contraction during installation under local maximum temperature and minimum temperature.
Degree of thermal expansion and contraction
△ L=α• △ T•L
Wherein:
α =1.2×10^{-5}/℃ the coefficient of linear expansion of the roof plate
△ L=32mm the MAX. displacement of the panel clip for each side
△ T=40℃ the temperature difference the roof panel may encounter
L Roof plate length, m
L= △ L/(α • △ T)=32/(1.2×10^{-5}×40)=66m

在材料相同时，内应力与温差成线性关系
热胀冷缩时，屋面板在被固定处会产生内应力
б=α • △ T•E
公式中：
E= 屋面板的弹性模量

When the material is the same, the internal stress is linearly related to the temperature difference
When thermal expansion and contraction occur, the internal stress (б=α • △ T•E) will occur at fixing points of the roof plate.
Wherein:
E= elasticity modulus of roof plate



DW-19 STANDING SEAM METAL ROOF SYSTEM

DW-19
直立锁缝金属屋面系统

- 屋面板间立缝处、女儿墙内板处，创新设计高耐候橡胶堵头 + 通长密封胶带的多重防水结构，杜绝了不锈钢天沟水满溢后倒灌漏水。
- 檐口设置抗风加强铝压条，屋面边缘区域做抗风加强，提高了屋面系统的抗风性能。

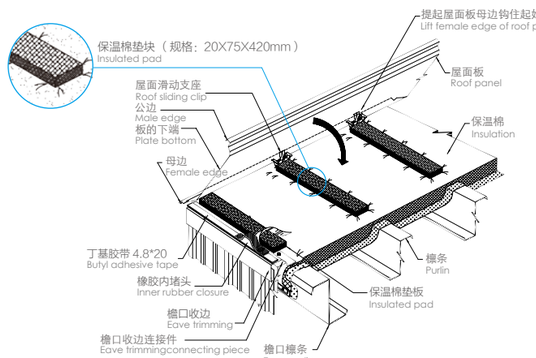
- Highly weatherproof sealing closure + continuous butyl adhesive tape multiple waterproof structure are designed for standing seam of roof panels and internal plate of parapet, which eradicates leakage of water in stainless steel gutter caused by flowing backward after spillover.
- Eave is provided with wind-resistant strengthened aluminium batten, and wind-resistant performance of roof edge is also strengthened to improve wind-resistant performance of roof system.

03 防冷桥技术：针对极寒、严寒地区的专项设计
Anti-cold bridge technology: specially designed for extremely cold and severely cold regions

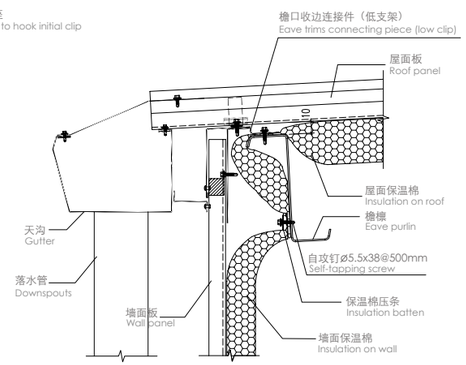
“冷桥”是指建筑围护结构的某些部位没有被保温材料覆盖，檐口山墙与屋面保温棉不连续，或保温棉被压缩而使保温性能降低，或保温棉覆盖的数量、质量不能满足热工要求，造成“短路”，致使该部位低于露点温度而产生的结露。

冷桥的直接后果，是造成该部位热损失，导致建筑物的整体保温性能下降。

"Cold bridge" indicates that certain parts of building cladding structure is not covered by thermal insulation materials, eave gable and insulated cotton of roof are not continuous, or thermal insulation performance is reduced because insulated cotton is compressed, or the quantity and quality of covered insulated cotton can not meet thermotechnical requirements, which cause "short circuit" thereby and moisture condensation due to the temperature of the part lower than dew point temperature.
The direct consequence of cold bridge is heat loss of the part, which leads to overall thermal insulation performance reduction of building.

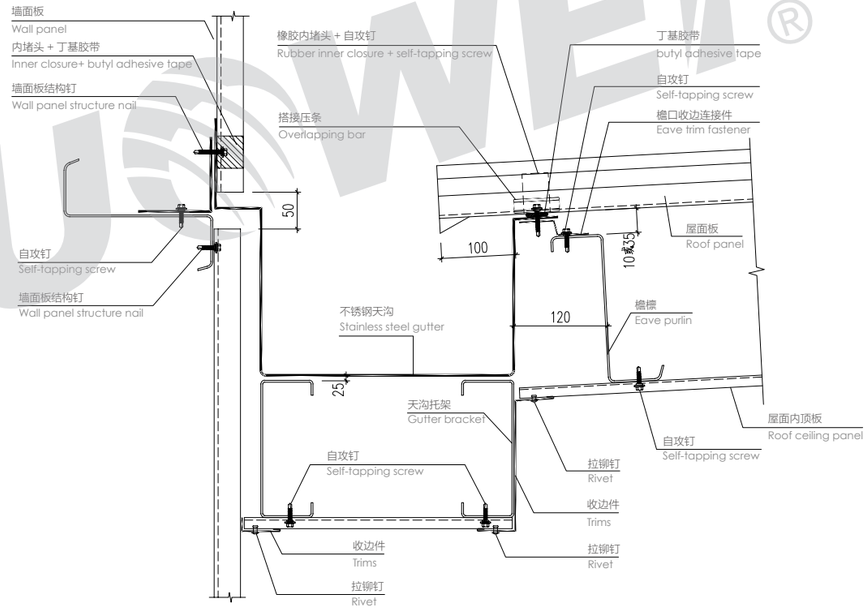


极寒区域屋面防冷桥做法
Practice of roof anti-cold bridge in extremely cold area



严寒区域屋面防冷桥做法
Practice of roof anti-cold bridge in severely cold area

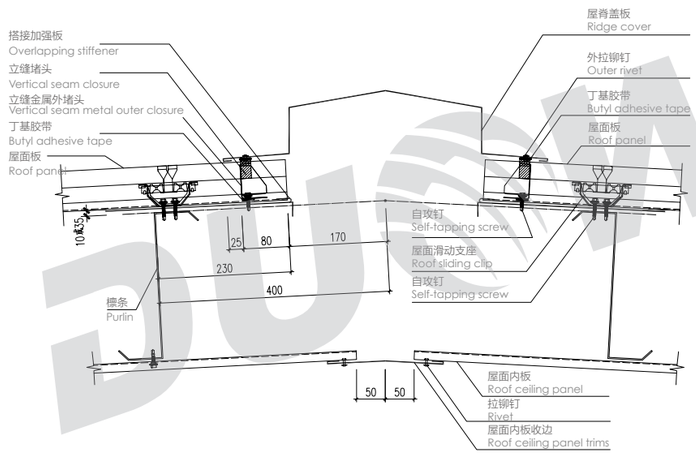
04 檐口：新型构造式防水抗风揭技术
Eave: New-structure waterproof and wind uplift resistance technology



DW-19 STANDING SEAM METAL ROOF SYSTEM

DW-19

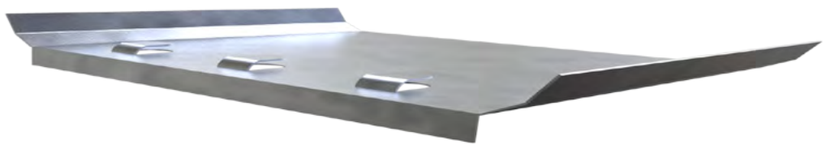
直立锁缝金属屋面系统



- 屋脊两侧屋面板位置设置加强板，避免了检修人员踩踏屋面时，造成屋脊处漏水，提高了建筑边缘区域的抗风性能；
- 双重防水构造，研制专用闭孔防水堵头等措施做闭合式防水处理，解决了国标图集中屋脊盖板纵向搭接处，由于局部无防水密封故存在漏水的隐患。
- Roof panel on both sides of ridge are provided with reinforcing plate to avoid the hazards of water leakage of ridge when maintenance personnel tread on roof and improves the wind-resistant performance of building edge zone;
- With double waterproof structure and special waterproof closure are taken for enclosed waterproof treatment, which solves the problem of hazards of water leakage of ridge cover plate at longitudinal overlapping position due to the lack of waterproof seal at local as specified in national standard atlas.

05 屋脊：新型构造式防水技术

Ridge: New-structure waterproof technology

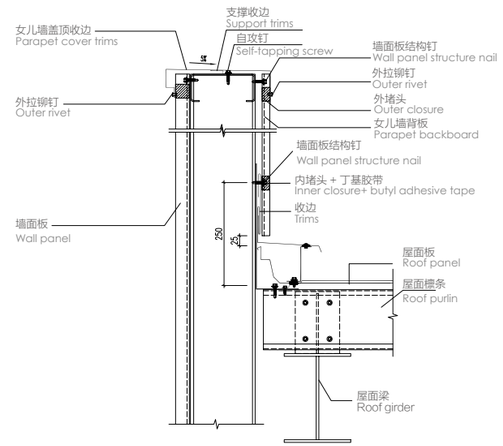


屋脊及采光板搭接处加强板

Reinforcing Plate at the Overlapping Position of Ridge and Daylighting Panels

06 山墙（带女儿墙）：新型构造式防水及抗风揭技术

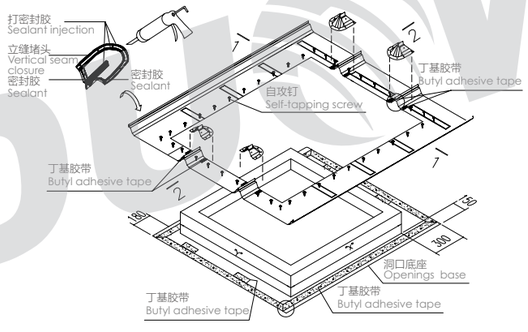
Gable (with parapet):New-structure waterproof and wind uplift resistance technology

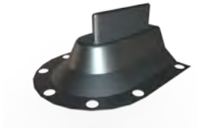


- 新型山墙节点可随屋面整体滑移，创新设计女儿墙处防积雪融化、毛细渗漏、并可随屋面热胀冷缩整体滑动的等压原理构造，该节点不会因温度变化而破坏防水结构；
- 提高山墙作为屋面边缘带的抗风揭性能；
- 泛水板可承受风吸力，构造的“等压腔”避免了毛细渗水现象。
- The new gable joint can slide as a whole along roof. With the innovative design of isobaric principle structure that prevents snow melting and capillary leakage of parapet and can slide as a whole along with the expansion and contraction of roof, waterproof structure will not be damaged by nodes due to temperature variation;
- Wind uplift resistance performance of gable as marginal zone of roof can be improved;
- Flashing can bear wind suction, and the "isobaric cavity" of the structure can avoid capillary water seepage.

07 洞口：新型防水保温抗风揭一体式洞口系统

Openings : New-type waterproof insulated and wind uplift resistance integrated hole system





洞口抗风揭导水专用加强堵头

Special Wind-uplift-resistance Water-diversion Reinforcing Plate Closure for Holes

- 创新设计一体型洞口底座，通过新型滑动连接片滑动连接洞口底座与屋面檩条，使屋面风机洞口与屋面系统一起整体滑动，同时也保证了其抗风性能。
- 设计屋面洞口底座内保温构造方式及研究屋面洞口底座与屋面板交接处构造方式，解决现行国家标准规范图集做法中洞口底座与屋面板之间的连接处易出现漏水现象、易出现冷桥现象以及相互之间的整体联动性较差的问题。
- With the innovative design of integrated hole base, the new sliding connection piece can be slided to connect hole base and roof purlin, so that roof draught fan and roof system can slide as a whole, meanwhile, its wind-resistant performance is also ensued.
- Thermal insulation structure method in roof hole base shall be designed and structural method for the joint of roof hole base and roof panel shall be researched to solve the problem of water leakage, cold bridge effect at the connecting position of hole base and roof panel and poor mutual overall correlation as specified in existing national standard specification atlas.

DW-19 STANDING SEAM METAL ROOF SYSTEM

DW-19

直立锁缝金属屋面系统

美国 FM 认证证书

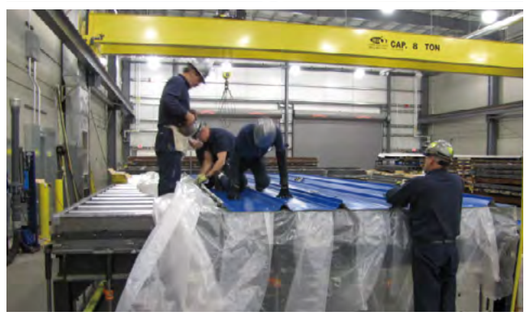
American FM Authentication Certificate

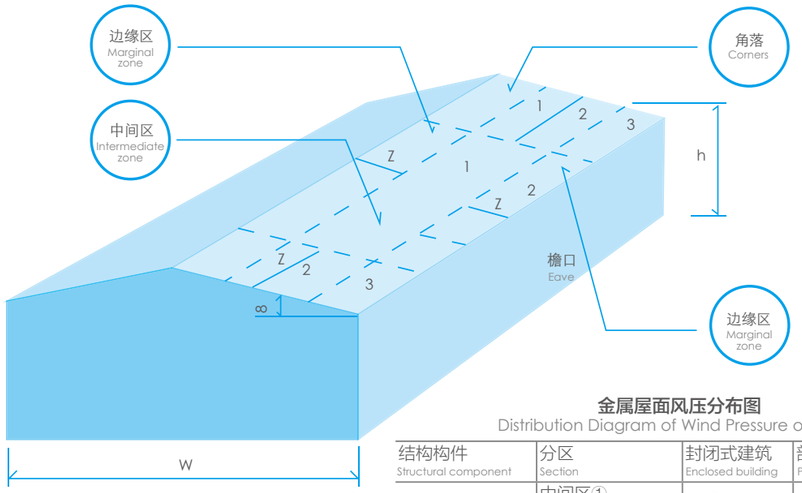
DW-19 北京市新产品证书

DW-19 Beijing New Product Certificate

08 DW-19 金属屋面系统通过了美国 FM 机构严格的抗风揭性能实验

DW-19 Metal roof system has passed the strict wind uplift resistance test by American FM institution.

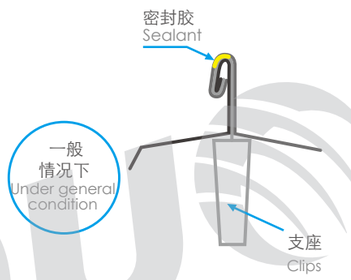


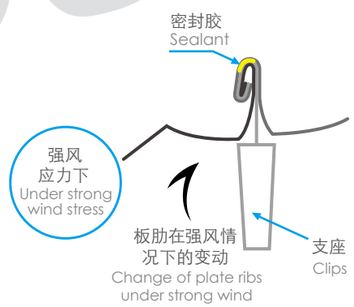


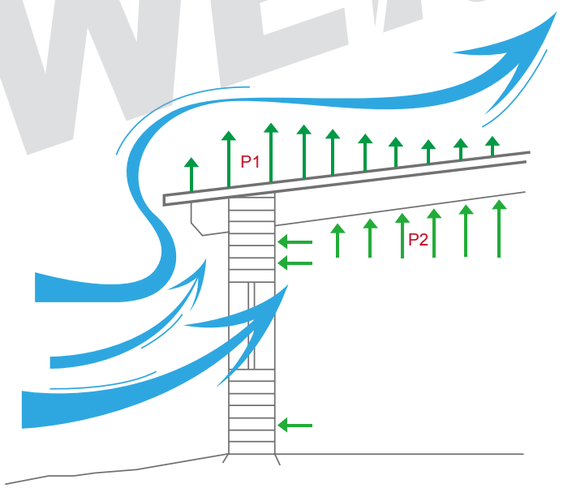
金属屋面风压分布图

Distribution Diagram of Wind Pressure on Roof

结构构件 Structural component	分区 Section	封闭式建筑 Enclosed building	部分封闭式建筑 Partial enclosed buildings
屋面板和紧固件（A1 ≤ 1m2） Roof panel and fasteners	中间区① Intermediate zone	-1.3	-1.7
	边缘带② Marginal zone	-1.7	-2.1
	角　部③ Corners	-2.9	-3.3
墙板和紧固件（A1 ≤ 1m2） Wall panels and fasteners	中间区④ Intermediate zone	-1.2	-1.6
		+1.2	+1.3
	边缘带⑤ Marginal zone	-1.4	-1.8
		+1.2	+1.3







DW-19 STANDING SEAM METAL ROOF SYSTEM

DW-19

直立锁缝金属屋面系统

屋面中区、边区、角区风暴等级表

Storm classification of center,side and corner areas of roofs

屋面中区的风暴等级 Storm levelin roof middle area	屋面边区最小风暴等级 Minimum storm levelin roof border area	屋面角区最小风暴等级 Minimum storm scale in roof corner area
1—60	1—90	1—135
1—75	1—105	1—165
1—90	1—135	1—195
1—105	1—150	1—225
1—120	1—180	1—255
1—135	1—195	1—285

风级、风速、风压对照表

Comparison of wind class,speed and pressure

风级 Wind scale	名称 Name	风速 Wind Speed		风压 Wind PressureWO=V²/16	陆地地面物体征象 Land Symptom	海面状态 Sea State
		Km/h	m/s	Kn/m²		
6	强风 Fresh gale	39—49	10.8—13.8	0.07—0.12	小树枝摇动，电线呼呼响 The tree branches shake and the wires whirs	大浪 Rough sea
7	疾风 Moderate wind	50—61	13.9—17.1	0.12—0.18	全树摇动，迎风步行不便 The whole tree shakes and walking windward is unconformable	巨浪 Very rough sea
8	大风 High wind	62—74	17.2—20.7	0.18—0.27	微枝折毁，人向前行阻力甚大 Twigs are broken off and walking forward is a little more difficult	狂浪 High sea
9	烈风 Strong wind	75—88	20.8—24.4	0.27—0.37	建筑物有小损 The building suffers minor damage	狂涛 High sea
10	狂风 Fierce wind	89—102	24.5—28.4	0.37—0.50	可拔起树来，损坏建筑物 The tree is uprooted and building is damaged.	狂涛 High sea
11	暴风 Storm	103—117	28.5—32.6	0.50—0.66	陆上少见，有则必有广泛破坏 It is rare on land and once occurs, there is widespread destruction	狂涛 High sea
12	飓风 Hurricane	> 117	32.7—36.9	0.66—0.85	陆上极少见，摧毁力极大 It is extremely rare on land and extremely destructive	海浪滔天 Dreadful foaming billows
13		> 133	37.0—41.4	0.85—1.07		
14		> 149	41.5—46.1	1.07—1.33		
15		> 166	46.2—50.9	1.33—1.62		
16		> 184	51.0—56.0	1.62—1.96		
17		> 200	56.1—61.2	1.96—2.34		

屋面中区、边区、角区划分图

Definition to center,side and corner area

檐口 Eave

	角区 Corner	边区 Side	角区 Corner
屋脊 Ridge	边区 Side	中区 Center	边区 Side
	边区 Side	中区 Center	边区 Side
	角区 Corner	边区 Side	角区 Corner

美国 FM 屋面抗风拔力等级与风压对照表

Comparison of wind uplife load to wind pressure from FM America

FM 抗风拔力等级 FM wind resistant pulling force rating	风压 Wind pressure	角区 Corner
	磅 / 呎 ² (psf)	千牛 / 米 ² (Kn/m²)
FM1—60	60	2.87
FM1—75	75	3.59
FM1—90	90	4.31

09

现场压型：移动式升降高空压型技术

On-site profiling:Mobile lifting profiling technology

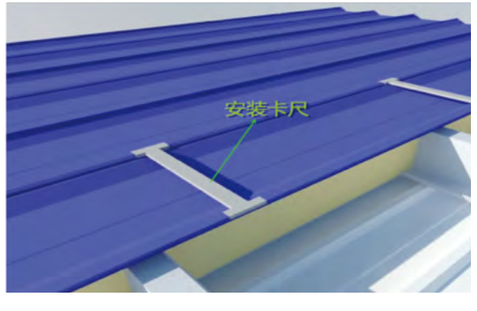
生产效率高，施工速度快，确保工期。可以自动上卷、移卷，遥控操作。减少二次倒运，避免漆膜破坏，最大限度确保成品质量。

High production efficiency, rapid construction speed, guaranteed construction period. Automatic decoiling, moving coils, and remote operation Minimize secondary reshipment, avoid film damage and ensure the quality of finished product to greatest extent.

10

现场安装：现场安装精度控制技术

On-site installation: On-site installation precision control technology



专用屋面精度控制的标准安装卡具，确保屋面安装精细度。

Standard installation fixture of roof precision control ensures the installation precision of roof.

VLOCK™ AL-MG-MN ALLOY ROOF SYSTEM
VLOCK™ 维罗 ™ 铝镁锰屋面系统

VLOCK™ 铝镁锰板屋面特点
VLOCK™ Al-Mg-Mn roof system characteristic

先进的直立锁边连接方式，无螺钉穿透，65mm 肋高，确保极其优良的密水性能及防雨雪渗漏能力
Advanced standing seam connection mode, no screw drilled and 65mm rib height ,ensure excellent watertight performance and rain and snow leakage prevention ability.

先进的构造设计，提供了出色的抗风性能
The advanced structural design to realize excellent wind resistance

可根据项目需要提供现场压型，避免板的端部搭接
On-site roll forming is provided according to the project demand to avoid lapped ends of panel.

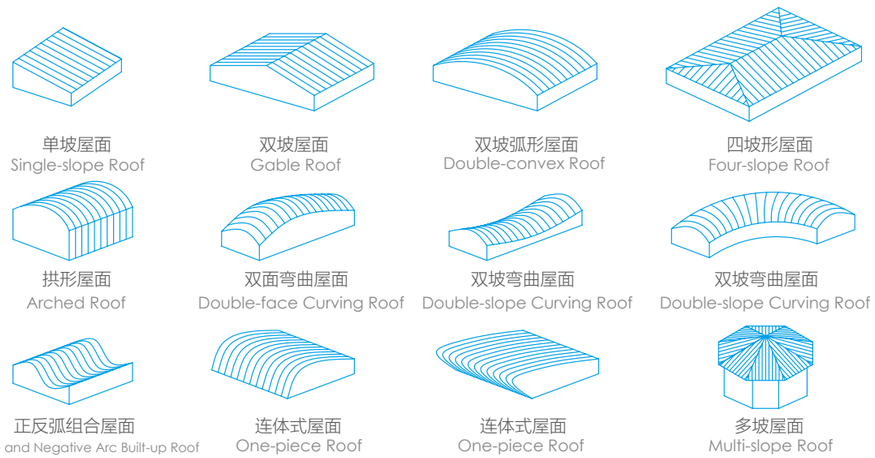
提供弧形板、扇形板和多种板宽的选择，满足各种富有挑战性的设计方案
Curving panel, taper panel and various panel widths for choosing can satisfy all kinds of challenging design plan.

可选择铝锰镁板、镀铝锌钢板、不锈钢板及铜板等多种金属材料
Al-Mg-Mn panel, Zinclume coated steel panel, stainless steel panel, copper panel and other metal materials to choose from.

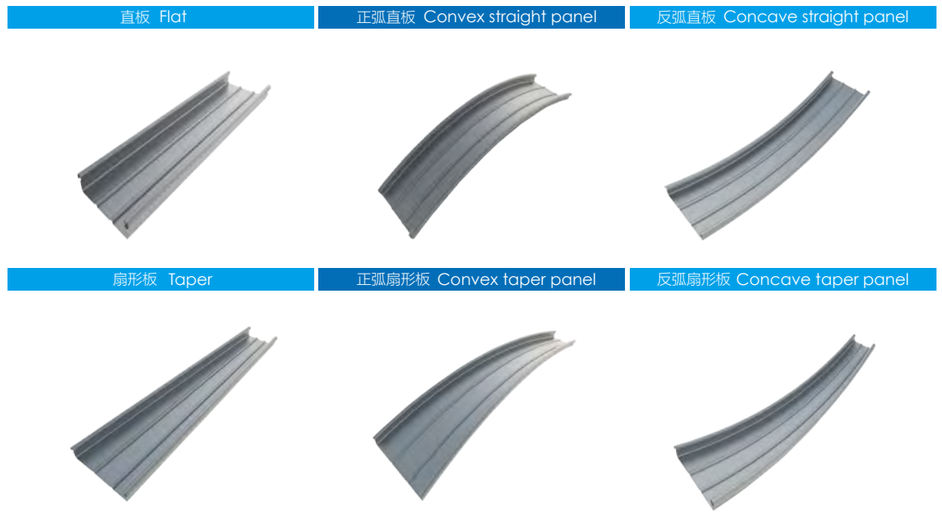
独特的 T 码固定座设计，有效适应各种大跨度屋面温度的变形要求
Unique T-type clip design can be effectively adapted to the deformation caused by all kinds of long span roof thermal expansion.

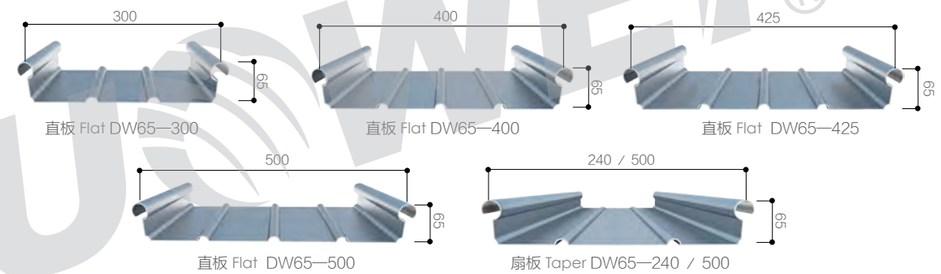
丰富的屋面配套系统，其中包括挡雪系统、防坠落系统、装饰板系统等
Abundant roof supporting system, including snow guard system, fall arrest system, decorating panel system and so on.

VLOCK™ 可实现的屋面造型
VLOCK™ Realizable roof shape



VLOCK™ 可实现的各种板型
VLOCK™ Realizable profiles





综合参数 Parameter

合金牌号 Alloy grade	3004, 5052, 5754, 3003
表面处理 Surface treatment	PVDF
合金状态 Alloy status	H24/H42/H44/H46
铝板厚度（mm）Thickness of the aluminium plate	0.9/1.0/1.2
板型覆盖宽度（mm）Plate covering thickness	平直形 Flat 300/400/425/500
	扇形 Taper 240-500
建议最小屋面坡度 Recommended minimium roof pitch	2.5%

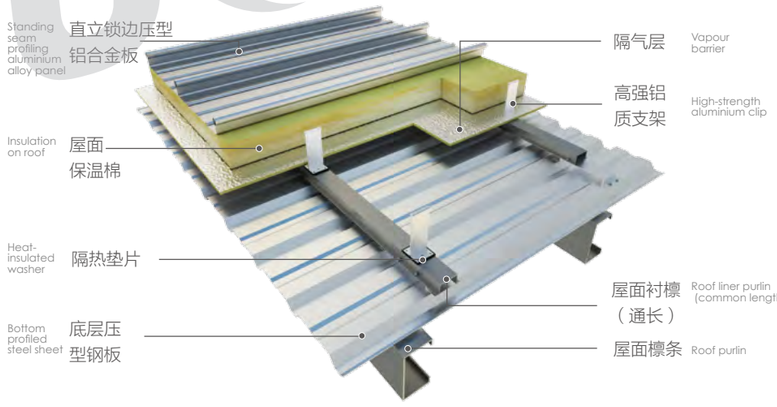
VLOCK™ AL-MG-MN ALLOY ROOF SYSTEM
VLOCK™ 维罗 ™ 铝镁锰屋面系统

VLOCK™ 屋面典型构造
Typical structure of roof panel

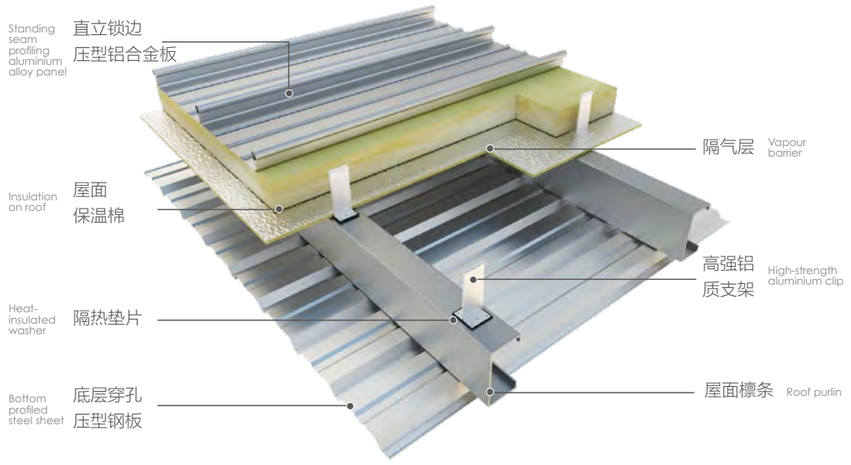
VLOCK 屋面系统可以广泛适用于公共建筑及高端工业厂房项目中，根据设计师和客户的需求，可以对 VLOCK 屋面系统的保温、隔音、降噪、通风进行深化设计，以使屋面构造具有不同的适用性。以下是常用标准构造效果图。
VLOCK roof system is widely applicable to public buildings and high-end industrial plant project. According to the demands of designer and customer, detailing design can be carried out for thermal insulation, sound insulation, noise reduction and ventilation, to ensure the roof structure can be used in different conditions. Common standard structural effect pictures are as follows.

VLOCK™ 屋面系统附加装饰板的标准构造
Standard structure of additional decorative panel of VLOCK™ Roof System

檩条明露型
Purlin-exposed type

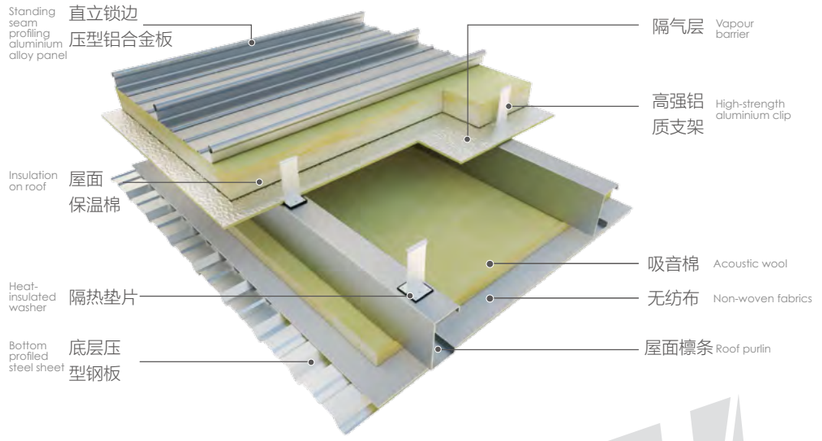


檩条暗藏型
Purlin-concealed type

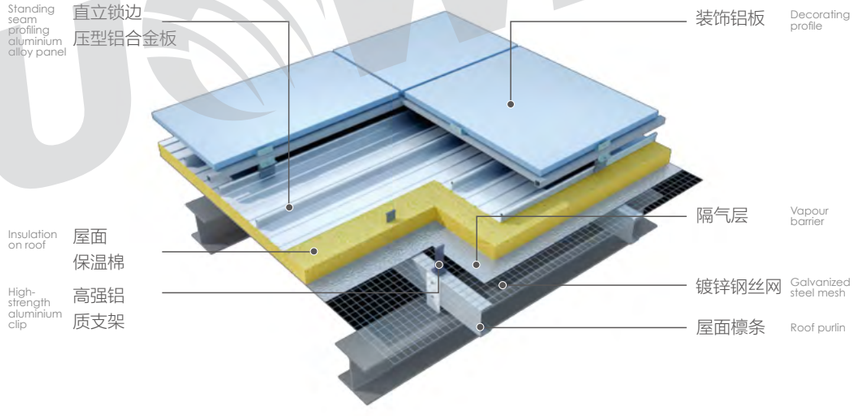


Standard structure of additional decorative panel of VLOCK™ Roof System

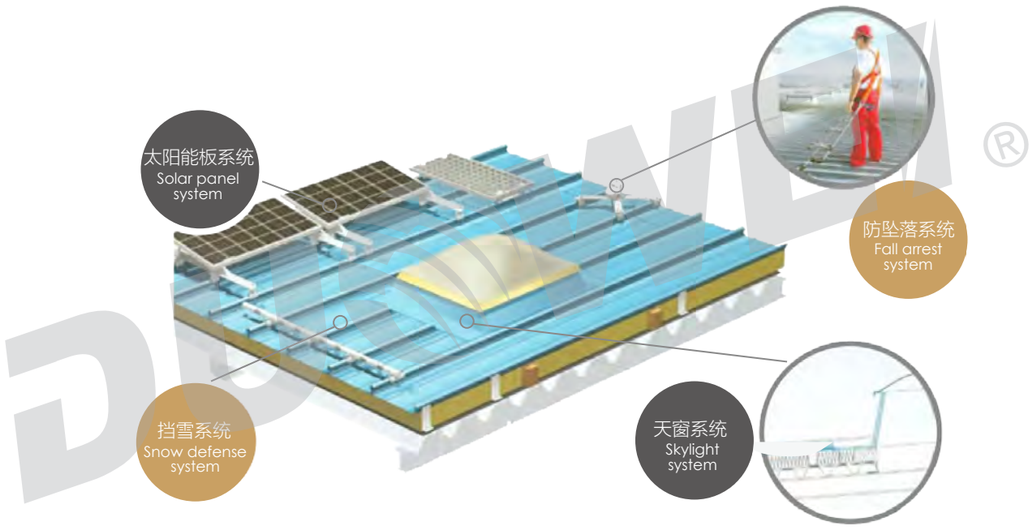
降噪吸音型
Noise-reduction and sound-absorption type



装饰板型
Decorating profile



VLOCK™ AL-MG-MN ALLOY ROOF SYSTEM
VLOCK™ 维罗 ™ 铝镁锰屋面系统



中国传媒大学游泳馆
铝镁锰屋面系统 9600m²

Indoor Pool of Communication University of China
Al-Mg-Mn Alloy roof system 9600m²

盘锦体育中心
铝镁锰屋面系统 18320m²
装配式钢筋桁架楼承板 6380m²

Panjin Sports Center
Aluminum-magnesium-manganese roof system 18,320m²
Fabricated steel bar truss deck support plate 6,380m²

VFROOF™ FLEXIBLE WATERPROOF ROOF SYSTEM

VFROOF™ 维普 ™ 柔性防水屋面系统

标准构造

Standard engineer of flexible waterproof roof

防水卷材：EPDM、PVC 、TPO 防水卷材

保温层：保温岩棉，厚度根据计算确定

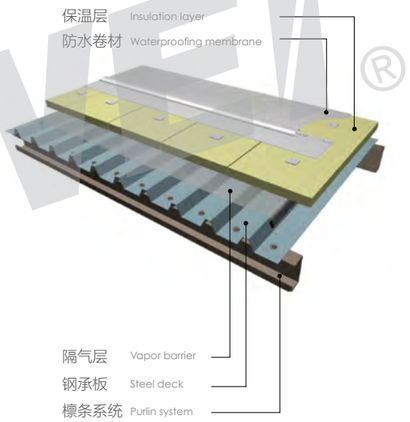
容重大于等于 180kg/m³

隔汽层：0.3mm 厚 PE 隔汽膜

钢承板：一般采用镀锌、镀铝锌、彩色涂层钢板

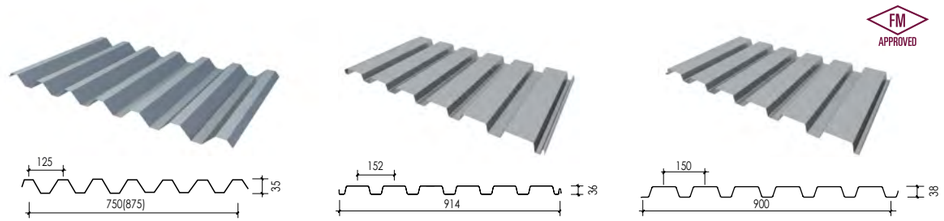
檩 条：镀锌 C 型或 Z 型檩条

Waterproofing membrane:EPDM、PVC or TPO
Insulation layer: insulation rockwool, with thickness to be determined by calculation and density not less than 180kg/m³
Vapor barrier: 0.3mm-thick PE vapor-barrier film
Steel deck:In general, galvanized, galvalume and painted steel sheet
Purlin system: C-type or Z-type galvanized purlins



配套钢衬板板型

Corrugated sheet profile (Roof Deck)



DW35-125-750　　DW-914　　D36

热风焊接 防水性能优异 — Hot air welding Excellent waterproofness

屋面细部节点 处理简单可靠 — Simple and reliable roof joint detail processing

抗风揭性能可靠 — Excellent wind-uplifting capacity

保温连续性好 无冷桥 无结露隐患 — Good continuity in thermal insulation, and wihtout cold bridge/ condensation problem

施工工艺简洁 质量容易控制 — Concise construction technology and easy quality control

分类以及特点

Classification and characteristics

EPDM 材料组成：

三元乙丙橡胶卷材是以乙烯、丙烯和二烯烃三种单体共聚合成的三元乙丙橡胶为主体，掺入适量的添加剂，经多道工序加工制成。

EPDM 材料特性：

三元乙丙橡胶具有无与伦比的抗臭氧、抗紫外辐射、以及抗老化的性能，即使是在 -45° C 依然能够保持相当高的弹性，延伸能够超过 300% 。

PVC 材料组成：

PVC 是一种以优质柔韧的聚烯烃（FPO）为基料、包含稳定剂、玻璃纤维织物内增强型、背复无纺布的多层合成的屋面防水材料。

PVC 材料特性：

可热风焊接、抗紫外线的屋面卷材，可在全球各种气候条件下使用，卷材内含玻璃纤维加强筋，提高了卷材的稳定性。

TPO 材料组成：

TPO 是热塑性聚烯烃卷材，由聚丙烯和乙丙橡胶组成，兼具了乙丙橡胶的耐候、耐老化性能和聚丙烯的可焊接性能。

TPO 材料特性：

可热风焊接、抗紫外线、具有出色的耐候性和搭接强度的屋面卷材。内含加强层，使卷材不易变形。

Composition of EPDM material:
Taking ethylene propylene terpolymer copolymerized by three monomers of ethylene, propylene and dienes as its main part, ethylene-propylene-diene monomer coil material, into which moderate additives are mixed, is made through many processing procedures.

EPDM material characteristics:
Due to incomparable ozone-resistant, ultraviolet-radiation-resistant and ageing-resistant properties of ethylene-propylene-diene monomer, EPDM material can still keep very high resilience and over300% extension even under the condition of -45°C temperature.

Composition of PVC material:
Taking high-quality flexible polyolefin (PO) as its base material and coated with non-woven fabrics, PVC is a kind of multi-layer composite roof waterproof material containing stabilizer and interior enhancement mode glass cloth.

PVC material characteristics:
Hot-gas welding and uvioresistant roofing coil material. Can be used under various climate conditions around the world. The glass fiber reinforcing ribs contained in the coil material improve the stability of the coil material.

Composition of TPO material:
Composed of polypropylene and ethylene propylene rubber, TPO, a kind of thermal-plastic polyolefin coil material, has both weather-resistant and ageing-resistant properties of ethylene propylene rubber and welding property of polypropylene.

TPO material characteristics:
Hot-gas welding and uvioresistant roofing coil material with excellent weather-resistance and lap strength. The contained enhancement layer makes it hard to be deformed.

柔性防水卷材的主要技术参数：Main technical parameters of flexible waterproof coiled material:

	TPO	PVC	EPDM
厚度 Thickness	1.2、1.5、1.8mm	1.5mm	1.14、1.15、1.52mm
宽度 Width	1.5—2.0m	2.0m	最大 Maximum 15*61m
接缝抗撕裂强度 Tearing resistance strength of seams	>=400/400N	>=300N/50mm	
拉伸强度 Tensile strength	纵向 Longitudinal：>=600N/50mm	纵向 Longitudinal：>=800N/50mm	
	纵向 Longitudinal：>=600MPa	纵向 Longitudinal：>=800MPa	10N/mm²
伸长率 Elongation	纵向 Longitudinal：>=50%	纵向 Longitudinal：>=50%	
	纵向 Longitudinal：>=20%	纵向 Longitudinal：>=20%	350-400%
抗紫外线性能 Uvioresistant property	通过 Passed	通过 Passed（>5000h）	耐久性 Durability

SANDWICH PANEL SYSTEM
工厂复合夹芯板系统

屋（墙）面夹芯板编号规则说明：
Coding rules for roof (wall) sandwich panel:

屋面夹芯板编号规则：
Coding rules for roof sandwich panels:

DW — PW/CW/PUW — I/II

- DUOWEI 品牌
- PW 聚氨酯封边屋面夹芯板
- CW 纯岩棉 / 玻璃棉屋面夹芯板
- PUW 聚氨酯屋面夹芯板
- I 型
- II 型

墙面夹芯板编号规则：
Coding rules for wall sandwich panels:

DW — PM/CM/CA/PA/PQ/CQ/PUM/PUA/LK — I/II

- DUOWEI 品牌
- PM 聚氨酯封边明钉夹芯板
- CM 纯岩棉 / 玻璃棉明钉夹芯板
- CA 纯岩棉 / 玻璃棉暗钉夹芯板
- PA 聚氨酯封边暗钉夹芯板
- PQ 聚氨酯封边四面企口夹芯板
- CQ 纯岩棉 / 玻璃棉四面企口夹芯板
- PUM 聚氨酯明钉夹芯板
- PUA 聚氨酯暗钉夹芯板
- LK 冷库夹芯板
- I 型
- II 型

编码说明：
Coding rules:

- GW （Glasswool）— 玻璃棉
- RW （Rockwool）— 岩棉
- C （Pure rockwool/ Glasswool）— 全岩棉 / 玻璃棉芯材
- PU （Polyurethane）— 聚氨酯
- P （Sealed with PU）— 聚氨酯封边
- A （Secret fastened）— 暗钉
- M （Through fastened）— 明钉
- Q （Our-side-tongue-and-groove）— 四面企口
- W （Roof）— 屋面

板面效果：
Plate Effect:

- F （Flat）— 纯平
- S （Square wave）— 方波
- E （Embossed）— 浮雕
- R （Ripple）— 水波纹
- WC （Wave concaved）— 水波纹中凹
- V8 （V8 small wave）— V8 小波纹
- BW （Big wave）— 大波浪

DUOWEI®

VGOO® 维固 ® 金属幕墙夹芯板系统
VGOO® Metal Curtain Wall Sandwich Panel System
+
VWALL® 维科 ® 金属幕墙夹芯板系统
VWALL® Metal Curtain Wall Sandwich Panel System
+
VPOLYMER® 维聚 ® 金属幕墙夹芯板系统
VPOLYMER® Metal Curtain Wall Sandwich Panel System
+
金属幕墙夹芯板系统技术要点
Main Technical Points
+
VCOOL® 维酷 ® 冷库板系统
VCOOL® Cold Storage Sandwich Panel System
+
VCLEAN™ 维洁 ™ 洁净板系统
VCLEAN™ Clean Sandwich Panel System
+
VROOF™ 维屋 ™ 金属屋面夹芯板系统
VROOF™ Metal Roof Sandwich Panel System

VGOO®METAL CURTAIN WALL SANDWICH PANEL SYSTEM

VGOO® 维固 ® 金属幕墙夹芯板系统

国家重点新产品项目 (2012GA00061) 北京市高新技术成果转化项目

High-tech Achievement Transformation Project of Beijing, National Key New Product Project(2012 GA00061)

维固® 板 VGOO® -PANEL

金属幕墙夹芯板（岩棉 / 玻璃棉芯材）

Metal curtain wall sandwich panel(rockwool / glasswool)

多维新型防火岩棉 / 玻璃棉夹芯板是选用两层高品质的彩色涂层钢板或其它精密压型的金属板材做面板，辊压成型后，将分条后的岩棉 / 玻璃棉 90 度翻转（使其纤维垂直于上下两层钢板），通过高强度的、高粘结力的、高防火的粘结剂，将优质岩棉 / 玻璃棉与金属面板强力粘接，复合而成美观、平整、刚韧的建筑板材。成型后的板材具有优良的防火、保温、环保等特点，为工业建筑围护系统提供了一个绝佳的选择。

DUOWEI new model fireproof rockwool/glasswool sandwich panel is recombined into a beautiful, flat, and tough building board by choosing two layers of high-quality color coated steel sheets or other precisely profiled metal sheets as its faceplates, rotating the stripped rockwool/glasswool 90 degrees after roll forming (make the fibers vertical to the upper and lower steel sheets) and strongly binding high-quality rockwool/glasswool with the metal faceplates using high-strength, high-adhesion, high-fire-prevention binder. Excellent fire-prevention, thermal insulation, environment protection and other characteristics of the formed boards provide a best choice for industrial building envelope system.

新型岩棉 / 玻璃棉优点：

Advantages of new model rockwool/glasswool:

- 具不燃性，防火性能 A 级
- 憎水性能优越，耐老化
- 保温性能优越
- 吸音降噪
- 可生物降解，环保
- 酸度系数高，大大减少对金属的腐蚀

- Non inflammability and Level A fireproof performance
- Hydrophobic property and high ageing resistance
- Excellent performance in thermal insulation
- Sound absorption and noise reduction
- Biodegradable and environment-friendly
- High acidity coefficient can greatly reduce the corrosive action on metals

常规岩棉（矿渣棉）缺点：

Disadvantages of conventional mineral wool (slag wool):

- 由于矿渣棉粉尘含量高，酸度系数低，导致其对金属腐蚀性强。
- 其吸湿性强，导致保温性能急剧下降，易致冷桥现象。

- Due to its high dust content and low acidity coefficient, it has a strong corrosive effect on metals.
- Its high hygroscopicity can lead to a sharp decline in thermal insulation performance, thus cold bridge phenomenon is easy to happen.

常规玻璃棉缺点：

Disadvantages of conventional glasswool:

- 我们常见的施工工地现场复合的玻璃棉，密度小，容易压缩，保温性能差，容易形成冷桥。

- The common glasswool compounded on site in the construction field is so easy to be compressed because of low density and bad thermal insulation performance that the cold bridge is easy to be formed.

多维新型防火岩棉 / 玻璃棉夹芯板，新在何处?

What's the features about DUOWEI new model fireproof rockwool/ glasswool sandwich panel ?

- 多维新型防火岩棉夹芯板芯材，是以优质的天然岩石如玄武岩、辉长岩等为主要原料，经高温熔融、纤维化而制成的人造无机纤维，矿渣、粉尘含量极低，不吸水是“真正的岩棉”！
- 多维新型防火玻璃棉夹芯板芯材，采用纯玻璃原石，运用高速向心分离工艺，制作出直径 5-8um 的细长而均匀的玻璃棉纤维，内部为纯净的无机质，不会因时间而降低隔热效果，整体结构紧密均匀。

- Taking high-quality natural rocks such as basalt, gabbro and others as main materials, the core material of DUOWEI new model fireproof rockwool sandwich panel is a kind of artificial inorganic fiber after the process of high temperature melting and fiberization with the characteristics of very low slag and dust content and non-absorbent. It is “real rockwool”!
- The core material of DUOWEI new model fireproof glasswool sandwich panel composes of 5-8um-diameter thin and uniform glasswool fibers produced by applying high speed centripetal seperation process to original glass stone, and its interior is pure inorganic substance. The thermal insulation effect cannot abate as time goes by due to its compact and uniform overall structure.

什么叫酸度系数?

What is the acidity coefficient ?

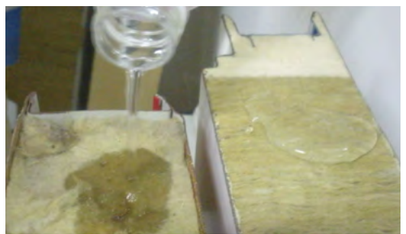
酸度系数是表征矿棉熔体高温黏度、成纤性能、易溶性、耐水性的重要综合性参数。酸度系数的定义是：（$SiO_2+Al_2O_3$）/（CaO+MgO）。一般情况下，矿渣棉酸度系数约为 1.1，优质岩棉酸度系数约为 1.8。矿渣棉酸度系数低，氧化钙、氧化镁含量较高，其对金属腐蚀性能极强。

The acidity coefficient is a kind of key comprehensive parameter signifying the high temperatureviscosity, fiber forming performance and solubility of mineral wool. The defination of acidity coefficient is: $(SiO_2+AL_2O_3)/(CaO+MgO)$.

In general, the acidity coefficient of slag wool is about 1.1, and the acidity coefficient of rockwool is about 1.8. The slag wool has a strong corrosive effect on metals due to its low acidity coefficient and high CaO and MgO contents.

憎水率实验对比图

Comparison picture of hydrophobicity test



常规岩棉吸湿性强 High hygroscopicity of conventional rockwool

新型岩棉憎水性能优越 Hydrophobic property of new model rockwool

通过实验表明：多维新型防火岩板夹芯板与常规岩棉夹芯板相比，具有较强的憎水性能。

The test shows that DUOWEI new model rockwool sandwich panel possesses higher hydrophobicity comparing with conventional rockwool sandwich panel.

多维新型防火岩棉夹芯板芯材指标
Core material index of DUOWEI new model fireproof rockwool sandwich panel

性能 Properties	单位 Unit	密度≥ 100kg/m³ Density≥100kg/m³	密度≥ 120kg/m³ Density≥120kg/m³	标准 specification≥d12
抗压强度 Compressive strength	kpa	85	105	EN 826
剪切强度 Shear strength	kpa	60	80	EN 12090
抗拉强度 Tensile strength	kpa	170	220	EN 1607
渣球含量 Slag ball content	%	<5(粗渣球尺寸 >0.25mm) <5(Size of coarse slag ball>0.25mm)		ASTM C1335
		<30(细微渣球尺寸 >63 μ m) <30(Size of fine slag ball>63μm)		ASTM C 1335
岩棉板的导热系数（平均温度 20℃） Thermal conductivity of rockwool panel (average temperature 20℃)	W/mk	0.038		GB/T 10295 ASTM C518 EN 12667
防火性能 Fireproof rating	—	不燃性材料 Noninflammable material		EN ISO 1182 GB/T 5464
	—	对火反应 A 级 A reaction to fire		EN 1350-1 GB 8624
耐火极限 Fire-resistant limit(FRL)		根据夹芯板的构造和厚度不同，耐火极限 30 到 240 分钟不等 According to the structure and thickness of sandwich panel, FRL is between 30mins and 240mins		
吸湿率（重量比） Hydroscopicity (weight ratio)	%	<1		ASTM C1104 GB/T 5480.7
憎水率（针对憎水性产品） Hydrophobicity(specific to hydroph-obic products)	%	≥ 98		GB 10299
老化膨胀率 Ageing and expansion rate	%	≤ 5（在温度 65℃和相对湿度 >95% 条件下 24 小时后的厚度变化率） ≤5 (Thickness change rate after 24 hours under the state of 65℃)		prEN 14509
熔化温度 Delting temperature	℃	>1000		—
纤维直径 Fiber diameter	um	≤ 7		

注：通常把导热系数较低的材料称为保温材料（我国国家标准规定，凡平均温度不高于 350℃时导热系数不大于 0.12W/(m · k) 的材料称为保温材料），而把导热系数在 0.05w/m · k 以下的材料称为高效保温材料。

Note: usually, the material with low thermal conductivity is regarded as thermal insulation material (it is stipulated that all the materials with a thermal conductivity no more than 0.12w/(m•k) when the temperature is lower than 350℃ called thermal insulation materials in national standard.), and the material with a thermal conductivity less than 0.05w/(m•k) is named high-efficient thermal insulation material.

多维新型防火岩棉夹芯板技术参数
Technical parameters of DUOWEI new model fireproof rockwool sandwich panel

（下表计算取岩棉容重 120kg/m³。外钢板 0.6mm，内钢板 0.5mm。）

(the values in the following table is calculated on the basis of rockwool bulk weight of 120kg/m³, 0.6mm outer steel sheet and 0.5mm inner steel sheet.)

多维新型防火岩棉夹芯板墙面板允许使用跨度及传热系数（允许变形 f ≤ L/200）
Allowable vertical load and thermal conductivity of DUOWEI new model fireproof rockwool sandwich wall panel (allowable deflection f ≤ L/200)

板厚 S(mm)	传热系数 W/m²k	重量 G（kg）	荷载 P=KN/m²	0.60	0.80	1.00	1.20	1.50
50	0.75	15.53	L(m)	3.66	3.13	2.75	2.46	2.12
75	0.53	18.37	L(m)	4.90	4.22	3.73	3.35	2.91
100	0.41	21.21	L(m)	5.99	5.17	4.58	4.12	3.59
150	0.31	26.88	L(m)	7.82	6.75	5.98	5.37	4.68

多维新型防火岩棉夹芯板屋面板允许使用跨度及传热系数（允许变形 f ≤ L/240）
Allowable vertical load and thermal conductivity of DUOWEI new model fireproof rockwool sandwich roof panel (allowable deflection f ≤ L/240)

板厚 S(mm)	传热系数 W/m²k	重量 G（kg）	荷载 P=KN/m²	0.60	0.80	1.00	1.20	1.50
50	0.75	15.74	L(m)	3.78	3.31	2.98	2.71	2.41
75	0.53	18.68	L(m)	4.83	4.21	3.76	3.42	3.01
100	0.41	21.62	L(m)	5.77	5.02	4.47	4.04	3.55
150	0.31	27.51	L(m)	7.53	6.54	5.82	5.26	4.61

中兴通讯西安研发基地
金属幕墙夹芯板系统 10550m²
ZTE Xi'an Research and Development Base
Metal Curtain Wall Sandwich Panel System 10,550m²

METAL CURTAIN WALL SANDWICH PANEL SYSTEM
VGOO / VPOLYMER / VWALL 金属幕墙夹芯板系统

多维新型玻璃棉芯材指标：
Core material index of DUOWEI new model fireproof glasswool sandwich panel

性能 Properties	测试标准 Test standards	测试结果 Test results
纤维直径（μm） Fiber diameter (μm)	GB/T5480.4	5.0 ~ 7.0
渣球含量（%） Slag ball content(%)	GB/T5480.4	0
燃烧性能级别 Combustibility rating	GB 8624	A 级（不燃材料） Grade A (incombustible material)
含水率（%） Moisture content（%）	GB/T13350	0.4
导热系数（w/m · k）（平均测试温度 25℃） Thermal conductivity（w/m·k） (The average test temperature as 25℃)	GB/T10295	0.031-0.036
降噪系数（NRC） Noise reduction coefficient (NRC)	JC/T469	0.70
隔音量（Rw） （Rw）Sound reduction index	GBJ75-84	≤ 34

多维新型防火玻璃棉夹芯板技术参数
Technical parameters of DUOWEI new model fireproof glasswool sandwich panel

多维新型防火玻璃棉夹芯板墙面板允许使用跨度及传热系数（允许变形 f ≤ L/200）
Allowable vertical load and thermal conductivity of DUOWEI new model fireproof glasswool sandwich wall panel(allowable deflection f ≤ L/200)

板厚 S(mm)	传热系数 W/m^2k	重量 G（kg）	荷载 $P=KN/m^2$	0.60	0.80	1.00	1.20	1.50
50	0.69	12.95	L(m)	3.74	3.23	2.86	2.57	2.23
75	0.47	14.50	L(m)	5.01	4.34	3.86	3.48	3.05
100	0.36	16.04	L(m)	6.12	5.32	4.73	4.28	3.75
150	0.33	19.14	L(m)	8.00	6.94	6.18	5.58	4.89

多维新型防火玻璃棉夹芯板屋面板允许使用跨度及传热系数（允许变形 f ≤ L/240）
Allowable vertical load and thermal conductivity of DUOWEI new model fireproof glasswool sandwich roof panel (allowable deflection f ≤ L/240)

板厚 S(mm)	传热系数 W/m^2k	重量 G（kg）	荷载 $P=KN/m^2$	0.60	0.80	1.00	1.20	1.50
50	0.69	13.10	L(m)	3.84	3.38	3.05	2.79	2.49
75	0.47	14.73	L(m)	4.93	4.31	3.87	3.52	3.12
100	0.36	16.36	L(m)	5.89	5.15	4.60	4.18	3.69
150	0.33	19.61	L(m)	7.69	6.71	6.00	5.44	4.80

注：上表计算取玻璃棉容重 64 kg/m^3 。外钢板 0.6mm，内钢板 0.5mm；
Note: the values in the above table calculated on the basis of glasswool density of 64kg/m^3, 0.6mm outer steel sheet and 0.5mm inner steel;

生产流程
Production procedure

01

原材料
Raw materials

02

主动开卷
Initiative decoil

03

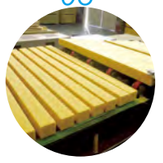
钢板覆膜
Film steel sheets

04

钢板压型
Corrugate steel sheets

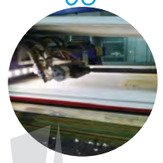
05

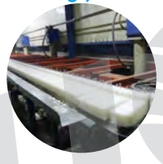
钢板预热
Preheat steel sheets

06

芯材分条
Strip core materials

07

错位对接
Cross butting

08

喷胶部分
Spraying section

09

聚氨酯侧封 / 无侧封
Side sealed with polyurethane / no side sealing

10

双履带固化
Double-crawler curing

11

成品切割
Cut

12

成品码垛
Stack

13

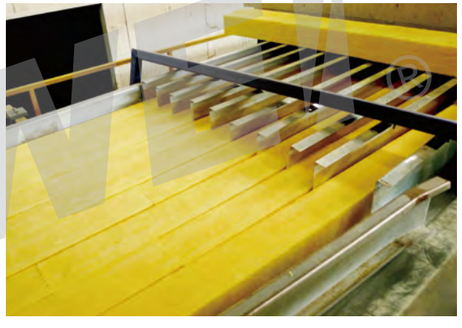
自动包装
Package automatically

METAL CURTAIN WALL SANDWICH PANEL SYSTEM
VGOO / VPOLYMER / VWALL 金属幕墙夹芯板系统

多维新型防火岩棉 / 玻璃棉板材优势
Advantages of DUOWEI new model fireproof rockwool / glasswool sandwich panel

芯材经 90 度翻转，与钢板成垂直状，大大提高了抗压强度。

After a 90°rotation, the core material is vertical to the steel sheet, thus the panel's compressive strength increases greatly.



芯材为竖向布置、交错对接，避免芯材之间存在的对接缝隙，大大提高整体的刚度。

The vertical distribution and cross butting of core materials prevent the butting gap among core materials from existing, thus the whole rigidity increases greatly.

新产品使用进口高效粘接剂，高度防火，而且新产品的粘接剂为混合后通过喷胶的方式喷涂在钢板上，用量达到 600g/m^2，粘接均匀可靠，粘接率几乎达到 100%。

The imported high-efficiency binder with excellent fireproof performance is used on new products, and the new product binder is coated onto the steel sheet through the spraying way with a dosage up to 600g/m^2. The even and reliable bond makes the bonding rate nearly reach 100%.

新型防火岩棉 / 玻璃棉板生产线
New model fireproof rockwool / glasswool panel production line

三星电机 (昆山、天津)
四面企口金属幕墙夹芯板 59300m^2
DW-19 金属屋面系统 136899m^2

Samsung Electro-Mechanics (Kunshan, Tianjin)
Metal Curtain Wall Sandwich Panel with All-rounded Groove 59,300m^2
DW-19 Metal Roof System 136,899m^2

岩棉 / 玻璃棉输送是整条生产线的一大亮点，经过上料、提升、切割、输送、横移、90 度翻转、整列、铣边等环节，大大提高了夹芯板的强度，也保证了夹芯板的平整性和美观性。岩棉 / 玻璃棉条状芯材为错位对接式。大大提高了复合板材的强度和抗撕裂性。

将黑料和白料经过一定压力充分混合，均匀喷洒在上、下钢板上，保证喷洒厚度，使钢板与岩棉粘接面更广，粘接更牢固，大大增加了夹芯板的强度。

为进一步提高上下钢板抗撕裂性，无冷桥、无结露的优点，在生产玻璃棉复合板时，两侧增加了 50mm 聚氨酯封边。

采用双履带机，改变了传统的辊和钢板线性接触的生产工艺，使辊和钢板之间产生面接触，并且与夹芯板同步运行，在双履带中充分固化，这样既确保了夹芯板平整度，也保证了芯材与钢板粘接的稳定性。

The conveyance of rockwool/glasswool is a major highlight in the whole production line. The rigidity of sandwich panels increases greatly and the flatness and beauty of sandwich panels are guaranteed through loading, lifting, cutting, conveying, lateral moving, 90°rotation, arraying, edge milling and other links.The rockwool/glasswool core material strips are cross-butted, thus the strength and tear resistance of composite plates increase greatly.

After intensive mixing under certain pressure, components of chemical materials are sprayed onto the upper and lower steel sheets evenly.The guaranteed spraying thickness, the widened bonding surface between rockwool and steel sheet as well as the stronger bond enhance the strength of sandwich panels greatly.

To further improve the panel's performance, such as metal skins' peel strength, no cold bridge and no dewing, 50mm polyurethane edge sealing is added to both sides in the production process.

The application of double crawler machine changes the traditional production process in which rolls keep a linear contact with steel sheets. By this way, rolls keep a plane contact with steel sheets, run synchronously with sandwich panels and solidify completely in double crawlers, thus the flatness of sandwich panels and the bonding stability between core materials and steel sheets are ensured.

新型防火岩棉 / 玻璃棉墙面夹芯板
New-model fireproof rockwool/glasswool wall sandwich panel

FM APPROVED CE

推荐板型一：Recommended type 1

DW-PM 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
 明钉式 Through fastened	DW-PM-I	外板 Exterior facer	方波（S）		0.5-0.7
			浮雕（E）		0.5-0.7
			纯平（F）		0.6-0.8
		内板 Interior facer	方波（S）		0.5-0.7
			浮雕（E）		0.4-0.7
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	500/600/700/800/900/1000（外、内）		
		展开宽度（mm） Spreading width	570/670/770/870/970/1070（外）		
			570/670/770/870/970/1070（内）		
		生产厚度（mm） Thickness	50、75、100、150、240		
		芯材及容重 Core material density（kg/m³）	玻璃棉 Glasswool： 64		
			岩棉 Rockwool： 105~150		

推荐板型二：Recommended type 2

DW-CM 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
 明钉式 Through fastened	 DW-CM-I	外板 Exterior facer	水波纹（R）		0.5-0.7
			方波（S）		0.5-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.8
		内板 Interior facer	方波（S）		0.5-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	500/600/700/800/900/1000/1100（外、内）		
		展开宽度（mm） Spreading width	560/660/760/860/960/1060/1160（外）		
			560/660/760/860/960/1060/1160（外）		
		生产厚度（mm） Thickness	50、75、100、150		
		芯材及容重 Core material density（kg/m³）	岩棉 Rockwool： 105~150		

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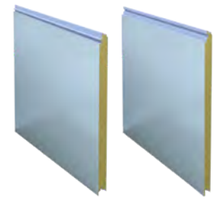
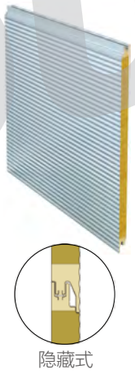
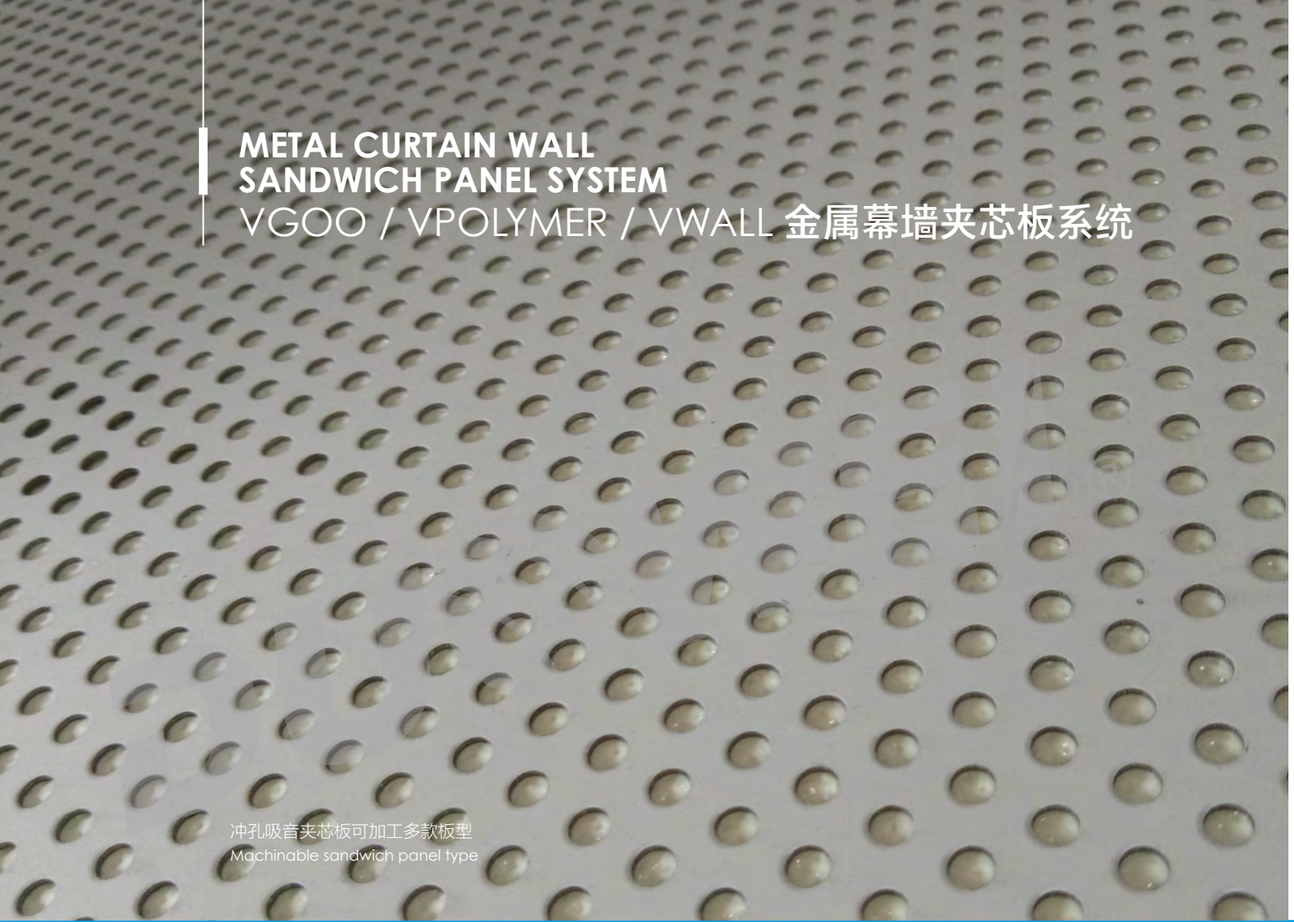
推荐板型三：Recommended type 3

DW-CA 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
 隐藏式 Secret fastened	DW-CA-I	外板 Exterior facer	水波纹（R）		0.5-0.7
			方波（S）		0.5-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.7-0.8
	DW-CA-II	内板 Interior facer	方波（S）		0.4-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	500/600/700/800/900/1000（外、内）		
		展开宽度（mm） Spreading width	700/800/900/1000/1100/1200（外）		
			565/665/765/865/965/1065（内）		
		生产厚度（mm） Thickness	50、75、100		
		装饰缝（mm） Decorative gap	20		
		芯材及容重 Core material density（kg/m³）	玻璃棉 Glasswool： 64		
			岩棉 Rockwool： 105~150		

新型防火岩棉 / 玻璃棉墙面夹芯板
New-model fireproof rockwool/glasswool wall sandwich panel

推荐板型四：Recommended type 4

DW-PA 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
 隐藏式 Secret fastened	 DW-PA-I	外板 Exterior facer	水波纹（R）		0.5-0.7
			方波（S）		0.5-0.7
			浮雕（E）		0.5-0.7
			纯平（F）		0.7-0.8
		内板 Interior facer	方波（S）		0.5-0.7
			浮雕（E）		0.4-0.7
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	500/600/700/800/900/1000（外、内）		
		展开宽度（mm） Spreading width	700/800/900/1000/1100/1200（外）		
			570/670/770/870/970/1070（内）		
		装饰缝（mm） Decorative gap	0、10、20		
		生产厚度（mm） Thickness	50、60、75、80、100、125、150		
		芯材及容重 Core material density（kg/m³）	玻璃棉 Glasswool： 64		
			岩棉 Rockwool： 105~150		



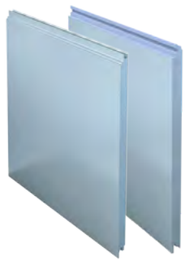
METAL CURTAIN WALL SANDWICH PANEL SYSTEM
VGOO / VPOLYMER / VWALL 金属幕墙夹芯板系统

冲孔吸音夹芯板可加工多款板型
Machinable sandwich panel type

维科® 板 VWALL® -PANEL

DUOWEI®

推荐板型六：Recommended type 6

DW-PQ/CQ 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
	DW-PQ-I  DW-CQ-I 	外板 Exterior facer	水波纹（R）		0.5-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.7-0.8
		内板 Interior facer	方波（S）		0.5-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	500/600/700/800/900/1000（外、内）； 500/600/700/800/900/1000/1100		
		展开宽度（mm） Spreading width	700/800/900/1000/1100/1200（外）； 570/670/770/870/970/1070（内） 聚氨酯封边 Sealed with PU		
			700/800/900/1000/1100/1200/1278(1300)（外）； 565/665/765/865/965/1065（内） 全棉芯材 RW/GW core material		
		装饰缝（mm） Decorative gap	0、20；20（全棉芯材 RW/GW core material）		
		生产厚度（mm） Thickness	50、75、100		
		芯材及容重 Core material density（kg/m^3）	玻璃棉 Glasswool： 64		
			岩棉 Rockwool： 120~150		

推荐板型五：Recommended type 5

冲孔吸音板
Sound-absorbing panel

参数数据：

芯材：防火岩棉 / 玻璃棉
孔形：圆孔　孔径：Φ=3mm
孔距：6mm
板面开孔率：23%
冲孔宽度：600mm / 800mm

Parameter data:

Core material：fireproof rockwool/glasswool
Hole type：Circular　Diameter of hole：Φ=3mm
Hole spacing：6mm
Hole rate of panel surface：23%
Width of hole range of panel：600mm / 800mm

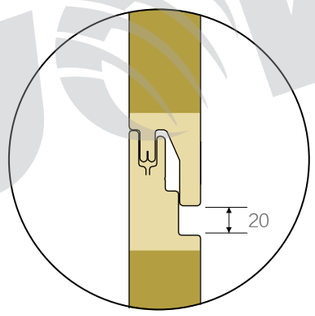
应用领域：

- 机场航站楼　• 高铁站　• 机房
- 剧院　• 会议厅　• 噪声超标准的工业厂房
- 吸音降噪的建筑空间
- 大型公共建筑的吸声墙板、天花吊顶板

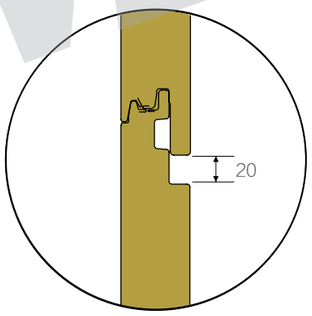
Application fields:

- Airport terminal　• High speed rail station
- Server room　• The theatre　• Conference hall
- The industrial workshop with excessive noise
- Sound-absorbing noise reduction of architectural space
- Sound-absorbing wall panels, ceilings of large-scale public buildings

四面企口金属幕墙夹芯板
Four-side-tongue-and-groove curtain wall sandwich panel



DW-PQ-I
插接口节点
Rib Joint Detail



DW-CQ-I
插接口节点
Rib Joint Detail

VWALL®METAL CURTAIN WALL SANDWICH PANEL SYSTEM
VWALL® 维科 ® 金属幕墙夹芯板系统

维科® 板 VWALL® -PANEL

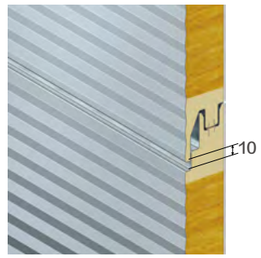
多维联合集团在四面企口幕墙夹芯板系统基础上研制的新板型系统。其最突出的特点为芯材为纯岩棉，插接口双向支撑。已成功应用于成都京东方项目。

- 纯岩棉芯材，防火性能更优；
- 暗钉连接，表面无外露螺钉；
- 插接口双向支撑，插接更为牢固，提升抗风性能；

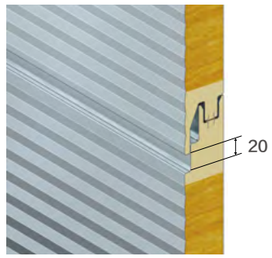
DUOWEI has developed new profile system based on four-side-tongue-and-groove, with main features of pure rockwool, two-way supporting, and has been successfully applied for BOE project.

- Pure rockwool achieve better fire-proof performace;
- Screw concealed fixed appearence, without exposed screws on surface;
- Tongue and groove with two-way supporting are more strong and can achieve better wind up lifting performance;

无缝 gapless



10mm 装饰缝 10mm gap



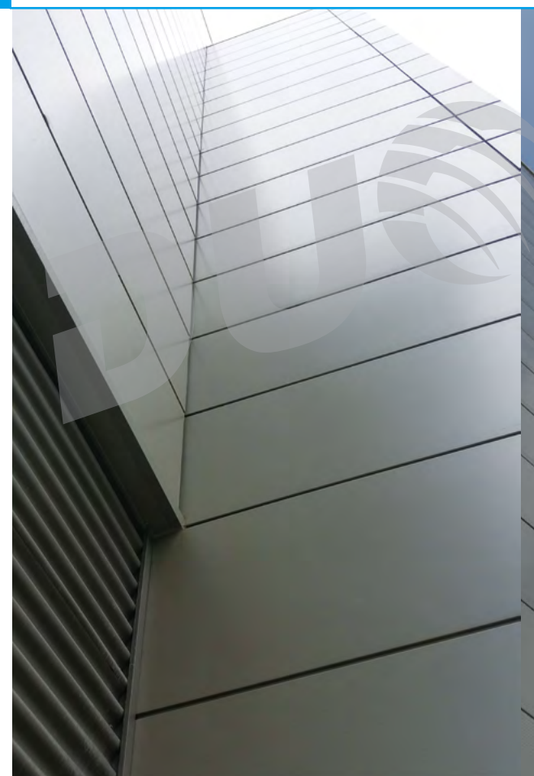
20mm 装饰缝 20mm gap

四面企口纯岩棉金属幕墙夹芯板系统
Four-side-tongue-and-groove pure rockwool metal curtain wall sandwich panel

- 极高抗弯载力，墙体力学性能优越，减少对辅助钢结构的依赖；
- 建筑墙体优美流畅、 表面光滑平整，代替铝板幕墙的装饰效果；
- 强化了四面企口板型纯平幕墙装饰效果。

- Extreme high bending resistant capacity and superior mechanical property, reducing the dependence auxiliary steel structures;
- Elegant and smooth building wall, smooth and even surface substituting the decorative effect of aluminum curtain wall;
- Improve flatn curtain wall decorative effect.

装饰缝可选
Decorative gap to choose from:



VPOLYMER®METAL CURTAIN WALL SANDWICH PANEL SYSTEM

VPOLYMER® 维聚 ® 金属幕墙夹芯板系统

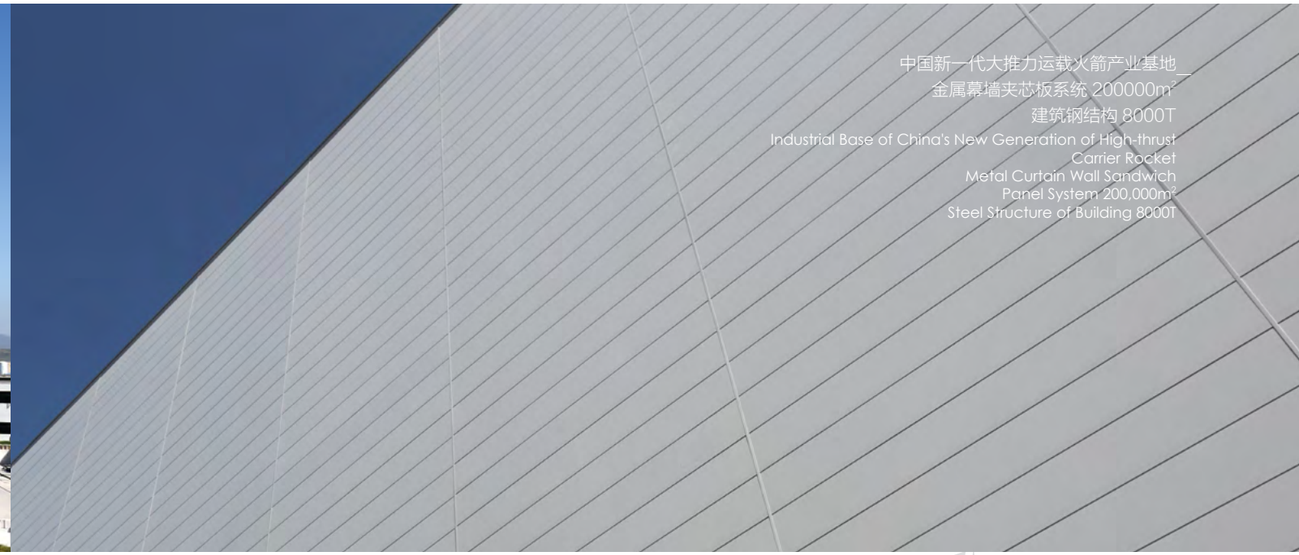
★北京市火炬计划项目 (项目编号：200603109)

Beijing City Torch Program Project (Project No.: 200603109)

维聚® 板
VPOLYMER® -PANEL

中煤张家口煤矿机械工业园
金属幕墙夹芯板系统 240000m²
建筑钢结构 9880T

China Coal Zhangjiakou Coal Mining Machinery Industrial Park
Metal Curtain Wall Sandwich Panel System 240,000m²
Steel Structure of Building 9880T



中国新一代大推力运载火箭产业基地
金属幕墙夹芯板系统 200000m²
建筑钢结构 8000T

Industrial Base of China's New Generation of High-thrust Carrier Rocket
Metal Curtain Wall Sandwich Panel System 200,000m²
Steel Structure of Building 8000T

环戊烷无氟聚氨酯环保发泡体系

Cyclopentane No-freon Polyurethane environment friendly foaming system

响应蒙特利尔国际公约，多维联合集团率先在行业内首家成功研发环戊烷无氟聚氨酯环保发泡技术，成型板材具有更强的尺寸稳定性。

- 绿色无氟，高度环保，对臭氧层与温室效应影响为 0。
- 增强泡沫强度，提高板材受力性能。
- 优异的保温性能。
- 增强尺寸稳定性，提升板材表面平整度，成品板材质量更优。

To respond the Montreal Convention, Duowei Union Group Co., Ltd. is the first enterprise in the industry who has successfully researched and developed cyclopentane no-freon polyurethane environmental friendly foaming technology, which will also make the formed sheet more stable in dimension.

- Fluoride-free, highly environmentalfriendly, no influence on ozone sphere and greenhouse effect.
- Enhance foam strength, improve the mechanical property of sheets.
- Excellent heat insulation performance.
- Strengthen dimensional stability, improve the flatness of the panel surface and the quality of finished sheets is superior.

PUR 产品

PUR Products

多维 PUR 产品在原料配比和工艺输出方面，采用全球最先进的六组份在线自动操作（SIMENS）混合浇注技术，在国内首次实现六组份连续发泡，可在线一次性完成混合配比工艺，并可根据环境变化调整配方，配合加气混合装置，使原料混合更均匀，泡沫更细腻，从而生产出高强度、节能型、绿色环保的节能建筑板材。

In terms of raw material proportioning and process output, Duowei PUR products employ the globally advanced six-component online automatic (SIMENS) mixing and pouring technology and have realized six-component continuous foaming for the first time in China. With the technology, mixing and proportioning process may be finished in an online way; the formula may be adjusted according to environmental changes; air feeding and mixing devices may be used to make raw material mixing more even and foam finer, thus producing high-strength, energy-saving and environment friendly building boards.

PIR 产品

PIR Products

聚异氰脲酸酯（POLYISOCYANURATE），简称 PIR。多维研制的复合板采用异氰脲酸酯通过自身三聚反应形成的，化合物中引进环状结构和较高的异氰脲酸酯指数，形成致密的聚异氰脲酸酯，从而使内部硬泡更为稳定，具有高耐热、高阻燃的特性。经实验证明，在短时间内可耐受 200 摄氏度的高温，长期耐受可达 160 摄氏度。

Polyisocyanurate is called PIR for short. For the composite boards developed by Duowei, excessive isocyanurate is added and ring structure and higher isocyanurate index are employed in the compounds to form compact PIR products, thus ensuring greater stability and excellent heat and fire resistance for the internal rigid foams. Experiments show that the products can endure a temperature up to 200℃ in short time period or to 160℃ for long time.

METAL CURTAIN WALL SANDWICH PANEL SYSTEM

VGOO / VPOLYMER / VWALL 金属幕墙夹芯板系统

★北京市火炬计划项目 (项目编号：200603109)

Beijing City Torch Program Project (Project No.: 200603109)

维聚® 板
VPOLYMER® -PANEL

多维聚氨酯夹芯板特性表
Properties of Duowei polyurethane Sandwich Panel

色彩选择 Color range	白灰色、银灰色、海蓝色、绯红色等 Offwhite, silver gray, sea-blue, crimson and so on
保温材料 Insulated core	PUR/PIR
涂层 Painting	PE 涂层、SMP 涂层、HDP 涂层、PVDF 涂层等 Polyester coating PE, SMP coating, HDP coating, fluorocarbon coating PVDF, etc.
镀层 Galvanizing	热镀锌、镀铝锌 Hot-dip zinc coated, hot-dip aluminum-zinc coated
推荐厂商 Recommended steel coil supplier	宝钢、烨辉、博思格等 Baosteel, YIEH PHUI, BLUESCOPE, etc.

多维聚氨酯夹芯板墙面板允许使用跨度及传热系数 (允许变形 f ≤ L/200)
Allowable vertical load and thermal performance of Duowei polyurethane sandwich wall panel (allowable deflection f ≤ L/200)

板厚 S(mm)	传热系数 W/m²k	重量 G (kg)	荷载 P=KN/m²	0.60	0.80	1.00	1.20	1.50
50	0.31	10.06	L(m)	3.52	3.04	2.69	2.42	2.11
75	0.21	11.06	L(m)	4.71	4.09	3.64	3.29	2.89
100	0.19	12.05	L(m)	5.76	5.02	4.47	4.05	3.56
120	0.16	12.84	L(m)	6.53	5.68	5.07	4.60	4.04
150	0.11	14.04	L(m)	7.56	6.58	5.87	5.32	4.68

注：外钢板 0.5mm, 内钢板 0.4mm Note: 0.5mm outer steel sheet and 0.4mm inner steel

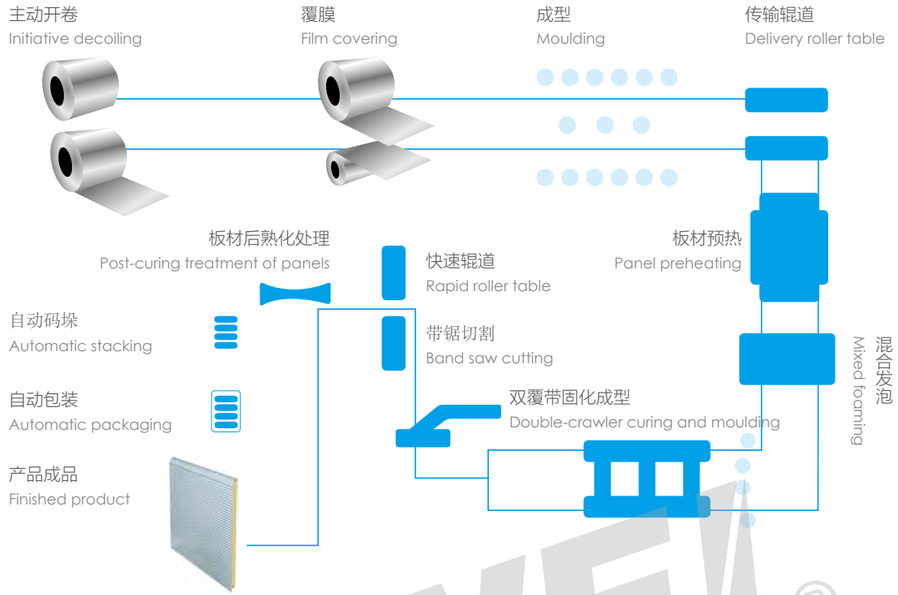
多维聚氨酯夹芯板屋面板允许使用跨度及传热系数 (允许变形 f ≤ L/240)
Allowable Span and Thermal Conductivity of Duowei Polyurethane Roof Sandwich Panel(allowable deformation f ≤ L/240)

板厚 S(mm)	传热系数 W/m²k	重量 G (kg)	荷载 P=KN/m²	0.60	0.80	1.00	1.20	1.50
30	0.32	9.32	L(m)	2.60	2.30	2.08	1.91	1.72
50	0.31	10.15	L(m)	3.59	3.17	2.85	2.61	2.33
75	0.21	11.18	L(m)	4.64	4.07	3.66	3.34	2.96
100	0.19	12.22	L(m)	5.57	4.88	4.38	3.99	3.53
120	0.16	13.05	L(m)	6.28	5.49	4.92	4.48	3.97
150	0.11	14.30	L(m)	7.30	6.39	5.73	5.22	4.62

注：外钢板 0.5mm, 内钢板 0.4mm Note:0.5mm outer steel sheet and 0.4mm inner steel sheet.

DUOWEI®

工艺流程
Process flow



行业突破
Industrial breakthroughs

- 中国首创软硬质面层复合板材全自动一体化生产技术
  生产线可连续生产软、硬质面层，可生产 PUR、PIR、岩棉、玻璃棉为芯材的节能板材，使产品的升级和扩展技术走到复合板生产行业的国内最前列。突破金属面夹芯板与多种阻燃材料及保温材料夹芯板生产线分立的理念。
- 中国首创六组份高压连续发泡在线配料混合生产系统。

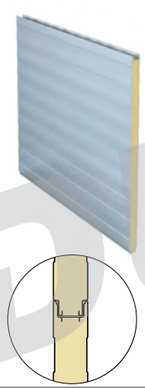
- The domestic first full automatic integrated production technology for soft and rigid surface composite boards. The production lines can continuously produce soft and rigid surface courses and energy-saving boards taking PUR, PIR, rockwool and glasswool as core materials, promising domestic foremost product updating and expanding technologies in the composite board production industry. It has broken through the idea that the production lines of metal-skinned sandwich panels are separated from that of the sandwich panels made of multiple kinds of flame retardant materials and heat insulating materials.
- The domestic first six-component high-pressure continuous foaming and online batching and mixing production system

★北京市火炬计划项目（项目编号：200603109）
Beijing City Torch Program Project (Project No.: 200603109)

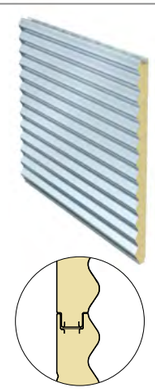
维聚® 板
VPOLYMER® -PANEL

聚氨酯节能墙面夹芯板
Polyurethane (PU) energy-saving wall sandwich panel

推荐板型七：Recommended type 7

DW-PUM 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
	DW-PUM-I	外板 Exterior facer	水波纹（R）		0.5-0.7
			方波（S）		0.5-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.8
		内板 Interior facer	方波（S）		0.4-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	1000（外、内）		
		展开宽度（mm） Spreading width	1070（外）		
			1070（内）		
		生产厚度（mm） Thickness	50、60、75、100、125、150、175、200		
		芯材及容重 Core material density（kg/m³）	PU：38~42		
			PIR：40~45		

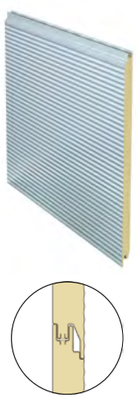
推荐板型八：Recommended type 8

DW-PUM 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
	DW-PUM-II	外板 Exterior facer	大波浪（BW）		0.4-0.7
		内板 Interior facer	方波（S）		0.4-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.5-0.7
		有效宽度（mm） Effective width	1000（外、内）		
		展开宽度（mm） Spreading width	1070（外）		
			1070（内）		
		生产厚度（mm） Thickness	75		
		芯材及容重 Core material density（kg/m³）	PU：38~42		
			PIR：40~45		

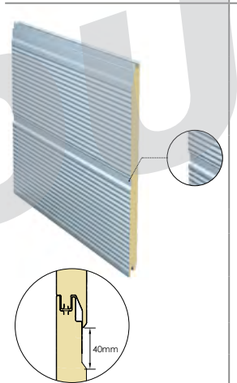
DUOWEI®

聚氨酯节能墙面夹芯板
Polyurethane (PU) energy-saving wall sandwich panel

推荐板型九：Recommended type 9

DW-PUA 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
	DW-PUA-I	外板 Exterior facer	水波纹（R）		0.5-0.7
			方波（S）		0.5-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.7-0.8
		内板 Interior facer	方波（S）		0.4-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	1000（外、内）		
		展开宽度（mm） Spreading width	1200（外）		
			1070（内）		
		装饰缝（mm） Decorative gap	0、10、20		
		生产厚度（mm） Thickness	50、55、60、65、75、80、90、100、110、120、125、150		
		芯材及容重 Core material density（kg/m³）	PU：38~42		
			PIR：40~45		

推荐板型十：Recommended type 10

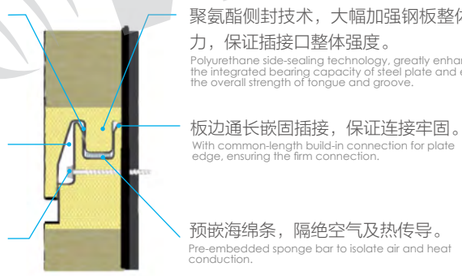
DW-PUA 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
	DW-PUA-II	外板 Exterior facer	水波纹中凹（WC）		0.5-0.7
		内板 Interior facer	方波（S）		0.4-0.7
			浮雕（E）		0.5-0.6
			纯平（F）		0.6-0.7
		有效宽度（mm） Effective width	1000（外、内）		
		展开宽度（mm） Spreading width	1200（外）		
			1070（内）		
		装饰缝（mm） Decorative gap	40		
		生产厚度（mm） Thickness	50、55、60、65、75、80、90、100、110、120、125、150		
		芯材及容重 Core material density（kg/m³）	PU：38~42		
			PIR：40~45		

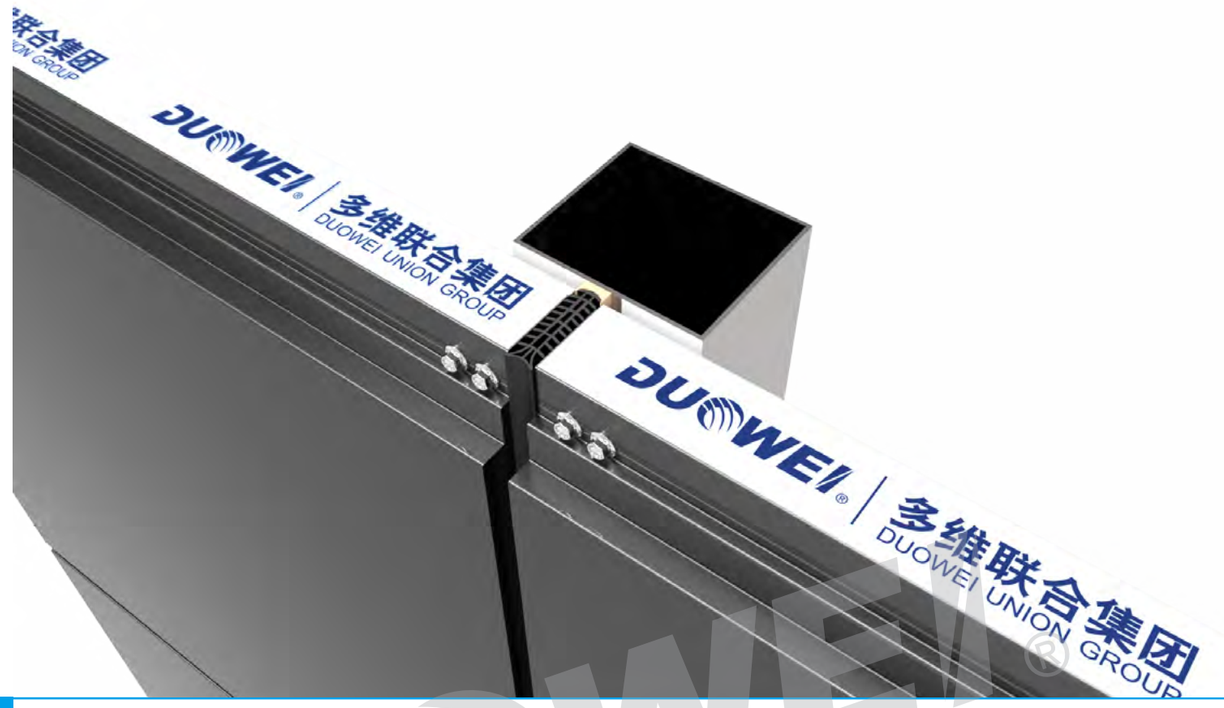
MAIN TECHNICAL POINTS OF METAL CURTAIN WALL SANDWICH PANEL SYSTEM

VGOO / VPOLYMER / VWALL

金属幕墙夹芯板系统技术要点

01 完善的板型构造系统技术
Improved profile system technology





02 槽式预埋件系统技术
Notch pre-embedded part system technology

- 槽式预埋件采用螺栓连接，外观整齐美观，与结构主体采用无焊接连接方式，安装误差可调、安装便捷、牢固性强。
- 可一定程度上消除施工误差，施工方便，同时槽式埋件体积小，不会与主体结构钢筋碰撞，便于其在混凝土中安装定位。
- 槽式预埋件具有良好的抗拉、抗震等良好性能。

- Notch embedded parts are connected via bolts with orderly and aesthetic appearance, and it is connected with main structural body in non-welding connection way, which makes installation error adjustable and installation convenient and fast with strong robustness.
- It can eliminate construction error to some extent and makes construction easy. Meanwhile notch embedded part has a small volume, thus it will not collide with main structural body, which is convenient for installation and positioning in concrete.
- Notch embedded part has excellent tensile and seismic performance.

03 夹芯板墙体对接缝及墙面阴角三重防水系统技术
Systematic waterproof technology for joint and internal wall angle of sandwich panel

- 创新研发的“带导水槽的高耐候柔性防水防冷桥胶垫”，该防水胶垫为高耐候、左右两侧锯齿状、中部与板材对接缝咬合，即使有雨水渗漏进入对接缝处，也会从导水槽处将雨水引流，自底部坎墙泛水处流出。
- 锯齿状带导水槽的高耐候柔性防水防冷桥胶垫与墙板为柔性挤压贴合式紧密接触，胶垫左右两侧的锯齿状结构与墙体挤压后，形成天然的腔体构造，高效隔绝热传导，基本杜绝冷桥现象发生。

- The "high-weather resistance flexible waterproof and cold bridge prevention rubber mat with water chute" researched and developed in an innovative way is of high weather resistance with jagged edges on lefty and right sides. Its middle part is occlusive with butt joint of sheets, which ensures that rainwater will be drained from water chute even and then flows out from flashing position of bottom sill wall if there is rainwater permeating into the butt joint.
- The jagged high-weather resistance flexible waterproof and cold bridge prevention rubber mat with water chute closely contacts with wall panel in flexible extruding and plying-up way, and there be a natural cavity structure formed after the jagged structure on both left and right extrudes with wall, which can effectively isolates heat conduction and basically eradicate cold bridge effect.

宝马汽车沈阳工业园金属幕墙顺利通过三小时喷淋试验
Metal curtain wall of BMW Shenyang industrial park smoothly passed the 3-hour water spray test

宝马汽车沈阳大东物流中心
金属幕墙夹芯板系统 35000m²
915 型屋面底板系统 55000m²
BMW Shenyang Factory
Metal Curtain Wall Sandwich Panel System 35,000m²
915 Roof Bottom Steel Plate System 55,000m²

第一重防水设计：特制鱼鳞内嵌式 EPDM 胶条密封技术

• 胶条宽度大于对接缝宽度，过盈配合能增加胶条与企口面的连接紧密性。
• 多重导水槽不仅起到防水作用，且形成多个负压空腔，增加胶条填充贴实度，不易脱落。

First-level waterproof design: special embedded EPDM rubber strip sealing technology

• Width of rubber strip is larger than that of butt joint, and interference fit can enhance the connection tightness of rubber strip and groove surface.
• Multiple water chute can not only prevent water, but also enhance filling and pasting degree of rubber strip by forming many negative pressure cavities, which is difficult to shed off.

第二重防水设计：高耐候密封胶密封技术

在对接缝底部加注高耐候密封胶，加强基底防水功能。

Second-level waterproof design: high weather-proof sealing technology

Fill high-weather resistance sealant at the bottom of butt joint to enhance base waterproof function.

第三重防水设计：柔性锯齿防水 EPDM 橡胶垫导水防冷桥技术

• 外观为齿轮状，可形成数个导水槽，有效防止水进入室内。
• 有效解决墙板对接缝处防冷桥的问题。

宝马汽车项目 EPDM 胶条对接缝淋水试验，不间断淋水 3 个小时，未发现漏点。

Third-level waterproof design: flexible jagged waterproof EPDM rubber achieving water-diversion and anti-cold bridge technology

• The appearance is jagged, which can form many water chute and effectively prevent water from entering room.
• It can effectively solve the problem of anti-cold bridge at butt joint of wall panel.

Water spraying test is carried out for EPDM rubber strip butt joint of BMW project for continuous 3h, no leakage points are found.

MAIN TECHNICAL POINTS
金属幕墙夹芯板系统技术要点

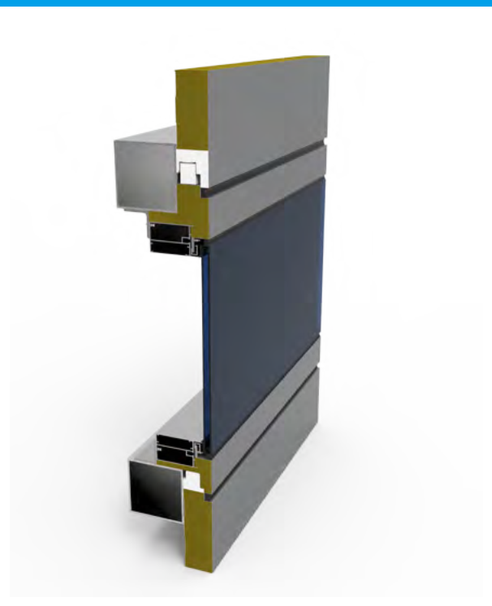
宝马汽车沈阳铁西及大东工厂
金属幕墙夹芯板系统 210000m²
装配式钢筋桁架楼承板系统 180000m²
盒式装饰板复合保温墙面系统（宝马研发中心）6800m²
DW-914 柔性防水屋面底钢板系统 120000m²

BMW Shenyang Tiexi Factory and Dadong Factory
Metal Curtain Wall Sandwich Panel System 210,000m²
Fabricated steel bar truss deck system 180,000m²
Box type decorative insulation sandwich wall system (BMW R & D center) 6,800m²
DW-914 flexible waterproof roof bottom steel plate system 120,000m²

05 夹芯板墙体与玻璃幕墙包边无搭接式节点技术
Technology of sandwich panel wall and glass curtain wall binding nodes without lap joint

创新研发了夹芯板墙体与玻璃幕墙及幕墙窗扣合式搭接新技术，包边件与玻璃幕墙窗外口取齐，密封钉实现隐藏，使整个墙面窗体美观、平整，更断绝了冷桥现象的发生，避免了雨季雨水流坠造成的墙体污染。

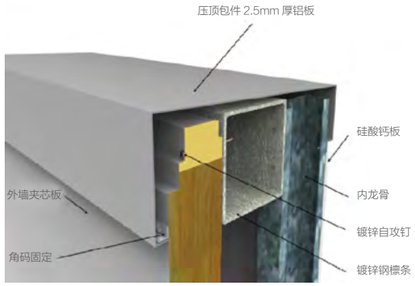
Based on the innovation, research and development of the new buckled lap joint technology for sandwich panel wall and glass curtain wall and curtain wall window, binding part is flush with glass curtain wall window, and seal nails are concealed, which makes the whole wall artistic and flat and even eradicates the cold bridge phenomenon , and it also avoids wall pollution caused by rainwater sagging.



06 夹芯板墙体女儿墙压顶保温防冷桥技术
Insulation of sandwich parapet wall top achieving anti-cold bridge technology

- 依照国标图集做法，其结构顶部的保温带断裂，为天然的冷桥带，极易造成冷桥现象。
- 女儿墙包件采用 1.2mm 厚镀铝锌钢板制作，包件施工之前上面铺设一层保温板，在墙板与顶部保温板交接处填充保温棉，有效防止冷桥现象的发生。

- According to practice specified in national atlas, the heat retaining belt on the top of structure will form a natural cold bridge belt after fracture, which is extremely easy to cause cold bridge effect.
- Package of parapet is made of 1.2mm-thick aluminized zinc steel plate. Before construction of package, a layer of insulation board is laid above it and insulated cotton is filled in the joint of wall panel and top insulation board, which can effectively avoid cold bridge phenomenon.



07 夹芯板墙体与铝合金大百叶窗包边件全分体式连接技术
Connection technology of sandwich panel wall and aluminium alloy blind window by full split folded sheets

包边件全分体式连接大百叶窗与夹芯板墙体，实现了大百叶窗包边件与夹芯板墙体在尺寸误差方面的自由伸缩，大大便利了现场施工的自由度，加快了现场安装的进程。

Package of sandwich panel wall and large blind window are connected in all-split connection way, which achieves the free expansion of large blind window package and sandwich panel wall in dimension error aspect, greatly facilitates the degree of freedom of field construction and accelerates the progress of field installation.

MAIN TECHNICAL POINTS
金属幕墙夹芯板系统技术要点

08

夹芯板墙体包边件对接技术
Butt joint technology of sandwich panel wall

在女儿墙位置、墙体有通长铝合金窗的位置、坎墙位置，有装饰缝的位置，都采用包件对接方式。这样不仅确保了墙体横向竖向装饰缝的通长效果，更为墙体排水提供了保障。

Package butt joint is adopted for parapet position, the position with common-length aluminum alloy window on walls, sill wall and position with decorative seam. It not only ensures the common-length effect of horizontal and vertical decorative seam, it also provides guarantee for wall drainage.

09

夹芯板墙体雨篷防雨水渗漏技术
Sandwich panel wall canopy rain water leakage prevention technology

- 雨篷顶板采用整块板材制作，避免搭接，避免雨水渗漏。
- 雨棚顶板与外墙板交接处泛水件在外墙固定处放置在两块板插接处，且在外部有打胶处理，防止雨水顺着泛水件缝隙渗漏。

- Canopy roof is made of a whole panel, which can avoid lap joint and rainwater leakage.
- Flashing part at the joint of canopy roof and external wall panel is place at the closure position of two panels at the fixing position of external wall, and sealant is used for external wall, to avoid rainwater leakage along the gap of flashing part.

10

夹芯板墙体一体式转角板及异型板技术
Integrated technology of sandwich corner panel and irregular panel

一体式转角板的制作与安装是多维夹芯板墙面系统的突出特点。多维一体式转角板由专用设备 45 度切割、折弯、工厂预制而成，安装快捷，插接口严密，具有铝板幕墙平整、美观的效果。

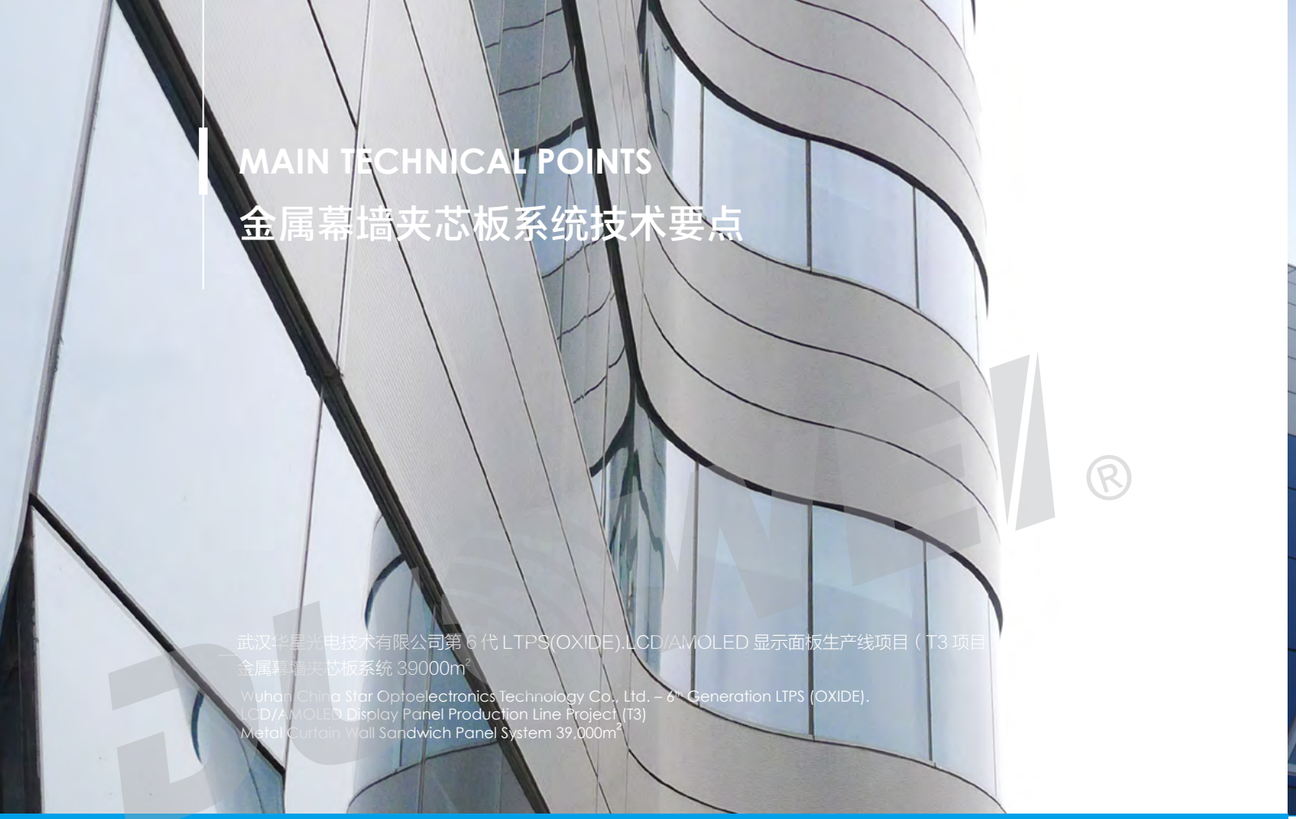
Manufacturing and installation of integral corner panel are the outstanding features of Duowei sandwich wall panel. Duowei integral corner panel is cut (with an angle of 45°) and bent by using special equipment and prefabricated in factory. It can be installed rapidly. Besides, its tongue and grooves are tight, which is as flat and artistic as that of aluminium panel curtain wall.

成都京东方光电科技有限公司第 6 代 LTPS/AMOLED 生产线
金属幕墙夹芯板系统 18000m²
柔性防水屋面系统　6200m²

BOE (Chengdu) Technology Group Co., Ltd. –
6th Generation LTPS/AMOLED Production Line
Metal curtain wall sandwich panel system 18,000m²
Flexible waterproof roof system 6,200m²

武汉天马第 6 代低温多晶硅（LTPS）TFT-LCD 及彩色滤光片（CF）生产线项目
金属幕墙夹芯板系统 89000m²

The Sixth Generation LTPS TFT-LCD and CF Production Line Project of Tianma Micro-electronics Co., Ltd.
Metal Curtain Wall Sandwich Panel System 89,000m²



MAIN TECHNICAL POINTS
金属幕墙夹芯板系统技术要点

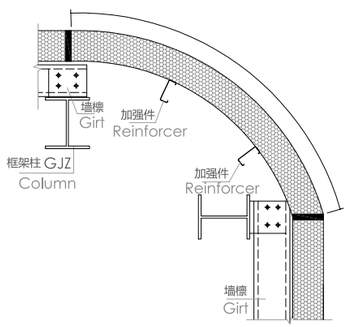
武汉华星光电技术有限公司第 6 代 LTPS(OXIDE),LCD/AMOLED 显示面板生产线项目（T3 项目）
金属幕墙夹芯板系统 39000m²

Wuhan China Star Optoelectronics Technology Co., Ltd. – 6th Generation LTPS (OXIDE), LCD/AMOLED Display Panel Production Line Project (T3)
Metal Curtain Wall Sandwich Panel System 39,000m²

弧形板
Curved corner panels

为满足建筑商对于追求美感和视觉效果的现代建筑设计理念，开发了多种端部搭接形式 .

To satisfy contractors' modern architectural design conception, which pursues beauty and visual effect, DUOWEI has developed many corner panels.

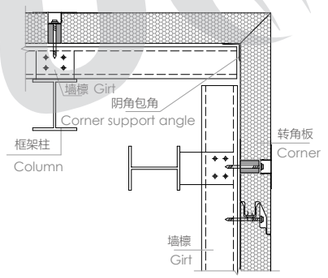


圆弧板阳角大样
Detailed drawing of arc plate's male corner

直角板
Orthogonal corner panels

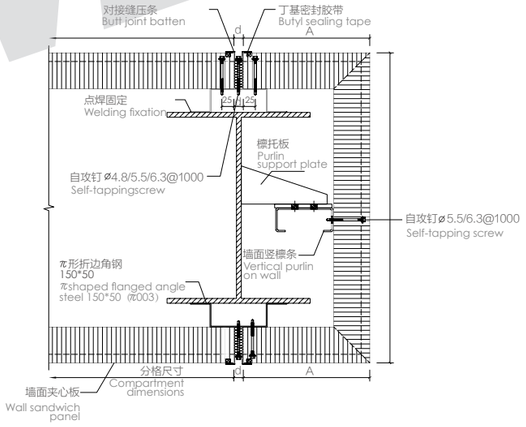
多维为满足建筑商对于追求美感和视觉效果的现代建筑设计理念，开发了多种端部搭接形式。

To satisfy contractors' modern architectural design conception, which pursues beauty and visual effect, DUOWEI has developed many corner panels.



转角处阳角大样
Corner detail for horizontal application

U 型转角板
U-shaped corner panels

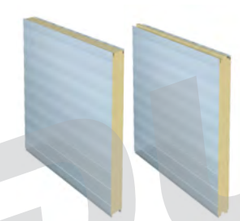
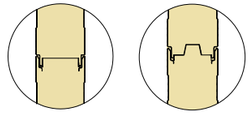


VCOOL® COLD STORAGE SANDWICH PANEL SYSTEM
VCOOL® 维酷 ® 冷库板系统

维酷® 板
VCOOL® -PANEL

DUOWEI®

推荐板型十一： Recommended type 11

DW-LK 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
 节点示意图 Joint details  I II	 DW-LK-I  DW-LK-II	外板 Exterior facer	方波(S)		0.4-0.7
			浮雕(E)		0.5-0.6
			纯平 (F)		0.6-0.8
		内板 Interior facer	方波(S)		0.4-0.7
			浮雕(E)		0.5-0.6
			纯平 (F)		0.6-0.7
		有效宽度 (mm) Effective width	1000 (外、内)		
		展开宽度 (mm) Spreading width	1070 (外)		
			1070 (内)		
		生产厚度 (mm) Thickness	100、125、150、175、200		
		芯材及容重 Core material density (kg/m³)	PU：38~42		
			PIR：40~45		

冷库板技术数据
The technical specifications of cold storage sandwich panel

库板厚度 Thickness range	库内外温差 Temperature difference between inside and outside	墙板高度 Height of wall panel	顶板长度 Length of roof panel	适用冷库温度 Applicable cold storage temperature
mm	℃	m*	m**	℃
100	30	5	4.45	-15
125	35	5.5	5.2	-20
150	50	6	5.85	-25
175	65	6.5	6.3	-30
200	75	7	6.8	-40

•m*/m**: 在内外压差和收缩压力下，无风载情况。超出长度或有风载则需要设置钢墙梁 / 钢吊梁。

• 以上数据根据单位面积热流量 8-10W/m² 来计算。

• The data shown in the left table are only available for the panel which subject to the internal-external pressure difference and contraction pressure, without wind load. If the specified length/height is exceeded or wind load occurs, panel supporters are required.
• The above data are calculated according to the heat flow of 8~10W/m².

产品优势：
Product advantages:

- 凹凸槽结构，提高了板材接缝处绝缘气密性，专为冷藏室、冷库设计。
- 板材均匀稳固，隔热性能、防水性能极佳。
- 自重轻，外观优美，有效解决冷藏工业温差。
- 在一定的模数内，库体可在长、宽、高三个方向自由变化，能够依需要扩大或缩小，也可将拼装板拆开，异地再装，安装简易快捷。

- The rabbet joint structure improves the insulation and air tightness of the panels and is specially designed for cold storages.
- The panels are uniform and stable and extremely excellent in both heat insulation and waterproofing.
- The panels have light weights and beautiful appearances, solving the temperature difference problem of the cold storage industry effectively.
- Within certain modulus, the cold storages may change freely in length, width and height directions to get bigger or smaller according to actual needs. The knockdown boards may be remounted at another place conveniently and quickly.

应用领域：
Application fields:

- 食品速冻加工及冷藏
- 食品加工厂
- 乳制品贮存
- 生物及医药制品
- 室内装配式冷库
- 冷链运输车辆冷库

- Fast frozen processing and refrigeration of food
- Food processing plant
- Storage of dairy products
- Biological products and medicines
- Indoor cold storge
- Cold storages for cold-chain transportation vehicle

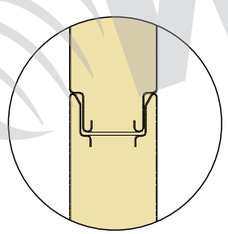
VCLEAN™ CLEAN SANDWICH PANEL SYSTEM
VCLEAN™ 维洁 ™ 洁净板系统

多维聚氨酯节能洁净板效果

Profile of Duowei polyurethane energy-saving hygienic sandwich panel

节点示意图

Joint detail



岩棉手工净化板、机制净化板、玻镁酚醛手工净化板、挤塑净化板、纸（铝）蜂窝净化板、玻镁中空净化板等。

Manual rockwool hygienic sandwich panel, machine-made hygienic sandwich panel, manual glass Magnesium and phenolic manual hygienic sandwich panel, extrusion molding hygienic sandwich panel, paper (aluminium) honeycomb hygienic sandwich panel, glass magnesium hollow hygienic sandwich panel and others.

产品优势：
Product advantages:

- 环保：绿色建材，无放射性、不含甲醛、重金属等有害物质，遇高温或明火不会产生有害气体和烟雾。
- 洁净：抗静电材料，表面不易积灰，不起尘。
- 防潮：不易变形，湿态强度不降低，可用于潮湿环境。
- 保温：具有出色的隔热效果，为保温节能材料。
- 耐腐蚀：表面可抗酸碱，耐污染性出色。
- 彩色：多种颜色可供选择，淡雅柔和，装饰性强。

- Environment friendly: As a kind of environment friendly building material, it contains no radioactive substances, formaldehyde, heavy metals and some other harmful substances and generates no harmful gases or smog upon high temperature or open flames;
- Clean: As a kind of anti-static material, it will reduce dust accumulation on surface;
- Damp proof: It is difficult to be deformed and no decrease of strength after getting wet;
- Heat preserving: It is a kind of heat preserving and energy saving material and has excellent heat insulation effect;
- Corrosion resistant: It is acid and alkali resistant on its surface and has great stain resistance;
- Color: With many colors for your choice, it is soft and elegant and shows good decorative effect.

推荐板型十三： Recommended type 13

VCLEAN™ 维洁 ™ 洁净板系统

VCLEAN™ clean sandwich panel system

应用领域：
Application fields:

- 电子行业
- 制药行业
- 医疗手术间
- 食品行业

主要为净化室、手术室和洁净车间提供整套的防火防静电洁净系统，包括墙体、吊顶、防静电工作台等。

在充分考虑防静电、洁净、防火等专业需求的同时，还兼顾美观、防潮、声学性能、耐久性等理化性能，提供完善的安全防护体系。

- Electronic industry;
- Pharmaceuticals industry;
- Medical operation rooms;
- Food industry

It mainly provides complete set of static and fire proofing hygienic systems for hygienic rooms, operation rooms and hygienic workshops, including walls, ceilings, anti-static workbenches and so on. It fully meets anti-static, hygienic and fireproofing requirements and has beautiful appearance, dampproofing, acoustical property, durability and some other physical and chemical performances, thus providing a perfect safety protection system.

VCLEAN™ CLEAN SANDWICH PANEL SYSTEM
VCLEAN™ 维洁 ™ 洁净板系统

岩棉夹芯复合板
Rockwool Sandwich Panel

构成：
双层彩涂板，内夹岩棉，四周采用铝合金框架或钢制龙骨框支撑，采用高强度胶水经加压、固化后而制成。
优点：
防火性能好，隔音隔热性能较高；
应用：
广泛应用于食品、制药、电子、科研、航天、医疗等行业的厂房、实验室及各种场所功能性隔断及吊顶。

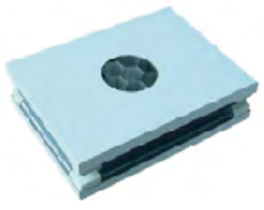
Constitution:
Double-deck sheet with rock wool filing, the side of the plate is supported by aluminum alloy frame or steel keel box after being pressurized and cured by using high strength glue.
Advantages:
Good fire Performance, high noise and heat insulation performance;
Application:
Products are widely applicable to the workshop, laboratory and various functional partition and ceiling of food, pharmaceutical, electronics, scientific, aerospace and medical industry.

纸蜂窝夹芯复合板（一）
Paper Honeycombs Sandwich Panel 1

构成：
双层彩涂板，内夹纸蜂窝，四周采用铝合金框架或钢制龙骨框支撑，采用高强度胶水经加压、固化后而制成。
优点：
隔音隔热性好，重量轻，平直度好。
应用：
广泛应用于食品、制药、电子、科研、航天、医疗等行业的厂房、实验室及各种场所功能性隔断及吊顶，特别适用于高洁净级别的电子生产车间。

Constitution:
Double-deck sheet with paper honeycombs, the side of the plate is supported by aluminum alloy frame or steel keel box after being pressurized and cured by using high strength glue.
Advantages:
High noise and heat insulation performance, low weight, good straightness
Application:
Products are widely applicable to the workshop, laboratory and various functional partition and ceiling of food, pharmaceutical, electronics, scientific, aerospace and medical industry, especially suitable for high level of electronic production workshop.

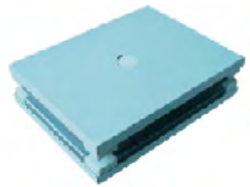
铝蜂窝夹芯复合板
Aluminium Honeycombs Sandwich Panel



构成：
双层彩涂板，内夹铝蜂窝，四周采用铝合金框架或钢制龙骨框支撑，采用高强度胶水经加压、固化后而制成。
优点：
防火性能好，自重轻，平直度好。
应用：
广泛应用于食品、制药、电子、科研、航天、医疗等行业的 厂房、实验室及各种场所功能性隔断及吊顶，特别适用于高洁净级别的电子生产车间。

Constitution:
Double-deck sheet with aluminum honeycombs, the side of the plate is supported by aluminum alloy frame or steel keel box after being pressurized and cured by using high strength glue.
Advantages:
High fire performance, low weight, good straightness
Application:
Products are widely applicable to the workshop, laboratory and various functional partition and ceiling of food, pharmaceutical, electronics, scientific, aerospace and medical industry, especially suitable for high level of electronic production workshop.

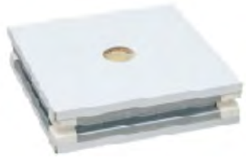
聚氨酯（PU）夹芯复合板
Polyurethane(PU) Sandwich Panel



构成：
彩涂板 +PU 芯材 + 彩涂板，四周采用铝合金框架或钢制龙骨框支撑，采用高强度胶水经加压、固化后而制成。
优点：
绝热性好，自重较轻。
应用：
广泛应用于食品、制药、电子、科研、航天、医疗等行业的 厂房、实验室及各种场所功能性隔断及吊顶，特别适用于高洁净级别的电子生产车间。

Constitution:
Color-coated plate + PU + color-coated plate, the side of the plate is supported by aluminum alloy frame or steel keel box after being pressurized and cured by using high strength glue.
Advantages:
Good adiabaticity, low weight
Application:
Products are widely applicable to the workshop, laboratory and various functional partition and ceiling of food, pharmaceutical, electronics, scientific, aerospace and medical industry, especially suitable for high level of electronic production workshop.

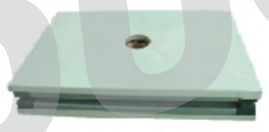
岩棉玻镁夹芯复合板
Rock Wool Glass Magnesium Sandwich Panel



构成：
彩涂板 + 铝蜂窝 + 玻镁板 + 彩涂板，四周采用铝合金框架或钢制龙骨框支撑，采用高强度胶水经加压、固化后而制成
优点：
防火性能好，强度较高，隔音隔热性好。
应用：
广泛应用于食品、制药、电子、科研、航天、医疗等行业的厂房、实验室及各种场所功能性隔断及吊顶。

Constitution:
Color-coated plate + rock wool + glass magnesium plate + color-coated plate, the side of the plate is supported by aluminum alloy frame or steel keel box after being pressurized and cured by using high strength glue.
Advantages:
Good fire Performance, higher strength, high noise and heat insulation performance;
Application:
Application: Products are widely applicable to the workshop, laboratory and various functional partition and ceiling of food, pharmaceutical, electronics, scientific, aerospace and medical industry.

纸蜂窝夹芯复合板（二）
Paper Honeycombs Sandwich Panel 2



构成：
彩涂板 + 玻镁板 + 纸蜂窝 + 玻镁板 + 彩涂板，四周采用铝合金框架或钢制龙骨框支撑，采用高强度胶水经加压、固化后而制成。
优点：
防火性能好，强度较高。
应用：
广泛应用于食品、制药、电子、科研、航天、医疗等行业的厂房、实验室及各种场所功能性隔断及吊顶。

Constitution:
Color-coated plate + glass magnesium plate + Paper Honeycombs + glass magnesium plate + color-coated plate, the side of the plate is supported by aluminum alloy frame or steel keel box after being pressurized and cured by using high strength glue.
Advantages:
Good fire Performance, higher strength.
Application:
Application: Products are widely applicable to the workshop, laboratory and various functional partition and ceiling of food, pharmaceutical, electronics, scientific, aerospace and medical industry.

以上产品规格：
长度：可根据客户需求（一般小于等于 6000mm）
宽度：标准板：985mm、1185mm（可根据客户需求定做）
厚度：50mm

Product Standard:
Length: Can be customized according to customer requirements (Generally less than or equal to 6000mm)
Width: Standard: 985mm, 1185mm (Can be customized according to customer requirements)
Thickness: 50mm

VROOF™ METAL ROOF SANDWICH PANEL SYSTEM

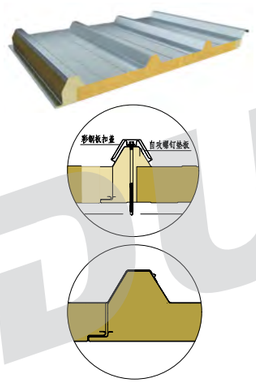
VROOF™ 维屋 ™ 金属屋面夹芯板系统

★国家重点新产品项目 (2012GA00061) 北京市高新技术成果转化项目

High-tech Achievement Transformation Project of Beijing, National Key New Product Project(2012 GA00061)

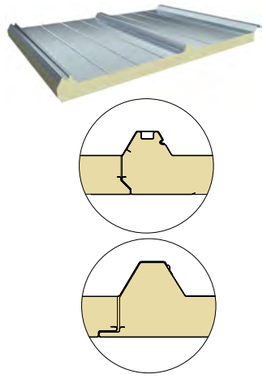
★北京市火炬计划项目 (项目编号：200603109)

Beijing City Torch Program Project (Project No.: 200603109)

DW-PW/CW 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
	DW-PW-I DW-CW-I	外板 Exterior facer	—	—	0.5-0.8
		内板 Interior facer	方波 (S)		0.4-0.7
			浮雕 (E)		0.5-0.6
			纯平 (F)		0.5-0.7
			冲孔 (P)		0.5-0.7
		有效宽度 (mm) Effective width	1000 (外、内)		
		展开宽度 (mm) Spreading width	1200 (外)		
			1070 (内)		
		波峰高度 (mm) Major rib height	42		
		波峰间距 (mm) Rib spacing	333		
		生产厚度 (mm) Thickness	50、75、120、150		
		芯材及容重 Core material density (kg/m³)	玻璃棉 Glasswool ： 64		
			岩棉 Rockwool ： 105~150		

优势：刚度大，排水效果好，抗负风压能力强，搭接严密，施工快捷。

Advantages: high rigidity, effective drainage, strong anti-negative wind pressure ability, tight overlapping and convenient construction.

DW-PUW 系列	板型图及编号 Profile drawing&No	参数 Parameter	表面形状 Profile	图例 Legend	钢板厚度 Thickness of steel sheet
	DW-PUW-I DW-PUW-II	外板 Exterior facer	—	—	0.5-0.8
		内板 Interior facer	方波 (S)		0.4-0.7
			浮雕 (E)		0.5-0.6
			纯平 (F)		0.5-0.7
		有效宽度(mm) Effective width	1000 (外、内)		
		展开宽度(mm) Spreading width	1200 (外)		
			1070 (内)		
		波峰高度(mm) Major rib height	40 (极大提高屋面板承载力 greatly enhance the bearing load of roof panel)		
		生产厚度(mm) Thickness	30、35、50、60、65、75、80、90、100、110、120、125、150		
		芯材及容重 Core material density (kg/m³)	PU：38~42		
			PIR：40~45		

优势：刚度大，螺钉隐藏，防水效果好，抗负风压能力强，搭接严密，施工快捷。

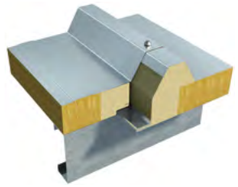
Advantages: high rigidity, screw concealed, strong anti-negative-air-pressure ability, tight overlapping and convenient construction.

新型防火岩棉 / 玻璃棉屋面夹芯板

New-model fireproof rockwool/glasswool roof sandwich panel

采用独有的防火 PIR 聚氨酯侧封技术，提高了搭接处的气密性、水密性，有效防止冷桥现象的发生。同时，克服了板材在搬运、安装过程中搭接处钢板与芯材剥离现象的发生。

The application of exclusive fireproof PIR side sealing technology increases the air-tightness and water-tightness in lap-joints, thus preventing the cold bridge from happening, and at the same time, the seperation of steel sheets from core materials is avoided while transportation and installation.



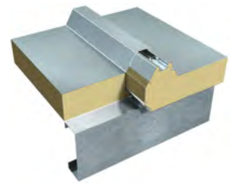
聚氨酯节能屋面夹芯板

Polyurethane (PU) energy-saving roof sandwich panel

多维聚氨酯屋面板采用暗钉连接，板面搭接紧密。独特的防水槽设计，有效防止雨水渗漏，无冷桥现象。

在确保建筑 物保温效果的同时，有效降低客户建筑成本，屋面坡度最低可达 3%。

Screw concealed, Duowei polyurethane roof panels have tight overlapping;The unique capillary groove design effectively avoids rainwater seepage and cold bridge phenomenon;The heat preservation effects of buildings are ensured and the building costs of customers are significantly decreased as well. The minimum roof pitch may be 3%.



ACCESSORIES SYSTEM
配套系统

路虎汽车常熟工业园
柔性防水屋面系统 222692m²
金属幕墙夹心板系统 114283m²

Land Rover Changshu Industrial Park
Flexible waterproof roof system 222,692m²
Metal Curtain Wall Sandwich Panel System 114,283m²

DUOWEI®

配套系统
Accessories System

+

VMBS™ 维集 ™ 模块化集成房屋系统
VMBS™ Modular Building System

+

VDECO™ 维德 ™ 伯爵 / 阶梯 / 平扣装饰板系统
VDECO™ Soffit/Step/ Flat Gusset Panel System

+

VBOX™ 维博 ™ 盒式板复合保温墙面系统
VBOX™ Box Type Decorative Panel Compound Insulation Wall System

+

压型板板型目录
Profiled Steel Sheet Series

+

楼承板板型目录
Profiled Steel Floor Deck Series

+

钢筋桁架楼承板板型目录
Steel Bar Truss Deck Series

ACCESSORIES SYSTEM
配套系统

落水系统
Drainage system

特点

多维创新研制的彩涂钢板落水系统比传统 pvc 落水系统更适用于寒冷地区，可伸缩变型，防止雨雪冻胀而破坏。

Features:
Color-coated steel sheet drainage system researched and developed by Duowei Union Group Co., Ltd. in an innovate way is more applicable to cold region than traditional pvc drainage system, which is extensible and flexible and it is free of damages caused by rain and snow freeze.

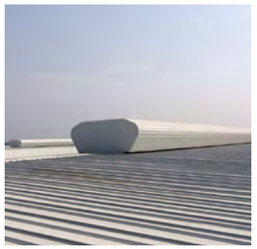
参数 Parameter		
加工钢板厚度（mm） Processing thickness of steel plate	0.5	0.6
截面惯性矩 I（cm^4 / m） Moment of Inertia (I)-cm^4/m	46.58	55.82
截面惯性矩 W（cm^3 / m） The sectional resistance moment (W)-cm^3/m	8.63	10.34
弯头角度 Angle of bent pipe	90°-135°	
原材料宽度 Thickness of raw material	495	

通风系统
Ventilation system

特点

与多维钢结构技术系统相配套、应用最成熟的通风系统。

Features:
Most mature ventilation system is matched with and applied to Duowei steel structure technology system.

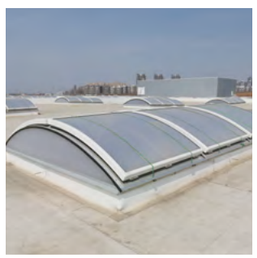


电动排烟系统
Electric exhaust system

特点

与多维屋面系统相配套，有弧形、菱形等多种造型，有启闭式、敞开式等开启方式。全电动操控，高效排烟。

Features:
It is matched with Duowei roof system, with many types such as arc and diamond and many open modes such as hoisting type and open type. Full-electric control, efficient smoke exhaust



幕墙窗系统
Curtain wall window system

特点

与多维金属幕墙夹芯板系统相配套，自主研发并获得国家授权专利的幕墙窗系统。

Features:
It is matched with Duowei metal curtain wall sandwich panel system and it is independently researched and developed by Duowei Union Group Co., Ltd. with many national patents obtained.

采光 / 遮阳系统
Lighting/shading system

特点

多维自主研发的具有国家授权专利保护的采光 / 遮阳系统。

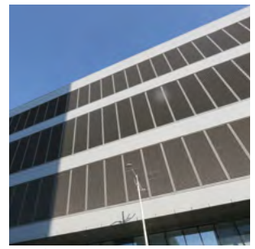
Features:
It is independently researched and developed by Duowei Union Group Co., Ltd. with many national patents obtained.

百叶系统
Shutter system

特点

多维自主研发的具有国家授权专利保护的百叶系统。

Features:
It is independently researched and developed by Duowei Union Group Co., Ltd. with many national patents obtained.



泄爆墙系统
Explosion venting wall system

特点

多维泄爆墙系统主要应用于高等级电子、变电站、高危品存储库房等建筑的轻质泄压墙体。由不超过 60KGm² 的夹芯板、压型钢板、墙体保温组成。泄爆墙体通过泄爆配件或装置使墙体开启并释放压力以控制爆炸的产生或使破坏程度达到最小。

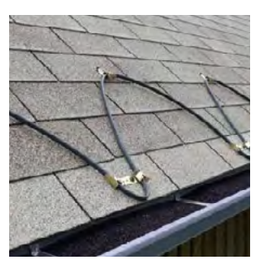
Features:
Duowei explosion venting wall system is mainly applicable to light pressure-relief wall of high-grade electronic, substation, high-risk storage warehouse and other buildings. It is composed of sandwich panel no more than 60KGm², profiled steel sheet and wall insulation. Explosion venting wall can be opened to release pressure via explosion venting parts and device, so as to prevent explosion and minimize the degree of damage.

融雪系统
Snow-melting system

特点

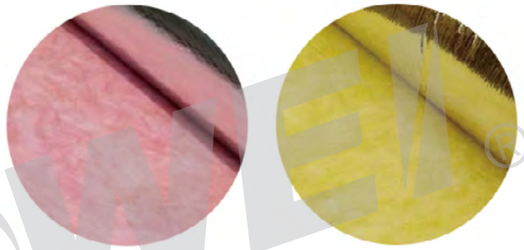
与多维技术系统相配套的屋面专用的融雪化冰系统。该系统由发热、隔热、导热以及控制模块四部分组成。

Features:
It is a snow-ice-melting system specially used for the roof matched with Duowei technology system.
The system is composed of four parts: heating, thermal insulation, heat conduction and control modules.



ACCESSORIES SYSTEM
配套系统

玻璃棉系统
Glasswool system



钢结构对玻璃棉保温材料防潮贴面的基本要求：

- 永久性一次施工，施工便捷，终身使用
- 产品外观美观
- 防潮性佳，避免水汽渗遭产生结露现象，造成钢材腐蚀
- 抗拉强度高，符合檩条跨距施工要求
- 优良的防火性能，符合各等级防火规范
- 有助于吸声降噪

Basic requirements of steel structure for dampproof facing of glasswool insulation material:

- Permanent one-off construction, convenient installationand lifelong use
- Beautiful appearance
- Good moisture resistance, to avoid condensation from water vapor seepage which may further cause corrosion of steel- High tensile strength, meeting the requirements of purlin span construction
- Excellent fire resistance, meeting all levels of fire prevention regulations
- Contributive to sound absorption and noise reduction

如何正确选择钢结构用玻璃棉毡防潮贴面

选用不正确的防潮贴面材料将造成严重后果，主要包括：

- 贴面材料抗拉伸及破裂强度不足或易受环境条件改变而发生变化，影响钢结构建筑的施工质量和使用性能 .
- 贴面材料无抗紫外线能力，暴露在空气中受紫外线影响产生脆化，缩短使用寿命 .
- 贴面材料使用的阻燃剂化学成份对金属具有腐蚀性，透过水汽的传递对钢结构产生锈化腐蚀，造成屋顶、墙面渗漏等问题，甚至影响钢结构的使用寿命 .
- 使用非阻燃型及短期性阻燃型贴面材料，遇火灾时将加速火势蔓延 .

How to select the glasswool dampproof facing for steel structure

The use of improper dampproof facing will cause serious consequences, including:

- Facing material has insufficient tensile strength and rupture strength is easily subject to the change of environmental conditions, which affects the construction quality and service performance of steel structure buildings
- Facing material is not resistant to UV, and once exposed to the air, embrittlement will occur which will shorten the service life.
- Facing material adopts flame retardant (FR) chemicals which are corrosive to metals and corrode the steel structure through the transmission of water vapor, resulting in leakage of roof and wall.It may even affect the service life of the steel structure
- The use of non-FR and short-term flame retardant facing material will accelerate the spread of fire.

钢结构用离心玻璃棉

钢结构用离心玻璃棉毡是用离心法技术，将熔融玻璃纤维化并加以热固性树脂为主的环保型配方粘结剂加工而成的制品，是一种直径只有几微米的玻璃纤维制作而成的有弹性的毡状体，并可根据使用要求选择不罔的防潮贴面在线复合。其具有的大量微小的主气孔隙，使其起到保温隅熟、吸声降噪及安全防护等作用，是钢结构建筑保温隔热、吸声降噪的优质材料。

Centrifugal glasswool for steel structure

Centrifugal glass wool blanket for steel structure is produced by using centrifugation technology, where the molten glass is made into fibering and environment-friendly formula binder dominated by thermosetting resin is added. It is elastic felt made of glass fiber with diameter in a few microns, and allows online compounding of dampproof facing of different types as demanded. It has a large number of small main spiracular slits, endowing it the functions of thermal insulation, sound absorption, noise reduction and safety protection for steel structure buildings.

DUOWEI®

特点

- 保温隔热
- 吸声降噪
- 控制冷凝结露

Characteristics

- Thermal insulation
- Sound absorption and noise control
- Condensation prevention.

产品规格的选定，通常由两个方面的因素决定

1、由建筑物所在地气候条件决定围护结构热阻值 (R 值) 的要求，R=T/ k(T– 玻璃棉毡厚度，k– 玻璃锦毡导热系数) 从而可计算出所需的玻璃棉棉毡规格 .

2、建筑物工作环境的控制冷凝结露要求：由下列结露点表可看出，冷凝结露除了与工作环填温度有关外，还与室内空气相对温度有关。控制冷凝结露，则要求通过热工计算，选用相应规格的玻璃棉毡，使建筑物室内的表面温度高于露点温度。

The selection of product specifications is usually determined by two factors

1. Thermal resistance (R) is subject to local climatic conditions of the building R=T/ k (T- thickness of glass wool felt, k- heat conductivity coefficient of glass wool felt) and then the required specifications of glass wool felt can be calculated.
2. Condensation and dewing control requirements for building service environment: from the following dewpoint table, condensation, in addition to working environment temperature, condensation and dewing is also subject to the relative temperature of indoor air. In order to control condensation and dewing, the glass wool felt of proper specification should be selected by thermal calculation to make the surface temperature inside the building higher than dew point temperature.

物理性质
Physical properties

性能 Properties	试验方法 Test Methods	技术要求 Technical Requirements
热荷重收缩温度 Reshrinking temperature	GB/T 11835–1998	摄氏 250 度—400 度 250~400℃
耐腐蚀性 Corrosion resistance	ASTM C665	无化学反应 No chemical reaction
抗霉菌性 Mold resistance	ASTM C665	不生霉 Mildewproof
吸湿性 Hygroscopicity	ASTM C1104 GB5480.7–87	在摄氏 49 度，相对湿度 90% 时， 不大于其重量 3% 不大于其重量 5% At 49℃ and 90% relative humidity, not more than 3% of its weight not more than 5% of its weight
湿气渗透率 Moisture permeability	ASTM E96 GB/T 17146–1997	最大 0.013 克 /24 小时 • 平方米 • 毫米水银 At maximum 0.013g/24 hours• Square meter• mmHg
燃烧性能 Combustion performance	UL723 ASTM E84 CANIULC S.102 中国国标 Chinese National Standard GB 8624	火焰传播：25 烟气扩散：50 A 级不燃性材料 Flame propagation: 25 Flue gas diffusion: 50 Grade A non-flammable material

自攻螺钉：
Self-tapping screw system

优良的抗腐蚀能力，建筑钢结构屋（墙）面固定的首选，自攻钉彩色螺帽与彩板匹配满足了客户个性化需求并具有耐老化，不褪色性能。

With excellent corrosion resistance, it is preferred for fixing of building steel structure roof (wall). The color nut of self-tapping screw well matches with painted plate, meeting the individual needs of customers, with anti-aging and non-fading performance.

VMBS™ MODULAR BUILDING SYSTEM

VMBS™ 维集 ™ 模块化集成房屋系统

多维集成房屋系统，集合多维精湛的轻钢结构系统技术、集装箱房屋系统技术与金属幕墙与压型钢板系统技术于一体。通过专项设计研制，可用于旅游酒店、景区景观、商场超市、建设营地、军事作训、野外医疗等多种用途的房屋建筑系统。

Duowei integrated housing system is a collection of Duowei excellent light steel structure system technology, container house system technology, metal curtain wall and profiled steel sheet system technology. With special design and development, it can be applicable for tourist hotel, landscape of the sightseeing, supermarkets, site camp, military exercise and training barracks, field medical treatment.

模块化房屋实景图 ^
Realistic Picture of Modular Houses

委内瑞拉马拉凯基地宿舍 V
Maracay Base Dormitory in Venezuela

技术参数
Specification

箱体规格：

外尺寸：6055mm × 2435mm × 2796mm（ISO 标准尺寸）

内尺寸：5895mm × 2270mm × 2500mm

外尺寸：6055mm × 3000mm × 2796mm

内尺寸：5895mm × 2840mm × 2500mm

Size(L×W×H)

Outer: 6055mm×2435mm×2796mm (ISO Dimension)

Inner:5895mm×2270mm×2500mm

Outer:6055mm×3000mm×2796mm

Inner:5895mm×2840mm×2500mm

VDECO™ SOFFIT/STEP/ FLAT GUSSET PANEL SYSTEM
VDECO™ 维德 ™ 伯爵 / 阶梯 / 平扣装饰板系统

伯爵装饰板
Soffit decorative panel

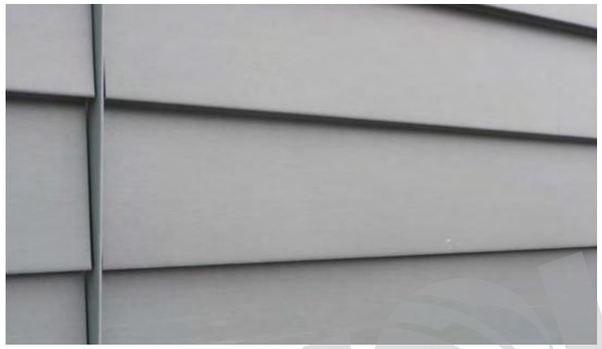
技术参数
有效宽度：200-400mm
生产厚度：0.6-0.8mm
材质：彩涂钢板、钛锌板、铝板

Technical data
Effective Width: 200-400mm
Thickness Available: 0.6-0.8mm
Material: PPGI, Titanium-zinc Plate and Aluminum Plate

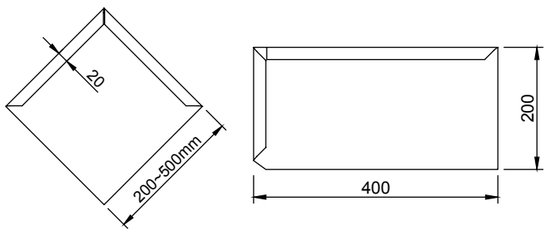
阶梯装饰板
Step decorative panel

技术参数
有效宽度：200-400mm
生产厚度：0.6-0.8mm
材质：彩涂钢板、钛锌板、铝板

Technical data
Effective Width:225-425mm
Thickness Available: 0.6-0.8mm
Material:PPGI, Titanium-zinc Plate and Aluminum Plate

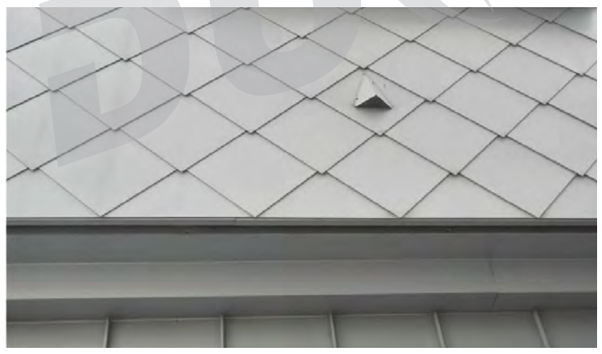


平扣装饰板
Flat Gusset Panel



技术参数
边长：200-500mm
生产厚度：0.6-1.0mm
材质：钛锌板、铝板
形状可选：菱形、矩形、六边形等

Technical data
Length: 200-500mm
Thickness Available: 0.6-1.0mm
Material: Titanium-zinc Plate and Aluminum Plate
Optional Design: Rhombus, Rectangle and Hexagon



VBOX™ BOX TYPE DECORATIVE PANEL COMPOUND INSULATION WALL SYSTEM
VBOX™ 维博 ™ 盒式板复合保温墙面系统

盒式板复合保温墙面系统，是多维创新研发的具有极强装饰性能，并具有复合保温功能的墙面系统。

- 墙面横向布置；
- 优越的无檩构造体系，代替墙面内板和墙面檩条，可跨过 8m 间距的柱距；
- 通常两端使用射钉、自攻螺钉固定于钢柱上，内填充保温材料，隐藏式扣合搭接；
- 通常用于外墙竖铺，若需横铺，则加次檩条。

Box type decorative panel system is a wall system with extremely strong decorative performance and compound insulation function innovated, researched and developed by Duowei Union Group Co., Ltd.

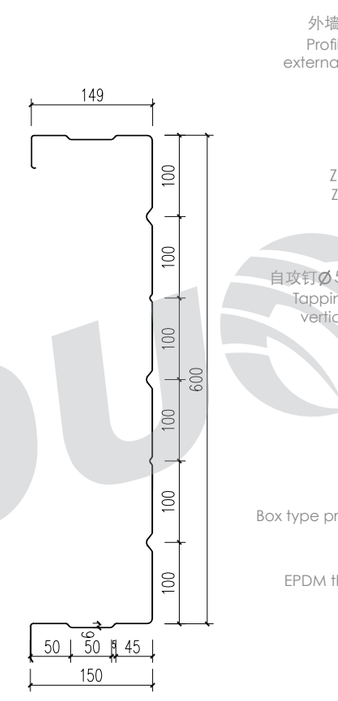
- Wall is in horizontal arrangement;
- Superior no-purlin structure system can replace internal panel of wall and wall purlin, and it can also stride column space of 8m;
- Generally, shoot nail and tapping screw are used on both ends to be fixed on steel column with thermal insulation material filled inside. Besides, concealed buckled lap joint is also adopted.
- It is generally vertically laid on external wall. If horizontal laying is required, second purlin shall be used.

盒式板复合保温墙面系统
Box type decorative panel system

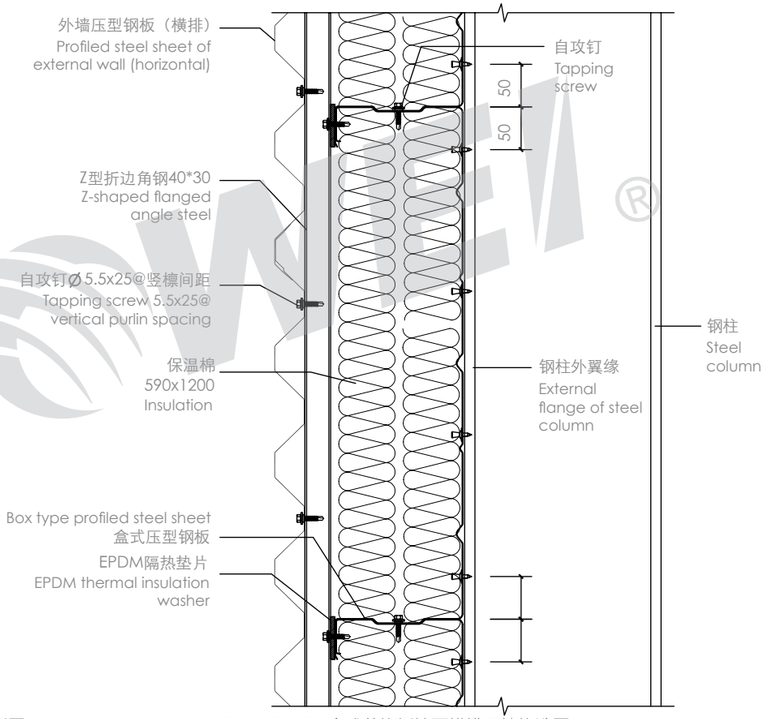
DW150-600 型盒式板技术参数
Technical Parameters of DW150-600 Box Type Decorative Panel

压型钢板型号 Model	有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板厚 Thickness (mm)	每平米重量 Unit weight per linear meter (kg/m²)	截面惯性矩 Moment of inertia (I)-cm⁴/m (mm)	截面抵抗矩 The sectional resistance moment(W)-cm³/m (mm)
DW150-600	600	1000	0.8	6.28	385.74	33.83
			1.0	7.065	480.66	42.16
			1.2	9.42	575.00	50.43
			1.5	11.775	715.34	63.30

（挠度限值 1/200） Deflection limit value		DW150-600 板型 不同跨度不允许均布荷载（KN/m²） DW150-600 Profile Uniform load is not allowed for different spans								
板材 steel plate	钢板厚度 thickness	4.0m	4.5m	5.0m	5.5m	6.0m	6.5m	7.0m	7.5m	8.0m
Q235	0.8mm	3.46	2.74	2.22	1.83	1.41	1.11	--	--	--
	1.0mm	4.32	3.41	2.76	2.28	1.76	1.38	1.10	--	--
	1.2mm	5.16	4.08	3.30	2.73	2.10	1.65	1.32	1.07	--
	1.5mm	6.48	5.12	4.15	3.40	2.61	2.06	1.65	1.34	1.10
Q345	0.8mm	4.76	3.34	2.44	1.83	1.41	1.11	--	--	
	1.0mm	5.94	4.17	3.04	2.28	1.76	1.38	1.10	--	--
	1.2mm	7.10	4.99	3.63	2.73	2.10	1.65	1.32	1.07	--
	1.5mm	8.84	6.20	4.52	3.40	2.62	2.06	1.65	1.34	1.10

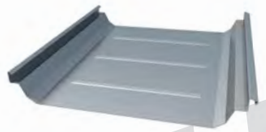


DW150-600 盒式装饰板板型图
Type of DW150-600 Box Type Decorative Panel



DW150-600 盒式装饰板墙面横排无檩构造图
Horizontal No-purlin Structure of DW150-600 Box type decorative insulation sandwich wall panel

DW-19 型

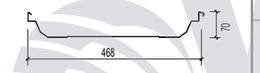


特点：

360 度直立锁边，表面无螺钉外露，防水性能优异；滑动支座连接，预防温度变化引起的屋面伸缩变形破坏，施工速度快。

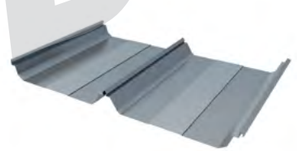
Features:

360-degree vertical overlock, no bolt exposure with excellent waterproofness; connected with sliding support to avoid roof damage by deformation and shrinkage due to temperature variation in addition to the its rapid construction speed.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
468	600	0.5	32.63	6.04	隐藏式屋面板 Screw hidden roof panel
		0.6	39.16	7.25	

DW66-394-788 型

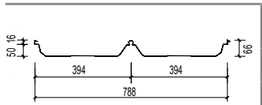


特点：

360 度直立锁边，表面无螺钉外露，防水性能优异；滑动支座连接，预防温度变化引起的屋面伸缩变形破坏，施工速度快。

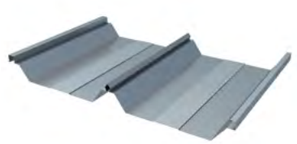
Features:

360-degree vertical overlock, no bolt exposure with excellent waterproofness; connected with sliding block to avoid roof damage by deformation and shrinkage due to temperature variation in addition to the its rapid construction speed.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
788	1000	0.5	27.66	9.45	隐藏式屋面板 Screw hidden roof panel
		0.6	34.98	10.99	

DW51-380-760 型 （角驰Ⅲ型）

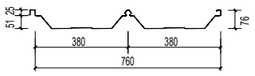


特点：

180 度锁边连接，波峰高，强度大、可以起拱；表面无螺钉外漏，防水性能优异。

Features:

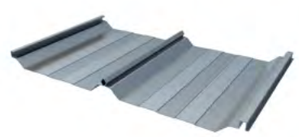
Connected with 180-degree overlock; with high wave crest and strong intensity, the bulging effect can be achieved; no bolt exposure with excellent waterproofness.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
760	1000	0.6	37.53	12.41	隐藏式屋面板 Screw hidden roof panel
		0.8	49.71	6.52	

注：可加工最大厚度 1.0mm。
Note: Max. machinable thickness of 1.0mm

DW39-410-820 型 （角驰 820 型）

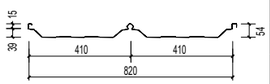


特点：

180 度锁边连接，波峰高，强度大、可以起拱；表面无螺钉外漏，防水性能优异。

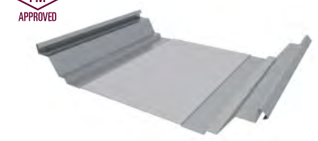
Features:

Connected with 180-degree overlock; with high wave crest and strong intensity, the arching effect can be achieved; no bolt exposure with excellent waterproofness.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
820	1000	0.5	32.05	11.05	隐藏式屋面板 Screw hidden roof panel
		0.6	38.27	12.93	
		0.8	50.05	17.40	

DW75-465 型

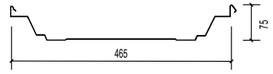


特点：

强度大，适用于大跨度屋面。

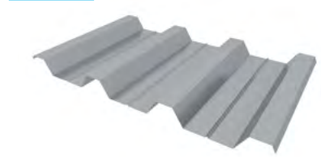
Features:

Applicable to long-span roof due to its high-strength feature.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
465	600	0.5	43.08	7.69	360 度咬口隐藏式屋面板 Screw hidden roof panel
		0.6	51.83	9.25	
		0.7	60.58	10.81	
		0.8	69.33	12.38	

DW51-250-750 型 （V5125）

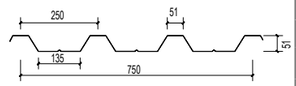


特点：

可加工最大厚度 1.2mm。

Features:

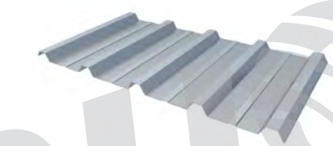
Max. machinable thickness of 1.2mm.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
750	1000	0.5	31.05	10.01	屋面板 Roof panel
		0.6	37.26	12.02	
		0.7	43.47	14.02	
		0.8	49.68	16.02	

注：可加工最大厚度 1.2mm。
Note:Max. machinable thickness of 1.2mm

DW28-205-820 型

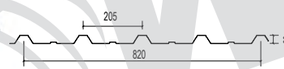


特点：

可加工强度为 550Mpa 压型钢板，可以起拱，施工速度快，经济性能佳。

Features:

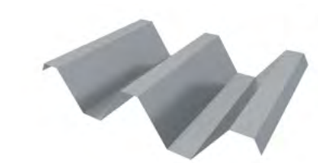
The machinable strength is 550Mpa, it can be arched.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
820	1000	0.5	10.28	5.24	屋面板 Roof panel
		0.6	12.05	6.33	
		0.8	16.34	8.37	

注：可加工最大厚度 1.0mm。
Note:Max. machinable thickness of 1.0mm

DW130-300-600 型 （W-600）

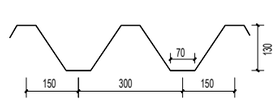


特点：

设计独特，抗风能力强，广泛用于大跨度屋面。

Features:

Widely applied to long-span roof construction due to its unique design and strong wind resistance capability.

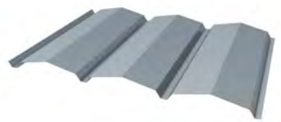


有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
600	1000	0.5	193.78	27.68	大跨度屋面板 Long-span roof panel
		0.6	232.56	33.22	
		0.7	271.32	38.76	
		0.8	310.11	44.30	

PROFILED STEEL SHEET SERIES

压型板板型目录

XY50-290-870 型



特点：

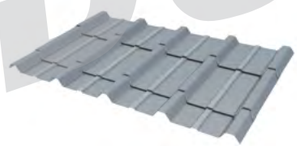
强度高，抗弯抗压，安装灵活快捷。

Features:

High-strength, bending and compression resistance and convenient and efficient construction procedure.

有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
870	1000	0.6	13.48	4.39	屋面板 Roof panel
		0.8	17.97	5.84	
		1.0	26.96	7.28	

DW25-210-840 型（仿古装饰瓦）

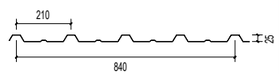


特点：

外观造型美观、质量轻、安装便捷。

Features:

Lightweight, convenient and efficient construction procedure and attractive appearance.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
840	1000	0.5	6.04	3.35	屋面板 墙面板 Roof panel wall panel
		0.6	7.19	3.99	
		0.7	8.35	4.64	
		0.8	9.51	5.28	

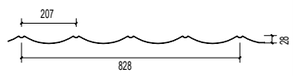
DW28-207-828 型（仿古装饰瓦）

特点：

外观造型美观、质量轻、安装便捷。

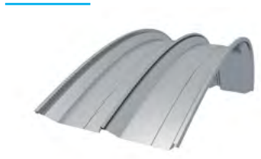
Features:

Lightweight, convenient and efficient construction procedure and attractive appearance.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
828	1000	0.5	5.04	3.15	仿古瓦 Antique tile
		0.6	6.05	3.78	
		0.7	7.07	4.42	
		0.8	8.09	5.05	

DW51-380-760 型（弧形瓦）

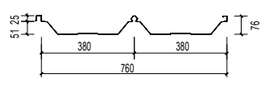


特点：

外观造型美观、质量轻、安装便捷。

Features:

Lightweight, convenient and efficient construction procedure and attractive appearance.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
760	1000	0.5	0.81	1.63	弧形瓦 Arc tile
		0.6	0.93	1.86	
		0.7	1.14	2.29	
		0.8	1.31	2.63	

注：可加工最大厚度 1.2mm。
Note:Max. machinable thickness of 1.2mm

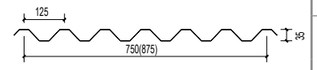
DW35-125-750(875) 型（V125 型）

特点：

可加工 G550 高强度彩钢板，适用于墙面外板及屋面板，施工方便快捷。

Features:

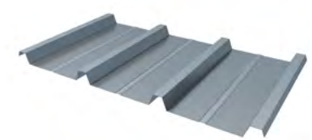
The machinable strength is G550, applicable for wall surface plating and roof boarding.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
750/875	1000 /1200	0.5	11.54	6.23	屋面板 墙面板 Roof panel wall panel
		0.6	13.85	7.48	

注：可加工最大厚度 1.2mm。
Note:Max. machinable thickness of 1.2mm

DW35-280-840 型（840 型）

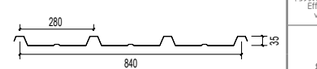


特点：

强度高，施工方便快捷。

Features:

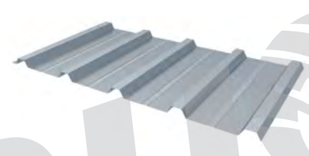
High strength and convenient and efficient construction procedure.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
840	1000	0.5	10.32	8.81	屋面板 墙面板 Roof panel wall panel
		0.6	11.17	10.57	
		0.8	15.77	14.21	

注：可加工最大厚度 0.9mm。
Note:Max. machinable thickness of 0.9mm

DW25-210-840 型

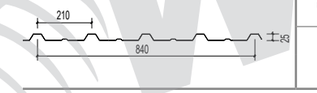


特点：

加工厚度 0.4-1.0mm，强度高，施工方便快捷。

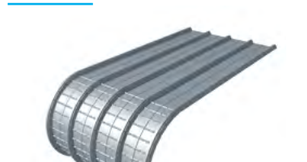
Features:

Machinable thickness of 0.4-1.0mm with high strength and convenient and efficient construction procedure.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
840	1000	0.5	9.18	4.68	屋面板 墙面板 Roof panel wall panel
		0.8	14.59	7.47	

DW28-205-820（弧型）

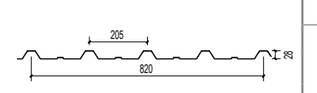


特点：

施工方便快捷、造型美观。

Features:

Convenient and efficient construction procedure attractive appearance.

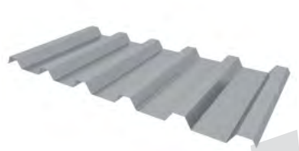


有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
820	1000	0.5	7.60	3.80	屋面板 墙面板 Roof panel wall panel
		0.6	9.12	4.56	
		0.7	10.64	5.32	
		0.8	12.17	6.08	

注：可加工最大厚度 0.9mm。
Note:Max. machinable thickness of 0.9mm

压型板板型目录

DW35-190-950(760) 型

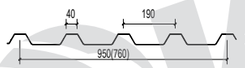


特点：

质轻，便于安装与维护，拥有较好的防火与防水性能，广泛用于工业厂房建筑。

Features:

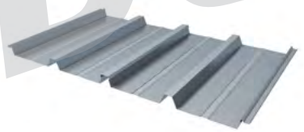
Lightweight, easy to be installed and repaired along with favorable fireproofing and waterproofing performances, being widely applied to factory building construction.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
950/760	1200/1000	0.5	16.86	7.33	屋面板 墙面板 Roof panel wall panel
		0.6	20.24	8.80	
		0.7	23.62	10.27	
		0.8	27.01	11.74	

注：可加工最大厚度 1.0mm。
Note:Max. machinable thickness of 1.0mm

DW32-210-840 型（隐藏式）

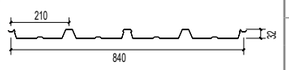


特点：

防水性能优异、安装过程中无机械损伤，隐藏式螺钉设计，防腐防尘效果佳。

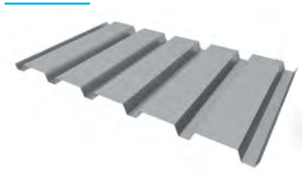
Features:

High strength and convenient and efficient construction procedure.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
840	1000	0.5	10.23	9.2	屋面板 墙面板 Roof panel wall panel
		0.6	12.29	10.75	
		0.8	16.38	14.71	

DW30-160-800 型（V3016）

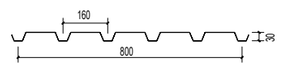


特点：

广泛用于墙面板、屋面板，外形美观时尚。

Features:

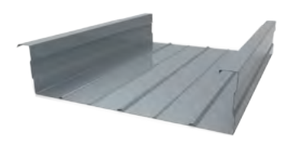
Widely applied to wall surface plating and roof boarding projects and with fashionable appearance effect.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
800	1000	0.5	9.79	4.89	屋面板 墙面板 Roof panel wall panel
		0.6	11.74	5.87	
		0.7	13.70	6.85	
		0.8	15.65	7.82	

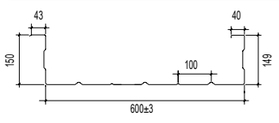
注：可加工最大厚度 0.9mm。
Note:Max. machinable thickness of 0.9mm

DW150-600 型



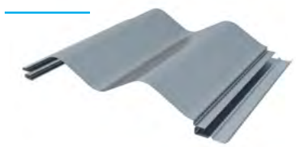
新板型推荐：

New products recommended:



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	用 途 Usage
600	1000	可加工厚度：0.75mm、0.8mm、0.9mm、1.0mm。可加工最大厚度1.5mm。 Features: Thickness: 0.75mm, 0.8mm, 0.9mm, 10.mm. Max. machinable thickness of 1.5mm.	墙面板 Wall panel

DW-311 型

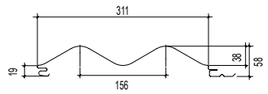


特点：

加工厚度 0.5-0.7mm，强度高，施工方便快捷。

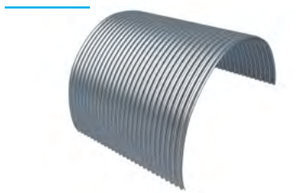
Features:

Machinable thickness of 0.5-0.7mm with high strength and convenient and efficient construction procedure.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
311	500	0.5	30.45	10.87	墙面板 wall panel
		0.6	35.52	12.69	
		0.7	40.60	14.50	

DW10-32-864（弧型）

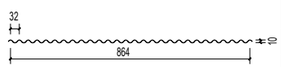


特点：

质量轻、强度高、施工方便快捷、造型美观。

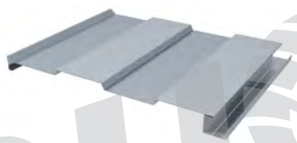
Features:

Lightweight, high-strength, convenient and efficient construction procedure and attractive appearance.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
864	1000	0.5	0.81	1.63	小波纹 墙面板 Ripple
		0.6	0.93	1.86	
		0.7	1.14	2.29	
		0.8	1.31	2.63	

DW10-95-373 型

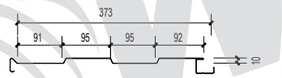


特点：

墙面板隐钉连接，波形独特，美观时尚。

Features:

Plate connected in fashionable wave pattern with concealed nails.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
373	500	0.5	5.39	2.45	墙面板 wall panel
		0.6	6.46	2.94	
		0.7	7.53	3.42	
		0.8	8.61	3.91	

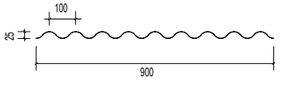
DW25-100-900 型

特点：

强度高、外形美观、施工方便快捷。

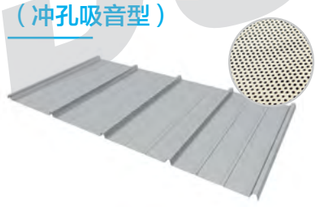
Features:

High-strength, convenient and efficient construction procedure and attractive appearance.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
900	1000	0.5	4.73	3.70	大波纹 墙面板 Big wave wall panel
		0.6	5.68	4.47	
		0.7	6.62	5.25	
		0.8	7.57	6.06	

DW15-225-900 型（冲孔吸音型）

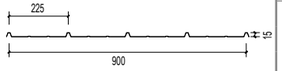


特点：

可加工材质为 Q345 的高强度彩钢板，施工方便快捷。

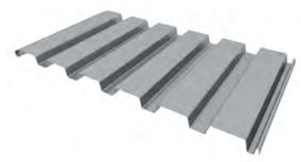
Features:

The machinable strength is Q345.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
900	1000	0.5	1.00	0.77	墙面板 内衬板 wall panel inner lining panel
		0.6	1.20	0.92	
		0.7	1.41	1.08	
		0.8	1.62	1.24	

DW-914

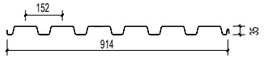


特点：

安装灵活快捷，美观时尚。

Features:

Convenient and efficient construction procedure attractive appearance.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	每米重量 Unit weight per linear meter (Kg/M)	用 途 Usage
914	1250	0.8	7.85	柔性防水屋面屋面板 Roof deck waterproof roof panel
		0.9	8.83	
		1.0	9.81	
		1.2	11.77	

注：可加工最大厚度 1.5mm。
Note:Max. machinable thickness of 1.5mm

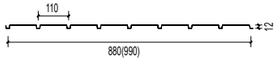
DW12-110-880(990) 型（V–110 型）

特点：

施工方便快捷。

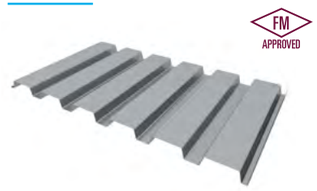
Features:

High strength and convenient and efficient construction procedure.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
880	1000	0.5	0.92	0.92	墙面板 内衬板 Wall panel & liner
		0.6	1.10	1.10	
		0.7	1.29	1.29	
		0.8	1.47	1.47	

DW38-150-900

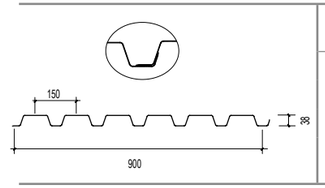


特点：

安装灵活快捷，美观时尚。

Features:

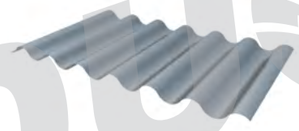
Convenient and efficient construction procedure attractive appearance.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	每米重量 Unit weight per linear meter (Kg/M)	用 途 Usage
900	1250	0.75	7.35	柔性防水屋面屋面板 Roof deck waterproof roof panel
		0.9	8.83	
		1.2	11.77	
		1.5	14.71	

注：可加工最大厚度 1.5mm。
Note:Max. machinable thickness of 1.5mm

DW35-130-780 型

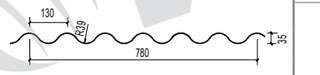


特点：

可加工强度为 Q345，做建筑横排板，效果美观大气，充分体现了建筑的时代特色。

Features:

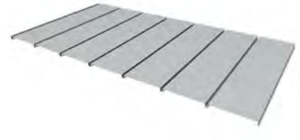
The machinable strength is Q345 being capable of bringing out the feeling of magnificence when being used as horizontal bar in building structures and giving fully expression to the epoch characteristics of the building.



有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
780	1000	0.5	0.81	1.63	墙面板 内衬板 Wall panel & liner
		0.6	0.93	1.86	
		0.7	1.14	2.29	
		0.8	1.31	2.63	

注：可加工最大厚度 1.0mm。
Note:Max. machinable thickness of 1.0mm

DW10-130-910 型

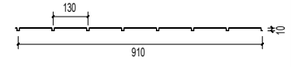


特点：

强度高、外形美观、施工方便快捷。

Features:

High-strength, convenient and efficient construction procedure and attractive appearance.

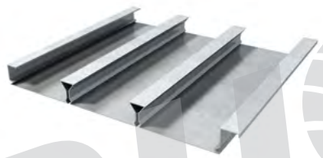


有效覆盖宽度 Effective width	展开宽度 Spreading width	板 厚 Thickness	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
910	1000	0.5	0.55	0.62	内衬板 Liner
		0.6	0.66	0.74	
		0.7	0.77	0.86	
		0.8	0.88	0.98	

PROFILED STEEL SHEET FLOOR DECK SERIES

楼承板板型目录

DW65-510 （闭口型）

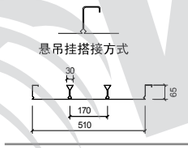


特点：

平整的板底外观，绝佳的防火性能，板底卡槽式悬吊系统，施工简单快速。

Features:

Even slab bottom appearance; Excellent fire prevention performance; Board (Slab) bottom slot-type suspension system; Simple, rapid construction.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
510	1000	0.75	92.67	20.59	钢楼承板 steel deck
		0.9	111.22	24.72	
		1	123.59	27.46	
		1.2	147.94	32.88	

DW48-200-600 （闭口型）

特点：

平整的板底外观，绝佳的防火性能，板底卡槽式悬吊系统，施工简单快速 。

Features:

Even slab bottom appearance; Excellent fire prevention performance; Board (Slab) bottom slot-type suspension system; Simple, rapid construction.

有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
600	1000	0.75	39.68	12.06	钢楼承板 steel deck
		0.9	4748	14.44	
		1	52.75	16.02	
		1.2	63.29	19.25	

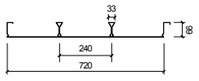
DW66-240-720 （720 闭口型）

特点：

平整的板底外观，绝佳的防火性能，板底卡槽式悬吊系统，施工简单快速 。

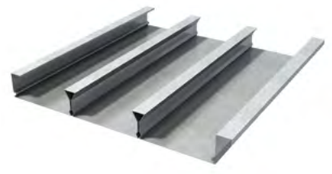
Features:

Even slab bottom appearance; Excellent fire prevention performance; Board (Slab) bottom slot-type suspension system; Simple, rapid construction.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
720	1250	0.75	80.36	16.4	钢楼承板 steel deck
		0.9	96.88	19.77	
		1	107.06	21.85	
		1.2	129.31	26.39	

DW65-185-555 （闭口型）

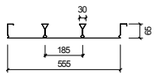


特点：

平整的板底外观，绝佳的防火性能，板底卡槽式悬吊系统，施工简单快速 。

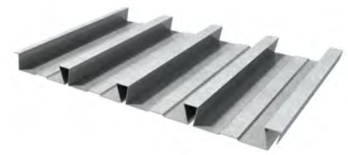
Features:

Even slab bottom appearance; Excellent fire prevention performance; Board (Slab) bottom slot-type suspension system; Simple, rapid construction.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
555	1050	0.75	86.68	18.9	钢楼承板 steel deck
		0.9	104.41	22.6	
		1	115.74	25.03	
		1.2	138.98	29.87	

DW51-190-760 （缩口型）

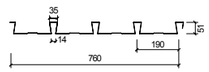


特点：

可加工厚度为 1.2mm 以下，材质为 Q235/Q345 的高强度钢承板。

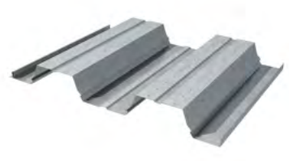
Features:

It can be processed into floor deck with mild steel panel within 1.2mm thickness.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
760	1250	0.75	49.93	13.87	钢楼承板 steel deck
		0.9	60.01	17.14	
		1	66.75	19.07	
		1.2	80.26	22.3	

DW76-688

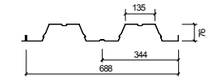


特点：

可加工厚度为 1.5mm 以下，材质为 Q345 的高强度钢承板。

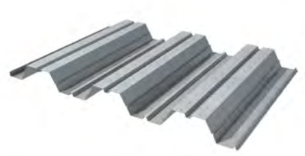
Features:

It can be processed into floor deck with mild steel panel within 1.5mm thickness.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
688	1000	0.75	112.49	26.78	钢楼承板 steel deck
		0.9	134.97	32.14	
		1	150	35.71	
		1.2	180	42.85	

DW51-240-720

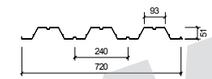


特点：

可加工厚度为 1.2mm 以下，材质为 Q235/Q345 的高强度钢承板。

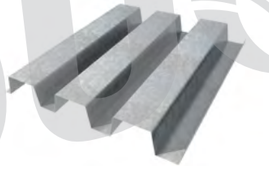
Features:

It can be processed into floor deck with mild steel panel within 1.2mm thickness.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
720	1000	0.75	47.08	17.44	钢楼承板 steel deck
		0.9	56.51	20.93	
		1	62.78	23.25	
		1.2	75.36	27.91	

DW75-200-600 （7520 型、U-200 型）

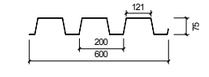


特点：

可加工厚度在 1.5mm 以下，材质为 Q345 的高强度钢承板。

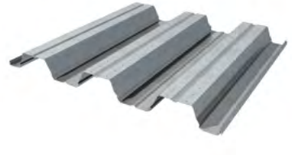
Features:

It can be processed into floor deck with mild steel panel within 1.5mm thickness.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
600	1000	0.75	118.65	34.9	钢楼承板 steel deck
		0.9	142.35	43.14	
		1	158.17	49.93	
		1.2	189.67	57.47	

DW76-305-915

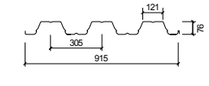


特点：

可加工厚度为 1.2mm 以下，材质为 Q235/Q345 的高强度钢承板。

Features:

It can be processed into floor deck with mild steel panel within 1.2mm thickness.



有效覆盖宽度 Effective width (mm)	展开宽度 Spreading width (mm)	板 厚 Thickness (mm)	截面惯性矩 Moment of inertia (I)-cm⁴/m	截面抵抗矩 The sectional resistance moment(W)-cm³/m	用 途 Usage
915	1250	0.75	105.48	26.37	钢楼承板 steel deck
		0.9	126.59	31.65	
		1	140.66	35.16	
		1.2	168.83	42.21	

STEEL BAR TRUSS DECK SERIES

钢筋桁架楼承板板型目录

多维 · TDM、TDV 型钢筋桁架楼承板产品概述：
Duowei .TDM,TDV steel bar truss deck introduction

多维 · TDM、TDV 型钢筋桁架楼承板是将楼板中的钢筋在工厂加工成钢筋桁架，并将钢筋桁架与镀锌压型钢板底模焊接成一体的组合模板。在施工阶段，钢筋桁架楼承板可承受施工荷载，直接铺设到梁上，进行简单的钢筋工程便可浇筑混凝土。由于完全替代了模板功能，减少了模板架设和拆卸工程，大大提高了楼板施工效率。

Duowei.TDM, TDV steel bar truss deck is a composite template which is welded into one combination by the steel truss and galvanized steel rolled-plate, and the steel truss is welded by rebar in the shop. In the construction phase, the steel truss deck can sustain the construction loads, and be laid on the beam directly, then do some simple rebar work, it can do the concrete work. the steel truss deck replaces thetemplate without erection and demolition, so improve the construction effi ciency.

产品构成：
Product formation

TDM、TDV 型钢筋桁架楼承板由上弦钢筋、下弦钢筋、腹杆钢筋、底模、支座钢筋构成。

The TDM,TDV steel bar truss deck is formed by the upper rebar, lower rebar, web rebar, deck and support rebar.

TDM 型钢筋桁架楼承板
TDM steel bar truss deck

TDV 型钢筋桁架楼承板
TDV steel bar truss deck

材料参数：
Component parameters

上、下弦钢筋：采用三级热轧盘螺钢筋 HRB400 级、或冷轧带肋钢筋 CRB550 级。

腹杆钢筋：采用冷轧光圆钢筋。

TDM、TDV 底模钢板：采用镀锌钢板常用厚度为 0.4 ~ 0.5mm，双面镀锌量 120g/m²。

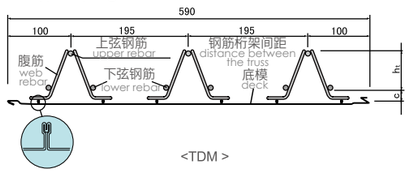
Upper, lower rebar: Grade 3 coiled hot-rolled HRB400 or cold-rolled ribbed Grade CRB550.
TDM, TDV deck steel plate : galvanized steel plate, the thickness is 0.4~0.5mm, and the coating mass is 120g/m² with tow-sides.

产品尺寸参数：
Product size parameters

上下弦钢筋直径 The diameter of upper & lower rebar	6-14mm
腹杆钢筋直径 The diameter of web rebar	4-7mm
钢筋桁架高度 ht The height of the truss	70-270mm
支座水平钢筋直径 The diameter of the Horizontal support rebar	10mm（h ≤ 100mm），12（h>100mm）
支座竖向钢筋直径 The diameter of the Vertical support reba	12mm（h ≤ 100mm），14（h>100mm）
底模钢板厚度 The thickness of the deck	0.4-0.6mm
底模钢板宽度 The width of the deck	590mm
混凝土保护层厚度 c The thickness of protective concrete	15mm，20mm，25mm，30mm
钢筋桁架楼承板长度 The length of the steel truss deck	1.0-12m

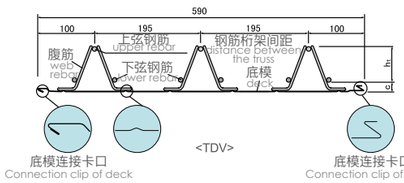
示意图：
Schematic

"M" 型直立肋双折边钢筋桁架楼承板：
"M" type up-right rib steel truss deck with double folds:



<TDM >

"V" 型双折边钢筋桁架楼承板：
"V" type steel truss deck with double folds:



<TDV>

底模连接卡口
Connection clip of deck

底模连接卡口
Connection clip of deck

多维 · TDD 装配可拆式钢筋桁架楼承板产品概述：
Duowei .TDD assembled and detachable steel bar truss deck introduction

多维 · TDD 型装配可拆式钢筋桁架楼承板是将楼板中的钢筋在工厂加工成钢筋桁架，并将钢筋桁架通过塑料扣件、自攻钉与复塑或高强镀锌底模连成一体的组合模板。在施工阶段，钢筋桁架楼承板可承受施工荷载，直接铺设到梁上，进行简单的钢筋工程便可浇筑混凝土。由于完全替代了模板功能，减少了模板架设和拆卸工程，大大提高了楼板施工效率。

Duowei.TDD assemble and detachable steel bar truss deck is a composite template which is joined into one combination by the steel bar truss and plastic deck or high strength galvanized steel rolled-plate, and the steel truss is welded by rebar in the shop. In the construction phase, the steel truss deck can sustain the construction loads, and be laid on the beam directly, then do some simple rebar work, it can do the concrete work. the steel truss deck replaces the template without erection and demolition, so improve the construction effi ciency.

产品构成：
Product formation

TDD 型钢筋桁架楼承板由上弦钢筋、下弦钢筋、腹杆钢筋、复塑模板、支座钢筋、扣件、自攻钉构成。

The TDD steel bar truss deck is formed by the upper rebar, lower rebar, web rebar, plastic deck, support rebar, plastic lock and self-tapping screw.

TDD 型钢筋桁架楼承板
TDD steel bar truss deck

材料参数：
Component parameters

上、下弦钢筋：采用三级热轧盘螺钢筋 HRB400 级、或冷轧带肋钢筋 CRB550 级。

腹杆钢筋：采用冷轧光圆钢筋。

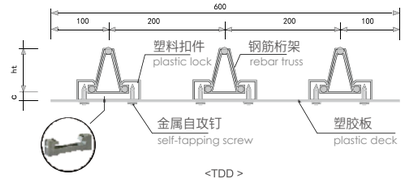
TDD 底模：15mm 厚复合塑料模板或 1.0-1.2mm 高强镀锌板。

Upper, lower rebar: Grade 3 coiled hot-rolled HRB400 or cold-rolled ribbed Grade CRB550.
Web rebar: cold-rolled plain rebar.
TDD deck: 15mm plastic deck or 1.0-1.2mm high strength galvanized steel rolled-plate.

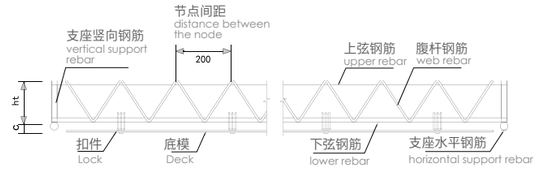
产品尺寸参数：
Product size parameters

上下弦钢筋直径 The diameter of upper & lower rebar	6-14mm
腹杆钢筋直径 The diameter of web rebar	4-7mm
钢筋桁架高度 ht The height of the truss	70-270mm
支座水平钢筋直径 The diameter of the Horizontal support rebar	10mm（h ≤ 100mm），12（h>100mm）
支座竖向钢筋直径 The diameter of the Vertical support reba	12mm（h ≤ 100mm），14（h>100mm）
底模厚度 The thickness of the deck	15mm 复塑模板； 1.0-1.2mm 高强镀锌板
底模宽度 The width of the deck	600mm
混凝土保护层厚度 c The thickness of protective concrete	15mm，20mm，25mm，30mm
钢筋桁架楼承板长度 The length of the steel truss deck	1.0-12m

示意图：
Schematic



<TDD >



< 立面图 Elevation drawing >

深圳市华星光电技术有限公司
第 8.5 代薄膜晶体管液晶显示器件项目
四面企口金属幕墙夹芯板 81000m²

The 8.5 Generation of Thin-fi lm Transistor and Liquid Crystal Display Devices Project of Shenzhen China Star Optoelectronics Technology Co., Ltd. Metal Curtain Wall Sandwich Panel with All-rounded Groove 81,000m²

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BMW

上海宝冶
Shanghai Baoye Group

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LG Display

中国石油
PetroChina

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China Aerospace

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CRCC

保利科技
Poly Technologies

中航技
CATIC

河套酒业
Hetao Liquor

可口可乐
Coca-Cola

阿迪达斯
Adidas

中国交建
China Communications Construction

中国土木
CCECC

中工国际
CAMC