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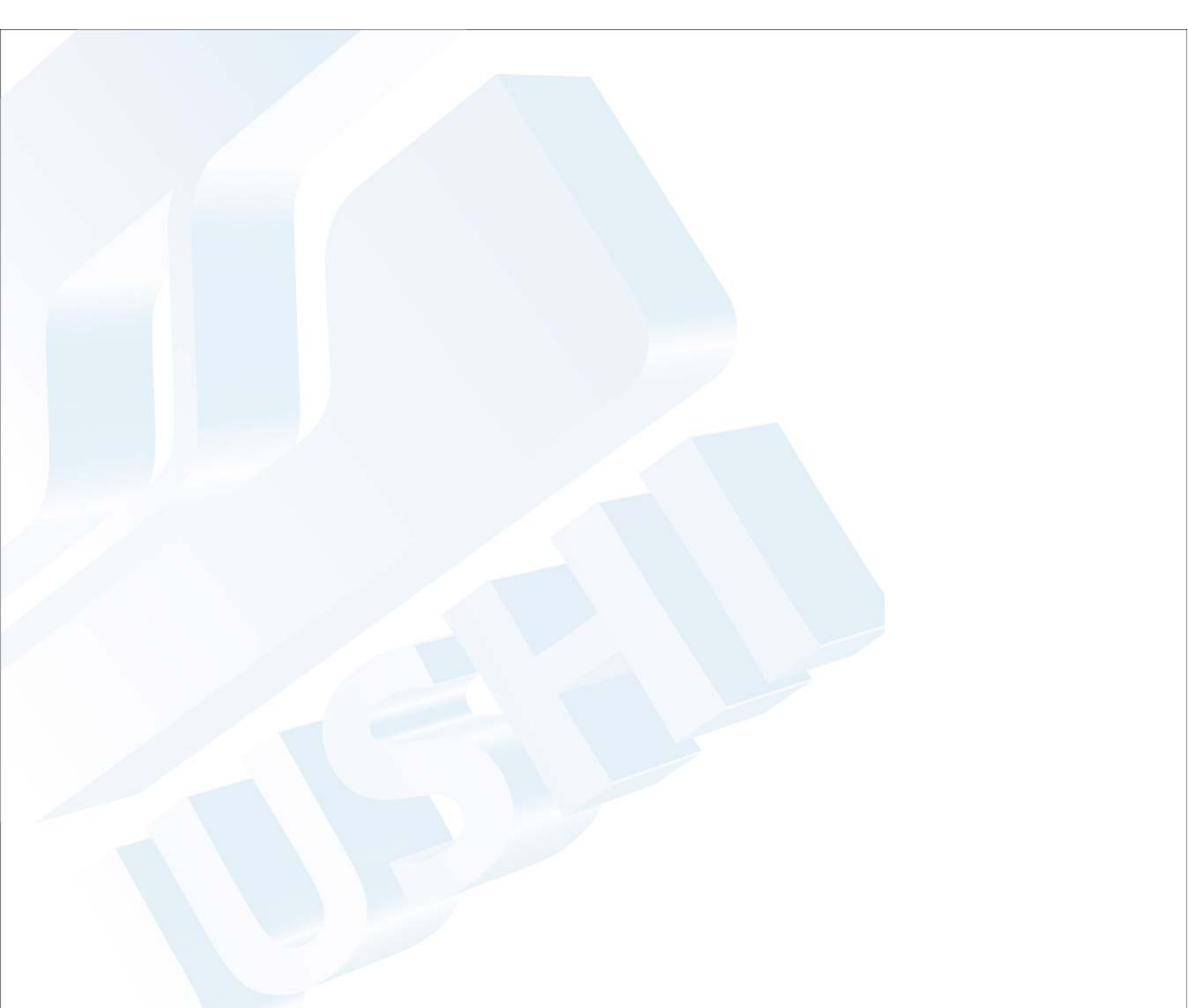


\* Does not apply to all products



# FIBERGLASS PRODUCTS FOR **OPEN MOLDING**





## **Spray-up Process**

*Assembled Rovings for Spray-up*

## **Hand Lay-up Process**

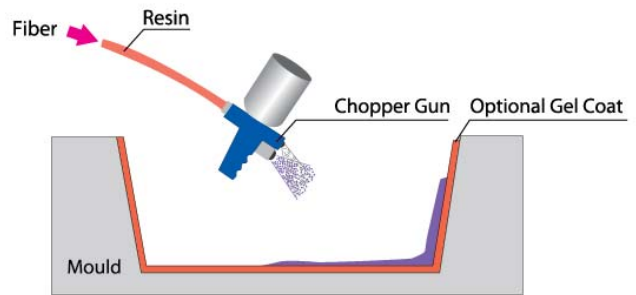
*Woven Rovings*

*Emulsion Chopped Strand Mats*

*Powder Chopped Strand Mats*

# Spray-up Process

A mould is sprayed with a mixture of catalyzed resin and chopped fiberglass roving (fiberglass cut to a specific length using a chopper gun). Then the glass-resin mixture is well compacted, usually manually, for complete impregnation and deairing. After curing, the finished composite part is de-molded.



## Assembled Rovings for Spray-up

Assembled Rovings for Spray-up are compatible with UP, VE and PU resins. They deliver properties of low static, excellent dispersion and good wet-out in resins.

Product Code	Nominal Linear Density, tex	Product Features	Typical Applications
178		Easy to operate in spraying-up process, easy roll-out, no spring-back in sharp corners, designed for high speed robotic spray-up process	Sanitary ware, boats, auto components
180	2400,	Fast wet-out ensuring optimum air release, excellent mechanical and water resistance properties of composite products	Bathtubs, FRP boat hulls, chemical storage tanks
	3460,		
170	4800	Moderate wet-out speed, ideal for products with large vertical surface	Swimming pools, bathtubs
172		Fast wet-out, easy roll-out, no spring-back in sharp corners, optimum dispersion after chopping, minimal resin fan glass fall-out	Bathtubs, water tanks, storage tanks

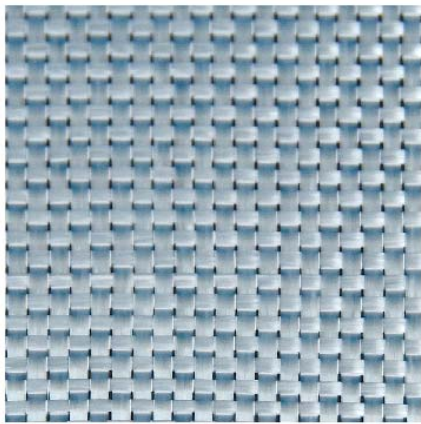
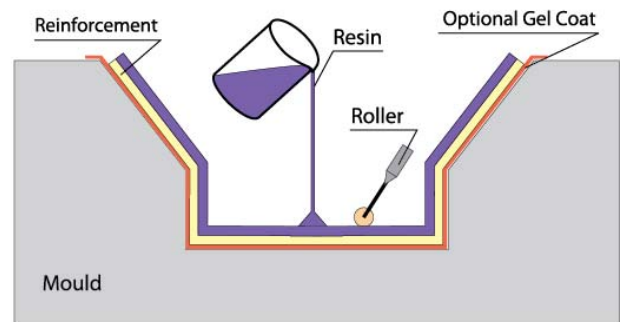
## End-Use Markets

( Marine / Bathroom equipment / Automotive / Chemistry and Chemical / Sports and Leisure )



# Hand Lay-up Process

The reinforcement, in forms of fiberglass strands, mat or woven roving, is first laid into a mould which has been pre-coated with a release agent and a gel coat. Then a resin mix is applied by hand using a brush or spray gun. A roller is then used to ensure uniform impregnation, complete glass wet-out, and removal of any trapped air bubbles. This operation is repeated until the desired thickness of the structure is obtained. After curing at room temperature or under heating condition, the finished parts are formed.



## Woven Rovings

Woven Rovings are compatible with UP, VE, EP and PF resins.

Woven Rovings are available with a width range of 50mm~3,000mm and a weight range of 200g/m<sup>2</sup> ~1,600 g/m<sup>2</sup>. Other specifications are also available on customer request.

### Product Features

- ◎ Warp and weft rovings aligned in a parallel and flat manner, resulting in uniform tension
- ◎ Densely aligned fibers, resulting in high dimensional stability and making handling easy
- ◎ Good moldability, fast and complete wet out in resins, resulting in high productivity
- ◎ Good mechanical properties and high strength of composite parts

Certification	Product Code	Certificate No.
DNV	EWR270	K-3075
	EWR360	K-3075
	EWR580	K-3075
	EWR600	K-3075
	EWR800	K-3075
LR	EWR270	MAST/2860/2
	EWR360	MAST/2861/2
	EWR580	MAST/2862/2
	EWR600	MAST/2863/2
	EWR800	MAST/2864/2

## End-Use Markets

( Marine / Building and Construction / Automotive / Chemistry and Chemical / Electrical and Electronics / Sports and Leisure / Wind Energy )





### Emulsion Chopped Strand Mats

Emulsion Chopped Strand Mats are made of randomly distributed chopped strands held together by an emulsion binder. They are compatible with UP, VE and EP resins. The roll width ranges from 50mm to 1,270mm. Special requirements can be available upon request.

Product Code	Area Weight (g/m <sup>2</sup> )	Resin Compatibility	Product Features
E01	225, 300, 450, 600, 900	UP, VE, EP	High tensile strength, allowing for use in hand lay-up process to produce large-area parts, no airborne fiber when operating, good wet-through and fast wet-out in resins, rapid air lease, high mechanical strength, superior acid corrosion resistance
E10	225, 300, 450, 600, 900	UP, VE, EP	Rapid air lease reducing rolling out times, low resin consumption
E20	225, 300, 450, 600, 900	UP, VE, EP	Good moldability, good wet-through and fast wet-out in resins, rapid air lease reducing rolling out times and increasing productivity, low resin consumption, high mechanical strength of composite products, superior acid corrosion resistance



### Powder Chopped Strand Mats

Powder Chopped Strand Mats are made of randomly distributed chopped strands held together by a powder binder. They are compatible with UP, VE, EP and PF resins. The roll width ranges from 50mm to 3,120mm. Additional demands on wet-out and decomposition time can be available upon request.

Product Code	Area Weight(g/m <sup>2</sup> )	Roll Width(mm)	Resin Compatibility	Product Features
P02	225, 300, 450, 600, 900	1040, 1270	UP, VE, EP	High tensile strength, suitable for use in hand lay-up process to produce large-area parts, good wet-through and fast wet-out in resins, rapid air lease, high mechanical strength
P20	225, 300, 450, 600, 900	1040, 1270	UP, VE, EP	Soft mat, ease of manual tearing apart, good conformability, good wet-through and fast wet-out in resins, rapid air release reducing rolling out times and increasing productivity, low resin consumption, high mechanical strength of composite products, superior acid corrosion resistance
P30	225, 300, 450, 600, 900	1040, 1270	UP, VE, EP	Fast wet-out, excellent translucency of composite products, high mechanical strength of composite products, superior acid corrosion resistance

Certification	Product Code	Certificate No.
DNV	EMC450	K-3076
	EMC300	K-3076
	EMC600	K-3076
	EMC900	K-3076
LR	EMC225(E)	MAST/3490/2
	EMC300(E)	MAST/3490/2
	EMC450(E)	MAST/3490/2
	EMC600(E)	MAST/3490/2
	EMC300(P)	MAST/2857/2
	EMC450(P)	MAST/2857/2
	EMC600(P)	MAST/2857/2
	EMC900(P)	MAST/2857/2

High Performance "E6<sup>®</sup> Enhanced Glass Fiber "  
Will Promote the Progress of Composites

E6<sup>®</sup>

# Enhanced Glass Fiber

- Enhance Product Performance
- Expand Applications
- Minimize Environmental Footprint
- Improve Customer Evaluation



With the rapid development of new applications, the design of fiberglass composite parts is becoming more and more demanding, requiring composite materials to deliver better performance, including increased strength, lighter weight and enhanced corrosion resistance. Manufacturers and end users want products with long-term consistency and reliability. To meet these demands, as well as to achieve clean production and minimize environmental footprint, Jushi Group has developed **E6<sup>®</sup> Enhanced Glass Fiber**.

Jushi **E6<sup>®</sup> Enhanced Glass Fiber** is a new E-glass fiber with enhanced properties. It combines all the benefits of E-glass fiber with technical breakthroughs in improved strength, elastic modulus, acid corrosion resistance and temperature resistance, thus meeting the requirements of the most demanding applications. **E6<sup>®</sup>** provides Jushi Group with a complete new technology platform on which new solutions are developed for a wide range of applications for different end-use markets.

*Compared with traditional E-glass fiber, Jushi E6<sup>®</sup> offers the following unique benefits:*

- Higher strength
- Higher modulus
- Better corrosion resistance
- Higher softening temperature

**E6<sup>®</sup>** is especially suitable for high pressure, corrosion resistance and high temperature resistance applications, such as high pressure vessels, wind energy equipment, sucker rods, environmental control devices and chemical, oil and desalination process pipes and tanks. **E6<sup>®</sup> Enhanced Glass Fiber** reinforcements offer better performance, making composite parts more reliable, durable and cost effective.

Fiberglass Products for Open Molding	Spray-up Process
	Hand Lay-up Process
Fiberglass Products for Pipes	Filament Winding Process
	Centrifugal Casting Process
Fiberglass Products for Compression Molding	SMC Process
	BMC Process
	LFI Process
Fiberglass Products for Continuous Profiles	Pultrusion Process
	Continuous Panel Molding Process
Fiberglass Products for Thermoplastics	Extrusion and Injection Processes
	LFT Process
	GMT Process
	CFRT Process
Fiberglass Products for Fabrics and Mats	Weaving Process
	Mat Production Process
Fiberglass Products for Others	Texturizing Process
	Reinforcements for Gypsum



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