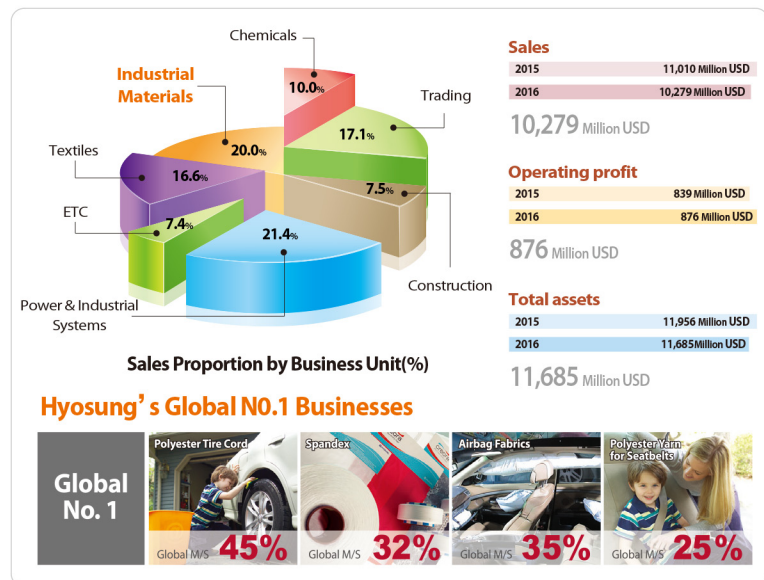


## Hyosung Corporation



Hyosung Corporation, founded in 1966, develops, produces, and distributes products for various applications in the industrial materials, power systems, machinery, chemical, and textile industries. Hyosung is the worldwide leader in polyester tire cord production, spandex, airbag and seatbelt fabrics.

Hyosung Corporation, with sales of approximately \$12 billion USD, is headquartered in Seoul, South Korea. South Korea is also home to Hyosung's 11 manufacturing facilities and 4 R&D facilities. Globally, Hyosung Corporation, has 66 sales facilities that reach Asia, North America, South America and Europe providing service to customers in over 130 countries. Hyosung employs over 25,000 employees in 27 countries worldwide.

## Hyosung Carbon Fiber - The Number 1 High Strength Carbon Fiber in the World

**Strength of Hyosung Carbon Fiber**

- ① Produces own precursor - Hyosung's own Technology
- ② Fully controlled continuous process from raw material to carbon fiber
- ③ Technology development capability
- ④ Customer technical support
- ⑤ High Strength carbon fiber
- ⑥ High Translation of fiber properties



### Typical Tow Properties

Fiber Type	Number of Filaments	Tensile Strength		Tensile Modulus		Elongation	Density	Filament Diameter	Yield	Sizing Level	
		SI Unit	US Unit	SI Unit	US Unit						
High Strength, Standard Modulus	6000	5,516 MPa	800 Ksi	250 GPa	36.3 Msi	2.2%	1.80 g/cm <sup>3</sup>	7.0 μm	400 g/km	1.0%	
	12000	5,516 MPa	800 Ksi	250 GPa	36.3 Msi	2.2%	1.80 g/cm <sup>3</sup>	7.0 μm	800 g/km	1.0%	
	24000	5,516 MPa	800 Ksi	250 GPa	36.3 Msi	2.2%	1.80 g/cm <sup>3</sup>	7.0 μm	1,650 g/km	1.0%	
High Strength, Intermediate Modulus	H3055	12000	5,516 MPa	800 Ksi	290 GPa	42.1 Msi	1.9%	1.80 g/cm <sup>3</sup>	6.6 μm	725 g/km	1.0%

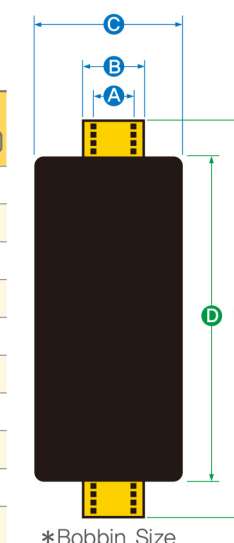
### Typical Composite Properties

Fiber Type		H2550				H3055		Test Method
		6K		12K		12K		
		SI Units	US Units	SI Units	US Units	SI Units	US Units	
Tensile Properties	0° Tensile Strength	2,950 MPa	428 Ksi	2,950 MPa	428 Ksi	2,950 MPa	428 Ksi	ASTM D3039
	0° Tensile Modulus	140 GPa	20.3 Msi	140 GPa	20.3 Msi	140 GPa	20.3 Msi	ASTM D3039
	0° Tensile Strain	2.00%		2.00%		2.00%		ASTM D3039
Compressive Properties	0° Compressive Strength	1,450 MPa	210 Ksi	1,450 MPa	210 Ksi	1,450 MPa	210 Ksi	ASTM D3410
Flexural Properties	0° Flexural Strength	1,800 MPa	261 Ksi	1,800 MPa	261 Ksi	1,800 MPa	261 Ksi	ASTM D790
	0° Flexural Modulus	125 GPa	18.1 Msi	125 GPa	18.1 Msi	125 GPa	18.1 Msi	ASTM D790
ILSS	Strength	90 MPa	13.1 Ksi	90 MPa	13.1 Ksi	90 MPa	13.1 Ksi	ASTM D2344

The above properties do not constitute any warranty or guarantees. These values are for material selection purposes only.

### Standard Packaging

Fiber Type	Number of Filaments	Spool Net Weight (kg)	Bobbin Size (mm)					Spool Per Case (kg)	Case Net Weight (kg)	Pallet Net Weight (kg)
			A	B	C	D	E			
High Strength, Standard Modulus	6000	1.0	76	84	110	250	280	12	12	360
		2.0	76	84	123	250	280	8	16	480
	12000	2.0	76	84	125	250	280	8	16	480
		4.0	76	84	154	250	280	6	24	720
		6.0	76	84	180	250	280	4	24	720
		8.0	76	84	220	250	280	80	640	640
High Strength, Intermediate Modulus	12000	2.0	76	84	131	250	280	8	16	480
		4.0	76	84	155	250	280	6	24	720



## Hyosung Carbon Fiber - History

2008~ Development Stage	2011~ Marketing Stage	2013~ Commercial Production Stage	~2025 Expansion Stage
<p><b>2008</b> Started Carbon Fiber Development</p> <p><b>2010</b> Successfully Developed H2550 Precursor &amp; Carbon</p> <p><b>2011</b> Approved Corporate Investment Plans for the Commercial Production Line Established Semi-Commercial Line in Jeonju, Korea (CF Capa. : 500MT/y)</p>	<p><b>2011</b> Started Global Product Marketing</p> <p><b>2012</b> Successfully Developed H3055 Precursor &amp; Carbon</p>	<p><b>2013</b> Established Commercial Plant in Jeonju, Korea (CF Capa. : 2,000MT/y)</p> <p><b>"The 1<sup>st</sup> Korean company to produce High Performance Carbon Fiber &amp; PAN Precursor"</b></p>	<p><b>~2025</b> Carbon Fiber Capa. : 14,000 MT/y Precursor Capa. : 28,000 MT/y</p>

## Application



## Factory Site

