



广东明氏塑胶科技有限公司



明氏塑胶  
MINGSHI PLASTIC



明氏塑胶  
MINGSHI PLASTIC

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Guangdong MingShi Plastic Technology CO.,LTD

A BRIGHT IDEA WORK WITH MINGSHI

# CONTENTS

## 目录

01	<b>COMPANY PROFILE</b> 公司简介	P02
02	<b>OUR TEAM</b> 我们的团队	P06
03	<b>TECHNICAL DEPARTMENT</b> 技术部	P08
04	<b>RAW MATERIAL</b> 原材料	P10
05	<b>PMMA PROCESSING</b> 压克力加工	P16
06	<b>QUALITY CONTROL</b> 品质控制	P20
07	<b>APPLICATION</b> 产品运用	P21
08	<b>PRODUCT</b> 主要产品	
	● PROFILES 型材	P22
	● TUBES 管材	P30
	● ACRYLIC RODS 压克力棒材	P34
	● DRAWINGS 产品图纸	P36
09	<b>CARE AND CLEANING</b> 产品维护	P83
10	<b>CONTACT US</b> 联系我们	cover

## COMPANY PROFILE

### 公司简介

Guangdong Mingshi Plastic Technology CO.,LTD was founded in 2004, which is located in Henglan town, Zhongshan city, Guangdong province, China. Mingshi is a high and new technological enterprise of various types of acrylic and polycarbonate with R&D, manufacturing and sales integrated.

Mingshi specializes in extrusion and injection including profiles, lens, tubes, rods, balls, handles, etc. And also provide second processing solutions and service. Our products are widely used in the industry of lighting, furniture, advisement Medical equipment, building, decoration, bathroom, gift Etc.

MINGSHI PLASTIC has advanced production equipment and a number of experienced professionals engaging in core technology development, production management and quality control. Over the 15 years, our company focuses on strict management, upholds the belief of 'existence with quality, development with credit standing' and is marching steadily toward the development direction of specialization, large scale and internationalization.

To establish scientifically rigorous manufacture system and after-sales service system, MINGSHI PLASTIC sticks to quality first, complies with criteria and regulations and strictly carries out the ISO90001: 2000 international quality control system standard to provide better quality products and services.

Based on the idea of 'marching hand in hand' and policy of 'self-development, making friends by service; self-improvement, winning a market by quality', MINGSHI PLASTIC currently has built up good brand identification and public praise in the industry. Our sales network spreads all over the country and far to Southeast Asia, Europe, America and other countries and regions.



广东明氏塑胶科技有限公司成立于2004年,位于广东省中山市横栏镇茂辉工业区康龙五路中巷1号,是一家集研发、生产、销售各种压克力和PC为一体的高新技术企业。

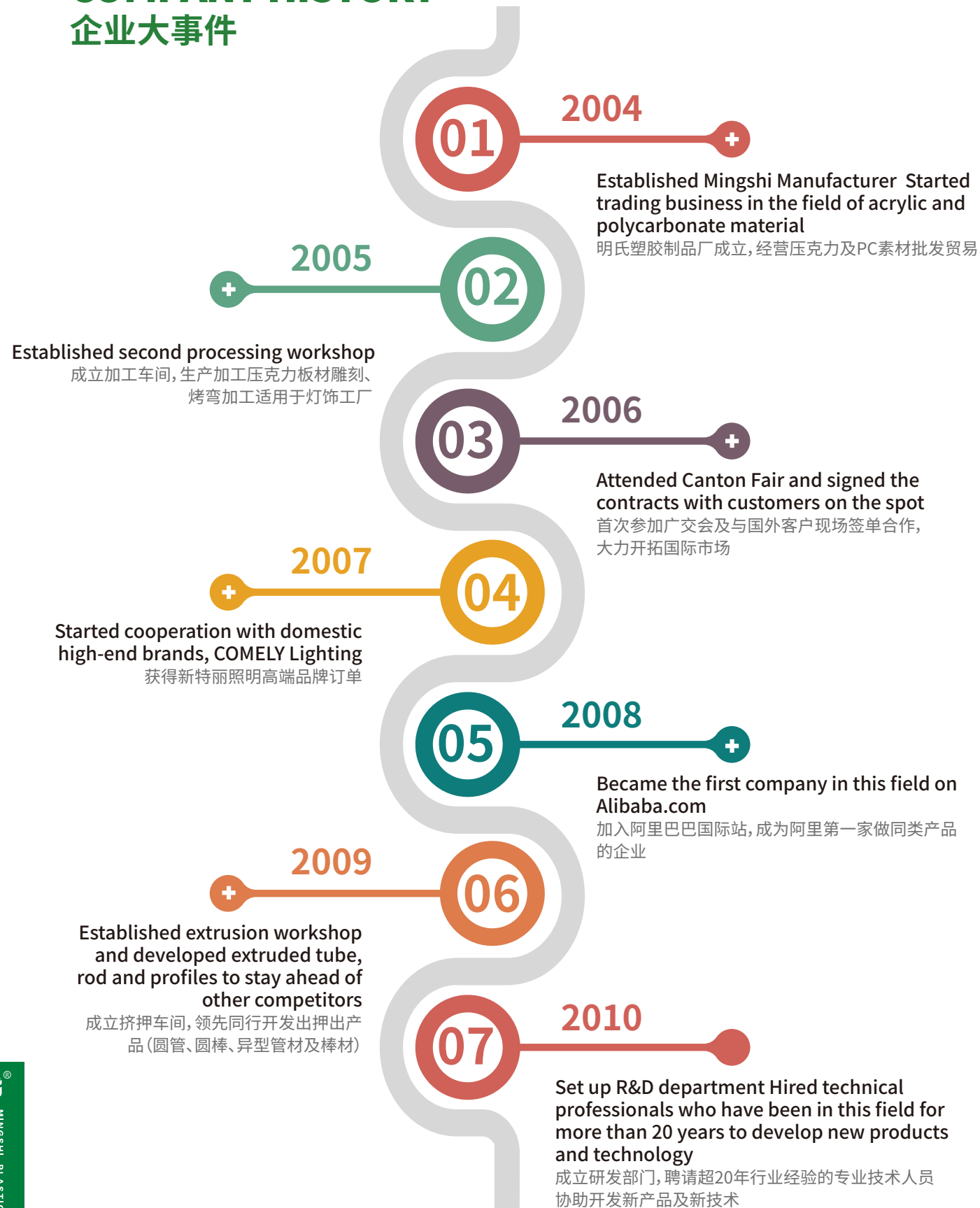
明氏塑胶主营压克力、PC挤出和注塑产品,并提供相应的二次加工综合解决方案和服务。产品广泛应用于传统照明、铁路照明、精品家具、建筑外墙装饰、LED照明、装饰照明、卫浴拉手、礼品、户外广告照明等各商业领域。

明氏塑胶公司拥有多名从事核心技术开发、生产管理、品质管理经验的资深人才,以及先进的生产设备。多年来,明氏塑胶严格管理,本着以“质量求生存,信誉求发展”的宗旨,秉承“专业化、规模化、国际化”的发展方向稳步迈进,坚守质量至上原则,遵守规范标准,严格执行ISO9001:2000国际质量体系,建立起了科学严谨生产制造体系和售后服务体系,为顾客提供优质的产品和服务。

公司本着携手共进之理念,以“自我发展,服务交朋友;自我完善,以质量争市场”为口号,明氏塑胶已经在行业内建立起良好的品牌形象和顾客口碑,销售网络遍布全国,并远销东南亚、欧美等国家和地区,热诚欢迎各界朋友前来参观、考察、洽谈业务!



## COMPANY HISTORY 企业大事件



## OUR TEAM

### 我们的团队

Our team is a remarkable spirit of cooperation, loyalty, decency, hard work, boldness and unselfishness. This attitude has permeated through the rest of the workforce and is the true reason why Mingshi is poised to remain the industry excellent competitiveness in these years.

在我们这个团队中有一种卓越的合作精神，他们负责而积极，并拥有熟练的工作技能。这种态度已经渗透到公司每一位成员，这也是明氏在这些年保持行业竞争力的真正原因。





## TECHNICAL DEPARTMENT 技术部

OUR SKILLFUL TECHNICAL ENGINEERS CAN OFFER ASSISTANCE DURING THE STRUCTURE DESIGN AND WE CAN CREATE SPECIALIST TOOLING FOR COMPLICATED AND INTRICATE EXTRUSION DESIGNS.

1. The phase of the new design development. From the finalization of the drawing to the choice of materials, passing through the evaluation of the new product's performances in the specific environment of the complete project.
  2. Confirmed the development of the new design by customer, we will open the new extrusion mold, test the mold and debug the mold to meet customer's whole requirements including the size tolerance, finish, and the optic.
  3. Production department warrant to make strict quality controls in every step of the production process, by the sampling and measurements method, the products are tested with high-tech equipment.
- . Electron Microscope: test the product's thicknesses and the layer of co-extrusion.
  - . Optical test equipment: test the light transmittance and haze.
  - . Xenon test equipment: Used to accurately simulate the effects of weathering, to determine mechanical and optical changes.



我们熟练的技术工程师可以在结构设计阶段提供协助，并能够制造特殊的模具去完成复杂的挤出设计。

- 1、开发阶段：从最终确定图纸，到材料的选择，再经过对新产品在特定环境下的性能评估。
  - 2、经客户确认：制造的挤押新模具，进行第一次试样，测试能否达到客户全部要求，包括图纸公差、表面和光学性能等。
  - 3、生产部保证在生产过程的每一步都进行严格的质量控制，通过取样和测量的方法，用高科技设备对产品进行检测。
- . 电子显微镜：测量产品的厚度以及应用共挤的层分布
  - . 光学测量仪：测量产品的透光率和雾度。
  - . 氙气测量仪：用于精确模拟风化的影响，从而判断机械和光学变化。



# RAW MATERIAL 原材料

WE WORK CLOSELY WITH INDUSTRY-LEADING MATERIAL MANUFACTURERS AND HAVE EXTENSIVE EXPERIENCE EXTRUDING MORE THAN 30 DIFFERENT THERMOPLASTIC COMPOUNDS. WE ARE ALWAYS TESTING NEW OR IMPROVED MATERIALS TO BE ABLE TO OFFER YOU A WIDER SELECTION OF MATERIAL CHOICES.

我们与行业领先的材料制造商密切合作，拥有挤出30多种不同热塑性化合物的丰富经验。我们一直在测试新的或改进的材料，以便为您提供更多的材料选择。

## ▼ ACRYLIC

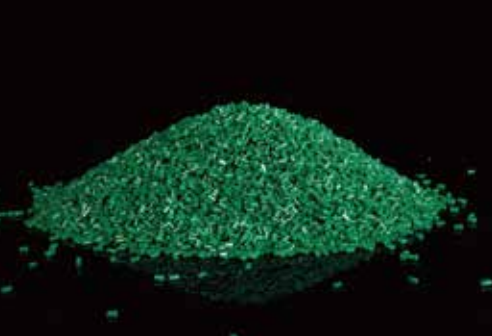
Acrylic is the more commonly used term for polymers of methyl methacrylate(PMMA). It offers excellent optical clarity and high impact resistance. Other important properties of acrylic include its low specific gravity, good chemical and heat resistance, toughness and strong weather resistance.



压克力  
是聚甲基丙烯酸甲酯(PMMA)的简称，具有优异的光学透明度、高抗冲击性，压克力另外的重要性能是低比重，稳定的化学性和耐热性，较强的韧性和耐候性。

## ▼ POLYCARBONATE

Polycarbonate is an extremely strong polymer with high impact resistance, high temperature resistance and excellent optical properties, owing to its high transparency.



聚碳酸酯  
是一种极强的聚合物，其透明度高，具有高抗冲击性、耐高温性和极好的光学性能。



CHARACTERISTIC TABLE OF PC MATERIAL

PC 原材料特性表

PROPERTY		TEST CONDITION	UNIT	STANDARD	TYPICAL VALUE
RHEOLOGICAL PROPERTIES					
C	Melt volume-flow rate	300 °C; 1.2 kg	cm³/10 min	ISO 1133	9.0
C	Molding shrinkage, parallel	60x60x2 mm; 500 bar	%	ISO 294-4	0.65
C	Molding shrinkage, normal	60x60x2 mm; 500 bar	%	ISO 294-4	0.7
	Molding shrinkage, parallel/normal	Value range based on general practical experienc	%	b.o. ISO 2577	0.6 - 0.8
	Melt mass-flow rate	300 °C; 1.2 kg	g/10 min	ISO 1133	10

MECHANICAL PROPERTIES (23 °C/50 % R. H.)

C	Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	2400
C	Yield stress	50 mm/min	MPa	ISO 527-1,-2	66
C	Yield strain	50 mm/min	%	ISO 527-1,-2	6.1
C	Nominal strain at break	50 mm/min	%	ISO 527-1,-2	> 50
	Stress at break	50 mm/min	MPa	ISO 527-1,-2	70
	Stress at break	50 mm/min	%	b.o. ISO 527-1,-2	130
C	Tensile creep modulus	1 h	MPa	ISO 899-1	2200
C	Tensile creep modulus	1000 h	MPa	ISO 899-1	1900
	Flexural modulus	2 mm/min	MPa	ISO 178	2400
	Flexural strength	2 mm/min	MPa	ISO 178	98
	Flexural strain at flexural strength	2 mm/min	%	ISO 178	7.0
	Flexural stress at 3.5 % strain	2 mm/min	MPa	ISO 178	74
C	Charpy impact strength	23 °C	kJ/m²	ISO 179-1eU	N
C	Charpy impact strength	-30 °C	kJ/m²	ISO 179-1eU	N
	Charpy impact strength	-60 °C	kJ/m²	ISO 179-1eU	N
	Charpy notched impact strength	23 °C; 3 mm	kJ/m²	ISO 7391/b.o. ISO 179-1eA	75P
	Charpy notched impact strength	-30 °C; 3 mm	kJ/m²	ISO 7391/b.o. ISO 179-1eA	14C
	Izod notched impact strength	23 °C; 3 mm	kJ/m²	ISO 7391/b.o. ISO 180-A	70P
	Izod notched impact strength	-30 °C; 3 mm	kJ/m²	ISO 7391/b.o. ISO 180-A	15C
C	Puncture maximum force	23 °C	N	ISO 6603-2	5400
C	Puncture maximum force	-30 °C	N	ISO 6603-2	6300
C	Puncture energy	23 °C	J	ISO 6603-2	60
C	Puncture energy	-30 °C	J	ISO 6603-2	65
	Ball indentation hardness		N/mm²	ISO 2039-1	115

THERMAL PROPERTIES

C	Glass transition temperature	10 °C/min	°C	ISO 11357-1,-2	144
C	Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	124
C	Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	136

PROPERTY		TEST CONDITION	UNIT	STANDARD	TYPICAL VALUE
THERMAL PROPERTIES					
C	Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	143
	Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	145
C	Coefficient of linear thermal expansion, parallel	23 to 55 °C	10-4/K	ISO 11359-1,-2	0.65
C	Coefficient of linear thermal expansion, transverse	23 to 55 °C	10-4/K	ISO 11359-1,-2	0.65
C	Burning behavior UL 94 [UL recognition]	0.75 mm	Class	UL 94	V-2
	Burning behavior UL 94 [UL recognition]	2.5 mm	Class	UL 94	HB
C	Oxygen index	Method A	%	ISO 4589-2	28
	Thermal conductivity, cross-flow	23 °C; 50 % r. h.	W/(m · K)	ISO 8302	0.20
	Resistance to heat (ball pressure test)		°C	IEC 60695-10-2	135
	Relative temperature index (Tensile strength) [UL recognition]	1.5 mm	°C	UL 746B	125
	Relative temperature index (Tensile impact strength) [UL recognition]	1.5 mm	°C	UL 746B	115
	Relative temperature index (Electric strength) [UL recognition]	1.5 mm	°C	UL 746B	125
	Glow wire test (GWFI)	0.75 mm	°C	IEC 60695-2-12	850
	Glow wire test (GWFI)	1.5 mm	°C	IEC 60695-2-12	850
	Glow wire test (GWFI)	3.0 mm	°C	IEC 60695-2-12	930
	Glow wire test (GWFI)	0.75 mm	°C	IEC 60695-2-13	875
	Glow wire test (GWFI)	1.5 mm	°C	IEC 60695-2-13	875
	Glow wire test (GWFI)	3.0 mm	°C	IEC 60695-2-13	875
	Glow wire test	1.5 mm	°C	b.o. EDF HN60 E.02	750
	Glow wire test	3.0 mm	°C	b.o. EDF HN60 E.02	750
	Application of flame from small burner	Method K and F; 2.0 mm	Class	DIN 53438-1,-3	K1, F1
	Needle flame test	Method K; 1.5 mm	s	IEC 60695-11-5	5
	Needle flame test	Method K; 2.0 mm	s	IEC 60695-11-5	5
	Needle flame test	Method K; 3.0 mm	s	IEC 60695-11-5	10
	Needle flame test	Method F; 1.5 mm	s	IEC 60695-11-5	60
	Needle flame test	Method F; 2.0 mm	s	IEC 60695-11-5	60
	Needle flame test	Method F; 3.0 mm	s	IEC 60695-11-5	120
	Burning rate (US-FMVSS)	>=1.0 mm	mm/min	ISO 3795	passed
	Flash ignition temperature		°C	ASTM D1929	480
	Self ignition temperature		°C	ASTM D1929	550

ELECTRICAL PROPERTIES (23 °C/50 % R. H.)

C	Relative permittivity	100 Hz	-	IEC 60250	3.1
C	Relative permittivity	1 MHz	-	IEC 60250	3.0
C	Dissipation factor	100 Hz	10-4	IEC 60250	5
C	Dissipation factor	1 MHz	10-4	IEC 60250	90
C	Volume resistivity		Ohm · m	IEC 60093	1E14
C	Surface resistivity		Ohm	IEC 60093	1E16
C	Electrical strength	1 mm	kV/mm	IEC 60243-1	34
C	Comparative tracking index CTI	Solution A	Rating	IEC 60112	250
	Comparative tracking index CTI M	Solution B	Rating	IEC 60112	125M
	Electrolytic corrosion		Rating	IEC 60426	A1



PROPERTY		TEST CONDITION	UNIT	STANDARD	TYPICAL VALUE
OTHER PROPERTIES (23 °C)					
C	Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.30
C	Water absorption (equilibrium value)	23 °C; 50 % r. h.	%	ISO 62	0.12
C	Density		kg/m³	ISO 1183-1	1200
	Water vapor permeability	23 °C; 85 % RH; 100 µm film	g/(m² · 24 h)	ISO 15106-1	15
	Gas permeation	Oxygen; 100 µm film	cm³/(m² · 24 h · bar)	b.o. ISO 2556	650
	Gas permeation	Oxygen; 25.4 µm (1 mil) film	cm³/(m² · 24 h · bar)	b.o. ISO 2556	2760
	Gas permeation	Nitrogen; 100 µm film	cm³/(m² · 24 h · bar)	b.o. ISO 2556	120
	Gas permeation	Nitrogen; 25.4 µm (1 mil) film	cm³/(m² · 24 h · bar)	b.o. ISO 2556	510
	Gas permeation	Carbon dioxide; 100 µm film	cm³/(m² · 24 h · bar)	b.o. ISO 2556	3800
	Gas permeation	Carbon dioxide; 25.4 µm (1 mil) film	cm³/(m² · 24 h · bar)	b.o. ISO 2556	16900
	Bulk density	Pellets	kg/m³	ISO 60	660

MATERIAL SPECIFIC PROPERTIES

	Refractive index	Procedure A	-	ISO 489	1.586
	Haze for transparent materials	3 mm	%	ISO 14782	< 0.8
	Luminous transmittance (clear transparent materials)	1 mm	%	ISO 13468-2	89
C	Luminous transmittance (clear transparent materials)	2 mm	%	ISO 13468-2	89
	Luminous transmittance (clear transparent materials)	3 mm	%	ISO 13468-2	88
	Luminous transmittance (clear transparent materials)	4 mm	%	ISO 13468-2	87

PROCESSING CONDITIONS FOR TEST SPECIMENS

C	Injection molding-Melt temperature		°C	ISO 294	300
C	Injection molding-Mold temperature		°C	ISO 294	80
C	Injection molding-Injection velocity		mm/s	ISO 294	200

RECOMMENDED PROCESSING AND DRYING CONDITIONS

	Melt Temperatures		°C	-	280 - 320
	Standard Melt Temperature		°C	-	300
	Barrel Temperatures - Rear		°C	-	250 - 270
	Barrel Temperatures - Middle		°C	-	270 - 290
	Barrel Temperatures - Front		°C	-	285 - 305
	Barrel Temperatures - Nozzle		°C	-	270 - 305
	Mold Temperatures		°C	-	70 - 110
	Hold Pressure (% of injection pressure)		%	-	50 - 75
	Plastic Back Pressure (specific)		bar	-	100 - 200
	Peripheral Screw Speed		m/s	-	0.05 - 0.2
	Shot-to-Cylinder Size		%	-	30 - 70
	Dry Air Drying Temperature		°C	-	120
	Dry Air Drying Time		h	-	4
	Moisture Content max. (%)		%	-	<= 0,02
	Vent Depth		mm	-	0.025 - 0.075

CHARACTERISTIC TABLE OF ACRYLIC MATERIAL

压克力原材料特性表

TECHNICAL SPECIFICATIONS GENERAL CHARACTERISTICS	CONDITIONS / METHOD	MEASUREMENT STANDARD	UNIT	VALUE
Density	23°C	ASTM D792	g/cm3	1.19
Water absorption (24H)	23°C / 50% HR	ASTM D570	%	0.3
Mold Shrinkage		ASTM D955	%	0.2-0.6

RHEOLOGICAL PROPERTIES

Melt Index	230°C / 3.8kg	1.6	g/10min	1.6
PROCESS – Melt temperature	Mini-Maxi	230-245	°C	230-245
PROCESS – Die temperature	Mini-Maxi	220-240	°C	220-240
PROCESS – Drying conditions	4h	75-85	°C	75-85

MECHANICAL PROPERTIES

Tensile Strength at Yield	23°C	ASTM D638	MPa	74
Elongation at break	23°C	ASTM D638	%	6
Flexural Modulus	23°C	ASTM D790	MPa	3240
Maximum Flexural Stress	23°C	ASTM D790	MPa	103
Compressive Strength	23°C	ASTM D695	MPa	117
Charpy Impact resistance (un-notched)	23°C	ISO 179-1eU	kJ/m²	11
Charpy Impact resistance (notched)	23°C	ISO 179-1ea	kJ/m²	2
Izod Impact resistance (notched)	23°C	ASTM D256	kJ/m²	1.4
Surface hardness (Rockwell scale M)	23°C	ASTM D785	HRM	97

OPTICAL PROPERTIES

Refractive index	23°C – Method A	ASTM D542	-	1.49
Light transmittance (3mm)	23°C	ASTM D1003	%	92
Haze (3mm)	23°C	ASTM D1003	%	0.5

ELECTRICAL PROPERTIES

Dielectric Strength		ASTM D149	MV/m	19.7
Dielectric Constant	60 Hz	ASTM D150		3.7
Dissipation Factor	1 MHz	ASTM D150		0.04
Surface Resistivity		ASTM D257	Ohm	>1014
Volume Resistivity		ASTM D257	Ohm.cm	>1015

THERMAL PROPERTIES

Vicat softening Point	50°C/hr, 1kg	ASTM D1525	°C	113
- Unannealed	50°C/hr, 5kg	ASTM D1525	°C	104
HDT	18.6kgf/cm2	ASTM D648	°C	98
- Under load, Annealed	4.6kgf/cm2	ASTM D648	°C	104
Coefficient of Linear Expansion	(-30°C ; 23°C)	ASTM D696	10-6K	65

FLAMMABILITY

Fire Resistance (Class)	3.2mm	UL/94	Class	HB
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# PROCESSING OF PMMA PRODUCTS 压克力加工

MINGSHI OFFER PMMA  
PROCESSING SERVICES AS  
BELOW:

- CNC ENGRAVING
- LATHE
- DRILLING AND THREADING
- MILLING AND GRINDING
- GLUING
- BENDING
- POLISHING
- PRINTING
- SANDBLASTING

明氏提供如下压克力加工服务

- CNC雕刻
- 车床
- 钻孔和攻牙
- 铣削和打磨
- 粘接
- 烤弯和折弯
- 抛光
- 丝印
- 喷砂



## POLISH

Polished acrylic components are a very popular option for engineers when considering the design of optical devices. Acrylic is known for its excellent light transmittance, clarity and lack of color.

Acrylic polishing can give the best clarity and light transmittance of all the clear plastics. In both the extruded and injection form, Depending on configuration of the component, any of the three polishing techniques may be used; buffing, flame polishing and Diamond polishing(direct machine polishing).



## CNC ENGRAVING

Regardless the material, thickness, size or quantity, we can cut and take care of all the processing.



## GLUING

Using solvents to joining acrylic parts. We can meet customer's size and shape requirement.



## FORMING AND BENDING

Thermoplastic bending is done using heated machines for bending and angle forming. When heat is applied, the solid material warms up and becomes malleable, allowing to make a bend. The desired bend angle is obtained using a mold.



## DRILLING AND THREADING

Drilling and Threading are a machining technique that allows to create a hole and thread in a acrylic part. Depending on your project and its design, the hole and thread can go all through the acrylic material or not.



## PRINTING

Silk-screen printing is one of the most popular printing techniques whereby a mesh is used to transfer ink onto products.

## 压克力抛光

抛光是成品加工中的一道重要工艺，切割后的切面会比较粗糙，表面也会变得模糊，为了恢复光滑的表面和压克力的透明度，抛光打磨就十分有必要。我们有3种抛光方式供您选择：

- 1、布轮抛光
- 2、火焰抛光
- 3、钻石抛光

我们也会根据您的产品建议相关的抛光方式。

## CNC雕刻

高效率、高精度，经由电脑控制自动切割及雕出所设计之图案。

## 粘合

通过使用溶剂将压克力部件粘合连接在一起，可以满足客户对尺寸及造型的要求。

## 烤弯和折弯

热塑性弯曲是利用加热设备进行弯曲和成型，当加热时，压克力材料变热并具有延展性，从而可以弯曲，所需的弯曲角度是通过模具完成的。

## 钻孔和攻牙

钻孔和攻牙是一种加工技术，可以根据客户的设计要求在压克力部件中形成穿透性或半穿透性的孔和牙。

## 丝印

丝印是最流行的印刷技术之一，通过网板将油墨转移到产品上。





## QUALITY CONTROL 品质控制

### TOLERANCES FOR DIAMETER

$\Phi 6\text{MM} - \Phi 149\text{MM} = \pm 1\%$

$\Phi 150\text{MM} - \Phi 300\text{MM} = \pm 1.5\%$

### TOLERANCES FOR LENGTH

$L < 2000\text{MM} = \pm 0.5\text{MM}$

$L > 2000\text{MM} : \pm 1\text{MM}$

$L > 6000\text{MM} = \pm 2\text{MM}$

A SMALL RECESS OF 0.1MM MAY OCCUR  
AT THE CUT EDGES

### TOLERANCES FOR WALL THICKNESS

$\Phi 6\text{MM} - \Phi 99\text{MM} = \pm 5\%$

$\Phi 100\text{MM} - \Phi 300\text{MM} = \pm 10\%$

### TOLERANCES FOR STRAIGHTNESS

MAXIMUM DEVIATION: 1MM ON  
1000MM CORD LENGTH

### OPTICAL PROPERTIES

EXTRUSION MARKS AND OPTICAL  
RINGS ARE UNAVOIDABLE DUE TO THE  
EXTRUSION PROCESS

ABOVE TOLERANCE REFERENCE

TEMPERATURE AT 20°C.

PLEASE EMAIL US AT

INFO@MS-ACRYLIC.COM

IF YOU HAVE ANY SPECIAL TOLERANCE  
REQUIREMENT, WE WILL TRY OUR BEST  
TO MEET CUSTOMER'S REQUIREMENTS



#### 外径公差

$\phi 6\text{mm} - \phi 149\text{mm} = \pm 1\%$

$\phi 150\text{mm} - \phi 300\text{mm} = \pm 1.5\%$

#### 长度公差

$L < 2000\text{mm} = \pm 0.5\text{mm}$

$L > 2000\text{mm} : \pm 1\text{mm}$

$L > 6000\text{mm} = \pm 2\text{mm}$

在切割边缘可能出现0.1mm崩边

#### 厚度公差

$\phi 6\text{mm} - \phi 99\text{mm} = \pm 5\%$

$\phi 100\text{mm} - \phi 300\text{mm} = \pm 10\%$

#### 直线公差

最大误差1mm (1000mm的长度)

#### 光学性能

挤出产品无法避免轻微的挤出拉纹和  
横向的震动纹

以上公差参考温度为20°C

如某些关键尺寸的公差有特殊要求, 请  
务必在开模图纸上注明或特别声明, 我  
们将全力满足您的要求, 请联系我们  
(邮箱地址info@ms-acrylic.com)

## APPLICATION 产品运用

OUR PRODUCTS ARE USED IN A BROAD ARRAY OF APPLICATIONS

- MANY OF OUR PRODUCTS APPEAR IN EVERYDAY USE.

WE SUPPLY STANDARD AND CUSTOM PRODUCTS TO A VARIETY OF  
DIFFERENT INDUSTRIES INCLUDING:

### LIGHTING INDUSTRY

-The knowledge we have gained working with lighting manufacturers means we can offer precise technical input at the design stage of new lighting products. Creating aesthetically attractive surface finishes such as frosted, satin and opal and using materials that provide excellent light diffusion and High light output.

### BUILDING INDUSTRY

### FURNITURE INDUSTRY

### AUTOMOTIVE, RAILWAY AND BUS

### SIGN AND DISPLAY INDUSTRY

### TOY INDUSTRY

### PACKING INDUSTRY



我们与照明制造商有15年的  
合作经验, 我们相信我们在材  
料选择和产品设计方面可以  
给出专业的建议。

#### 照明行业

- 普通照明
- 铁路照明
- 卫浴照明
- 建筑照明
- 家居照明
- 户外广告照明
- 技术应用型材

#### 建筑行业

#### 家具行业

#### 汽车行业

#### 标志和展示行业

#### 玩具行业

#### 包装行业



## PRODUCTS - PROFILES

### 主要产品 - 型材

Mingshi in-house design engineers immerse themselves in your application, select the perfect materials for your project, and provide engineering assistance to ensure your custom extruded profiles conform to your precise standards.

We make it our number one priority to provide best-in-class customer service throughout the entire extrusion process including design, make sample, arrange production, delivery the goods, aftersale etc.

我们的工程师专注于您对产品的要求和运用, 提供最理想的材料供您选择, 并提供工程协助, 以确保您的定制挤押型材符合您的精确标准。

我们的首要任务是在整个流程中包括设计、打样、生产、交货、售后提供最佳的服务。

#### PC PROFILES KEY FEATURES:

- . Excellent optical properties
- . Made from UV approved materials
- . High tensile strength over wide temperature range
- . High impact strength – even at low temperatures
- . Excellent high temperature resistance
- . Flame-resistant
- . Good electrical insulation
- . Available in clear, colored custom colors, satin finish
- . Standard and custom sizes
- . Can be machined, drilled, cut and ultrasonic welding

#### PC型材特性:

- . 优异的光学性能
- . 由通过UV认证的材料制成
- . 在广泛的温度范围内具有高拉伸强度
- . 高耐冲 - 即使在低温下也是如此
- . 优异的耐高温性
- . 阻燃
- . 良好的电绝缘性
- . 提供透明色、彩色、定制色、砂面等
- . 标准尺寸和定制尺寸
- . 可加工、钻孔、切割和超声波焊接

#### ACRYLIC PROFILES KEY FEATURES:

- . Excellent optical properties
- . Lightweight and easily fabricated
- . Superior clarity, High light transmittance
- . Can be standard or custom sizes
- . Available in clear, colored custom colors, satin finish
- . Can be machined, drilled, cut, bonded, polishing, roasted bending forming, sandblasting and printing

#### 亚克力型材特性:

- . 优异的光学性能
- . 低密度, 易于成型
- . 卓越的透明度, 高透光率
- . 标准或定制尺寸
- . 提供透明色、彩色、定制色、砂面等
- . 可加工、钻孔、攻牙、切割、粘接、抛光、烤弯、丝印、喷砂等

## EXTEND INFINITE FLEXIBLE PROFILE

Mingshi profiles made from normal rigid material coextruded with flexible material offer infinite length for linear light line for recessed su-face-mounted and pendant luminaire.

Each piece is tailor made to kinds of diameter or curve, it can fully inspire the designer of diverse of configuration ideas.



### 软条

明氏通过硬质材料与特殊的柔性材料共挤实现无限长度的塑料异型材, 适用于各种线性灯具照明。

可根据设计师对特殊场景弯曲不同弧度。

#### KEY FEATURES

- Extend infinitely
- Can be roiled up, and good for transportation
- High light transmission
- Material is PC or PMMA with flexible material
- With prismatic, satin or smooth surface

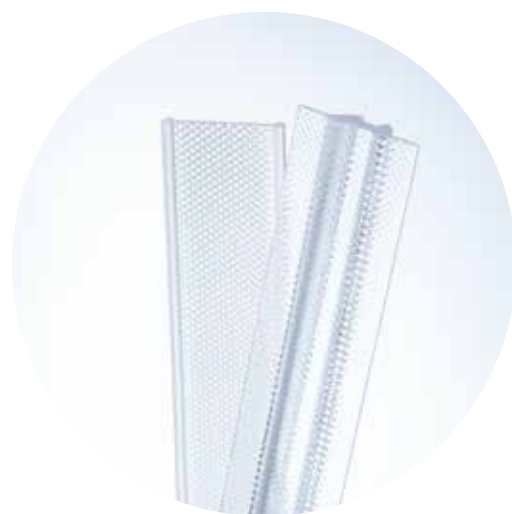
#### 主要特点

- 无限延伸
- 可以圈起来便于运输
- 高透光率
- 材料是具有柔性材料的PC或压克力
- 带有棱镜表面

## PRISMATIC PLASTIC PROFILES

Mingshi is specialized in the extrusion of lighting profiles in new micro prism structure. Micro prismatic profiles are available in the polycarbonate and PMMA material.

Micro Prismatic Glare Reduction Profiles are introduced by MingShi to achieve UGR ( Unified Glare Rating ) request keeping high light transmission with shine brighter effect.



### 压克力压花型材

明氏专注于新型微棱镜结构的挤出照明型材。微棱镜型材有PC和PMMA材料可供选择。明氏推出了减少眩光的微棱镜型材,以满足UGR(统一眩光等级)要求,保持高透光率和更好的光学效果。

#### KEY FEATURES

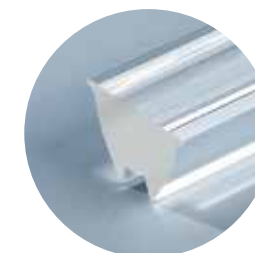
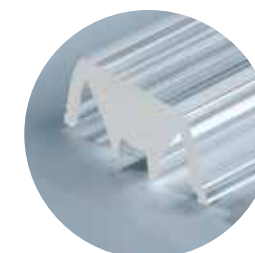
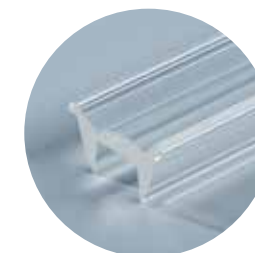
- High light transmission
- Highly flame retardant
- Highly unified glare
- Low Glare UGR<19

#### 主要特点

- 高透光率
- 完美的漫反射效果
- 无光带阴影
- 低眩光UGR <19

## OPTICAL LINEAR LENSES

Mingshi can develop and produce optical linear lenses base on customer drawing.



### 光学线性透镜

明氏可以根据客户提供的设计共同开发、生产光学线性透镜。



## ▼ SATIN

We manufacture innovative items like Satin and Optical Opal profiles. The satin surface and a perfect light diffusion together with an extraordinary light transmission are the characteristics of this high-quality product.



### THE SATIN SURFACE INCLUDING THREE TYPES:

1. Sandblast
2. Satin surface on one side by extrusion mold
3. 100% Satin on the whole product by extrusion mold, and also we can adjust the satin blending on the product from (1% to 100%) up to custom requirement.



### 砂面

我们生产砂面与光扩散相结合的创新型材，磨砂的表面和完美的漫反射以及非凡的透光率是这种高品质产品的特征。

砂面包括三种类型：

- 1、喷砂
- 2、直接在挤出模具上成型的表面磨砂
- 3、直接在挤出模具上成型的全磨砂，我们还可以调整产品上的磨砂混合（1%至100%），直到达到您的定制要求。

### THE ADVANTAGE OF SATIN:

- High transmission
- Excellent, Satin surface
- Diffuse light distribution
- Minimal absorption
- Break-proof
- Shatterproof
- High UV stability
- High impact strength

### 砂面的优势：

- 高透光率
- 优质的哑光表面
- 柔和的光
- 最少的光吸收
- 防破裂
- 防碎
- 抗UV
- 高抗冲

## ▼ OPTICAL OPAL PROFILES

The opal profiles allow a very light diffusion, They have a brilliant surface and transmit light smoothly and warmly. This white version achieve an excellent quality/price performance. We can adjust the light transmittance and surface color base on customer requirement.



### 光扩散

光扩散型材具有光亮的表面且可以达到非常柔和的视觉效果，具有极高性价比，我们可以根据客户的要求调整雾度和透光率，各种光扩散配方供您选择。

### THE ADVANTAGE OF OPTICAL WHITE OPAL PROFILES:

- Excellent optical Characteristics
- Excellent impact resistance
- Can be adjust to your LED colour temperature
- Good UV stability
- Glossy or satin surface

### 光扩散型材的优点：

- 出色的光学特性
- 优异的抗冲击性
- 可以根据您的LED色温进行调整
- 抗UV
- 光面或砂面

## ▼ SPECIAL SHAPED PROFILES

Our custom profile can be extruded into special shapes.

### 异型材

我们的定制型材可以挤压成特殊形状。



## ▲ THE MULTIPLE-COLORED PROFILES

It is a good example of co-extruded profile's design features. We can co-extrusion tubes in two,three or four different colors, and any color you would like.

### 多色型材

这是共挤型材设计特点的一个很好的例子。 我们可以将两种，三种或四种不同颜色的型材以及您想要的任何颜色共挤出来。

# PROFILE





## PRODUCTS - TUBES

### 主要产品 - 管材

As a manufacturer, Mingshi has been extruding acrylic (PMMA) and polycarbonate (PC) into optically high-quality tubes from small to large diameters for 15 years. Mingshi is the specialist for individual customer requirements, such as special diameters or lengths, high impact resistant materials, colors etc.

作为制造商，明氏已具有挤出生产从小尺寸到大尺寸的高质量光学性能的聚甲基丙烯酸甲酯 (PMMA) 和聚碳酸酯 (PC) 管 15 年的经验。同时明氏也可以满足客户个性化要求,如特殊的直径或长度、高抗冲击材料、定制颜色等。

#### PC TUBE KEY FEATURES:

- . Excellent optical properties
- . Made from UV approved materials
- . High tensile strength over wide temperature range
- . High impact strength – even at low temperatures
- . Excellent high temperature resistance
- . Flame-resistant
- . Good electrical insulation
- . Available in clear, colored, custom colors, satin finish
- . Standard and custom sizes
- . Can be machined, drilled, cut and ultrasonic welding

#### PC管特性:

- . 优异的光学性能
- . 由通过UV认证的材料制成
- . 在广泛的温度范围内具有高拉伸强度
- . 高耐冲 - 即使在低温下也是如此
- . 优异的耐高温性
- . 阻燃
- . 良好的电绝缘性
- . 提供透明色、彩色、定制色、砂面等
- . 标准尺寸和定制尺寸
- . 可加工、钻孔、切割和超声波焊接

#### ACRYLIC TUBE KEY FEATURES:

- . Excellent optical properties
- . Lightweight and easily fabricated
- . Superior clarity, High light transmittance
- . Standard or custom sizes made to order
- . Available in clear, colored, custom colors, satin finish
- . Can be machined, drilled, cut, bonded, polishing, roasted bending forming, printing and sandblasting.

#### 亚克力管特性:

- . 优异的光学性能
- . 密度低, 易于成型
- . 卓越的透明度, 高透光率
- . 标准或定制尺寸
- . 提供透明色、彩色、定制色、砂面等
- . 可加工、钻孔、攻牙、切割、粘接、抛光、烤弯、丝印、喷砂等

## ▼ SATIN

We also manufacture innovative items like Satin and Optical Opal tubes. The satin surface and a perfect light diffusion together with an extraordinary light transmission are the characteristics of this high-quality product.



#### THE SATIN SURFACE INCLUDING THREE TYPES:

1. Sandblast on the surface
2. Satin surface on one side by extrusion mold
3. 100% Satin on the whole product by extrusion mold, and also we can adjust the satin blending on the product from (1% to 100%) up to custom requirement.

#### THE ADVANTAGE OF SATIN:

- High transmission
- Excellent, Satin surface
- diffuse light distribution
- Minimal absorption
- break-proof
- Shatterproof
- High UV stability



#### 砂面

我们生产砂面与光扩散相结合的创新管材，磨砂的表面和完美的漫反射以及非凡的透光率是这种高品质产品的特征。

砂面包括三种类型

- 1、表面喷砂
- 2、直接在挤出模具上成型的表面磨砂
- 3、直接在挤出模具上成型的全磨砂，我们还可以调整产品上的磨砂混合（1%至100%），直到达到您的定制要求。

#### 砂面的优势:

- 高透光率
- 优质的哑光磨砂面
- 柔和的光
- 最少的光吸收
- 防破裂
- 防碎
- 抗UV

## OPTICAL OPAL TUBE

The opal tubes allow a very light diffusion, too. They have a brilliant surface and transmit light smoothly and warmly. This white version achieve an excellent quality/price performance. We can adjust the light transmittance and surface color base on customer requirement.



### 光扩散

光扩散型材具有光亮的表面且可以达到非常柔和的视觉效果, 具有极高性价比, 我们可以根据客户的要求调整雾度和透光率, 各种光扩散配方供您选择。

#### THE ADVANTAGE OF OPTICAL WHITE OPAL TUBE:

- Excellent optical Characteristics
- Excellent impact resistance
- Can be adjust to your LED colour temperature
- Good UV stability
- Glossy or satin surface

#### 光扩散管的优点:

- 出色的光学特性
- 优异的抗冲击性
- 可以根据您的LED色温进行调整
- 抗UV
- 光面或砂面

## THE MULTIPLE-COLORED TUBE

It is a good example of co-extruded tube's design features. We can co-extrusion tubes in two, three or four different colors, and any color you would like.



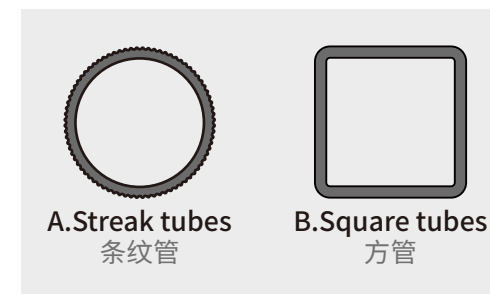
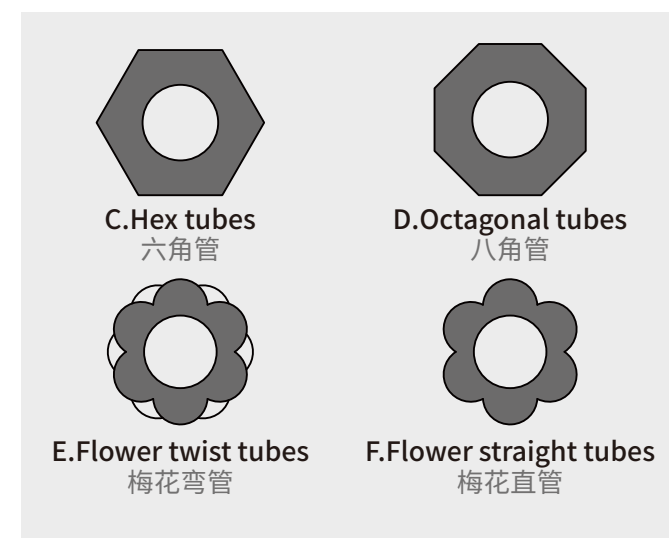
### 多色管

这是共挤管设计特点的一个很好的例子。我们可以将两种, 三种或四种不同颜色的管子以及您想要的任何颜色共挤出来。

## ACRYLIC SPECIAL SHAPED TUBE

OUR CUSTOM TUBE CAN BE EXTRUDED INTO SPECIAL SHAPES. THIS NOW INCLUDES SPECIAL SHAPED TUBES AS BELOW:

- A.Streak tubes
- B.Square tubes
- C.Hex tubes
- D.Octagonal tubes
- E.Flower twist tubes
- F.Flower straight tubes



### 压克力异型管

我们的定制管可以挤压成特殊形状。这包括如下特殊形状的管:

- A.条纹管
- B.方管
- C.六角管
- D.八角管
- E.梅花转管
- F.梅花直管

#### Round Tube Outside Diameter - 圆管外径

Φ5mm	Φ25mm	Φ65mm	Φ125mm
Φ6mm	Φ26mm	Φ67mm	Φ130mm
Φ8mm	Φ28mm	Φ70mm	Φ132mm
Φ10mm	Φ30mm	Φ76.2mm	Φ140mm
Φ11mm	Φ31mm	Φ75mm	Φ150mm
Φ13mm	Φ35mm	Φ80mm	Φ160mm
Φ14mm	Φ38mm	Φ85mm	Φ180mm
Φ15mm	Φ40mm	Φ90mm	Φ190mm
Φ16mm	Φ45mm	Φ95mm	Φ200mm
Φ18mm	Φ50mm	Φ100mm	Φ210mm
Φ19mm	Φ55mm	Φ105mm	Φ240mm
Φ20mm	Φ60mm	Φ110mm	Φ250mm
Φ21mm	Φ63mm	Φ120mm	Φ300mm

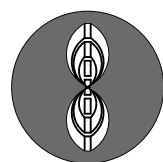


# PRODUCTS - ACRYLIC RODS

## 主要产品 - 亚克力棒材

MingShi produces a wide variety of extrusion rods. It includes solid rods, bubble rods, line rods, square rods, irregular rods. Through a complete heat treatment processes, we reduce stress and enhance processing stability, the product has good tensile strength. In order to ensure the high level of transparency, we used high light transmittance raw materials, strictly controlled production process, to ensure the purity of the material, while also greatly enhance the products quality. Currently, rods are increasingly used in the lighting, building materials, house decoration, advertising and other different functions.

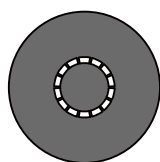
明氏生产各种各样的挤押棒, 包括实心圆棒、气泡棒、线棒、方棒、异型棒。为了保证极高的透明度, 我们采用高透明原材料, 严格控制生产工艺, 确保材料的纯度, 同时也大大提高了产品质量。通过完整的热处理工艺, 我们减少应力和提高加工稳定性。



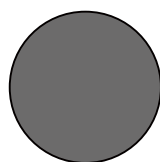
Twist line rods  
转线棒



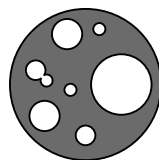
Special rods  
异形棒



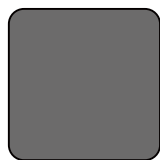
Line rods  
线棒



Acrylic rods  
实心圆棒



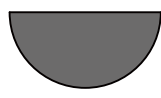
Bubble rods  
气泡棒



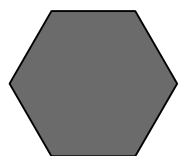
Square rods  
方棒



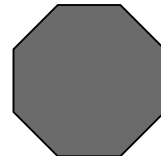
Triangle rods  
三角棒



Half round rods  
半圆棒



Hexagonal rods  
六角棒



Octagonal rods  
八角棒

### Round Rod Outside Diameter - 圆棒直径

Φ2mm	Φ17mm	Φ32mm	Φ47mm	Φ75mm
Φ3mm	Φ18mm	Φ33mm	Φ48mm	Φ80mm
Φ4mm	Φ19mm	Φ34mm	Φ49mm	Φ85mm
Φ5mm	Φ20mm	Φ35mm	Φ50mm	Φ90mm
Φ6mm	Φ21mm	Φ36mm	Φ51mm	Φ100mm
Φ7mm	Φ22mm	Φ37mm	Φ53mm	Φ110mm
Φ8mm	Φ23mm	Φ38mm	Φ54mm	Φ120mm
Φ9mm	Φ24mm	Φ39mm	Φ55mm	Φ130mm
Φ10mm	Φ25mm	Φ40mm	Φ56mm	Φ150mm
Φ11mm	Φ26mm	Φ41mm	Φ57mm	Φ160mm
Φ12mm	Φ27mm	Φ42mm	Φ58mm	Φ180mm
Φ13mm	Φ28mm	Φ43mm	Φ59mm	Φ200mm
Φ14mm	Φ29mm	Φ44mm	Φ60mm	
Φ15mm	Φ30mm	Φ45mm	Φ65mm	
Φ16mm	Φ31mm	Φ46mm	Φ70mm	

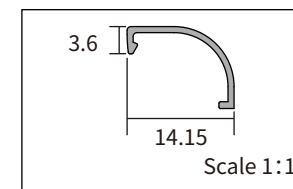
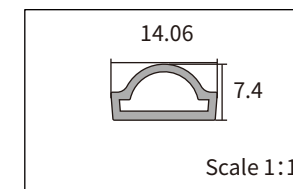
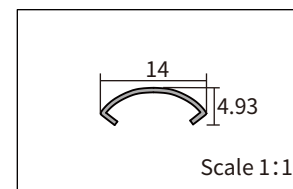
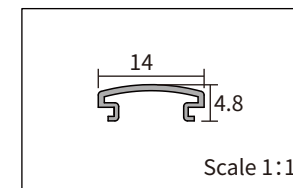
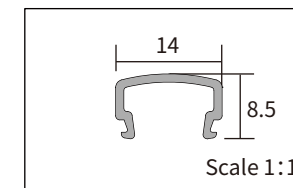
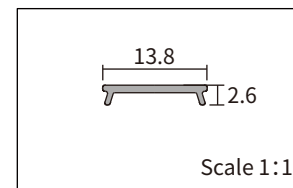
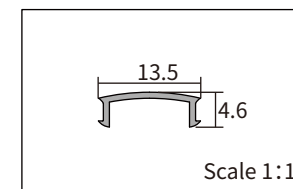
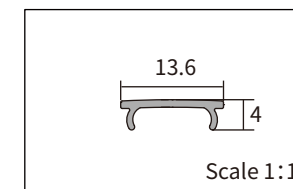
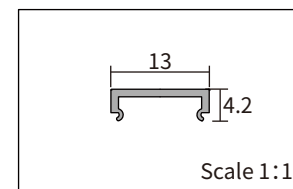
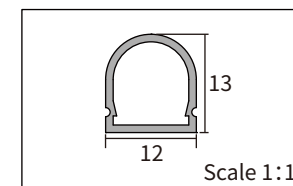
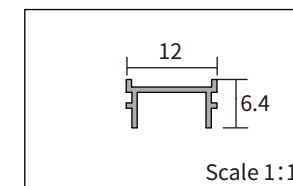
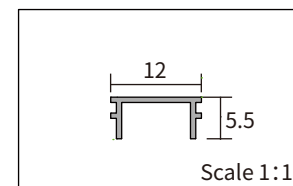
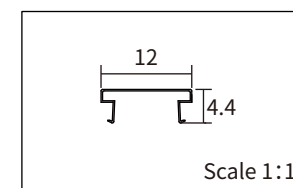
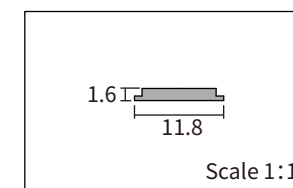
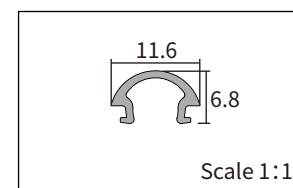
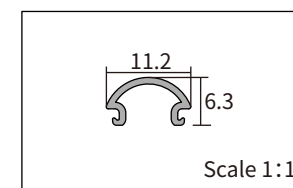
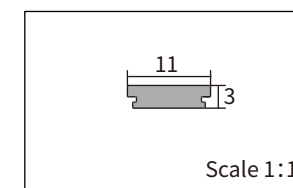
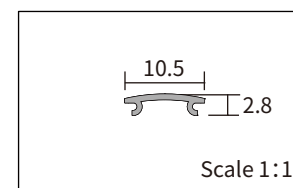
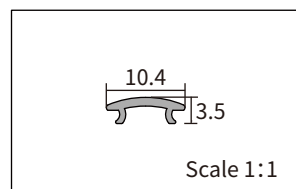
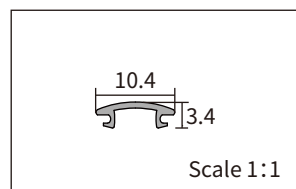
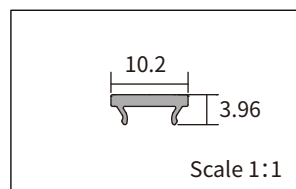
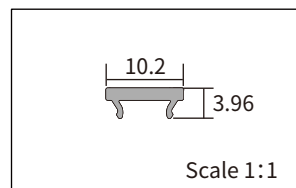
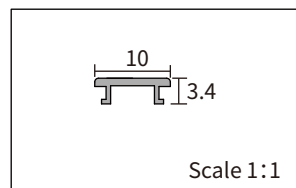
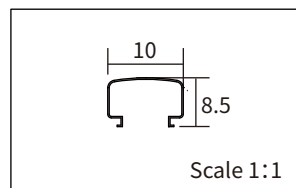
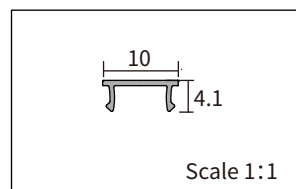
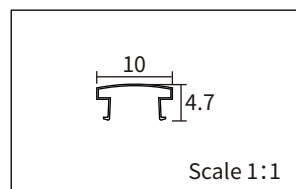
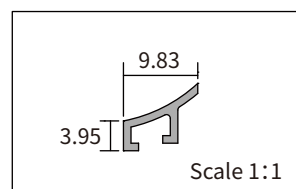
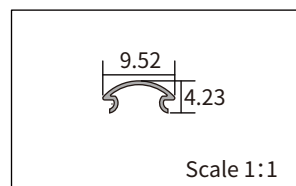
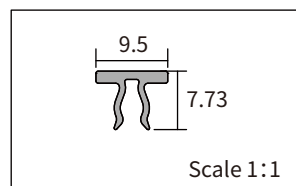
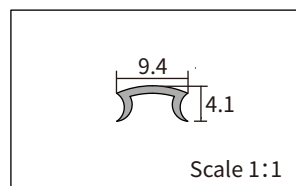
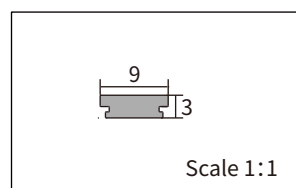
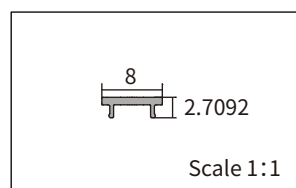
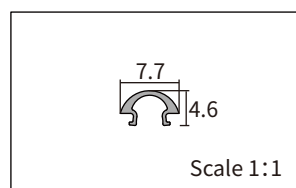
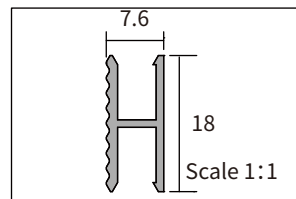
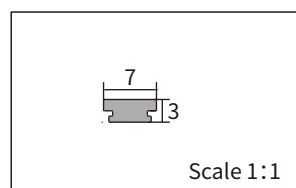
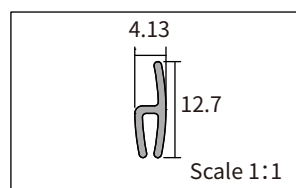
### THE COLOR WE CAN DO:

- \*Transparent
- \*Colored
- \*Two, three or four colors in co-extrusion
- \*Satin surface



我们能做的颜色:

- \*透明
- \*彩色
- \*两种, 三种或四种颜色的共挤
- \*砂面



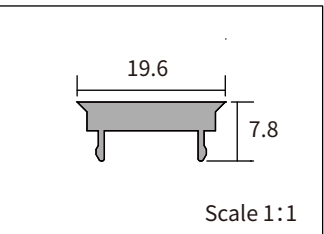
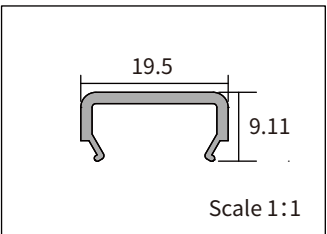
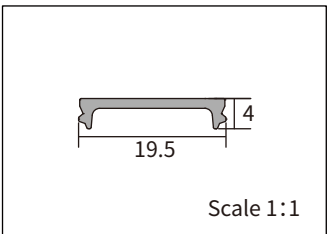
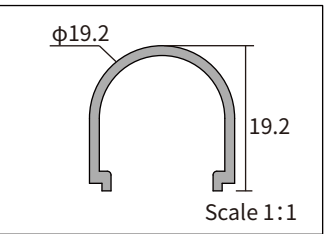
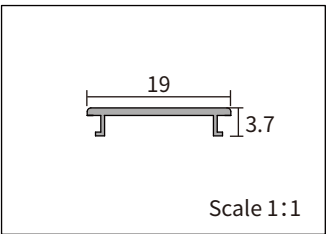
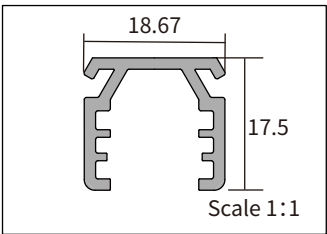
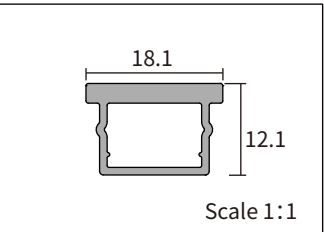
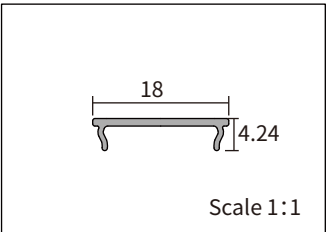
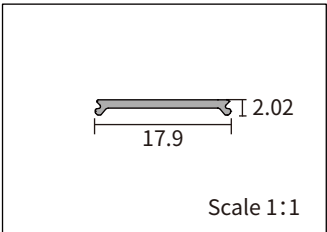
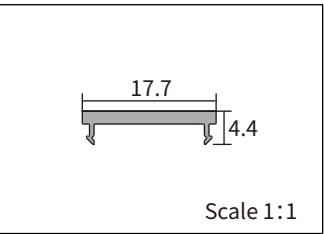
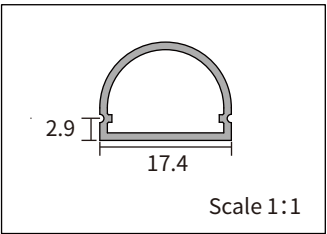
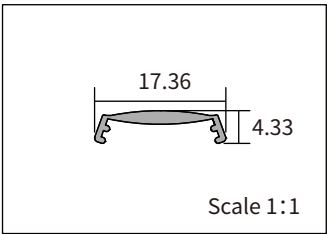
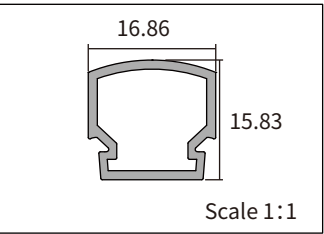
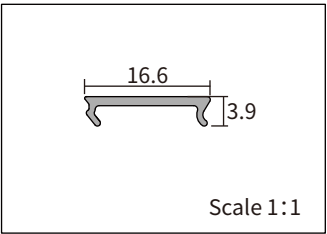
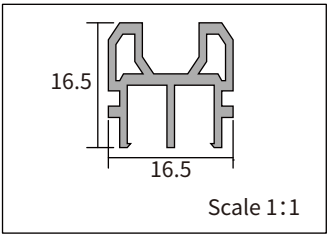
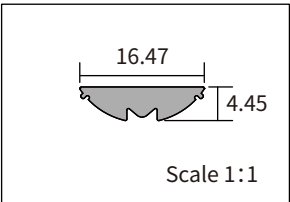
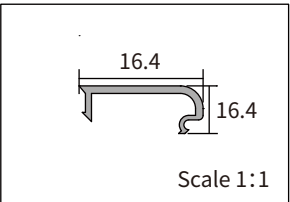
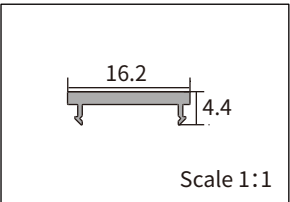
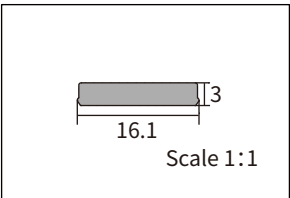
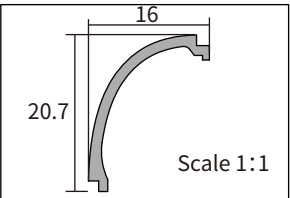
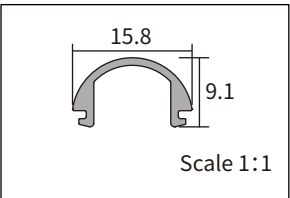
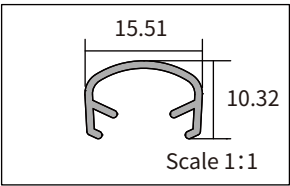
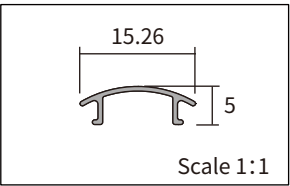
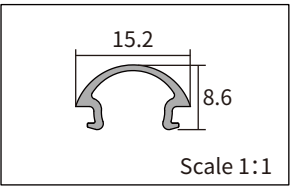
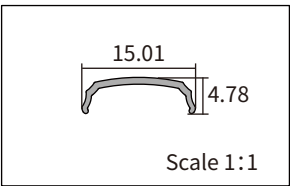
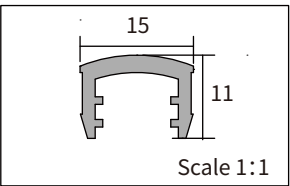
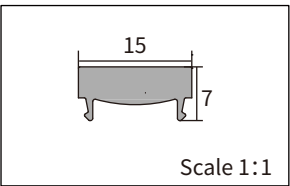
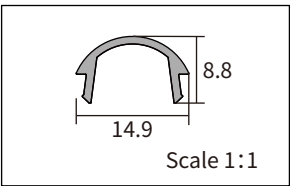
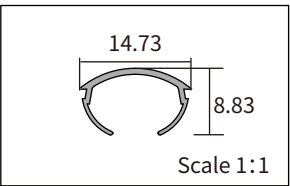
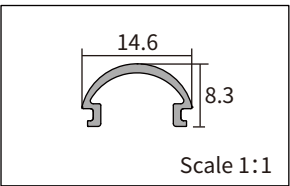
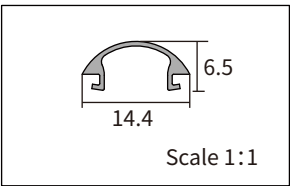
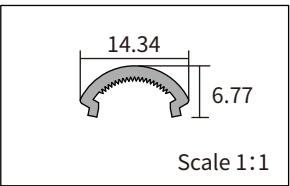
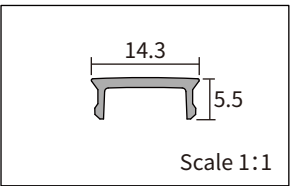
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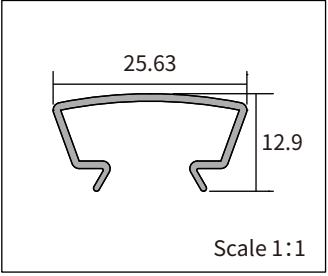
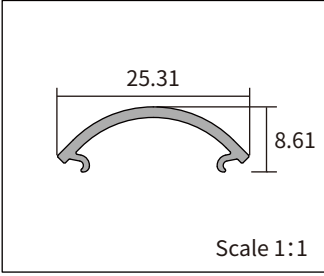
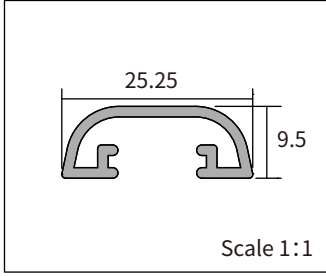
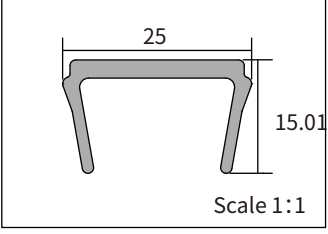
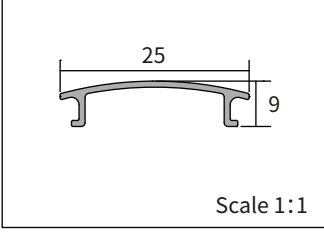
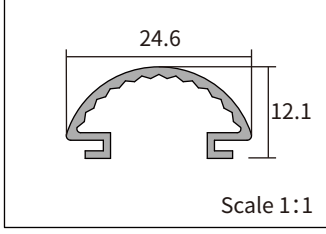
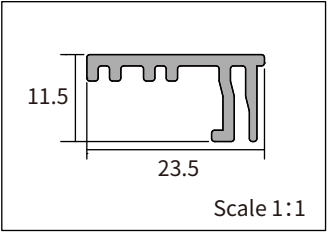
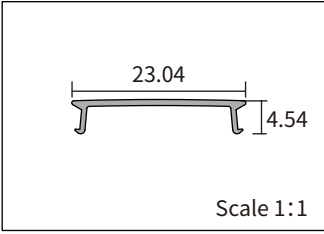
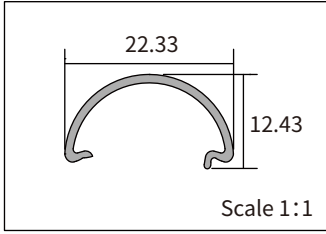
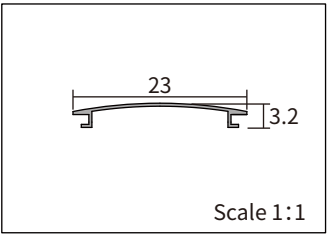
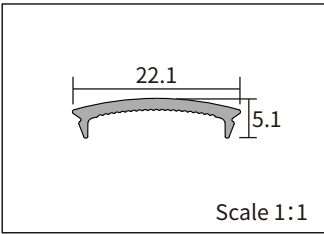
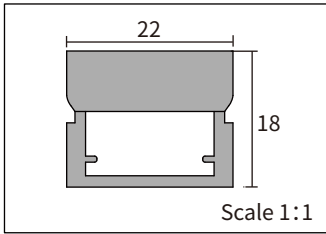
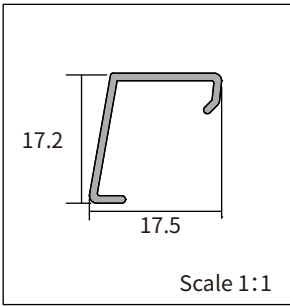
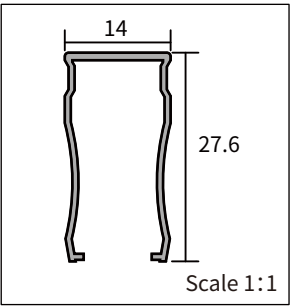
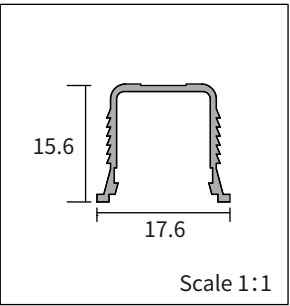
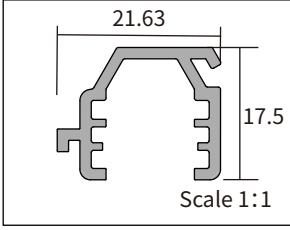
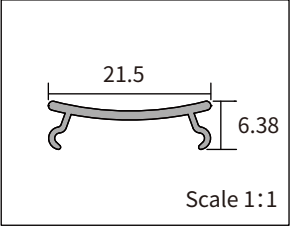
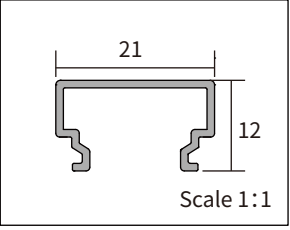
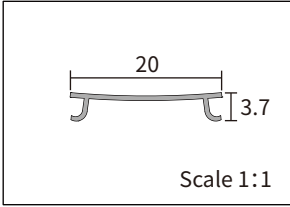
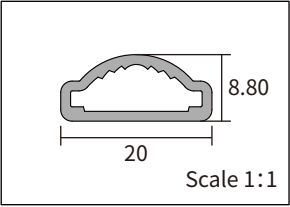
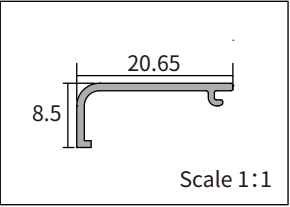
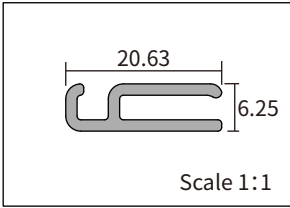
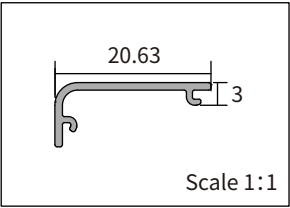
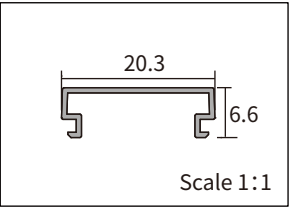
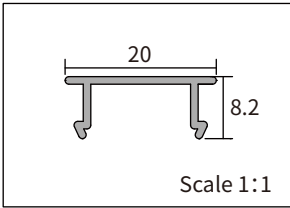
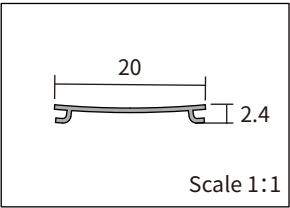
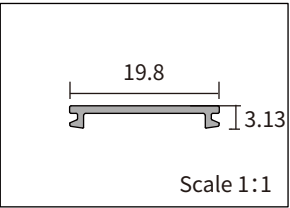


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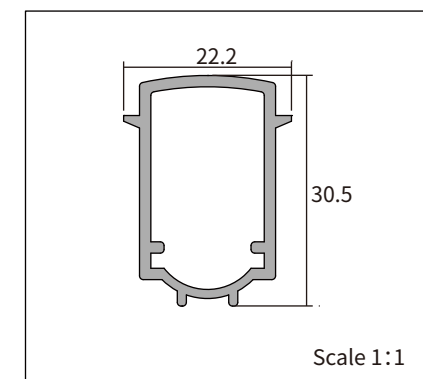
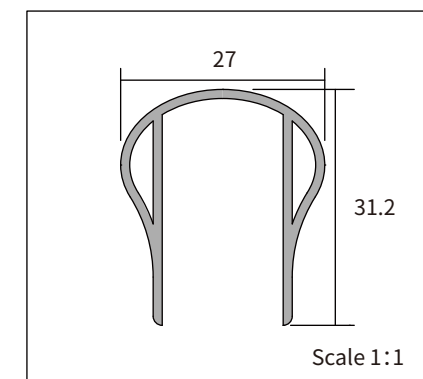
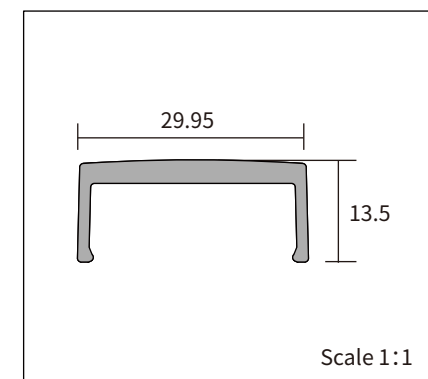
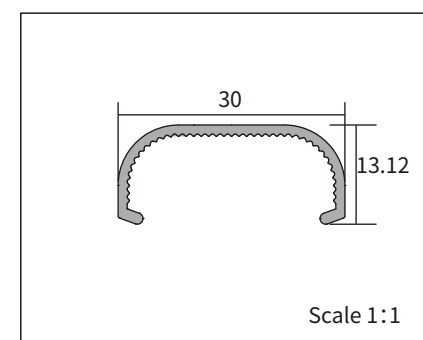
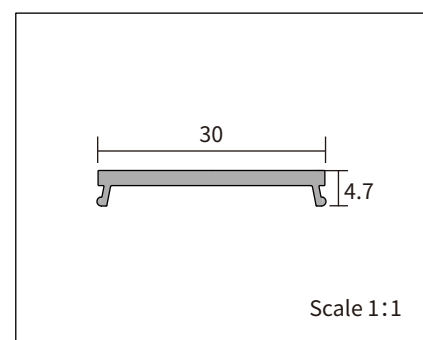
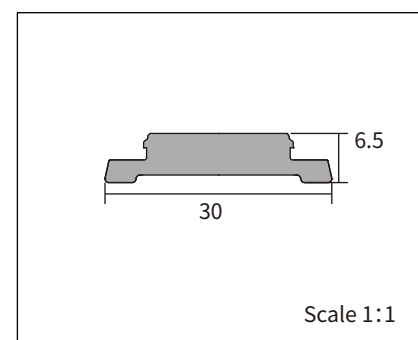
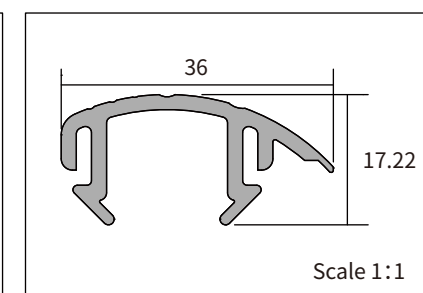
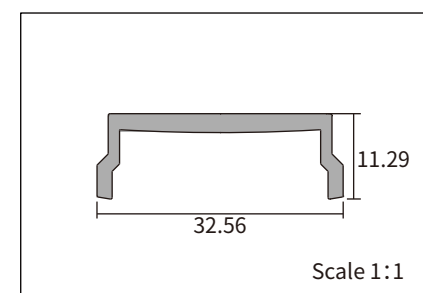
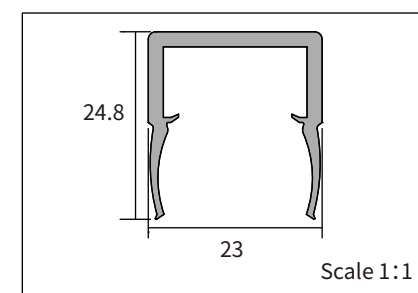
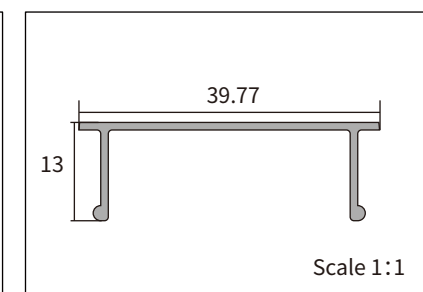
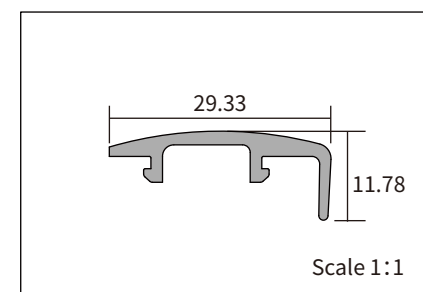
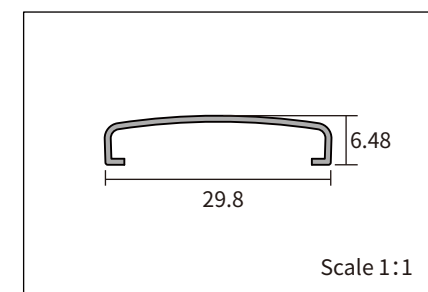
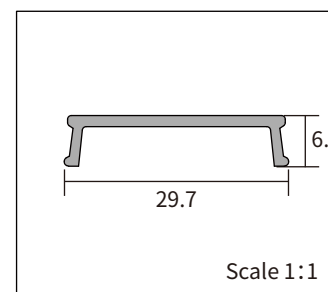
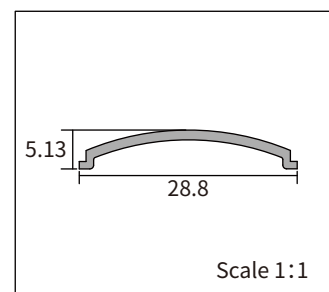
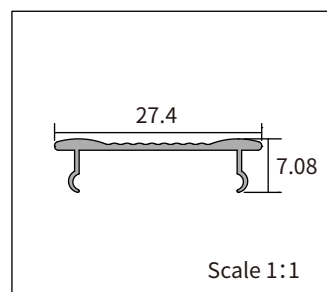
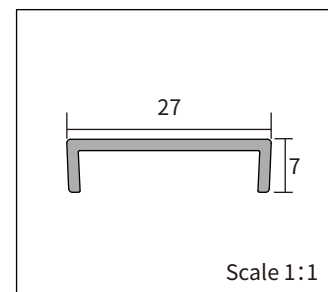
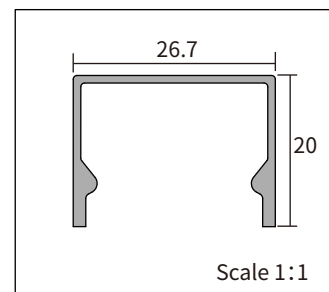
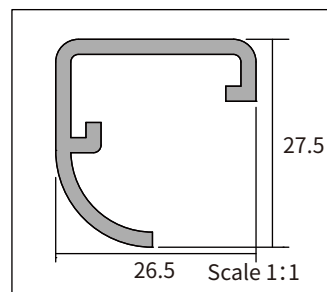
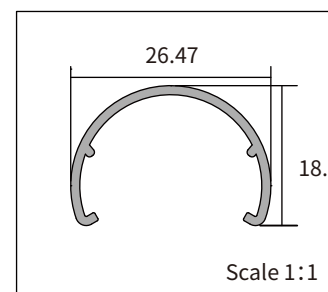
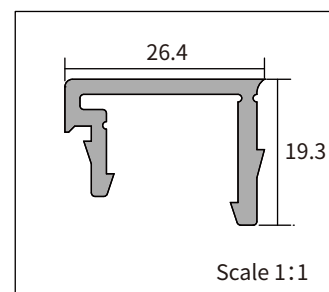
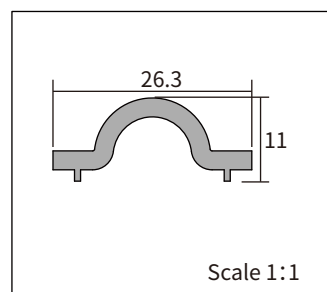
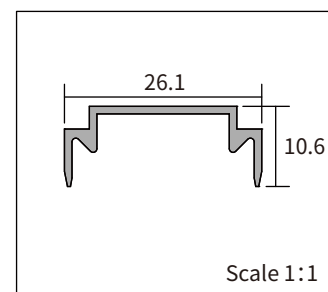
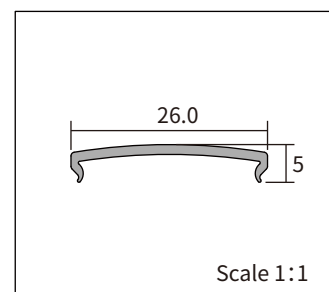
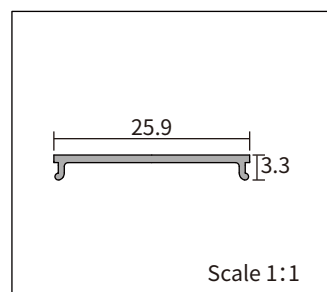
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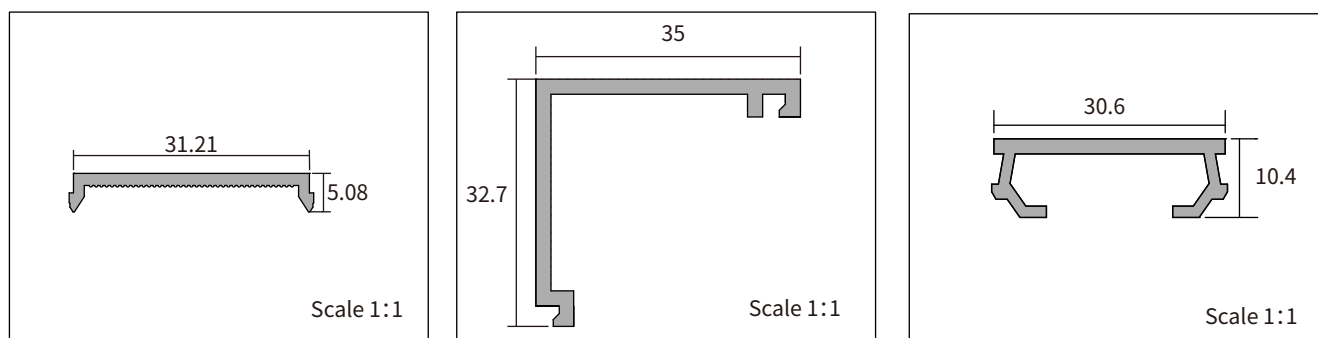
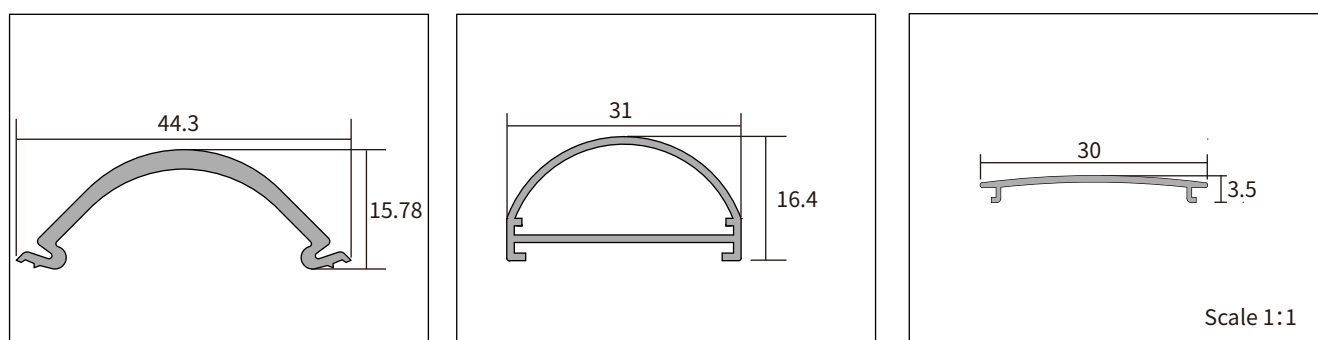
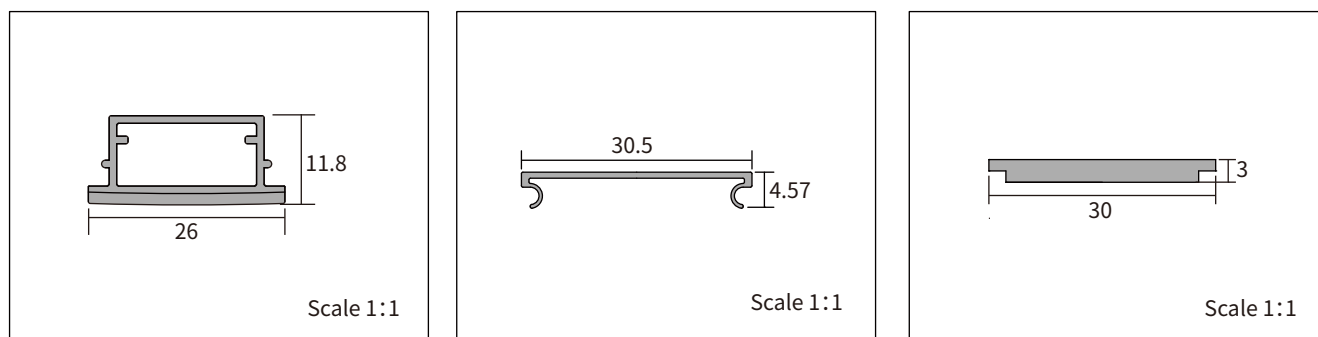
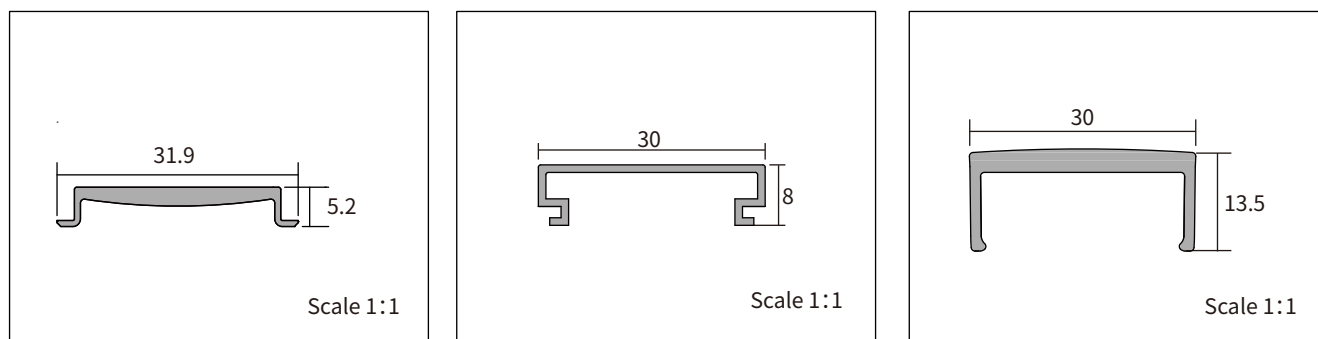


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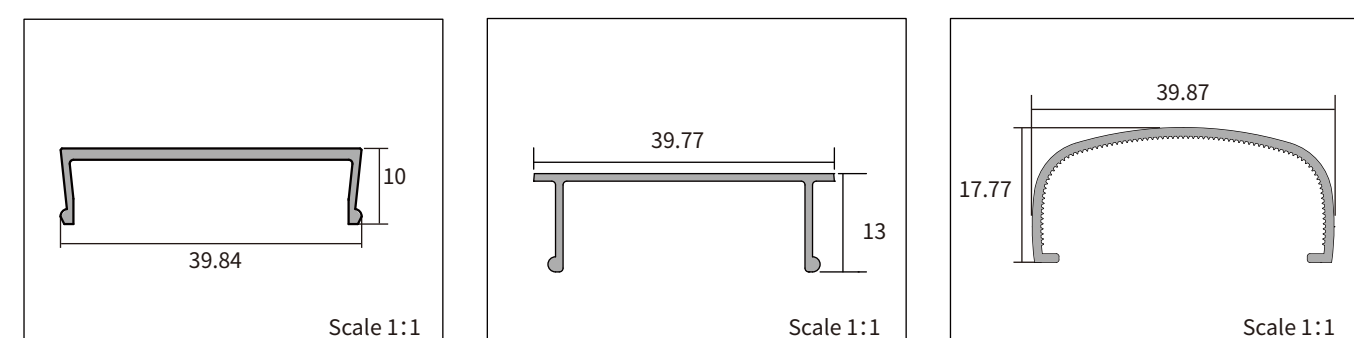
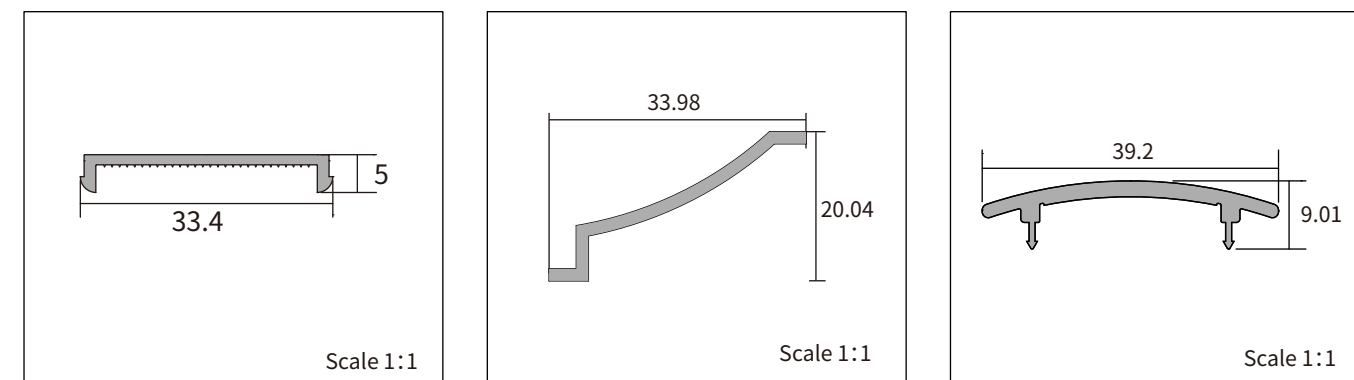
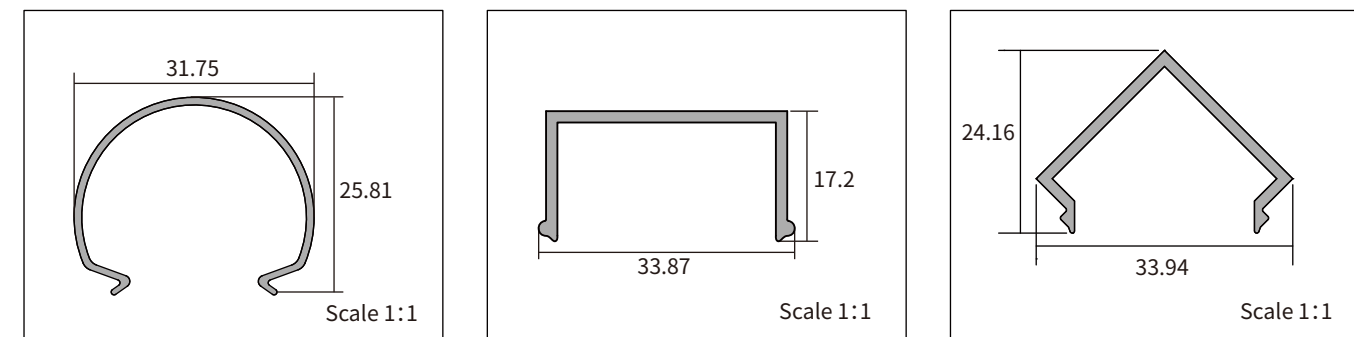
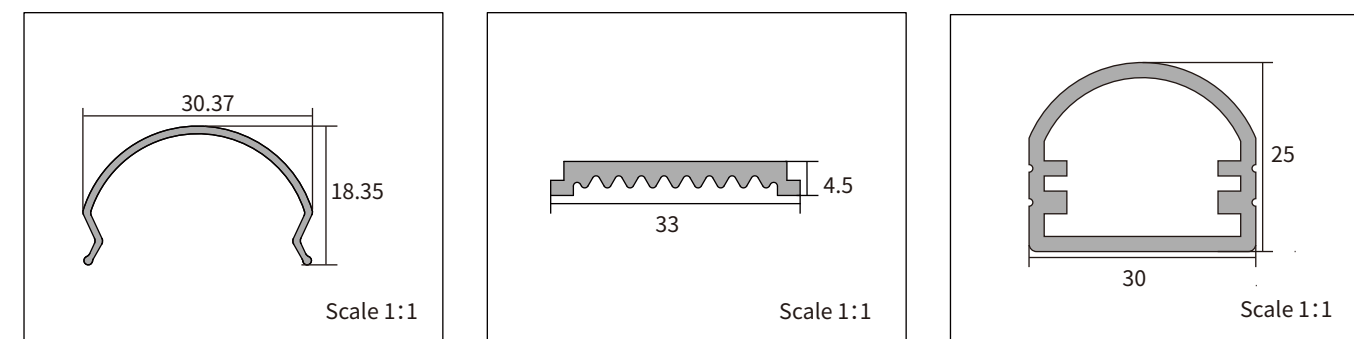
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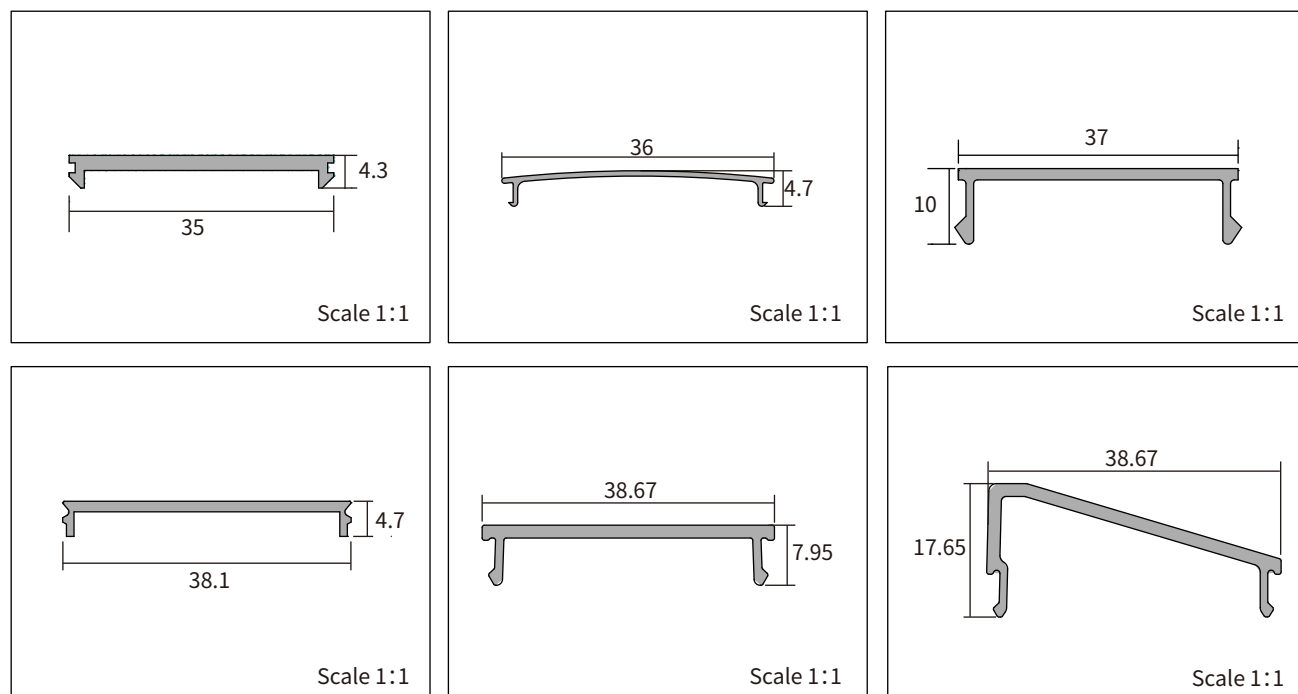
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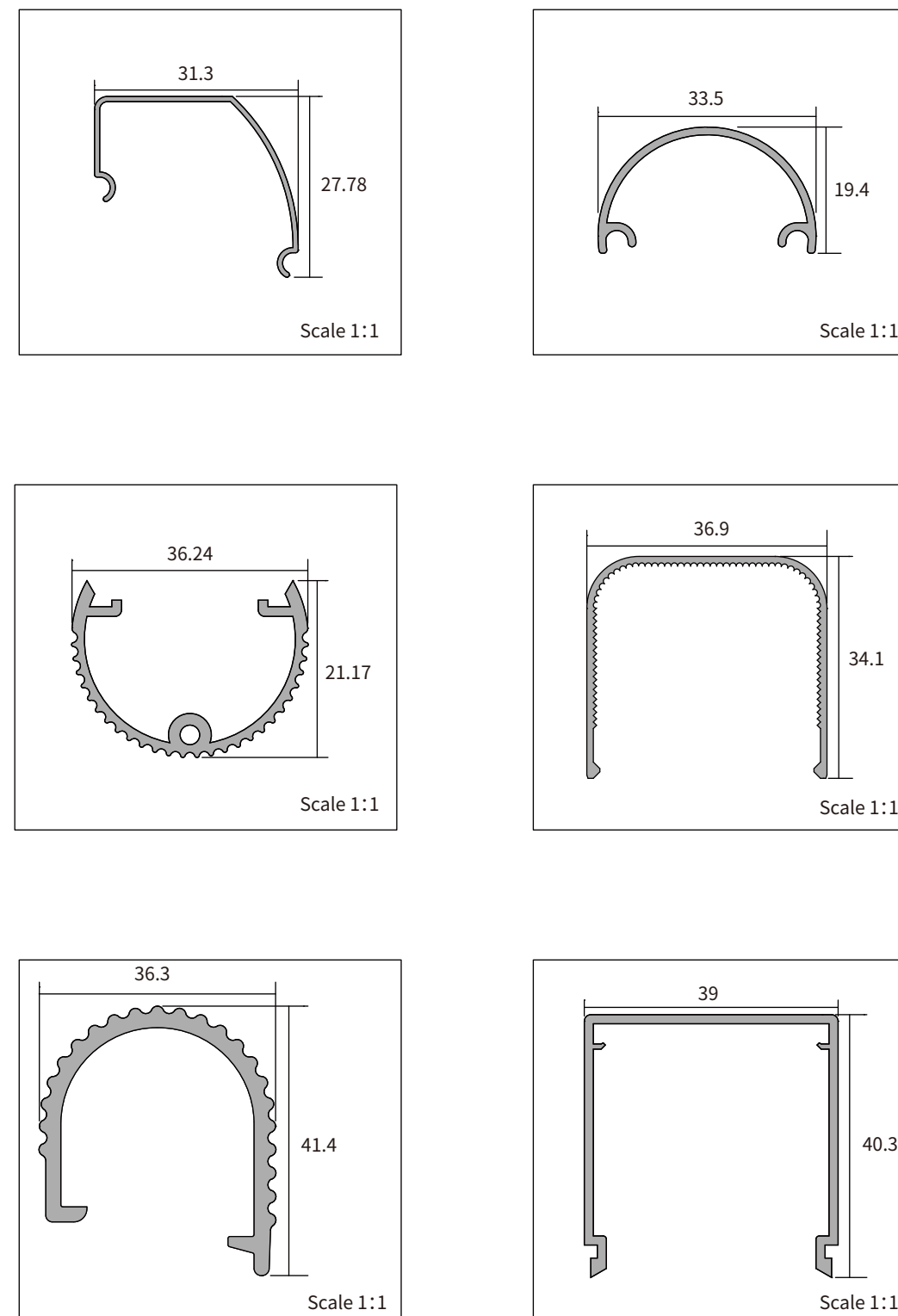
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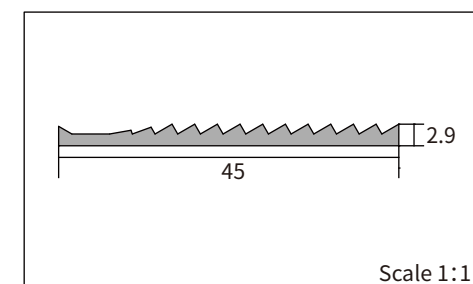
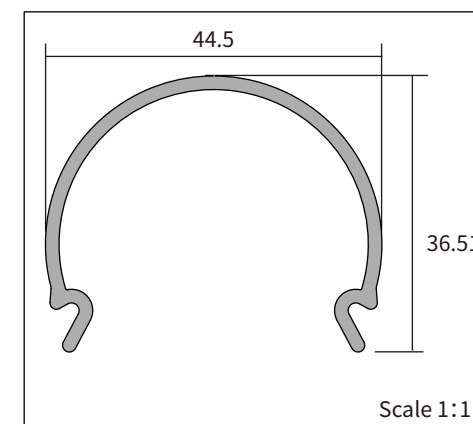
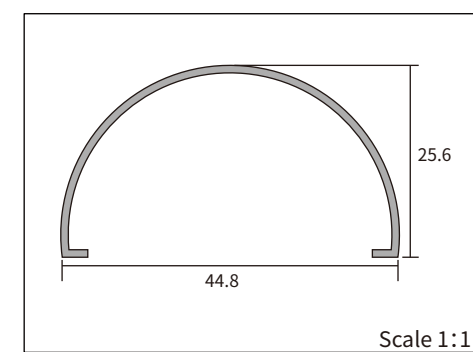
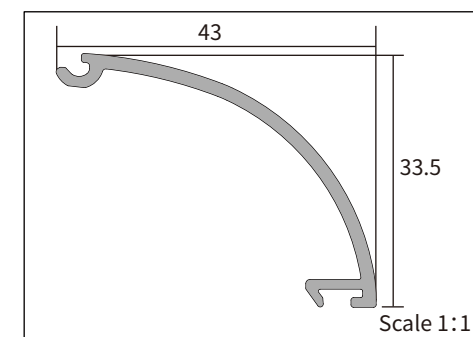
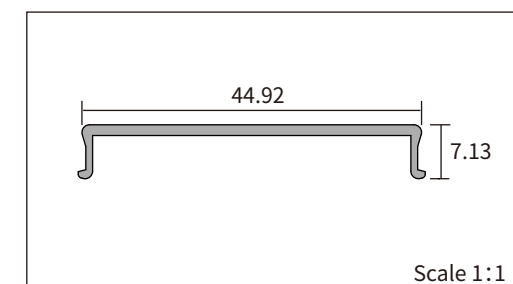
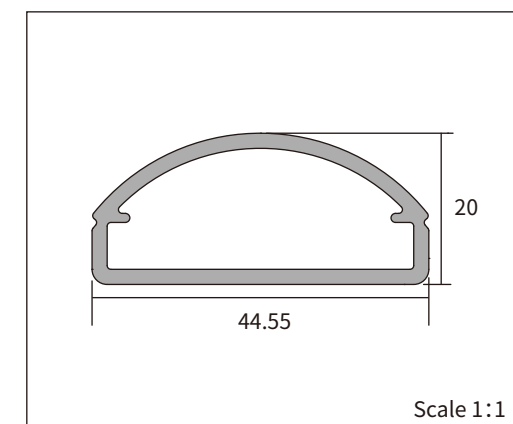
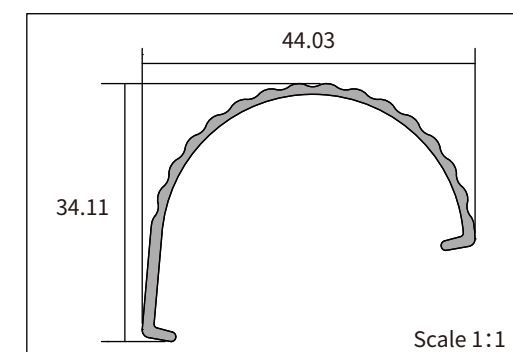
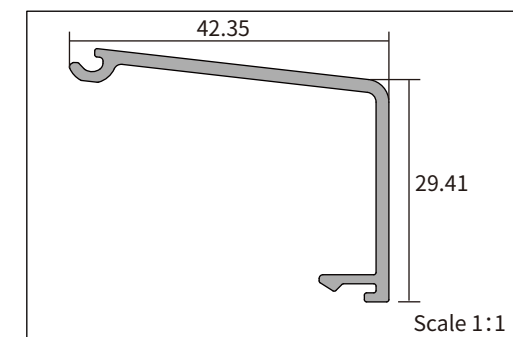
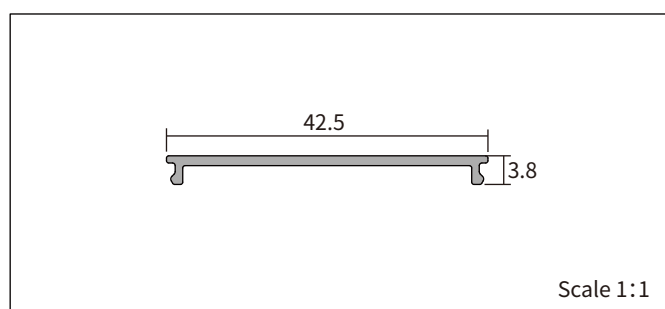
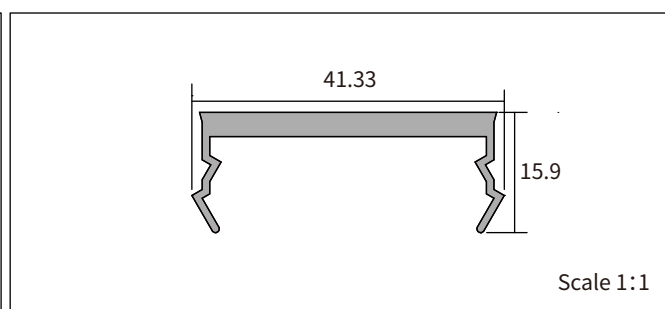
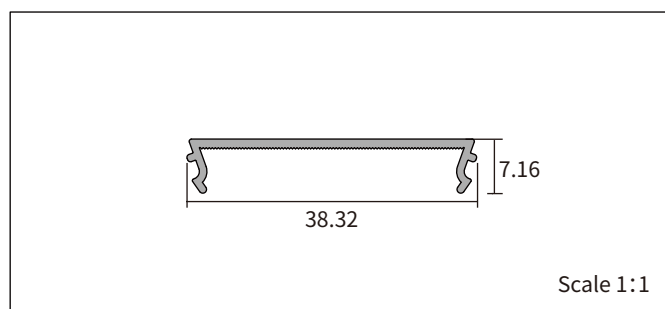
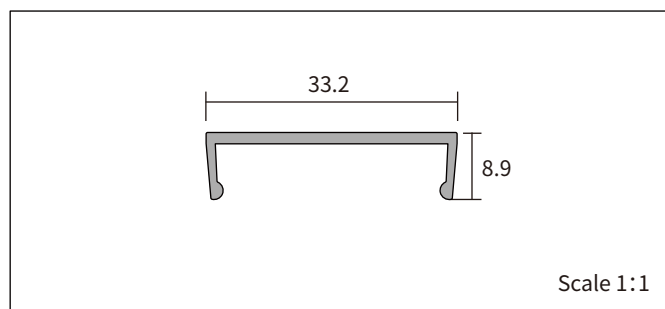
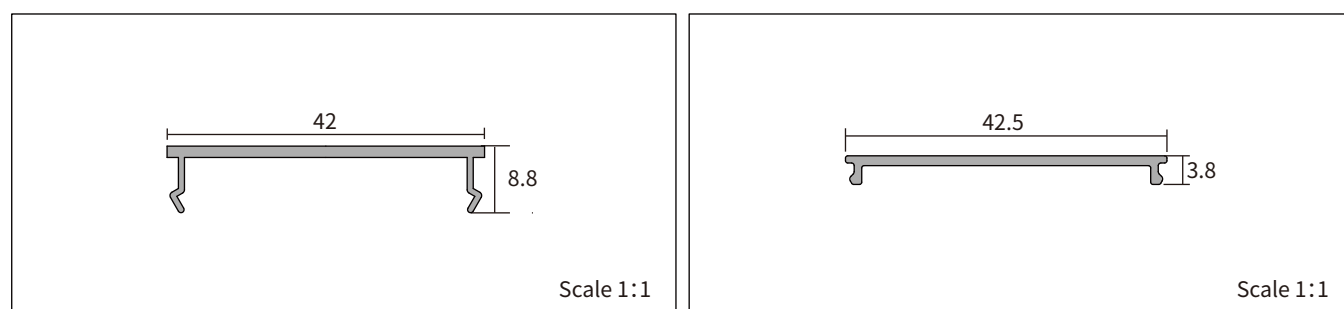
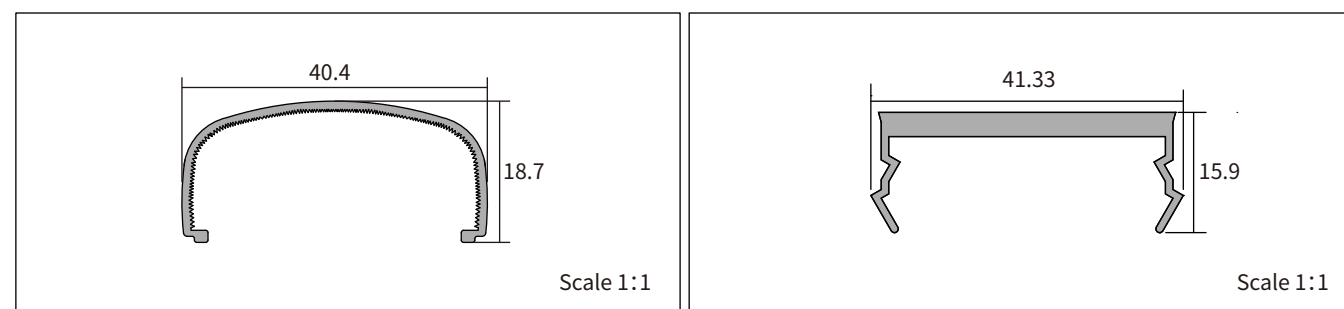
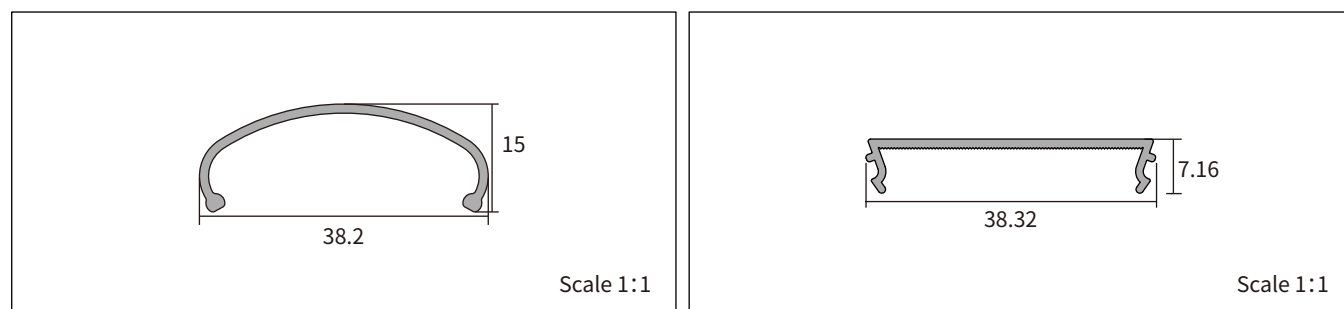
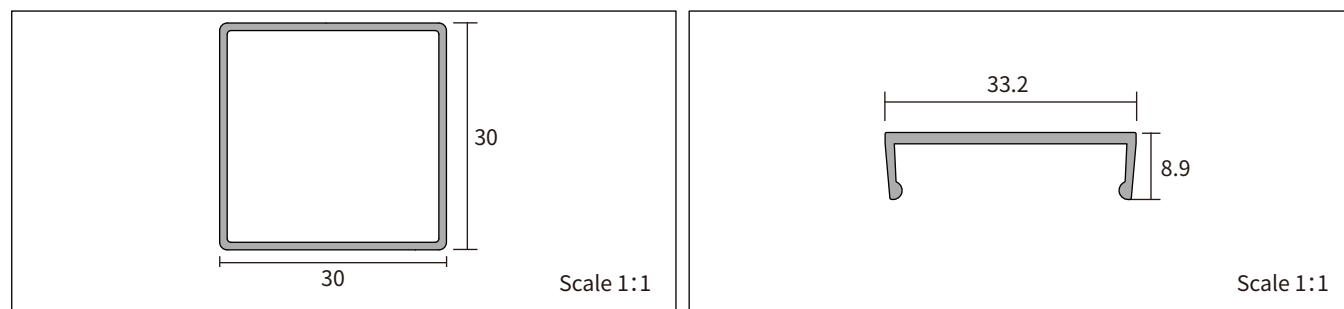
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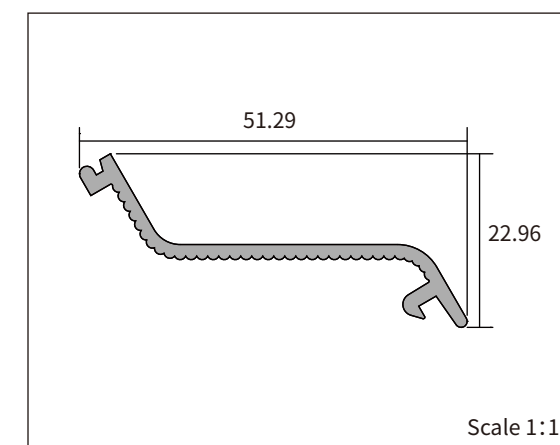
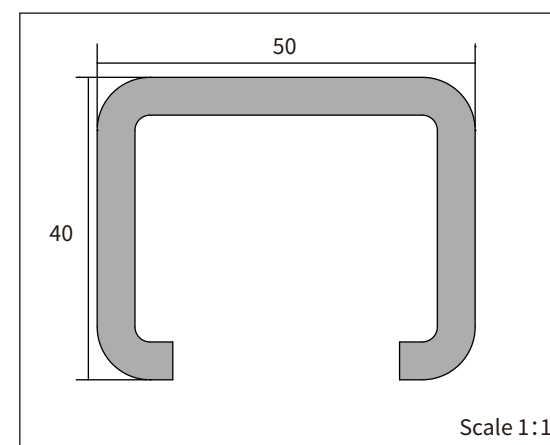
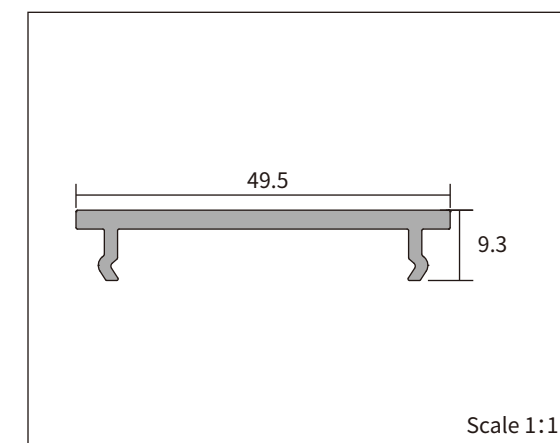
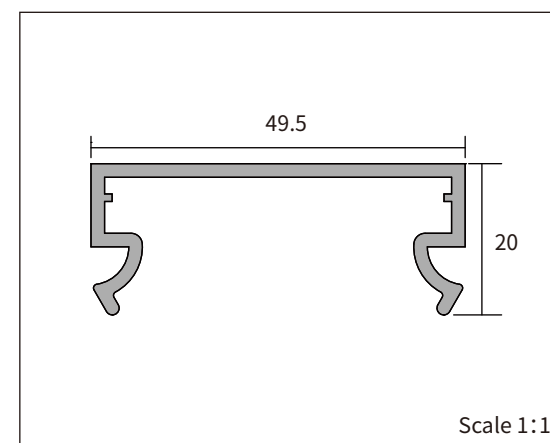
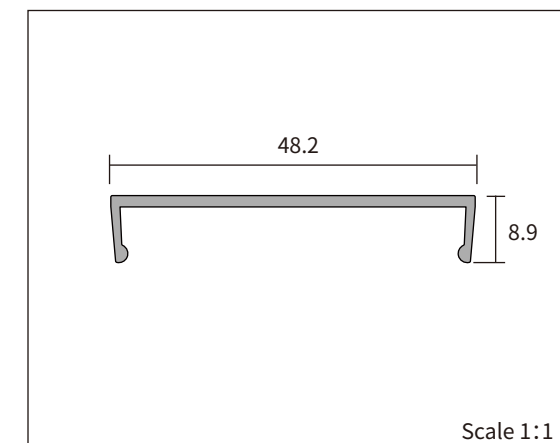
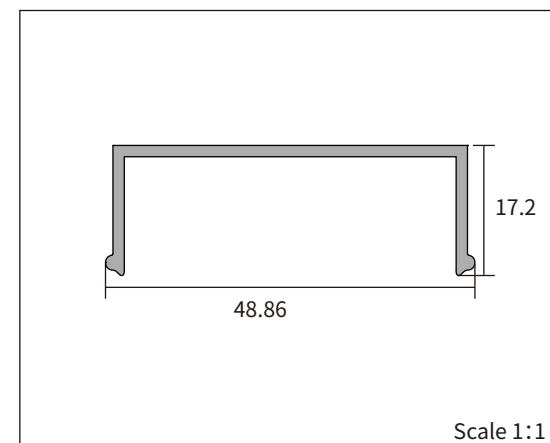
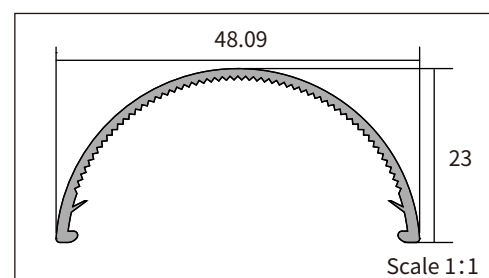
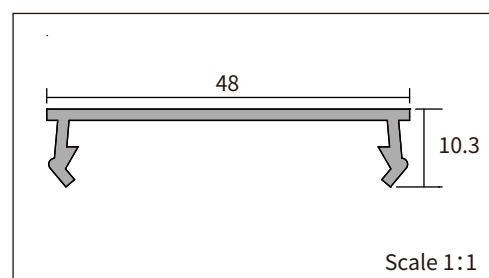
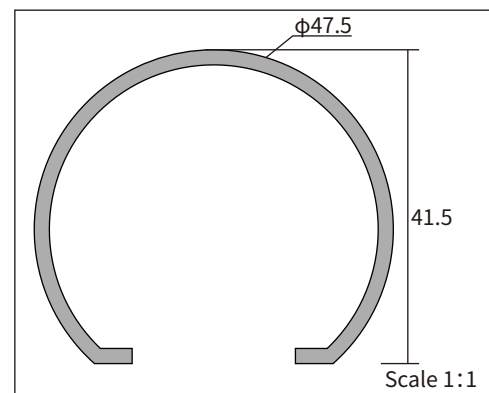
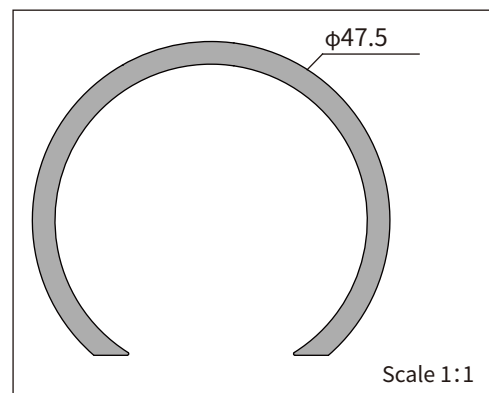
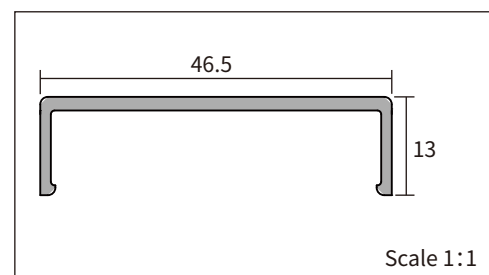
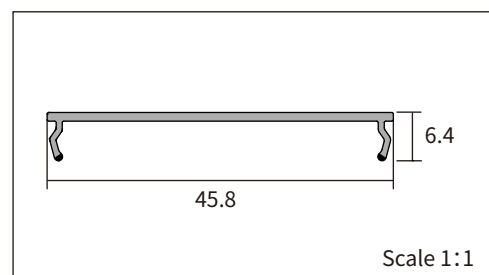
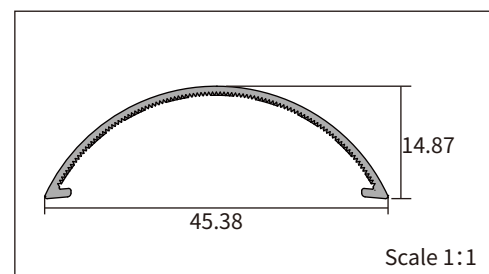
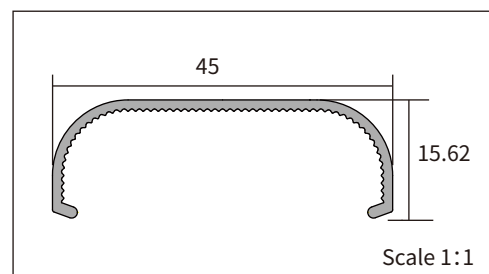


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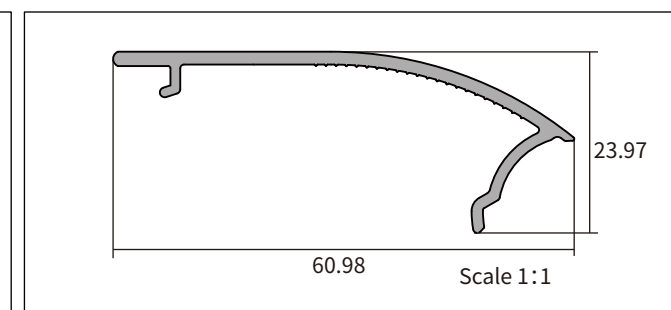
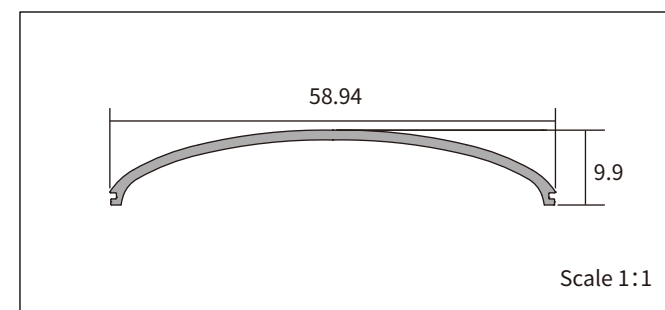
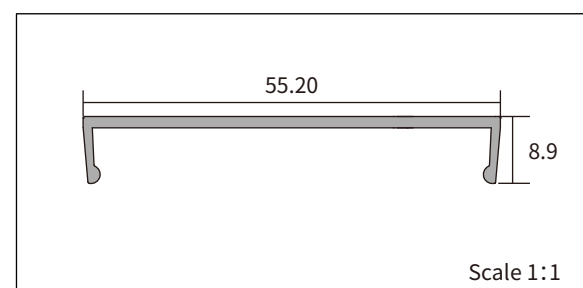
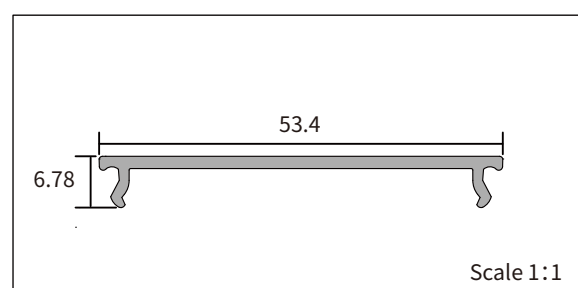
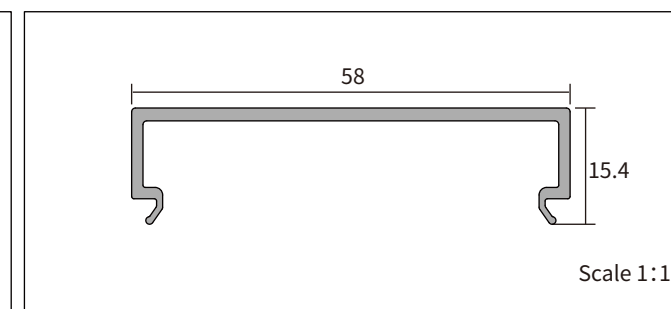
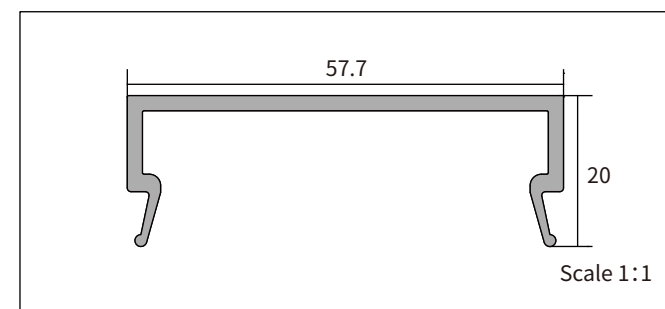
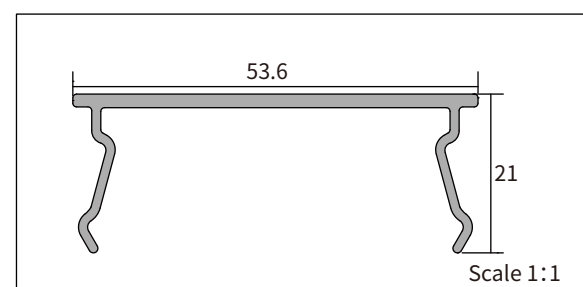
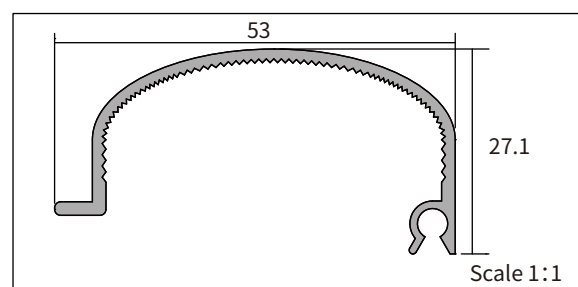
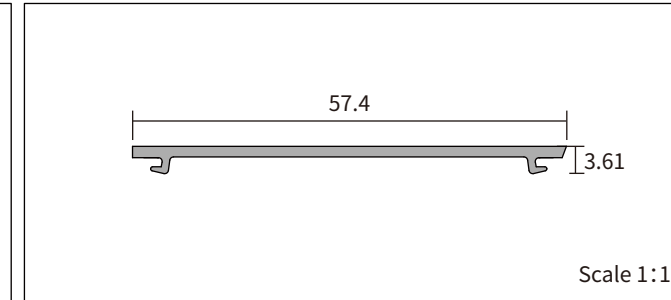
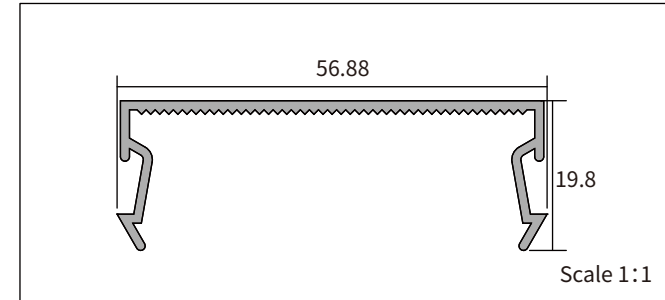
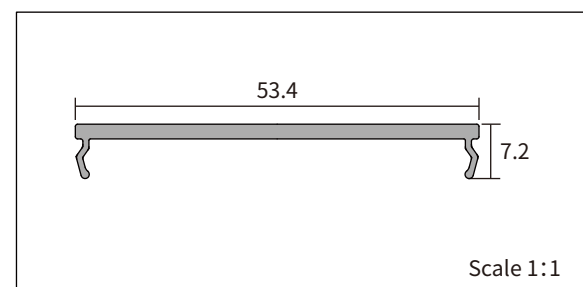
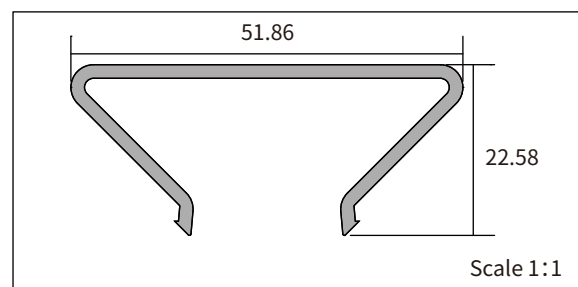
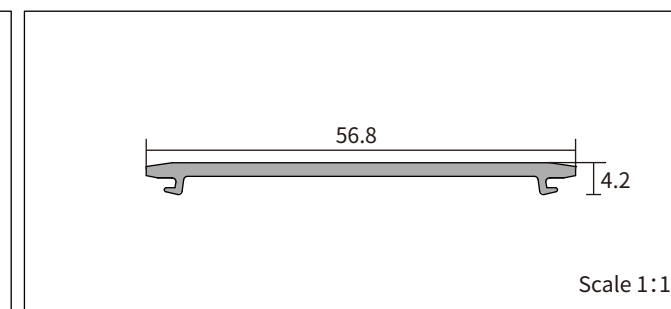
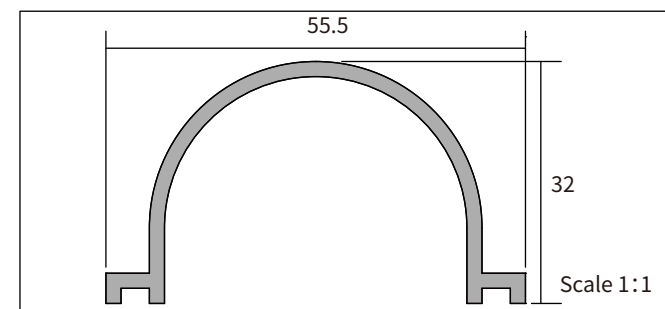
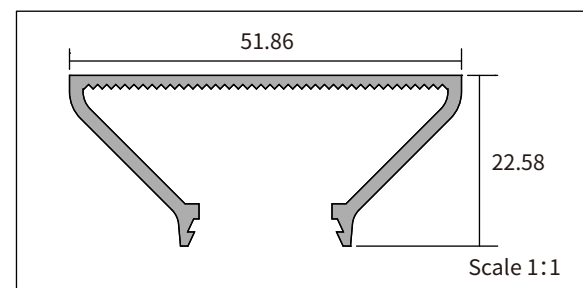
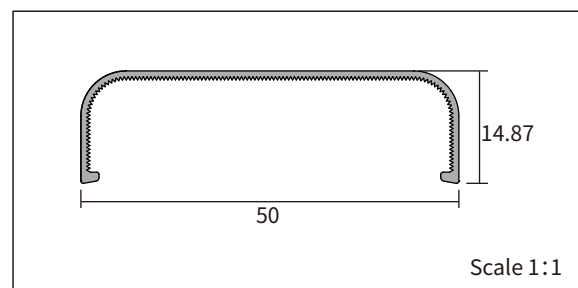


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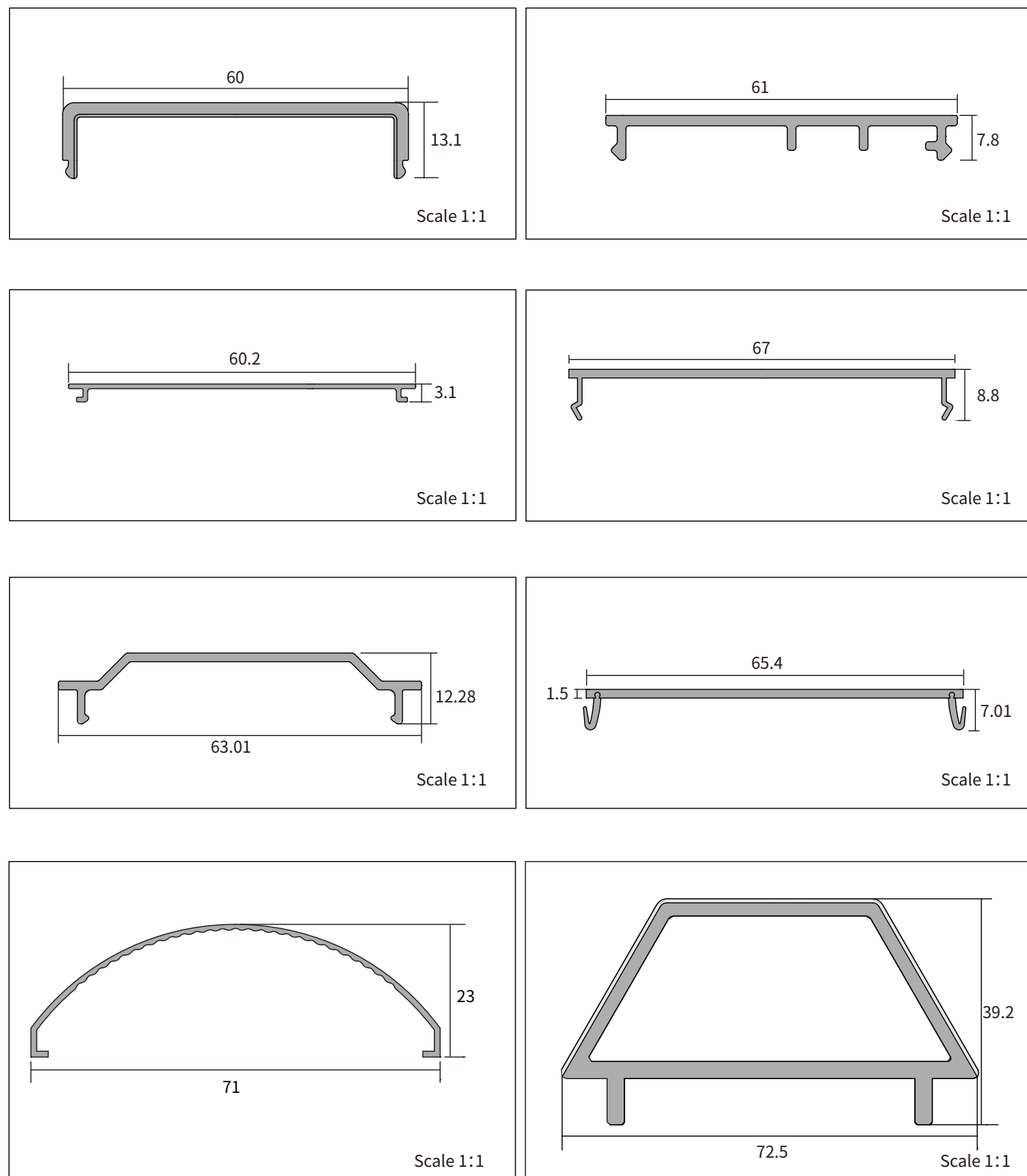
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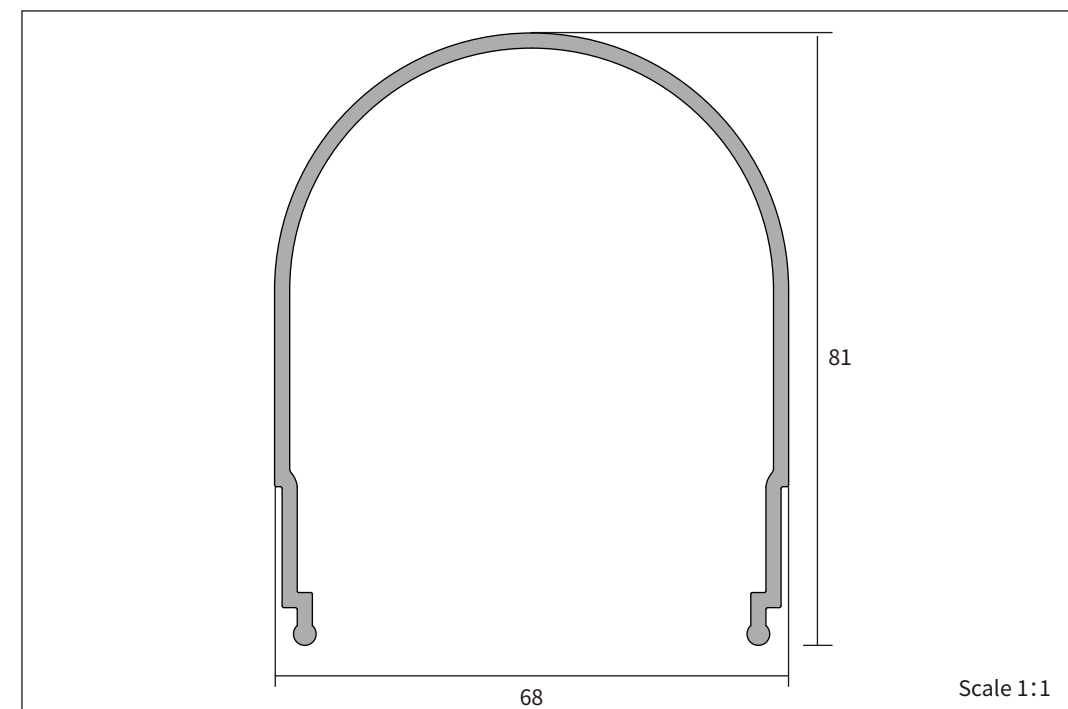
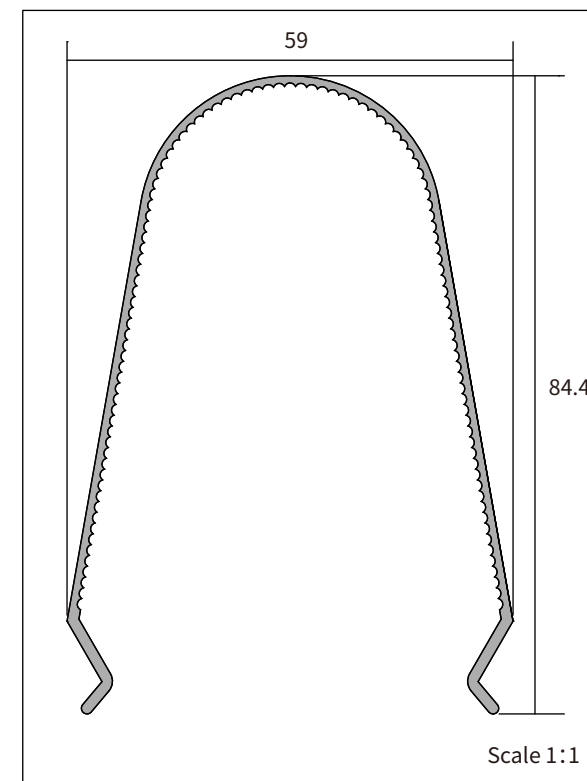
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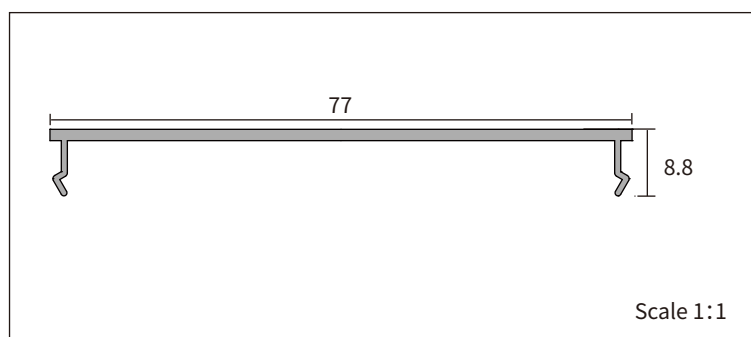
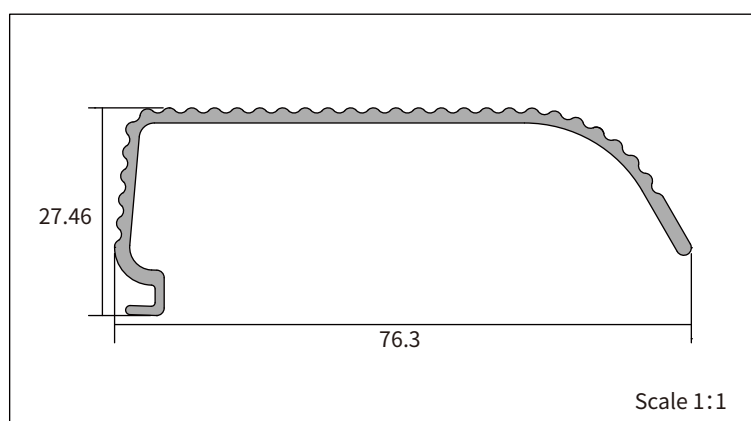
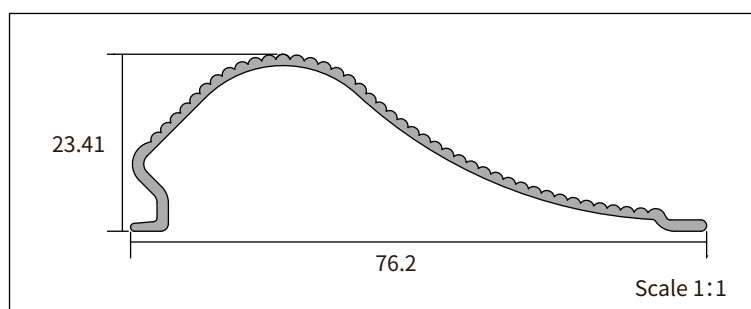
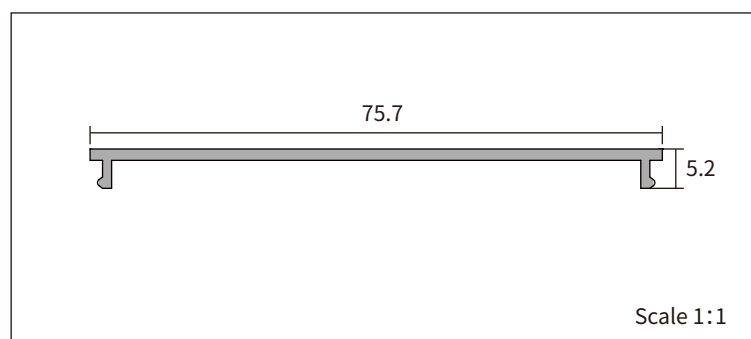
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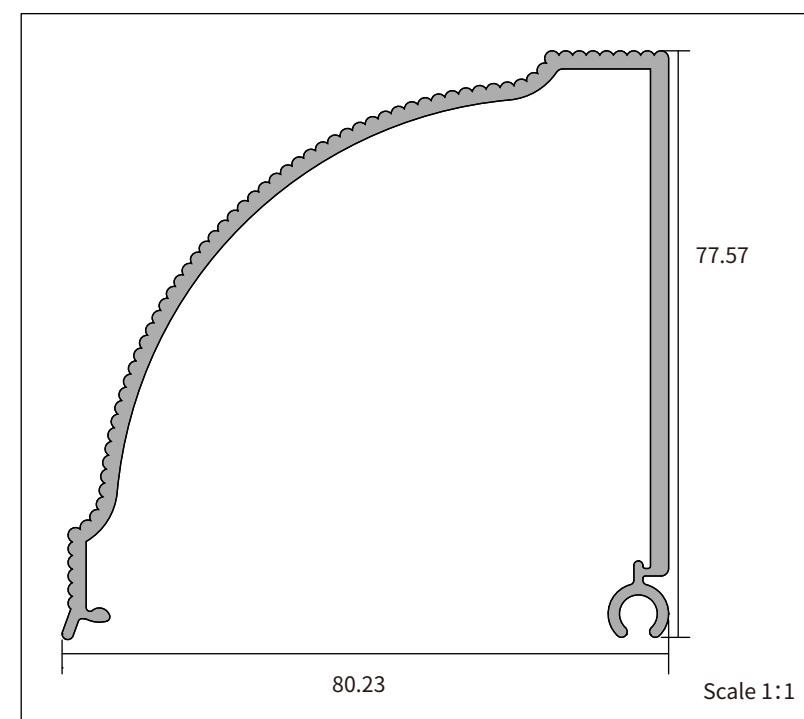
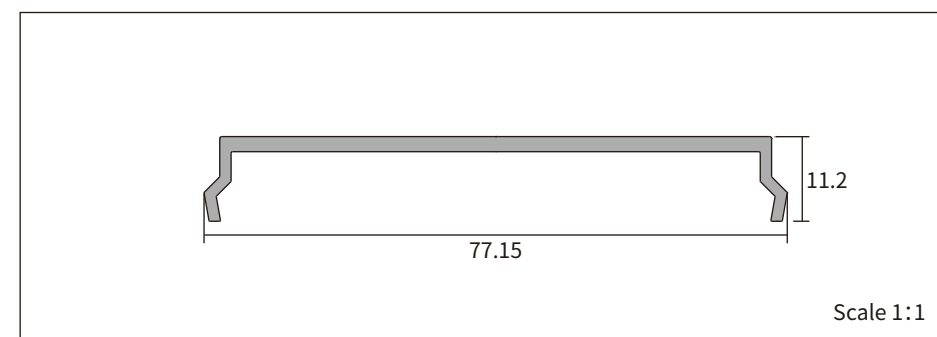
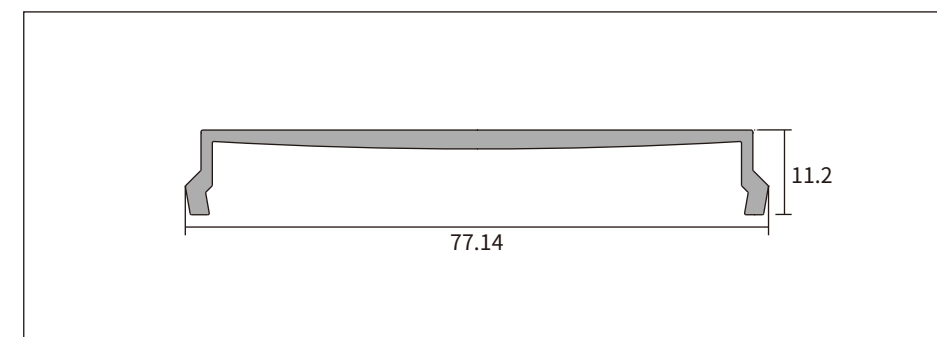
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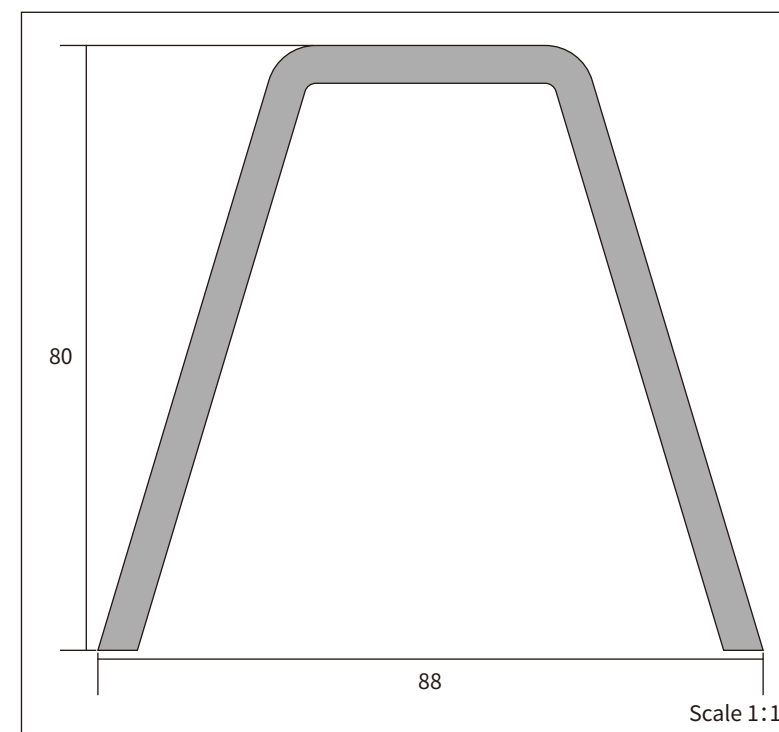
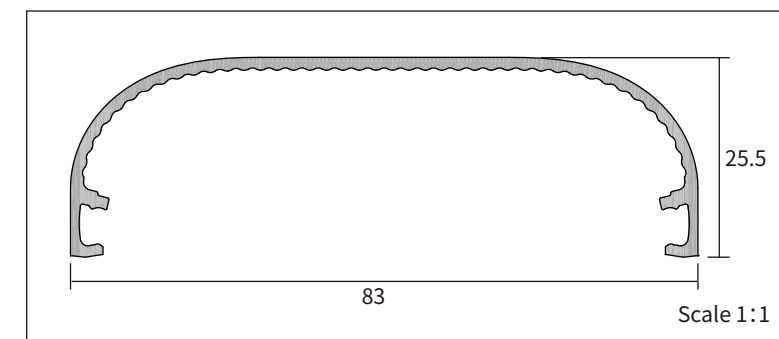
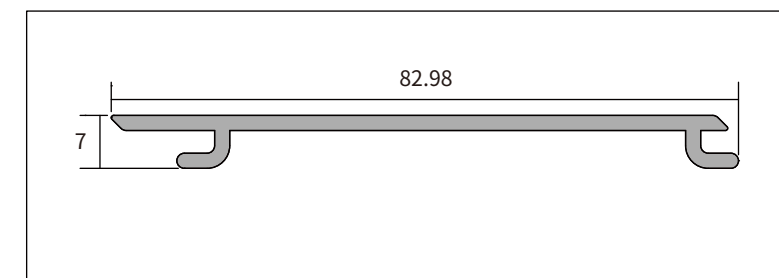
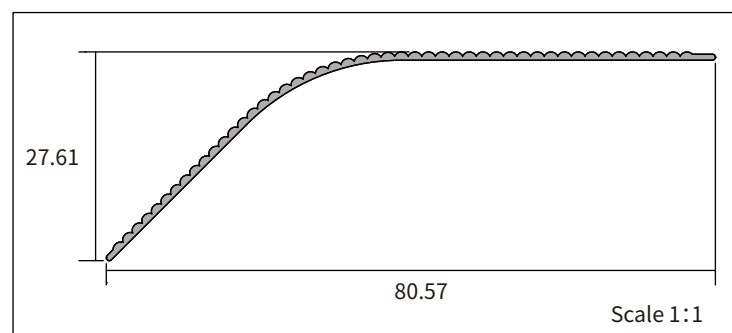
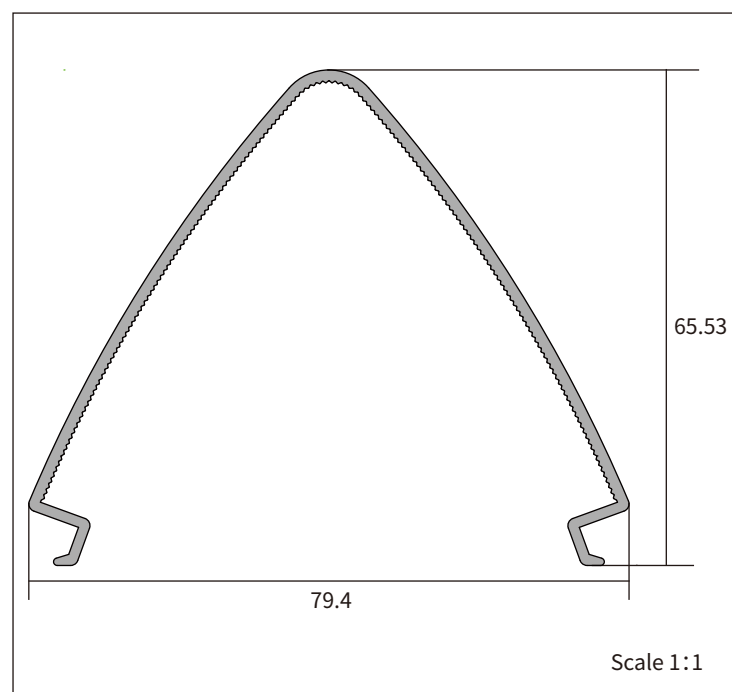
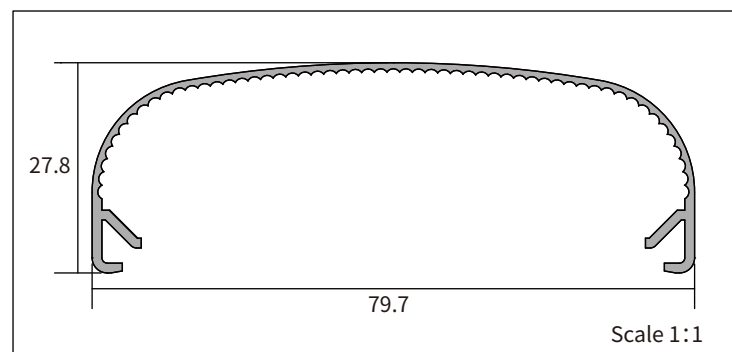
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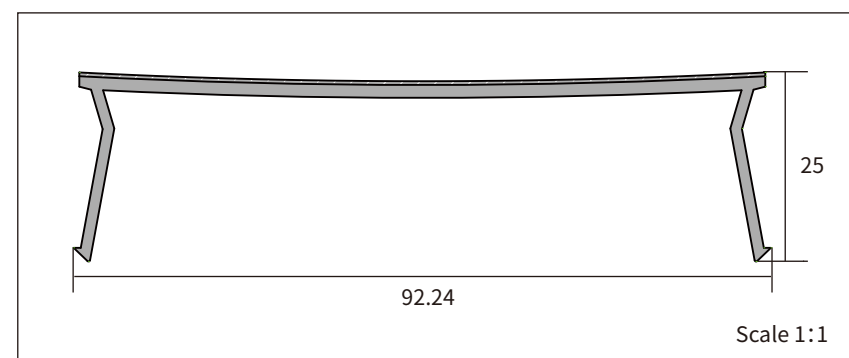
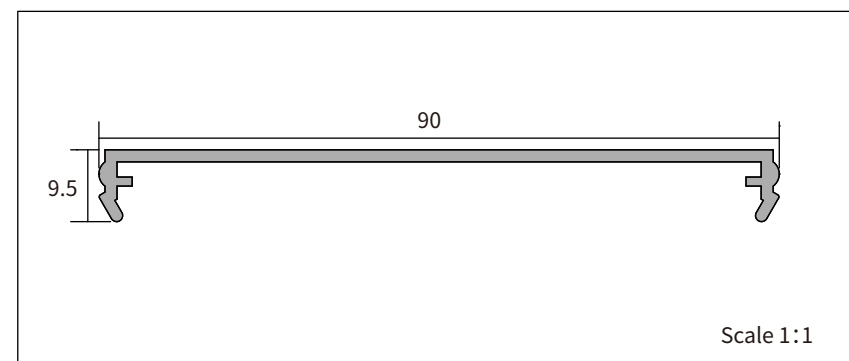
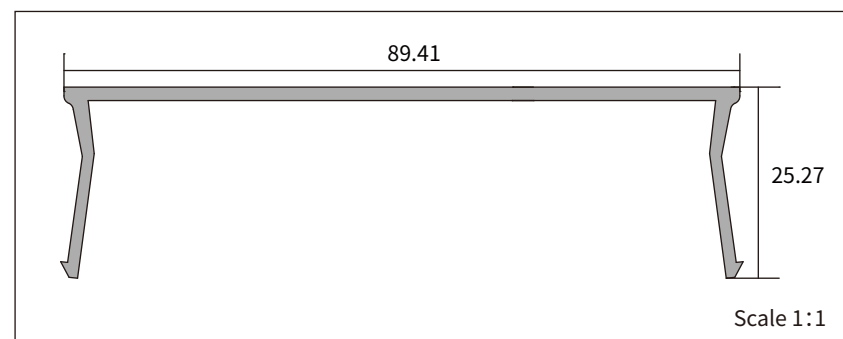


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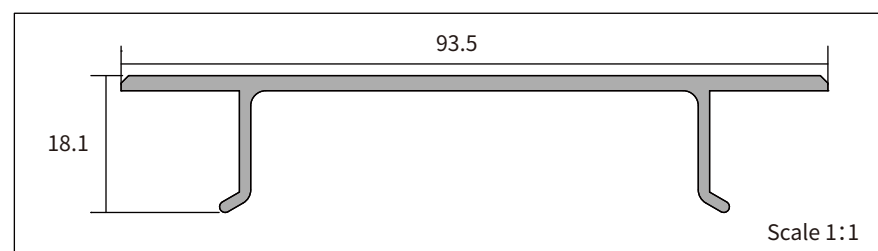
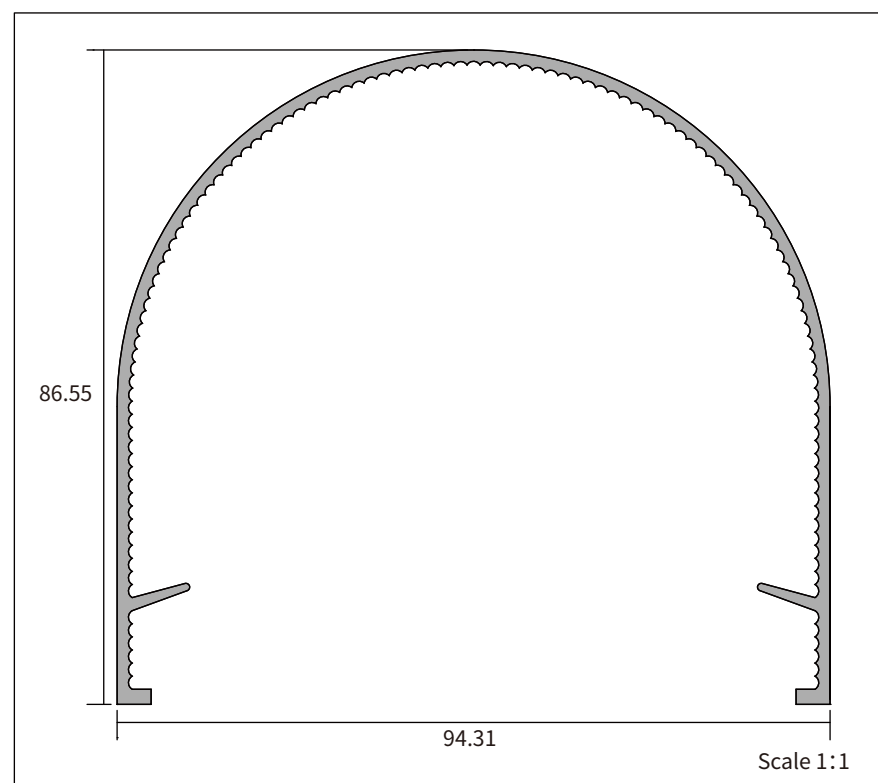
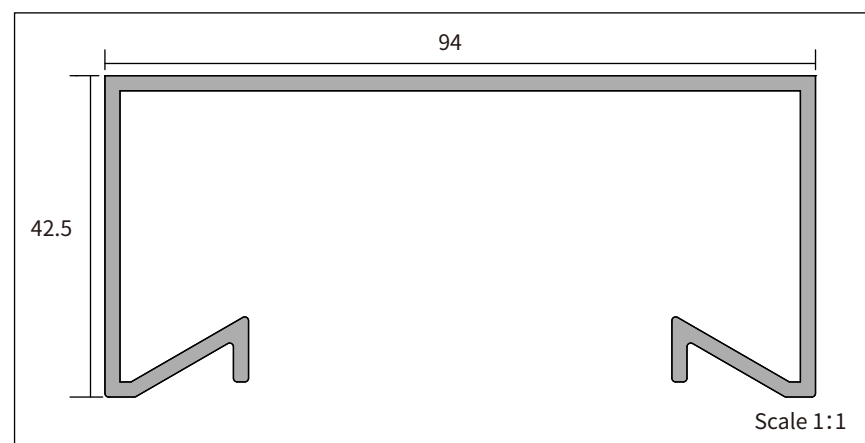
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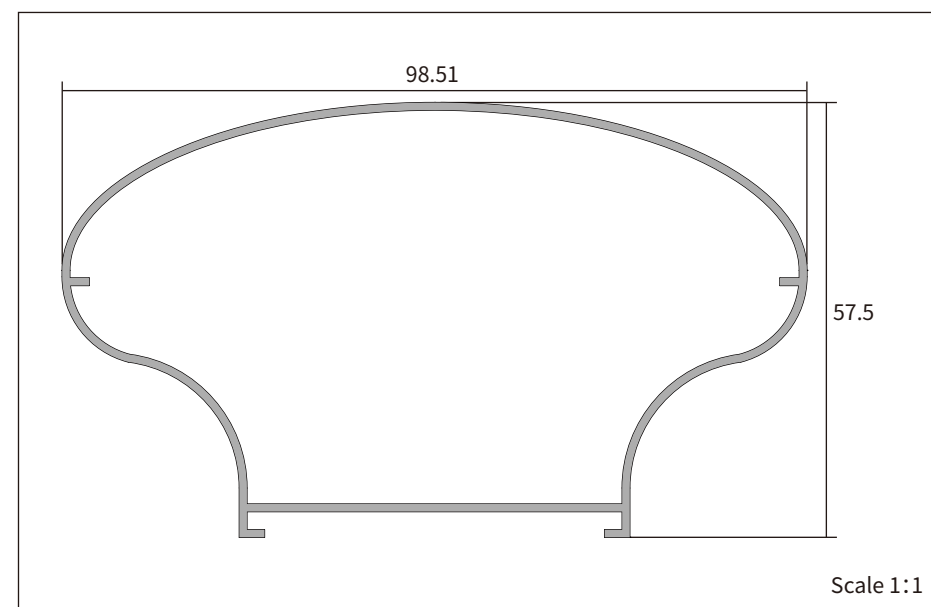
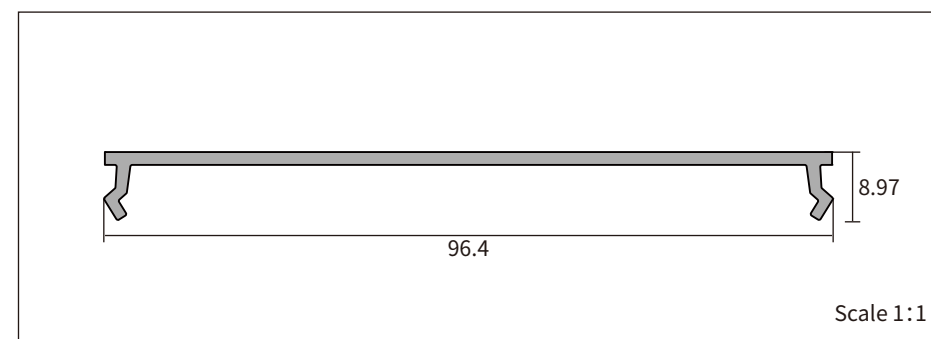
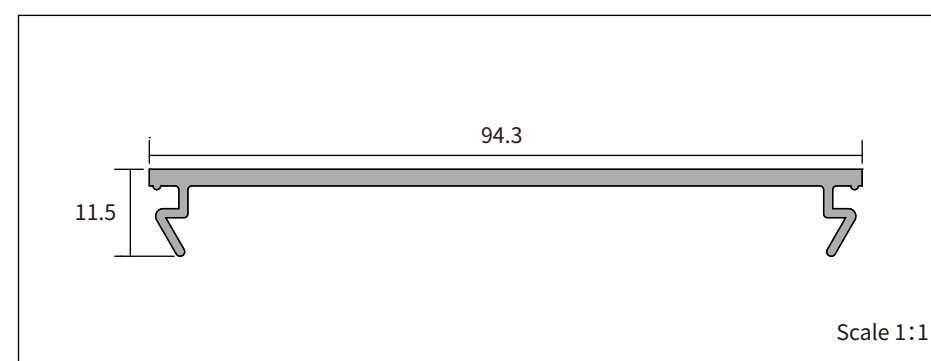
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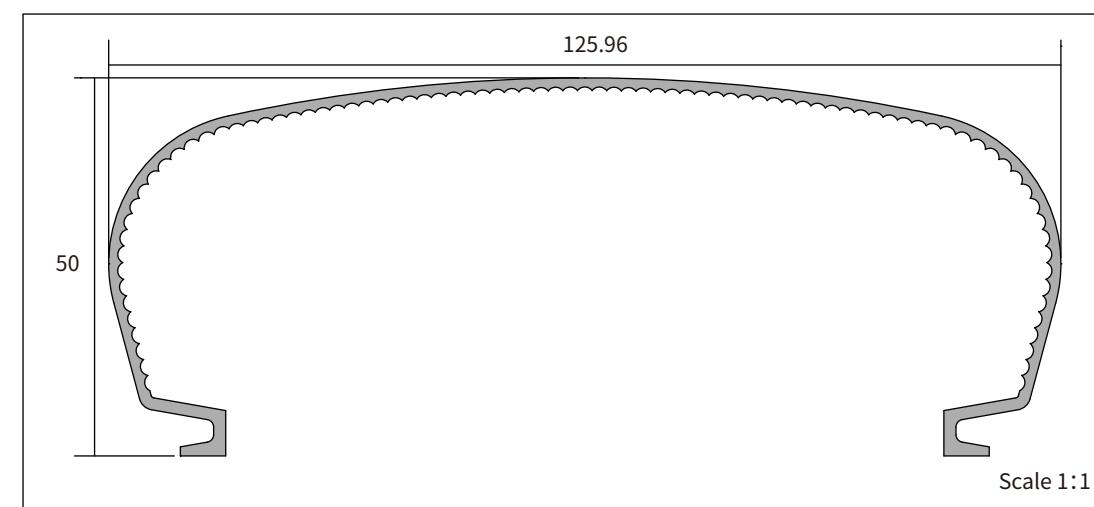
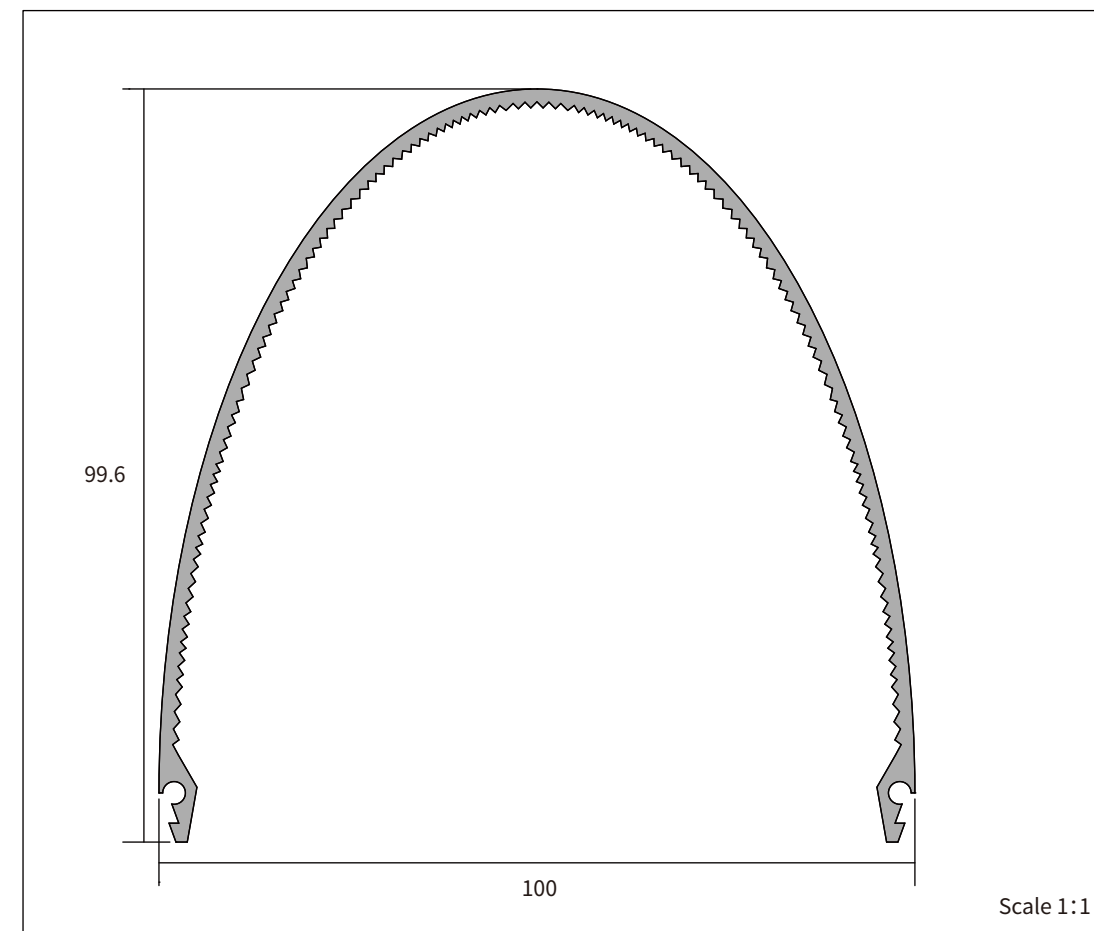
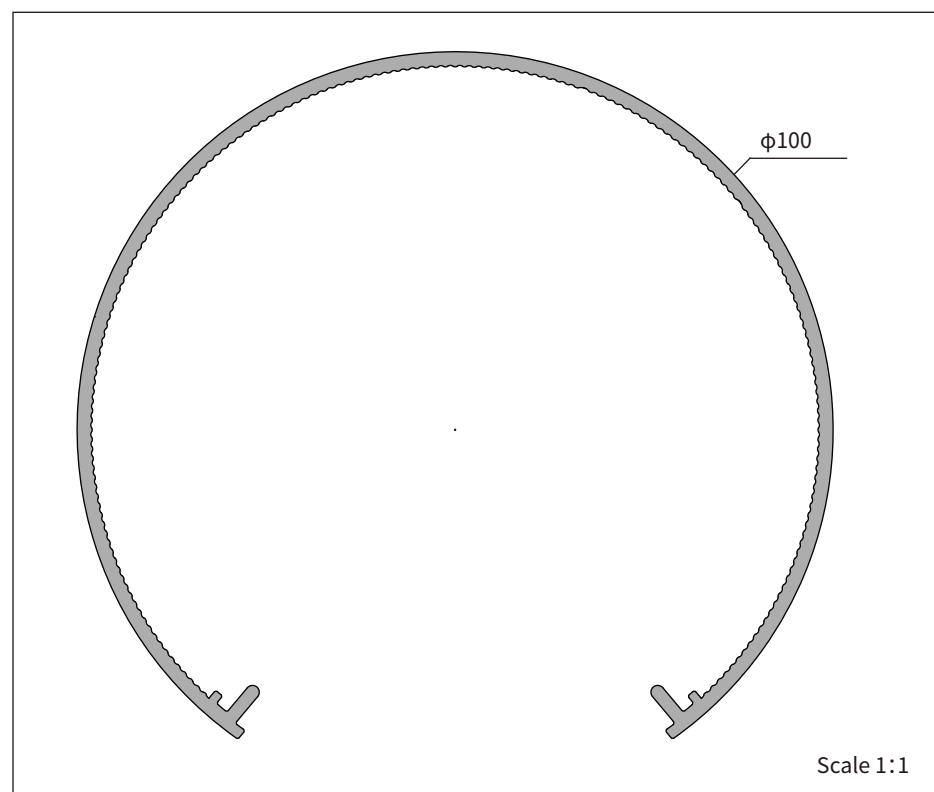
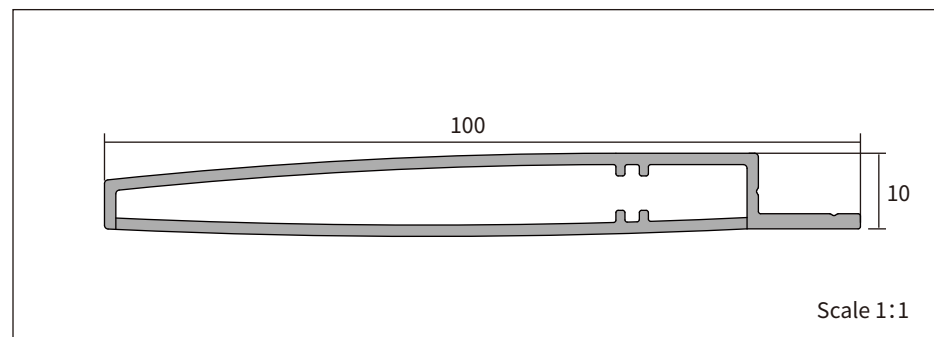
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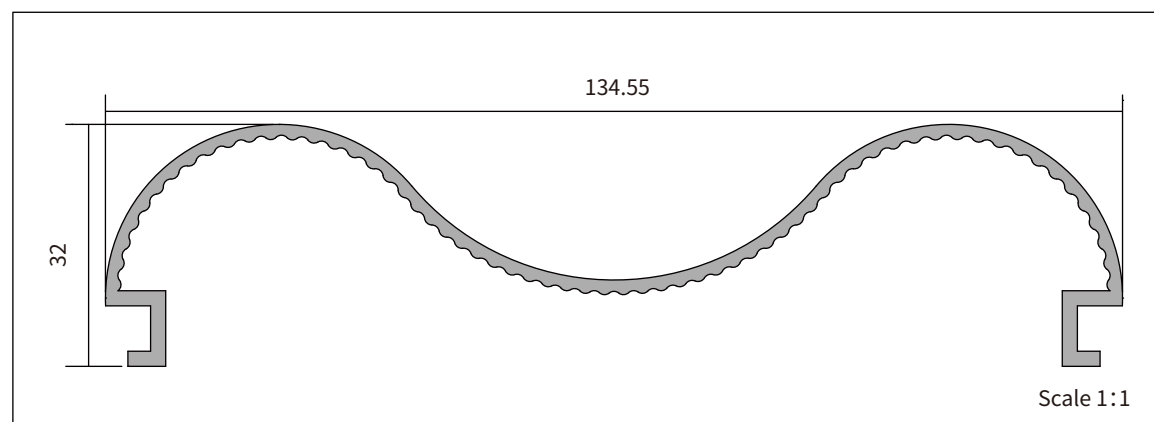
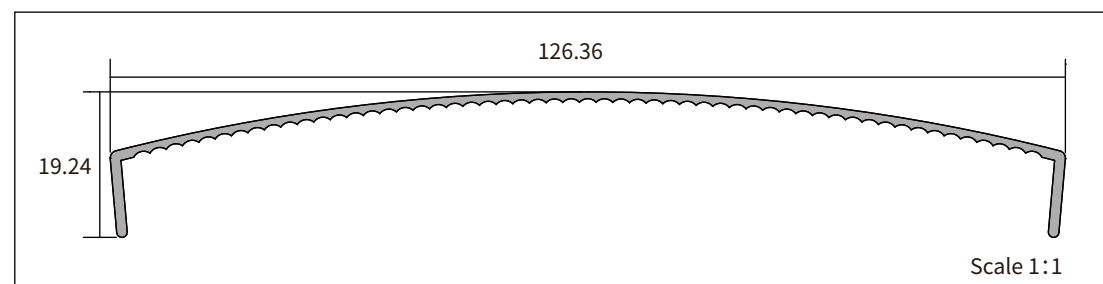
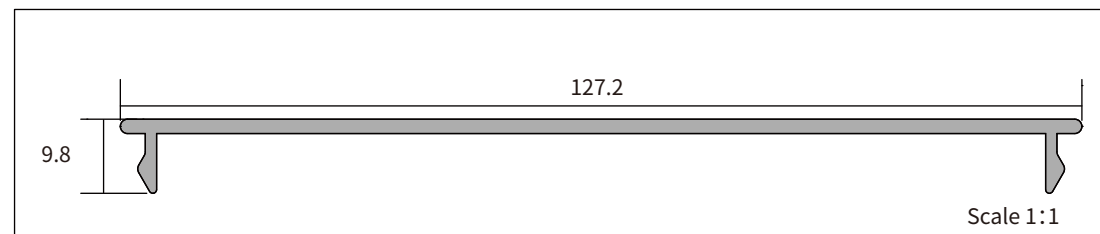
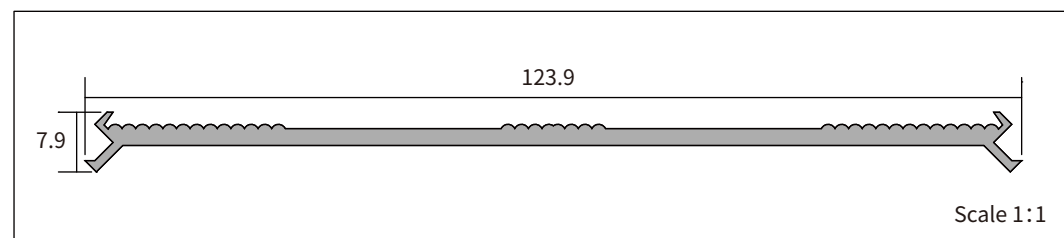


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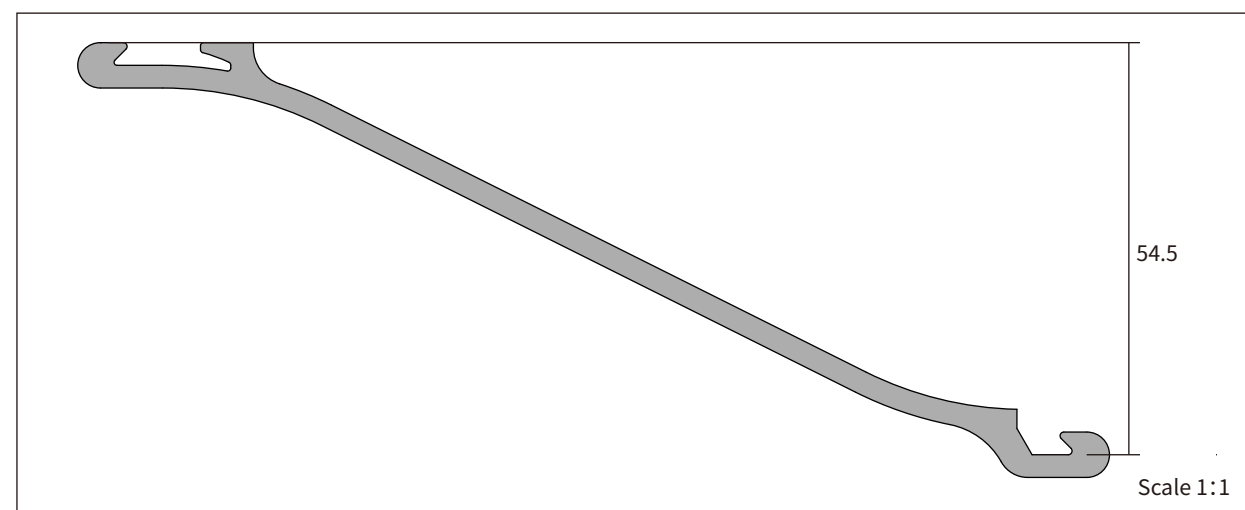
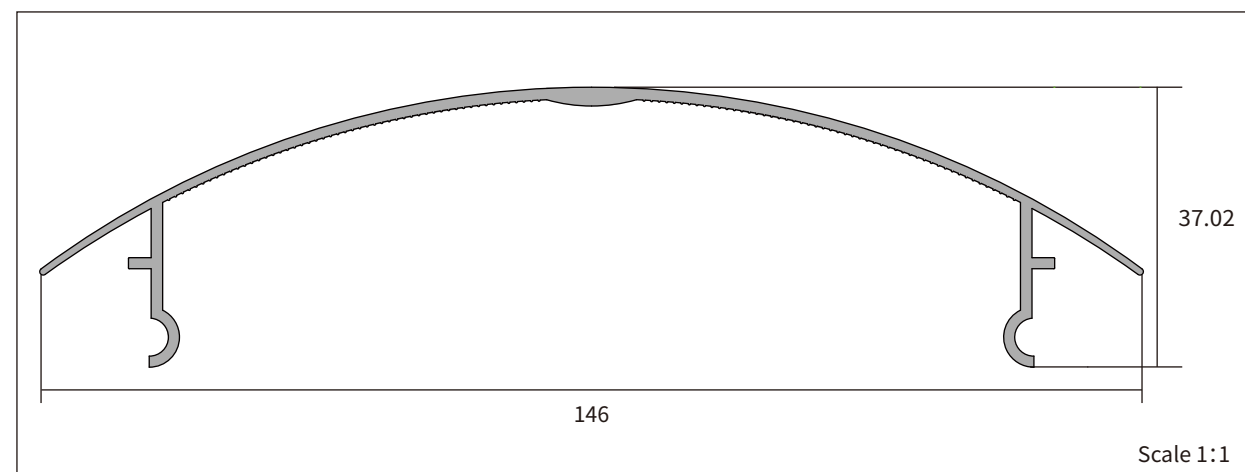
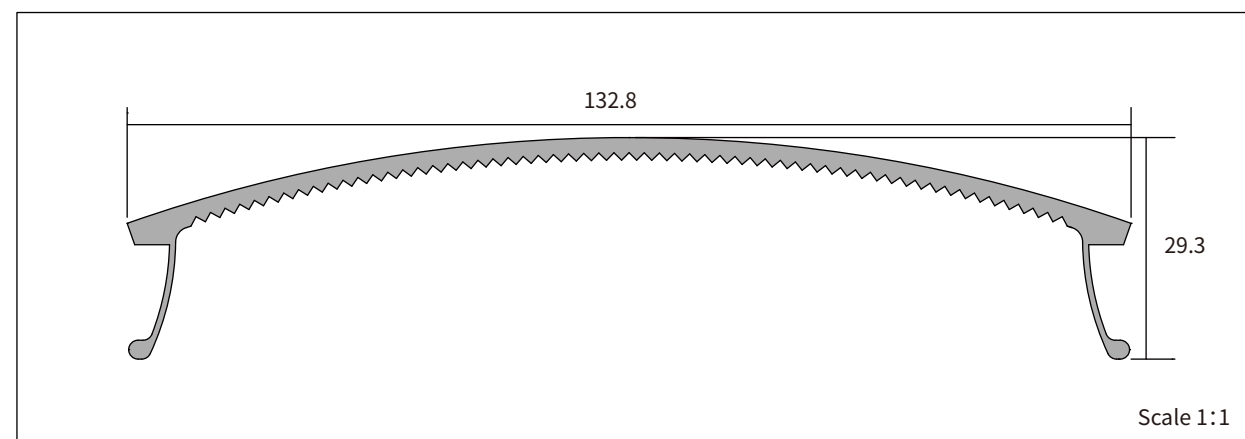
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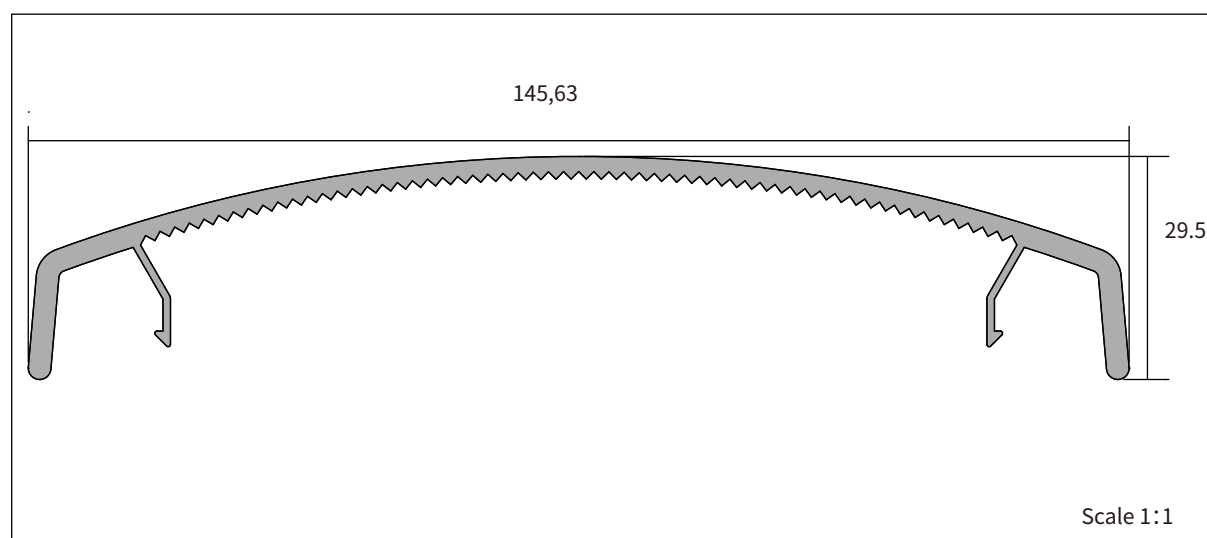
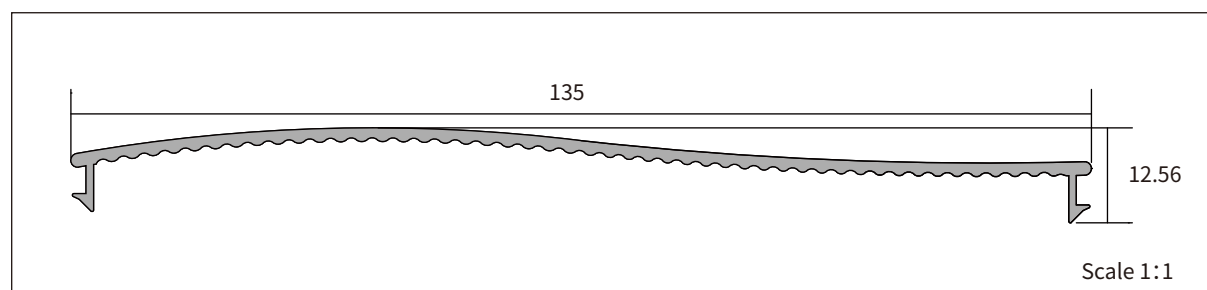
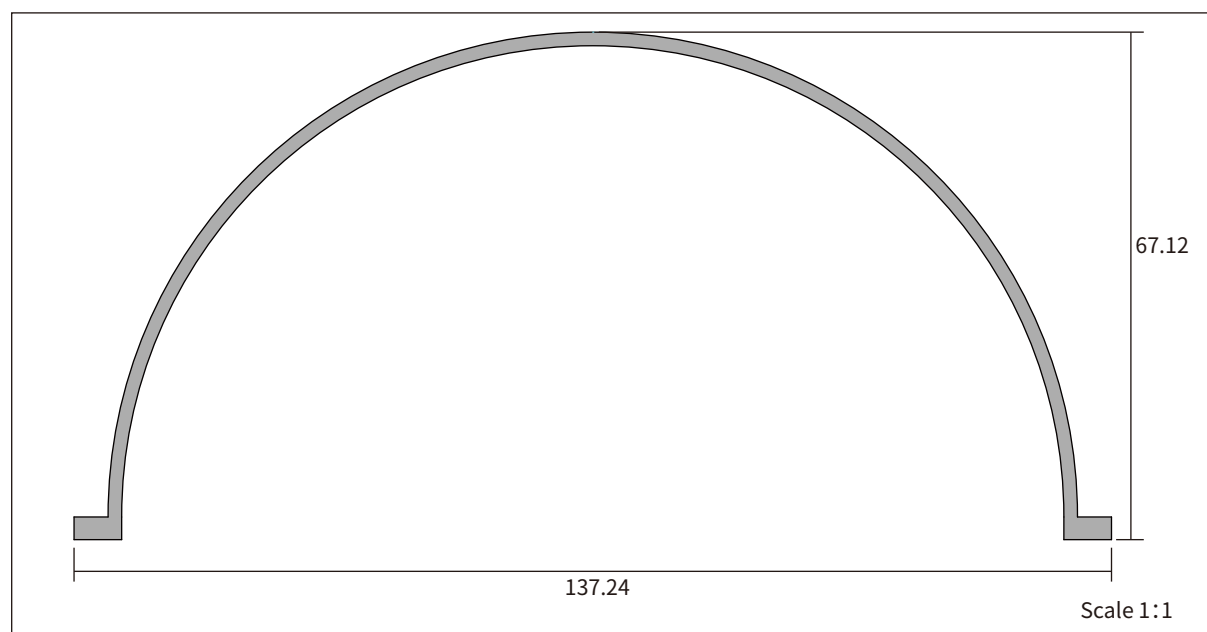
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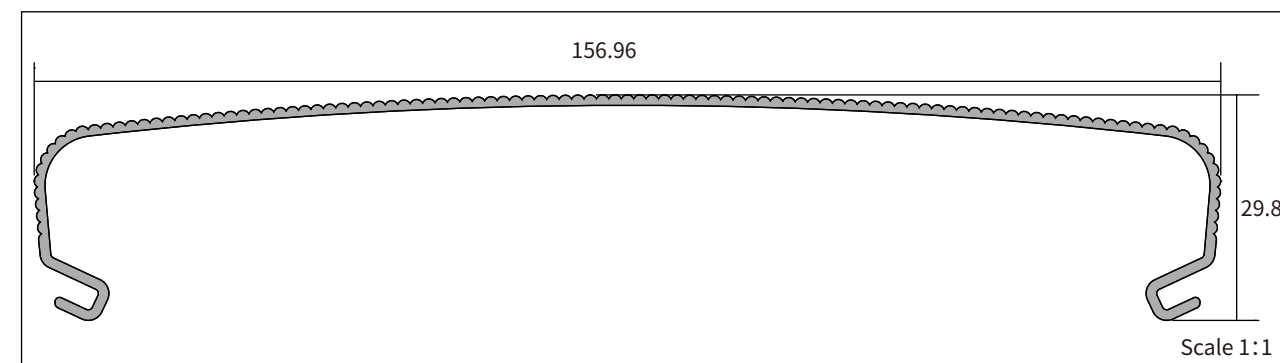
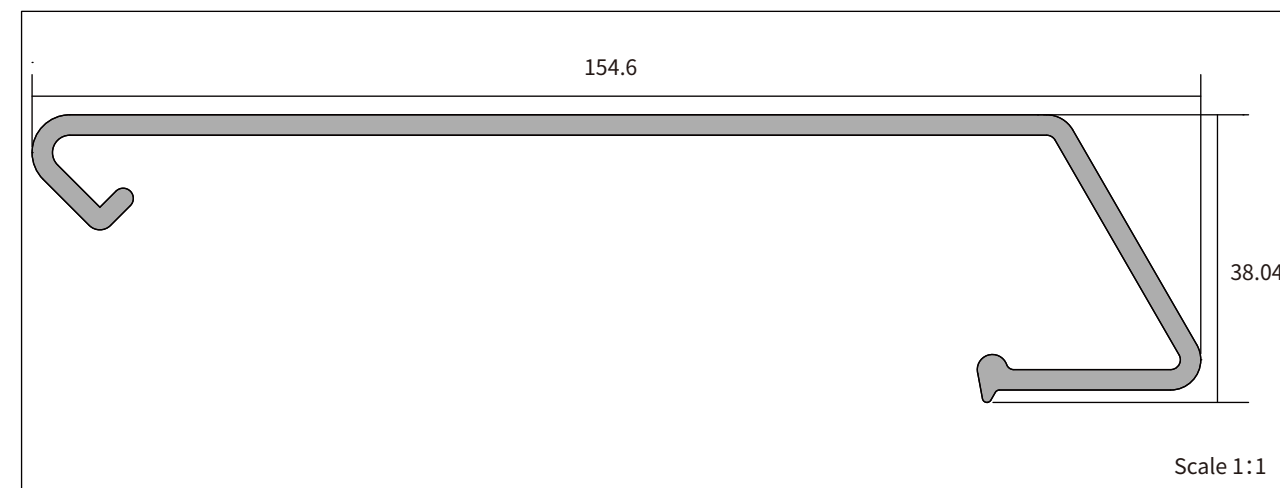
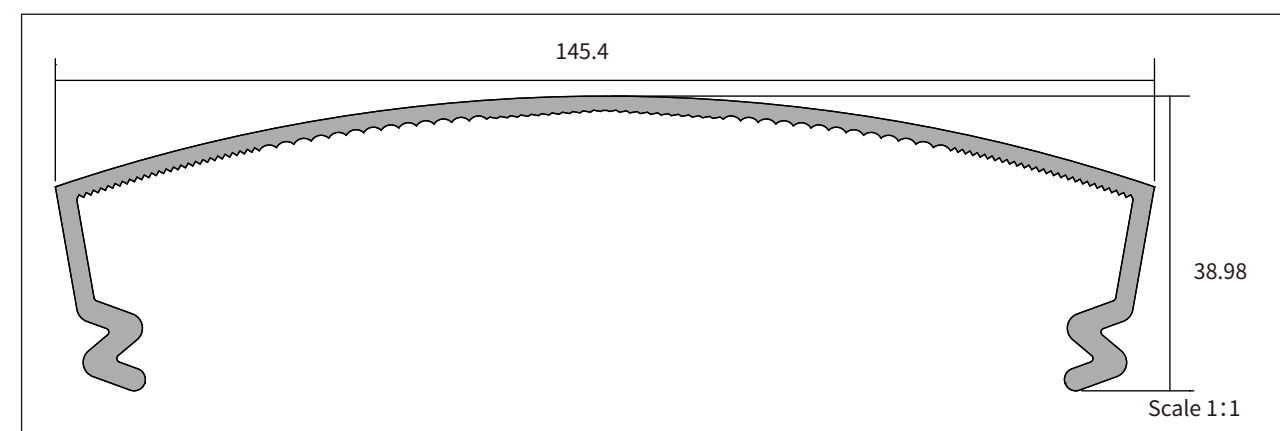
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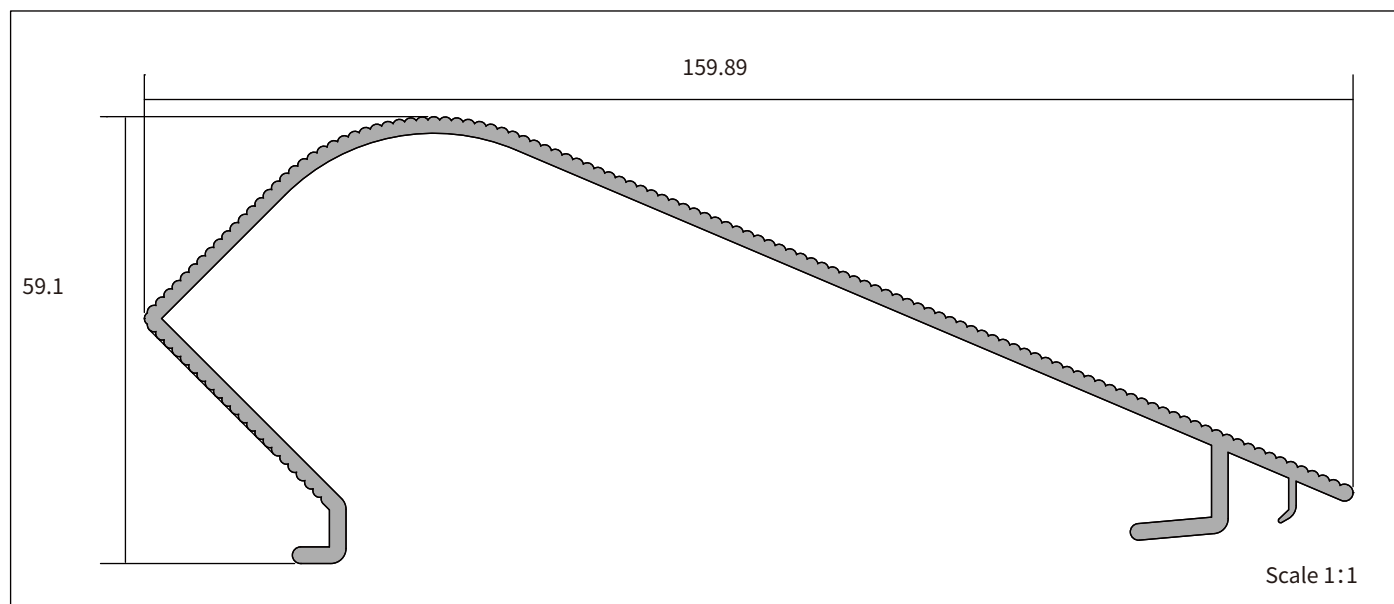
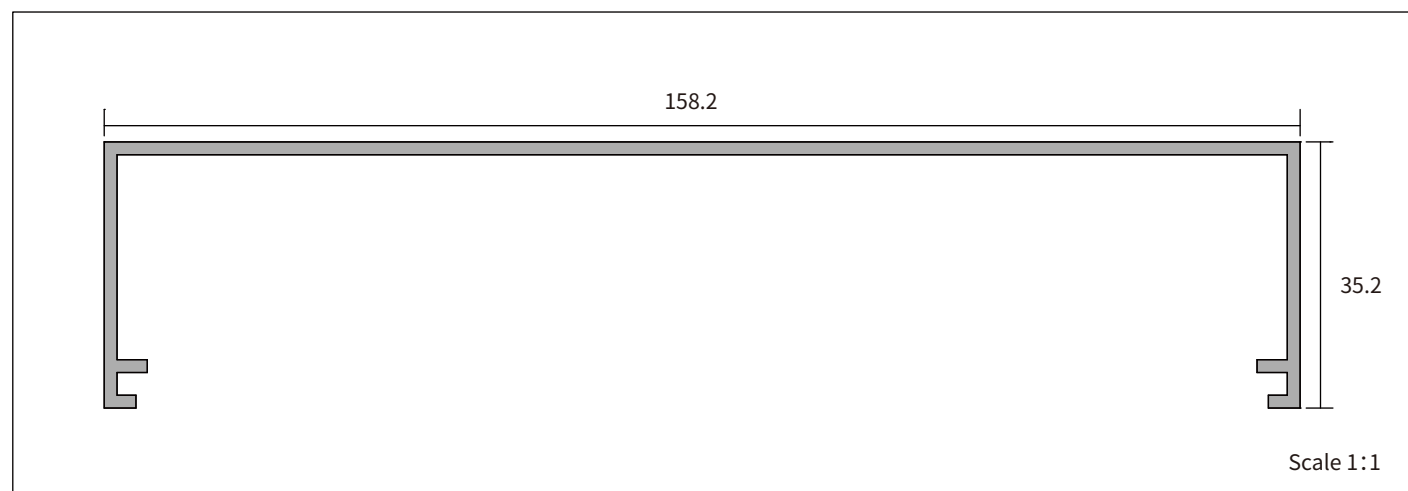
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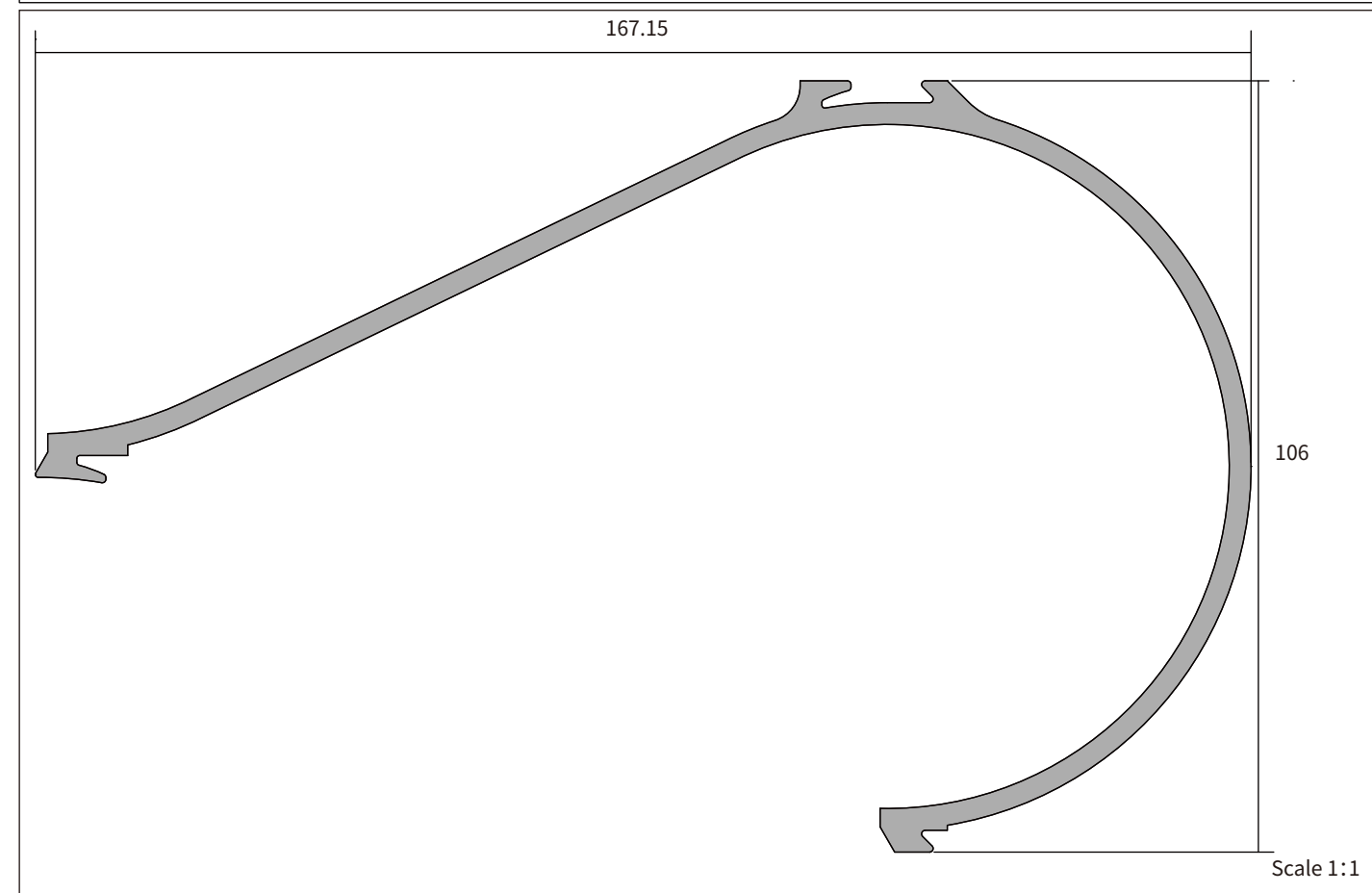
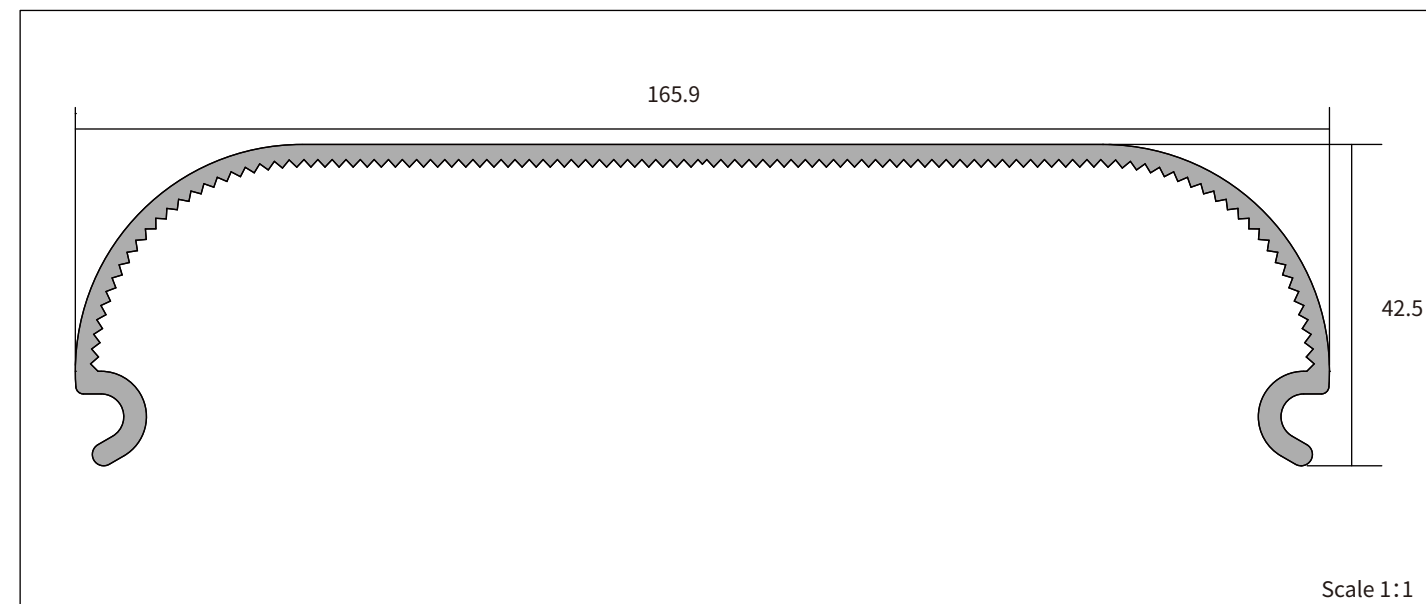
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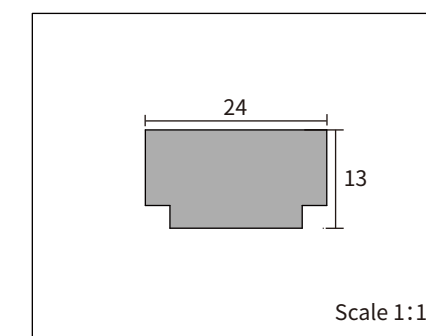
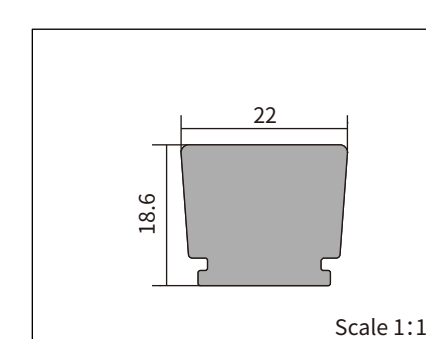
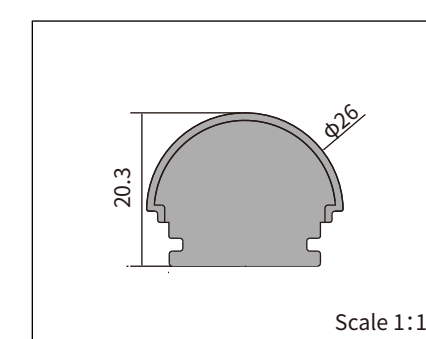
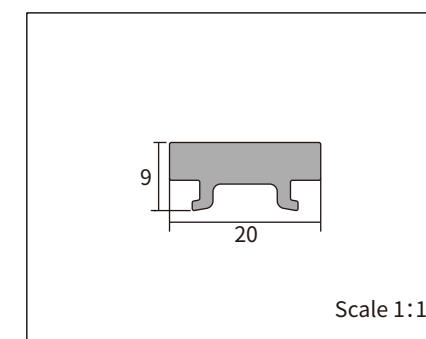
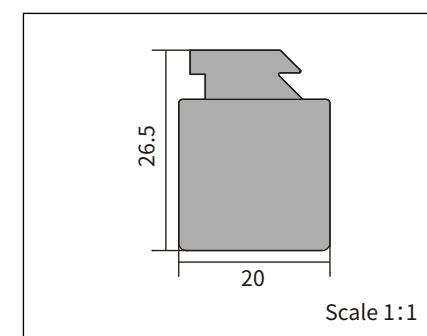
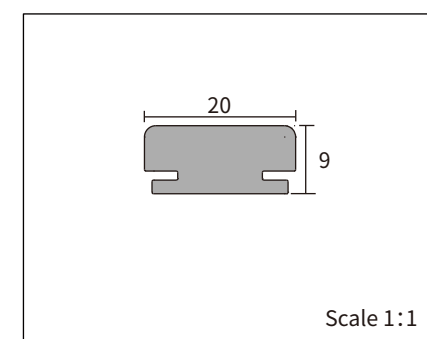
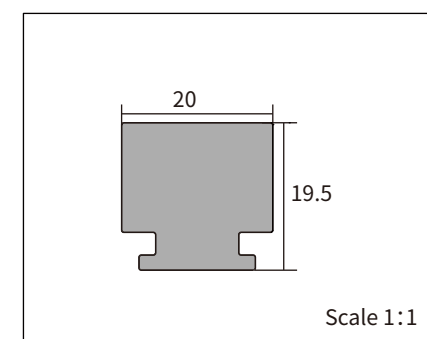
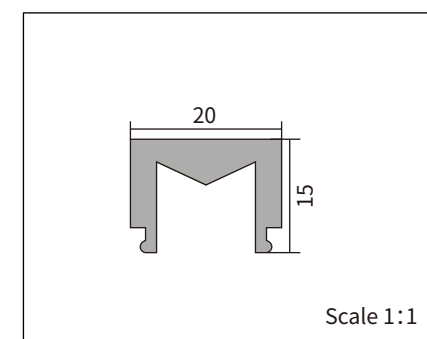
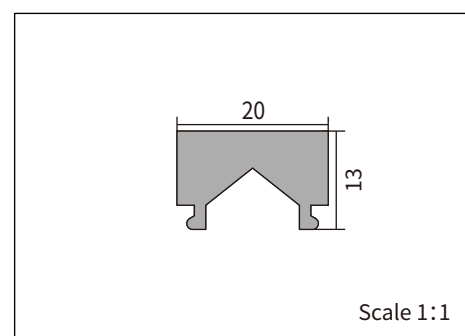
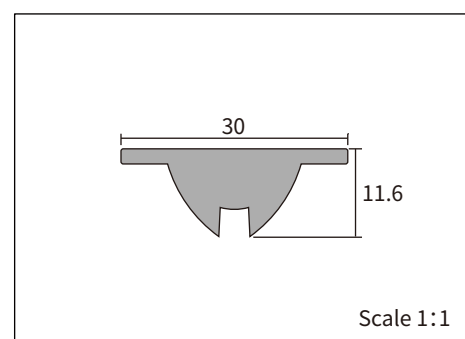
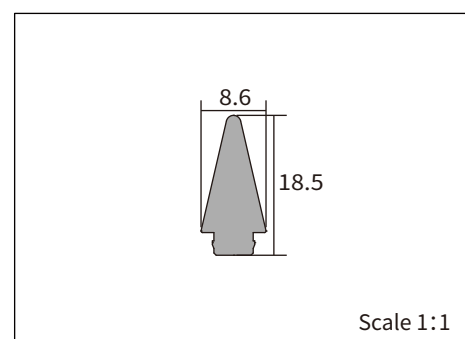
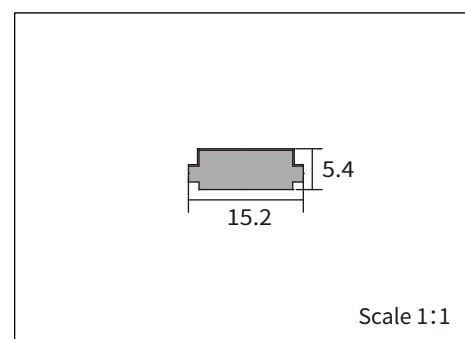
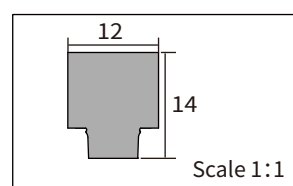
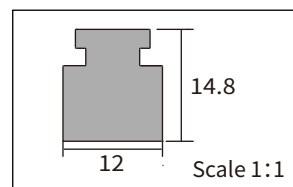
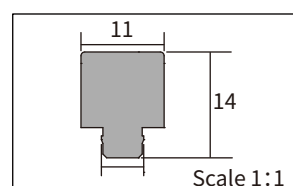
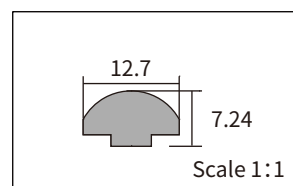
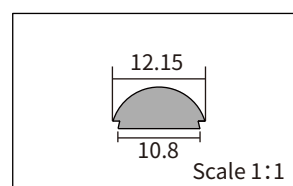
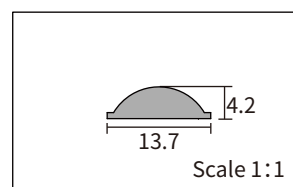
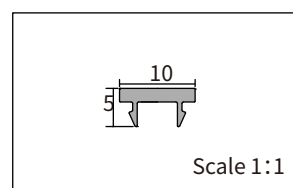
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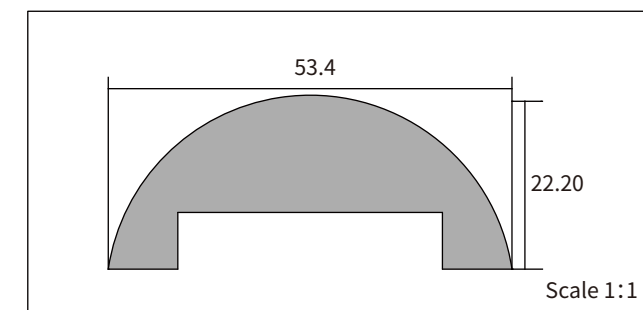
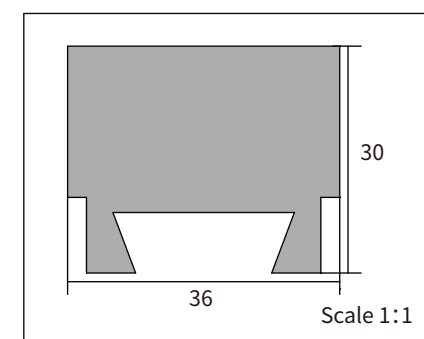
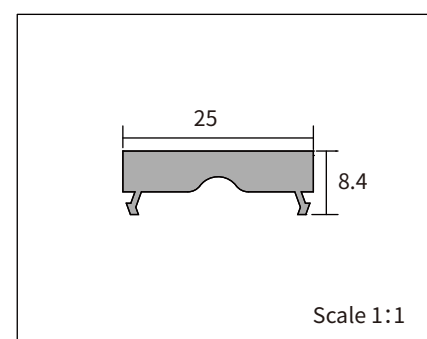
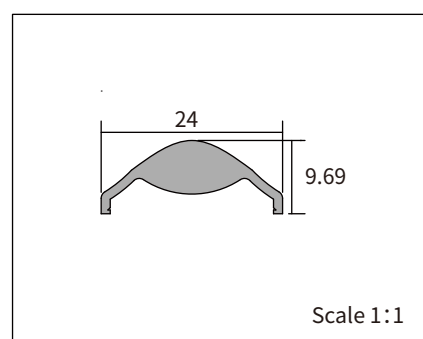
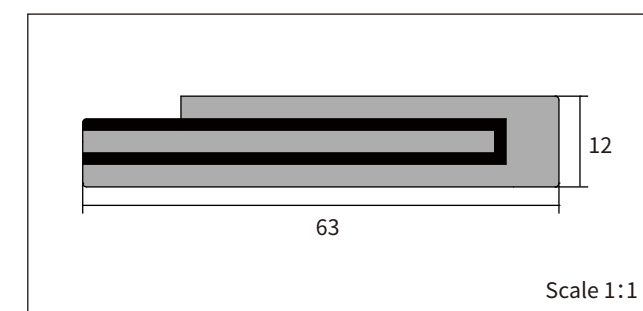
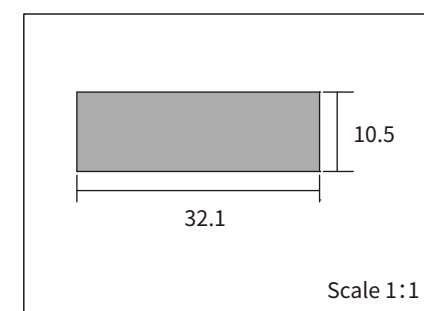
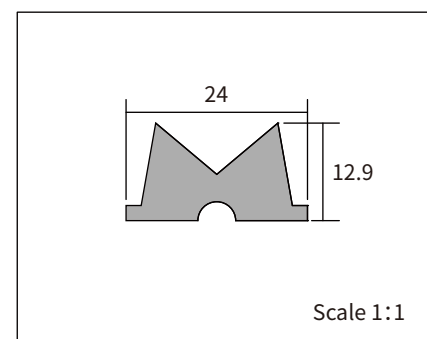
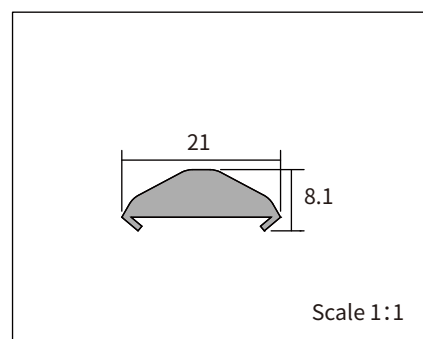
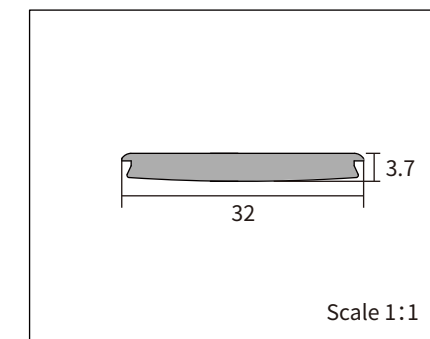
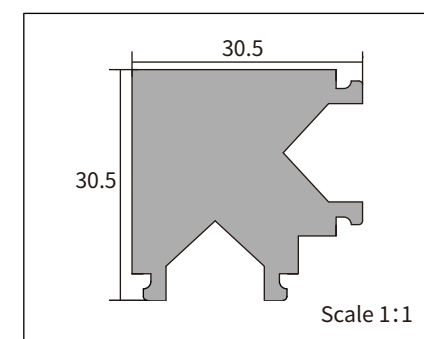
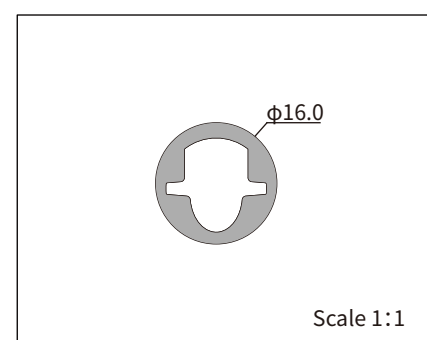
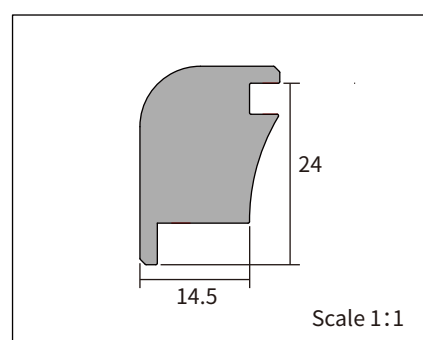
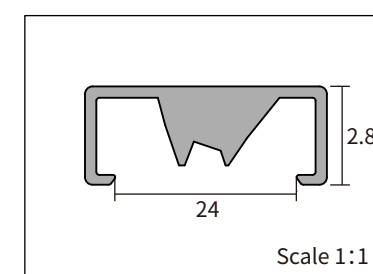
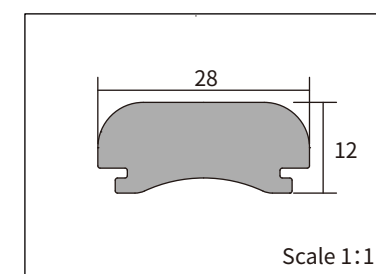
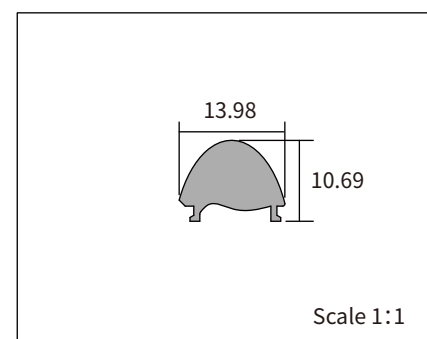
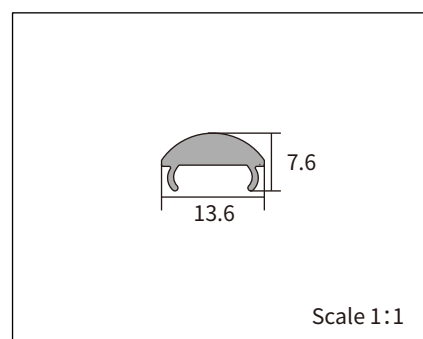


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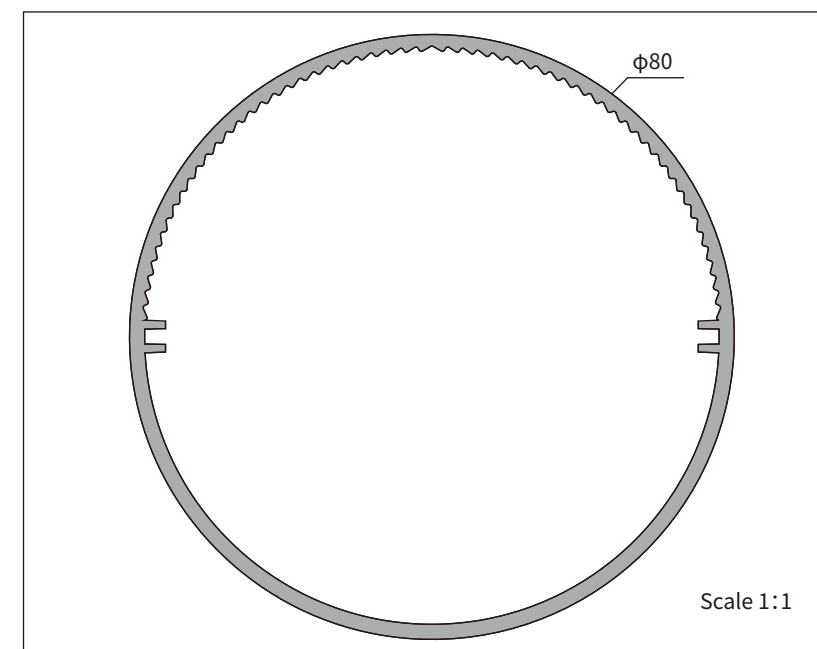
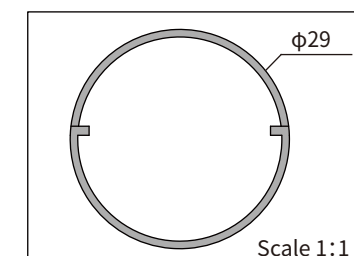
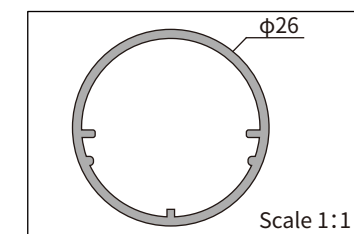
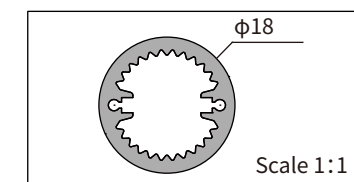
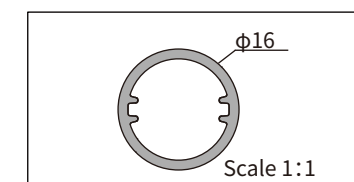
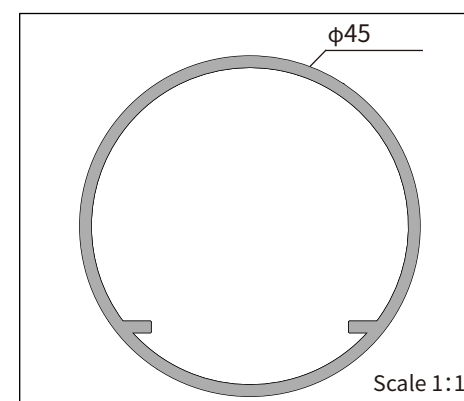
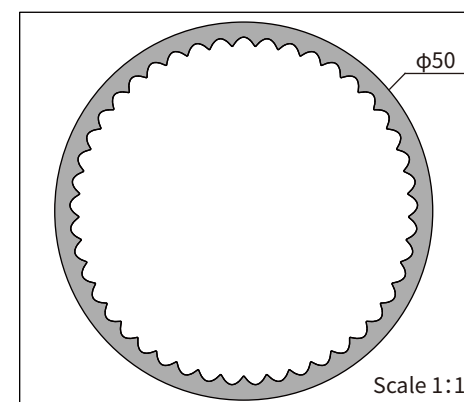
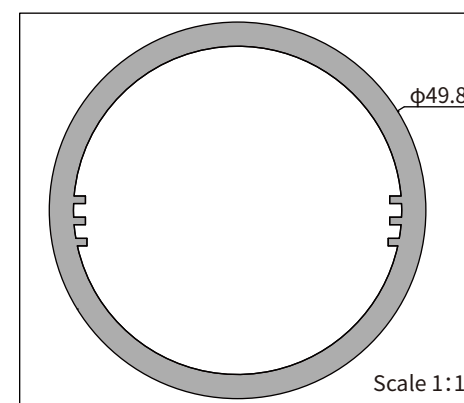
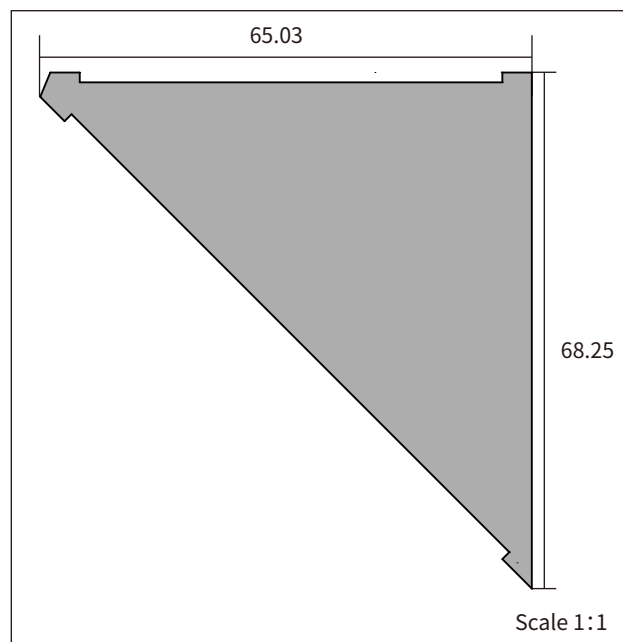
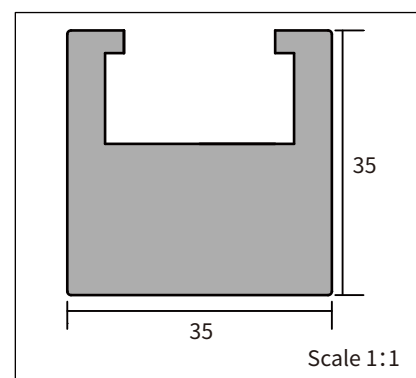
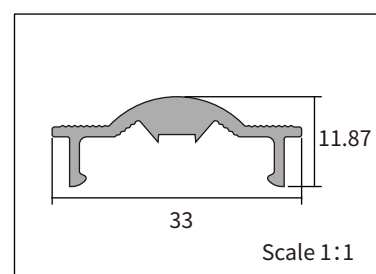
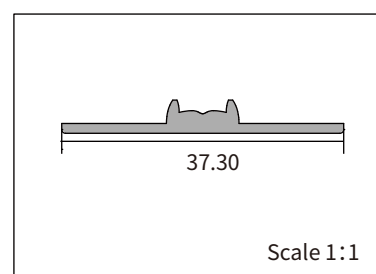
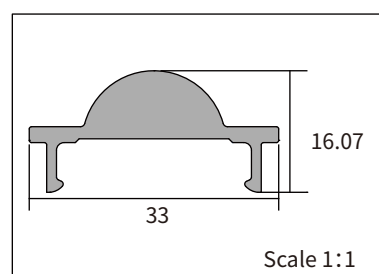
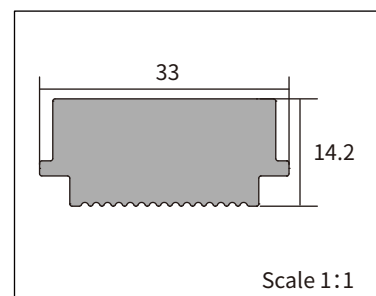
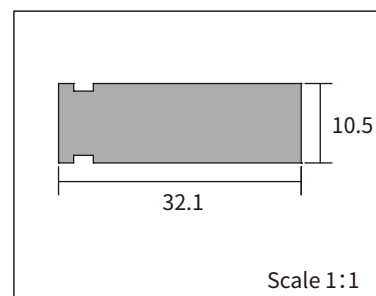
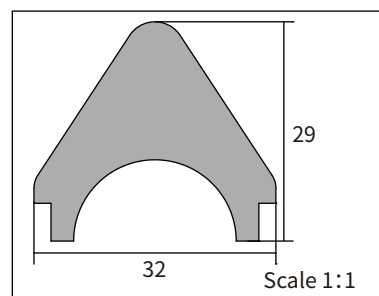
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## CARE AND CLEANING 产品维护

### WHAT IS THE BEST WAY TO CLEAN POLYCARBONATE AND ACRYLIC?

1. Rinse the polycarbonate or acrylic.
2. Apply a mix of mild soap and warm water. Use a clean, new cloth made of soft material yet as lint-free as possible so it does not trap small particles that might scratch the polycarbonate.
3. Do NOT wipe in a circular motion. Up and down uniform strokes with light pressure only.
4. Change the water and rinse the cloth often. If at any point you see particles then rinse immediately.
5. Rinse, repeat until clean and make sure you dry with another soft cloth to avoid spots left by the water.

### DO NOT USE:

Window cleaning sprays, kitchen scouring compounds or solvents such as acetone, gasoline, alcohol, oils, carbon tetrachloride or lacquer thinner or any substance that is not compatible with polycarbonate and acrylic material. These can scratch the surface and / or weaken the products causing small surface cracks called crazing.

清洁PC和压克力最好的方法是什么？

1. 清洗PC或者压克力。
2. 用温和的肥皂和温水混合。使用干净的，由柔软材料制成的新布，但要尽可能不含棉絮，这样它就不会吸附可能划伤PC和压克力小颗粒。
3. 轻轻的由上而下均匀擦拭，切勿做圆周擦拭。
4. 经常更换水和冲洗布料，如果看到任何颗粒，请立即冲洗。
5. 重复清洗直到干净，并确保您使用另一块干的软布擦拭，以避免留下水印。

不要使用：

窗户清洁喷剂，厨房洗涤化合物或溶剂，如丙酮、汽油、酒精、油、四氯化碳、漆稀释剂或任何与PC和压克力材料不相容的物质。否则可能会划伤表面或软化产品，导致产生表面裂纹。



