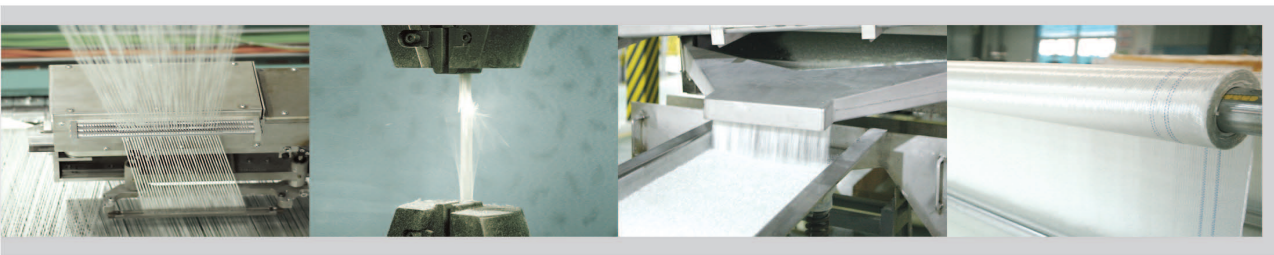




# Fiberglass Solutions to **OPEN MOLDING**



## **Spray-up**

Spray-up Roving

## **Hand Lay-up**

CSM

Woven Roving

Combo Mat

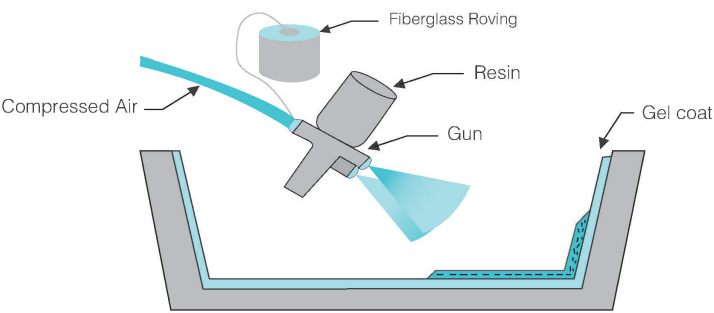
Knitted Mat

Surface Mat

# Open Molding Process: Spray-up & Hand Lay-up

## Spray-up

Fiberglass assembled roving is chopped & sprayed along with resin mix onto the open mould evenly, compressed for complete impregnation & air bubble removal and cured.



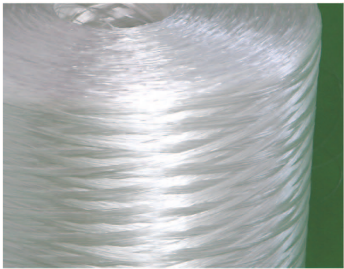
Spray-up Process

## Fiberglass Product for Spray-up

### Spray-up Roving

#### 【 Description 】

Spray up roving is coated with silane-based sizing, compatible with UP, VE resins and widely used to produce sanitary devices and marine vessels.



#### 【 Properties 】

- ◎ Consistent linear density
- ◎ Low static & fuzz
- ◎ Good chop-ability and dispersion
- ◎ Applicable for robotic operation

#### 【 Identification of Product Code 】

Eg. E RS 240 – T132BS  
E: E-glass  
RS: Assembled/Multi-end Roving  
240: Linear Density 2400tex  
T132BS: Sizing & Product Code

#### 【 Products 】

Product Code	Linear Density tex	Linear Density yield	Application Features	Finished Products
T132BS	2400,3100	207,160	General Purpose	Sanitary Ware, Yacht, Truck Components
T132N	2400	207	Good Anti-slip on Large Vertical Surface	Swimming Pool, Large Boat Hull
T132D	2400	207	Easy Roll-out, Good Conformity to Mould Structure	Products of Multi-angle & Complex Structure

## Hand Lay-up

Resin mix and fiberglass reinforcements (roving, woven roving or mat) are put into mold layer by layer, completely impregnated with air bubble removed, laminated to designed thickness and cured

## Fiberglass Products for Hand Lay-up

### CSM

#### 【 Description 】

Chopped Strand Mat is made of chopped fiber in specified length, randomly & evenly distributed on conveyor, bonded together by polyester powder or emulsion binder and cut into certain widths and lengths after heat forming, It is mainly applicable for hand lay-up process.



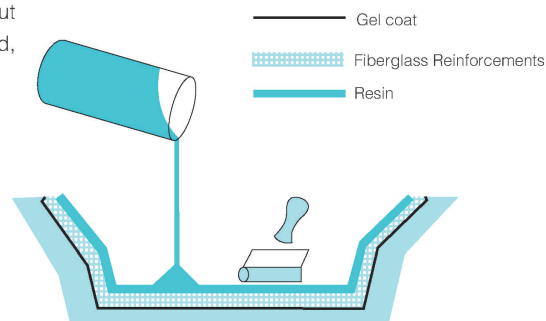
#### 【 Properties 】

- ◎ Even area weight
- ◎ Fast wet out and low resin consumption
- ◎ Medium rigidity and optimum molding performances

#### 【 Identification of Product Code 】

Eg. E MC 450 – 1040

E: E-glass  
MC: Chopped Strand Mat (Powder Bonded)  
450: Area Weight (g/m<sup>2</sup>)  
1040: Width (mm)



Hand Lay-up

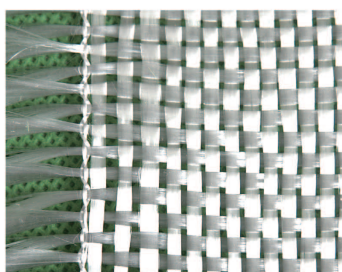
#### 【 Products 】

Product Code	Width mm	Area Weight g/m <sup>2</sup>	Wet Out Speed s	Styrene Solubility s	Moisture Content %	Binder
EMC series	100 – 3000	100 – 900	≤ 100	≤ 40	≤ 0.20	Polyester Powder
EMCL series	150 – 2540	100 – 900	≤ 180	≤ 40	≤ 0.40	PVAc Emulsion

## Woven Roving

#### 【 Description 】

Woven roving is made on looms by weaving direct roving into fabrics, including plain weave, twill weave, etc. It gives bi-directional (0° /90°) reinforcement, compatible with UP, VE & EP resin systems and is mainly used for hand lay-up process.



#### 【 Properties 】

- ◎ High mechanical strength of finished products
- ◎ Even area weight
- ◎ Fast wet-out
- ◎ Flexible inputs of warp & weft

#### 【 Identification of Product Code 】

Eg. E WR 570 – 1270  
E: E-glass  
WR: Woven Roving  
570: Area Weight (g/m<sup>2</sup>)  
1270: Width (mm)



## 【 Products 】

Product Code	Area Weight g/m <sup>2</sup>	Width mm	LOI %	Moisture Content %
EW200	200	1270	≤0.80	≤0.20
EW300	300	1270	≤0.80	≤0.20
EW400	400	1270	≤0.80	≤0.20
EW570	570	1270	≤0.80	≤0.20
EW600	600	1270	≤0.80	≤0.20
EW800	800	1270	≤0.80	≤0.20

## Surface Mat

### 【 Description 】

Surface mat is used in the interior & exterior surface laminates of FRP/GRP, to improve the chemical corrosion resistance, appearance and extend the service life.



### 【 Properties 】

- ◎ Even distribution of fiber
- ◎ Smooth and soft surface
- ◎ Fast wet-out
- ◎ Excellent molding property

### 【 Identification of Product Code 】

Eg. A E MS – 30 – 1000  
 A: Taishan  
 E: E-glass  
 MS: Surface Mat  
 30: Area Weight (g/m<sup>2</sup>)  
 1000: Width (mm)

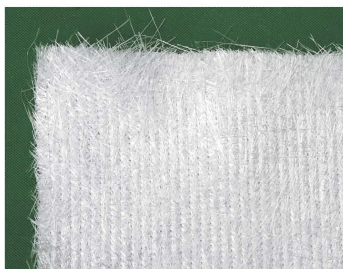
## 【 Products 】

Specification	Area Weight g/m <sup>2</sup>	Width mm	Typical Application
AEMS	25–50	50–2080	FRP/GRP surface laminates

## Combo Mat

### 【 Description 】

Combo mat is made by stitching with polyester yarn one layer of chopped fiber onto woven roving, or one layer of chopped fiber on both sides of woven roving. It is compatible with UP,VE resins,etc.



### 【 Properties 】

- ⊙ Free of any binder
- ⊙ Even thickness
- ⊙ Fast wet-out
- ⊙ Assorted fiber alignment and optimized directional strength
- ⊙ Combined fabric construction improves placement efficiency

### 【 Identification of Product Code 】

Eg. E CW 450 / 800 – 1500

E : E-glass

CW: Multi-layer Fabrics

450 : Area Weight of Chopped Fiber (g/m<sup>2</sup>)

800: Area Weight of Woven Roving (g/m<sup>2</sup>)

1500 : Width (mm)

### 【 Products 】

Product Code	Area Weight g/m <sup>2</sup>	Chopped Fiber g/m <sup>2</sup>	Woven Roving g/m <sup>2</sup>	Width mm	Num. of Layer
ECW300/500	800	300	500	1270	2
ECW300/600	900	300	600	1270	2
ECW300/800	1100	300	800	1270	2
ECW450/800/450	1700	450/450	800	1270	3

## Knitted Mat

### 【 Description 】

Knitted mat is composed of E-glass fiber chopped in specified length, randomly dispersed & stitched together by polyester yarn, and it is compatible with UP & EP resins.



### 【 Properties 】

- ⊙ Free of any binder
- ⊙ Even thickness
- ⊙ Fast wet-out
- ⊙ Excellent isotropy of properties
- ⊙ Good molding property

### 【 Identification of Product Code 】

Eg. E MK 450 – 1500

E: E-glass

MK: Knitted Mat

450: Area Weight (g/m<sup>2</sup>)

1500: Width (mm)

### 【 Products 】

Product Code	Area Weight g/m <sup>2</sup>	Width mm	Num. of Layer
EMK300	300	250–1500	1
EMK380	380	250–1500	1
EMK450	450	250–1500	1



## About Us

Taishan Fiberglass Inc., is a subsidiary company of China National Building Material Group Corporation Ltd., and a National Key High-tech Enterprise.

Our products cover E-Glass, TCR (ECR) Glass, Alkali Resistant Glass Cem-FIL®, HMG Glass and S-1 HM™ series. The leading products such as Roving, Chopped Strand Mat, Yarn, Electronic Fabrics, Chopped Strands, Multiaxial Fabrics, Knitted Fabrics, Woven Roving, etc., are exported to over 70 countries and regions, including the US, Europe, ME, etc.

We are committed in scientific and standardized management and have acquired certificates of International Quality Management System (ISO 9001), Environmental Management System (ISO 14001), Occupational Health and Safety Management System (GB/T 28001) and products are awarded Det Norske Veritas Type Approval Certificate (DNV), Lloyd's Register of Shipping (LR), Germanischer Lloyd (GL) and China Classification Society (CCS), etc.

Taishan Fiberglass Inc., will adhere to sustainable development and provide customers with superior products and services, to keep contributing to the progresses of China fiberglass industry and in pursuit of becoming a globally prestigious fiberglass manufacturer.



Fiberglass Solutions to Pipes & Tanks	Filament Winding; Centrifugal Casting
	Direct Roving for Filament Winding, Chop Roving, Chopped Strand Mat, Woven Roving, Axial Tape, Knitted Mat, Surface Mat, Hobas Roving
Fiberglass Solutions to Open Molding	Spray-up; Hand Lay-up
	Spray-up Roving, CSM, Woven Roving, Combo Mat, Knitted Mat, Surface Mat
Fiberglass Solutions to Pultrusion	Pultrusion
	Direct Roving for Pultrusion, Knitted Mat, Surface Mat
Fiberglass Solutions to Continuous Panel Molding	Continuous Panel Molding
	Continuous Panel Roving, Chopped Strand Mat
Fiberglass Solutions to Compression Molding	SMC/BMC Compression Molding
	SMC Roving, Chopped Strands for BMC
Fiberglass Roving for Mats & Fabrics	Weaving Mat Production
	Direct Roving for Multi-axial Fabrics, Direct Roving for Geo-grids, Direct Roving for Fabrics, Roving for Mat
Fiberglass Solutions to Thermoplastics	Extrusion & Injection; LFT (Long Fiber Thermoplastic); LFT-G and LFT-D GMT (Glass Mat reinforced Thermoplastics)
	Continuous Roving for Thermoplastics, Chopped Strands, LFT Roving, GMT Roving
Fiberglass Solutions to Wind Energy	Prepreg (Pre-forming); Vacuum Infusion (Vacuum Bagging); Hand Lay-up
	Multi-axial Fabrics for Wind Energy, PP Core Mat
Electronic & Industrial Fiberglass Yarns	
Electronic Fiberglass Fabrics	
HMG High Modulus High Strength Fiberglass	



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