

Opportunities for Composites in the Global Railway Market 2014-2019

<https://marketpublishers.com/r/O1D65786A89EN.html>

Date: August 2014

Pages: 161

Price: US\$ 4,400.00 (Single User License)

ID: O1D65786A89EN

Abstracts

Composites shipments in the global rail market is expected to grow to \$876 million in 2019. The major drivers for composites in the global rail market are lower cost over the lifetime of the parts, FST properties, weight reduction, high growth in high speed rail, change in technologies, fuel efficiency and operational costs, and passenger safety.

Lucintel, a leading global management consulting and market research firm, has analyzed the global rail market by segments and has come up with a comprehensive research report “Opportunities for Composites in the Global Railway Market 2014–2019.” This report provides an analysis of the global rail market including an analysis of market trends, competitive landscapes, company profiles, emerging trends, and key drivers of industry growth. The study also includes the trends and forecasts for the global rail market through 2019, segmented by type of resins and reinforcements, manufacturing processes as well as by regions which are listed below.

The global rail composite market by type of resins used:

Polyester

Phenolic

Vinyl Ester

Epoxy

Others

The global rail composites by type of reinforcements:

Glass fiber

Carbon fiber

Others

The global rail composites by region:

NA

Europe

APAC and ROW

The global rail composites by manufacturing processes:

Open mold

Pultrusion

VARTM

RTM

SCRIMP

Injection molding

Others

On the basis of its comprehensive research, Lucintel forecasts that the global rail composites will grow moderately during 2014-2019. Bombardier, Alstom, Siemens, GE, China CSR, China CNR are among the major rail manufacturers. Regular innovation of the products is very important for companies to sustain their successful positions in the

market.

This unique report from Lucintel will provide you with valuable information, insights, and tools needed to identify new growth opportunities and operate your business successfully in this market. This report will save hundreds of hours of your own personal research time and will significantly benefit you in expanding your business in this market. In today's stringent economy, you need every advantage that you can find

Contents

1. EXECUTIVE SUMMARY

2. GLOBAL RAIL INDUSTRY: PAST, PRESENT, AND FUTURE

2.1: Past (200 Years of History in Brief)

2.2: Present

2.3: Future

3. GLOBAL RAIL MARKET ANALYSIS

3.1: Market by types of railcars

3.1.1: High-speed rail

3.1.2: Heavy rail (metro/rapid transit)

3.1.3: Light rail (urban trams)

3.1.4: Locomotives

3.2: Market by region

3.2.1: Europe

3.2.2: North America

3.2.3: ROW

4. TREND AND FORECAST IN GLOBAL RAIL MARKET

4.1: Trends in rail

4.2: Trends in railcar

4.2.1: Global railcars market trend by region

4.3: Forecasts in rail market

4.4: Forecasts in railcars

4.4.1: Global rolling stock market forecast by region

4.4.2: Order backlogs

5. GLOBAL RAIL MARKET: INDUSTRY LEADERS

5.1: Total sales by major OEMs

5.2: Product review of major global rail OEMs

5.2.1: Product portfolio analysis

5.2.2: Bombardier Transportation

5.2.3: Alstom Transportation

5.2.4: CSR

5.2.5: China CNR

6. COMPOSITE MATERIALS AND THEIR APPLICATIONS IN RAIL INDUSTRY

6.1: Lifecycle cost considerations in choosing materials

6.2: Raw materials used by component manufacturers

6.2.1: Reinforcement

6.2.2: Resins

6.2.3: Core material

6.2.4: Prepreg

6.3: Raw material suppliers to the rail industry

6.3.1: Reinforcement fiber/fabric suppliers

6.3.2: Resin suppliers

6.3.3: Core materials suppliers

6.3.4: Prepreg suppliers

6.4: Overview of composites applications in rail market

6.5: Composite applications in trains

6.5.1: Alstom TGVs

6.5.2: Kawasaki Shinkansen

6.5.3: Amtrak Acela

6.5.4: Siemens Velaro

6.5.5: Magnetic Levitation

6.5.6: Alstom AGV

6.5.7: Bombardier Regina

6.5.8: Bombardier Talent

6.5.9: Bombardier Turbostar

6.5.10: Bombardier Innovia

6.5.11: Siemens Combino tram

6.5.12: Austrian Bayerische Oberlandbahn

6.6: Core Material Applications in Trains

6.6.1: DIAB

6.6.2: Alcan Airex

6.7: Interior applications

6.8: Exterior applications

6.9: Composite materials requirements

6.9.1: Fire standards

6.9.2: British Standard BS6853:1999

6.9.3: France Standard NF F 16-101/NF F 16-102

- 6.9.4: German Standard DIN 5510-2: 1988
- 6.9.5: EU Standard EN 45545: 1988
- 6.9.6: The United States Standard NFPA 130:2000
- 6.9.7: Italy Standard PrE10.02.977.3
- 6.9.8: Property comparison
- 6.9.9: Fire performance of Phenolic
- 6.9.10: Categories of Trains as per BS6853
- 6.10: Composites market analysis in rail
- 6.11: Composites consumption by material type (raw material)
 - 6.11.1: Resin consumption by type
 - 6.11.2: Fiber consumption by type
- 6.12: Composites consumption by material type (end market)
 - 6.12.1: Composites consumption by resin type
 - 6.12.2: Composites consumption by fiber type
- 6.13: Composite materials consumption by application (end market)
- 6.14: Composites consumption by region
- 6.15: Composites consumption by manufacturing process (end market)
 - 6.15.1: Hand lay-up/wet lay-up process
 - 6.15.2: RTM process
 - 6.15.3: VARTM process
 - 6.15.4: SCRIMP process
 - 6.15.5: Prepreg lay-up process
 - 6.15.6: Pultrusion
- 6.16: Composites rail tie manufacturers
 - 6.16.1: Recycle Technologies International (RTI)
 - 6.16.2: Tie Tek
 - 6.16.3: Axion International
 - 6.16.4: Performance Rail Tie
 - 6.16.5: IntegriCo Composites

7. TREND AND FORECAST OF COMPOSITES IN RAIL MARKET

- 7.1: Driving forces and challenges
- 7.2: Overall trends
 - 7.2.1: Trends by region (end market)
 - 7.2.2: Trends by process (end market)
 - 7.2.3: Trends by resin type (end market)
 - 7.2.4: Trends by fiber type (end market)
- 7.3: Overall Forecast

- 7.3.1: Forecast by region (end market)
- 7.3.2: Forecast by manufacturing process (end market)
- 7.3.3: Forecast by resin (end market)
- 7.3.4: Forecast by fiber (end market)
- 7.4: Rail composites tie market

8. RAIL COMPOSITES COMPONENT MOLDERS

- 8.1: Overview of component molders
- 8.2: Composites component suppliers
 - 8.2.1: AAR Composites
 - 8.2.2: Able Manufacturing & Assembly
 - 8.2.3: Aim Composites Ltd.
 - 8.2.4: ApATeCh
 - 8.2.5: Azdel
 - 8.2.6: Beard & Cornall
 - 8.2.7: Creative Pultrusion, Inc.
 - 8.2.8: Dartford Composites Ltd.
 - 8.2.9: Ebo System
 - 8.2.10: Ernst Kuhne Kunststoffwerk GmbH & Co. KG
 - 8.2.11: Exel Composites
 - 8.2.12: Faiveley Transport
 - 8.2.13: Fiberline A/S
 - 8.2.14: Fibrocom
 - 8.2.15: Horlacher
 - 8.2.16: Hubner-Germany
 - 8.2.17: Intermountain Design
 - 8.2.18: Joptek
 - 8.2.19: Jupiter Plast Composites
 - 8.2.20: Kemrock
 - 8.2.21: Magee Plastics Company
 - 8.2.22: Martin Marietta Materials
 - 8.2.23: McClarin Plastics
 - 8.2.24: Miles Fiberglass & Composites
 - 8.2.25: Rochling Group
 - 8.2.26: Stillman Northern
 - 8.2.27: Stratiforme
 - 8.2.28: Stratime Composites Systems
 - 8.2.29: Temoinsa

8.2.30: Testori Americas

8.2.31: Texstars Inc.

8.2.32: TPI Composites

8.2.33: Top Glass S.P.A.

8.2.34: Premier Composite Technologies (PCT)

8.2.35: Haysite Reinforced Plastics Co.

List Of Figures

LIST OF FIGURES

Chapter 1. Executive Summary

Figure 1.1: Porter's five forces model for the global rail market

Figure 1.2: Porter's five forces model for the composites market in global rail market (end market perspective)

Chapter 2. Global Rail Industry: Past, Present, and Future

Figure 2.1: Top speed gained by locomotives at different times

Figure 2.2: Passenger - kilometer in 2010

Figure 2.3: Length of rail lines—globally

Figure 2.4: Current records for top speeds by traction type

Figure 2.5: Price of single global railcars by category

Chapter 3. Global Rail Market by Type of Cars

Figure 3.1: Global rolling stock market by region in 2013 by percentage of total shipments

Figure 3.2: Siemens' Venturio

Figure 3.3: Alstom's TGV

Figure 3.4: Bombardier's metro at Delhi, India

Figure 3.5: Siemens' VAL

Figure 3.6: Alstom's Citadis tram

Figure 3.7: Siemens' Avanto

Figure 3.8: Alstom Prima Locomotive

Figure 3.9: Global rolling stock market by region in 2013

Chapter 4. Trend and Forecast in Global Rail Market

Figure 4.1: Trends in the global rail industry from 2008 to 2013

Figure 4.2: Global rolling stock market trend from 2008 to 2013

Figure 4.3: Global rolling stock market trend in unit shipment

Figure 4.4: Trend of global rolling stock market by region from 2008-2013 in \$B shipment

Figure 4.5: Forecast in global railway industry from 2014 to 2019

Figure 4.6: Global rolling stock market forecast from 2014 to 2019

Figure 4.7: Global rolling stock market by region in 2019

Figure 4.8: Global rolling stock market forecast by region

Figure 4.9: Regional breakdown of Bombardier order backlog in 2013

Figure 4.10: Bombardier Global rail order backlog trends from 2008 to 2013 in B dollars

Figure 4.11: Alstom order backlog in 2013 by region

Figure 4.12: Alstom global rail order backlog trends from 2008-2013 in B dollars

Figure 4.13: Kawasaki order backlog in 2013 by region

Figure 4.14: Kawasaki global rail order backlog trends from 2008-2013 in B dollars

Chapter 5. Trends and Forecasts in Global Rail Market

Figure 5.1: Total sales of major OEMs in the global rail industry from 2008 to 2013

Figure 5.2: Bombardier people mover - Innovia

Figure 5.3: Bombardier monorail

Figure 5.4: Bombardier monorail Flexity

Figure 5.5: Bombardier Flexity tram 2

Figure 5.6: Bombardier metro – Movia train

Figure 5.7: Bombardier Intercity Train

Figure 5.8: Newly launched Bombardier Zefiro train

Figure 5.9: Bombardier TRAXX Locomotive

Figure 5.10: Alstom Citadis tram

Figure 5.11: Alstom Metropolis

Figure 5.12: Alstom X'Trapolis

Figure 5.13: Alstom Coradia

Figure 5.14: Alstom TGV

Figure 5.15: Alstom Pendolino

Figure 5.16: Alstom Prima El Loco

Figure 5.17: CSR Electric Locomotive

Figure 5.18: CSR Diesel Locomotive

Figure 5.19: CSR passenger coach

Figure 5.20: CSR air-conditioned passenger coach

Figure 5.21: CSR freight wagon

Figure 5.22: CSR subway train

Figure 5.23: CSR pioneer MU

Figure 5.24: CNR electric locomotive “Sky Shuttle”

Figure 5.25: CNR DF11D diesel locomotive

Figure 5.26: CNR passenger coach 25Z Family

Figure 5.27: CNR freight wagon P65

Figure 5.28: CNR rapid transit vehicle DK32

Figure 5.29: CNR electrical MUs

Figure 5.30: CNR diesel MUs (“Putian” 160 km/h concentrated power diesel Tiltin)

Figure 5.31: CNR light rail

Chapter 6. Composite Materials and their Applications in Rail Industry

Figure 6.1: Front nose made of composites in Alstom TGV

Figure 6.2: Front nose made of composites in Alstom Kawasaki

Figure 6.3: Front nose made of composites in Amtrak Acela

Figure 6.4: Amtrak Acela using composites

- Figure 6.5: Front nose made of composites in Siemens Velaro
- Figure 6.6: Composites car body in Maglev
- Figure 6.7: Bombardier Regina uses composites
- Figure 6.8: KTK group interior components -DIAB- Shanghai Metro
- Figure 6.9: Front exterior panel over the bumper guards -DIAB- Regio Shuttle Train
- Figure 6.10: Alcan core material used on raw cabins
- Figure 6.11: Roofs and intermediate floors for rail vehicles - Alcan core material
- Figure 6.12: Toilet modules
- Figure 6.13: Toilet seat
- Figure 6.14: Interior lining at QEBB
- Figure 6.15: Battery box cover at ICS Double-Decker
- Figure 6.16: Cab-door-liner
- Figure 6.17: Window mask for rail
- Figure 6.18: Cab console shroud
- Figure 6.19: Cab door
- Figure 6.20: Luggage bin
- Figure 6.21: Ceiling access panel
- Figure 6.22: Sitzschalen Transpole Metro-seat shell
- Figure 6.23: Composites BART floor
- Figure 6.24: Oxygen-distributor-cover
- Figure 6.25: Septa car window panel
- Figure 6.26: Console knee panel
- Figure 6.27: Toilet modules
- Figure 6.28: Maglev
- Figure 6.29: Maglev
- Figure 6.30: GM locomotive nose - intermountain design
- Figure 6.31: Skirts used at Stadlar
- Figure 6.32: Shinkansen bullet train in which front noses are made of composites
- Figure 6.33: People Mover intermountain design
- Figure 6.34: Alcan VAC raw cabins ready for assembly and paintwork
- Figure 6.35: GE front cab
- Figure 6.36: Alcan - FLIRT regional train's cabins
- Figure 6.37: DV - 12 locomotives door
- Figure 6.38: ICS Double-Decker's end cover
- Figure 6.39: Composites consumption by material (raw market) in the global rail market 2013
- Figure 6.40: Composites consumption by material (raw market) in the global rail market 2013
- Figure 6.41: Composites consumption by resin (raw market) in the global rail market

2013

Figure 6.42: composites consumption by resin (raw market) in the global rail market

2013

Figure 6.43: Composites consumption by fiber (raw market) in the global rail market

2013

Figure 6.44: Composites consumption by fiber (raw market) in the global rail market

2013

Figure 6.45: Composite materials consumption by type of resin by value in 2013 (end market)

Figure 6.46: Composites consumption by type of fiber by value 2013 (end market)

Figure 6.47: Composite materials consumption by application in M dollars in 2013 (end market)

Figure 6.48: Composite materials consumption by application in M pounds in 2013(end market)

Figure 6.49: Composites consumption by region by M dollars in 2013 (end market)

Figure 6.50: Composites consumption by region by M pounds in 2013 (end market)

Figure 6.51: SCRIMP process

Figure 6.52: Composite materials consumption by major manufacturing processing Techniques in M dollars in 2013 (end market)

Figure 6.53: Composite materials consumption by major manufacturing processing techniques in M pounds in 2013 (end market)

Figure 6.54: Composite materials consumption by manufacturing process technique by M dollars in 2013 (end market)

Figure 6.55: Composite materials consumption by weight by manufacturing process technique in 2013 (end market)

Figure 6.56: China transit authority composites cross ties

Figure 6.57: Some rail tie manufacturers and their rail tie products

Figure 6.58: Rail tie–RTI

Chapter 7. Trend and Forecast of Composites in Rail Market

Figure 7.1: Drivers and challenges for composites in rail

Figure 7.2: Composites consumption trends in global railcars in \$m from 2008-2013 in terms of end market

Figure 7.3: Composite materials consumption trends in the global rail market from 2008 to 2013

Figure 7.4: Composites consumption by region (end market) (\$M) in the global rail market 2008

Figure 7.5: Composites consumption by region (end market) (\$M) in the global rail market 2012

Figure 7.6: Composites consumption by region (end market) (\$M) in the global rail

market 2013

Figure 7.7: Composites consumption by region (end market) (M pounds) in the global rail market 2008

Figure 7.8: Composites consumption by region (end market) (M pounds) in the global rail market 2012

Figure 7.9: Composites consumption by region (end market) (N pounds) in the global rail market 2013

Figure 7.10: Composites consumption by manufacturing process (end market) in the global rail market 2008

Figure 7.11: Composites consumption by manufacturing process (end market) in the global rail market 2012

Figure 7.12: Composites consumption by manufacturing process (end market) in the global rail market 2013

Figure 7.13: Composites consumption by manufacturing process (end market) in the global rail market 2008

Figure 7.14: Composites consumption by manufacturing process (end market) in the global rail market 2012

Figure 7.15: Composites consumption by manufacturing process (end market) in the global rail market 2013

Figure 7.16: Composites consumption by resin (end market) (\$M) in the global rail market 2008

Figure 7.17: Composites consumption by resin (end market) (\$M) in the global rail market 2012

Figure 7.18: Composites consumption by resin (end market) (\$M) in the global rail market 2013

Figure 7.19: Composites consumption by fiber (end market) (\$M) in the global rail market 2008

Figure 7.20: Composites consumption by fiber (end market) (\$M) in the global rail market 2012

Figure 7.21: Composites consumption by fiber (end market) (\$M) in the global rail market 2013

Figure 7.22: Composites consumption forecast in the global railcar market by \$M from 2014 to 2019 in terms of end market

Figure 7.23: Composites material consumption forecast in the global railcar market by M pounds from 2014 to 2019

Figure 7.24: Composites consumption by region (end market) (\$M) in the global rail market 2014

Figure 7.25: Composites consumption by region (end market) (\$M) in the global rail market 2019

Figure 7.26: Composites consumption by region (end market) (M pounds) in the global rail market 2014

Figure 7.27: Composites consumption by region (end market) M pounds) in the global rail market 2019

Figure 7.28: Composites consumption by manufacturing process (end market) in the global rail market 2014

Figure 7.29: Composites consumption by manufacturing process (end market) in the global rail market 2019

Figure 7.30: Composites consumption by manufacturing process (end market) in the global rail market 2014

Figure 7.31: Composites consumption by manufacturing process (end market) in the global rail market 2019

Figure 7.32: Composites consumption by resin (end market) (\$M) in the global rail market 2014

Figure 7.33: Composites consumption by resin (end market) (\$M) in the global rail market 2019

Figure 7.34: Composites consumption by fiber (end market) (\$M) in the global rail market 2014

Figure 7.35: Composites consumption by fiber (end market) (\$M) in the global rail market 2019

List Of Tables

LIST OF TABLES

Chapter 1. Executive Summary

Table 1.1: Market parameters for the global railcar market and attributes of usage

Table 1.2: Market parameters for the end product usage of composites in global rail market and attributes of usage

Chapter 2. Global Rail Industry: Past, Present, and Future

Table 2.1: Passenger traffic trends around the world (in billions passenger-kilometers)

Table 2.2: Length of lines around the world (in kilometers)

Table 2.3: Country using different rail gauges

Table 2.4: Top OEMs segmentation by train type

Table 2.5: GDP, industrial production, and unemployment rate for leading countries

Table 2.6: Interest and exchange rates for leading countries interest rate (%) p.a. (January 15, 2014)

Table 2.7: Emerging market indicators (economy and financial market)

Chapter 3. Global Rail Market by Type of Cars

Table 3.1: List of countries with their total high-speed rail network in 2013

Chapter 4. Trend and Forecast in Global Rail Market

Table 4.1: Growth of global rail vehicle sales in billion dollars

Table 4.2: Growth of global rail vehicle sales in units

Table 4.3: Top global railcar manufacturers order backlog trends from 2008 to 2013

Chapter 5. Trends and Forecasts in Global Rail Market

Table 5.1: Product portfolio analysis for global rail manufacturers

Chapter 6. Composite Materials and their Applications in Rail Industry

Table 6.1: List of materials found in global rail vehicle applications

Table 6.2: List of rail composites product manufacturer with matrix and reinforcements

Table 6.3: Properties of fibers and conventional bulk materials

Table 6.4: Reinforcement suppliers

Table 6.5: Owens corning rail composites applications

Table 6.6: PPG's rail composites applications

Table 6.7: Ahlstrom's rail composites applications

Table 6.8: Johns Manville rail composites applications

Table 6.9: Parabeam's rail composites applications

Table 6.10: Hankuk's rail composites applications

Table 6.11: List of resin and additive suppliers

Table 6.12: Core material suppliers

Table 6.13: Applications in train by fiber and resin

Table 6.14: Core material manufacturer supplies to passenger rail industry

Table 6.15: List of rail composites interiors

Table 6.16: List of rail composites exteriors

Table 6.17: BS6853:1999 the main fire test standards

Table 6.18: France standard NF F 16-101:1988 the main fire test standard

Table 6.19: German standard DIN 5510-2:1988 the main fire test standard

Table 6.20: EN 45545:1988 the main fire testing standard

Table 6.21: NFPA 130:2000 the main fire testing standard

Table 6.22: Comparison of the performance of phenolic, polyester, and metals

Table 6.23: Fire performance of phenolic resin

Table 6.24: Comparison of different composites

Table 6.25: Toxicity of different gases

Table 6.26: Show the different parameters as per bs 6853 standard

Table 6.27: TRAXX locomotive's material distribution

Table 6.28: Processes used and parts produced by select manufactures of composites

Chapter 8. Rail Composites Component Molders

Table 8.1: Molders by resin material employed

Table 8.2: Molders by manufacturing processes employed

Table 8.3: AAR composites rail

Table 8.4: Able manufacturing & assembly rail composites information

Table 8.5: Aim Composites Ltd. rail composites information

Table 8.6: ApATeCh rail composites information

Table 8.7: Azdel, Inc. rail composites information

Table 8.8: Beard & Cornall rail composites information

Table 8.9: Creative Composites Ltd rail composites information

Table 8.10: Dartford Composites Ltd. rail composites information

Table 8.11: Ebo Systems rail composites information

Table 8.12: Ernst K?hne Kunststoffwerk rail composites information

Table 8.13: Exel Composites rail composites information

Table 8.14: Faiveley Transport rail composites information

Table 8.15: Fiberline rail composites information

Table 8.16: Fibrocom rail composites information

Table 8.17: Horlacher rail composites information

Table 8.18: Hubner-Germany rail composites information

Table 8.19: Intermountain Design rail composites information

Table 8.20: Joptek Rail composites information

Table 8.21: Jupiter Plast rail composites information

Table 8.22: Kemrock Rail composites information

Table 8.23: Magee Plastics Company rail composites information

- Table 8.24: Martin Marietta Materials rail composites information
- Table 8.25: McClarin Plastic rail composites information
- Table 8.26: Miles Fiberglass rail composites information
- Table 8.27: Rochling Group rail composites information
- Table 8.28: Stillman Northern rail composites information
- Table 8.29: Stratiforme Rail composites information
- Table 8.30: Stratime Composites Systems rail composites information
- Table 8.31: Temoinsa rail composites information
- Table 8.32: Testori Americas rail composites information
- Table 8.33: Texstars rail composites information
- Table 8.34: TPI Composites rail composites information
- Table 8.35: Top glass rail composites information
- Table 8.36: PCT composites information
- Table 8.37: Haysite composites information

I would like to order

Product name: Opportunities for Composites in the Global Railway Market 2014-2019

Product link: <https://marketpublishers.com/r/O1D65786A89EN.html>

Price: US\$ 4,400.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/O1D65786A89EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970