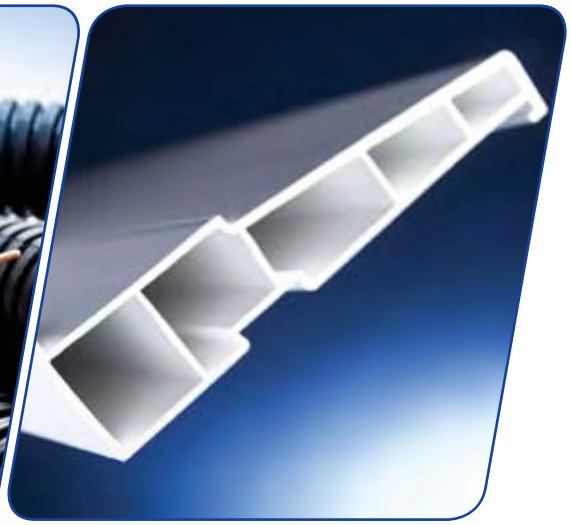
Market Study: Plastic Extrusion



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Nowadays, information is available at the push of a button, always, and in overwhelming amounts. But what is the best way to find the crucial data amongst all that information? That is why several thousand companies use the knowledge of our employees. Based on their extensive experience, they provide decisive data for the benefit of their customers. The clearly arranged and practice-oriented studies of Ceresana offer precise analyses and well-founded forecasts - also for your markets!

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Yours faithfully, Oliver Kutsch

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  Find out if new investments and technologies are worthwhile and how to gain access to future markets. We also show possible market scenarios
- **Recognize opportunities and risks**
  Identify opportunities and risks on your target markets in time

This study is useful for:

- Manufacturers and distributors of polypropylene (PP), polyethylene (LDPE, LLDPE, HDPE), polyvinyl chloride (PVC), polystyrene (PS), polyethylene terephthalate (PET), polyamide (PA), acrylonitrile butadiene styrene (ABS), polycarbonate (PC), other types of plastics
- Producers of packaging, construction products, vehicle parts, electrical and electronic parts, products for the agricultural industry, medical technology, mechanical engineering and construction, household products, toys, sports goods, and garden products
- Manufacturers of auxiliaries and additives such as pigments, fillers, plasticizers
- Associations and institutes, executive board, technology and production, strategic planning, R&D, market research, marketing, sales and distribution, procurement

In this brochure you will find the following information:

In terms of quantity, extrusion is the most important process in the plastics industry: More than 114 million tonnes of plastics are processed with this method worldwide every year. Both flexible as well as rigid objects that can be compact or cellular can be produced with extrusion. The processing possibilities range from film, pipe, and profile extrusion to sheet, ram, and cold extrusion up to coextrusion.

Ceresana analyzes in this study the world market for plastics for extrusion. In 2015, about 51% of the plastics used for extrusion were used in the Asia-Pacific; North America and Western Europe followed with shares of 15.5% and 13.2%. The types of plastics polyvinyl chloride (PVC), polyethylene (LDPE, LLDPE, HDPE), polypropylene (PP), polystyrene (PS), polyethylene terephthalate (PET), and other plastic types are differentiated in this study. PVC is mainly used for extrusion: Over the past eight years, demand for products made of PVC rose by of 2.3% per year. The second most important plastic type for extrusion is polyethylene-LLDPE with a market share of approx. 18%.

The most important sales market for extrusion products is the packaging industry. The category "packaging" mainly includes films, as well as bags and sacks, and shrink and stretch films. The heading packaging films includes the majority of films used for foodstuffs, but also films for non-food applications such as packaging for cosmetics, hygiene products, textiles, stationary, and similar products. The market for packaging films profits especially from a persistent trend towards flexible packaging solutions in many segments. In addition to a reduction of weight and resource consumption, flexible packaging is also expected to increase customer convenience. A trend towards smaller package sizes and a growing market for flexible packaging in the sectors hygiene and pharma will nonetheless result in growth in the upcoming years as well. The most important type of plastics in packaging is LLDPE, followed by PP and LDPE.

The second largest sales market are products for the construction industry. By far the most important plastic in this industry is PVC: In 2015, about 22.5 million tonnes of this material were used. All other types accounted for considerably lower market shares. The most important plastic products in the construction industry are pipes and windows. Besides these, many other construction components are made of plastics: floors, covers, facade elements, coatings, films, sheets, sealants, doors, small parts, and fastenings. Global increase in demand for plastic pipes is mainly generated by the growing consumption in the emerging countries. Here, new constructions play a major role. Due to the quickly progressing urbanization, densification of the residential areas and their pipeline systems are an important topic in many cities of emerging countries. In the more developed industrial states where sewage and potable water networks are already installed closely, renovation and replacement of the existing networks.

The most dynamic development of demand for plastics for extrusion will however not take place in the construction sector but in the segments "transportation" and "electrical and electronics". From 2015 to 2023, Ceresana expects global demand in these application areas to increase by 3.1% and 2.9% per year.

The Study in Brief:

Chapter 1 provides a presentation and analysis of the market for plastics for extrusion – including forecasts up to 2023. Data on demand and revenues are given for the regions Western Europe, Eastern Europe, North America, South America, Asia-Pacific, the Middle East, and Africa.

Chapter 2 provides market data for the 16 most important countries, that is, country-specific information on demand and revenues. Demand is analyzed in detail split by several application areas and product types.

Chapter 3 thoroughly examines the application areas for plastics for extrusion: packaging, construction industry, transportation, electrical and electronics, industrial products, other applications. These sales markets are split by both the world regions and the most important countries. Furthermore, demand for the particular plastic types split by application areas is given.

Chapter 4 deals with demand for the particular types of plastics: PVC, LDPE, LLDPE, HDPE, PP, PS, PET, and other plastic types.

Global revenues generated with plastics for extrusion from 2007 to 2023 - split by regions

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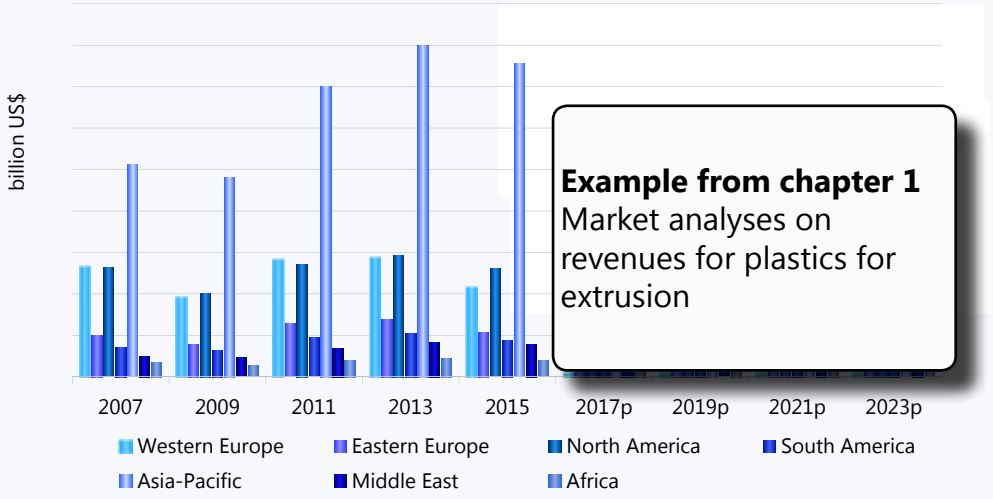
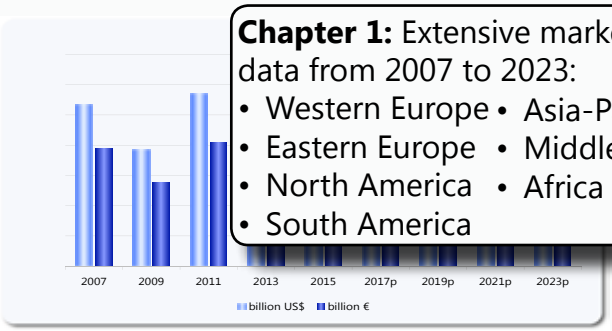


Example from chapter 1
Market analyses on revenues for plastics for extrusion

1.2 Western Europe

About X million tonnes of plastics for extrusion were utilized in Western Europe in 2015. Thus, demand fell by an average of X% p.a. since 2007. Until 2023, we expect to see an annual increase in West European consumption by X%. Given this growth rate, West European share on global demand is likely to fall from X% in 2015 to roughly X% in 2023. Revenues generated with plastics for extrusion amounted to EUR X billion in 2015. We forecast market value to increase by X% p.a. in the next eight years.



Chapter 1: Extensive market data from 2007 to 2023:

- Western Europe
- Eastern Europe
- North America
- South America
- Asia-Pacific
- Middle East
- Africa

Graph: Revenues generated with plastics for extrusion in Western Europe from 2007 to 2023 in billion USD and billion EUR

About X% of West European demand originated in Germany, followed by Italy and France. Demand in the United Kingdom and Spain is relatively low. The remaining West European countries (the Netherlands, Sweden, Austria, Portugal, Belgium, Denmark, Switzerland, Finland, Norway, and Ireland) reached an aggregated market share of X%. We expect the highest growth rates of X% per year until 2023 for Germany.
Registering market volumes of X million tonnes and X million tonnes in 2015 respectively, PVC and LDPE are the most important plastics in Western Europe. LLDPE reported the third largest market volume, followed at a distance by HDPE and PP. Demand for PP will develop most dynamically in the upcoming eight years; at rates of X% per year, this product will increase its demand to X million tonnes.

in million tonnes	2007	2009	2011	2013	2015	2017p	2019p	2021p	2023p	2015 - 2023
Germany	X	X	X	X	X	X	X	X	X	X% p.a.
France	X	X	X	X	X	X	X	X	X	X% p.a.
United Kingdom	X	X	X	X	X	X	X	X	X	X% p.a.
Italy	X	X	X	X	X	X	X	X	X	X% p.a.
Spain	X	X	X	X	X	X	X	X	X	X% p.a.
Other	X	X	X	X	X	X	X	X	X	X% p.a.
Total	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X% p.a.**

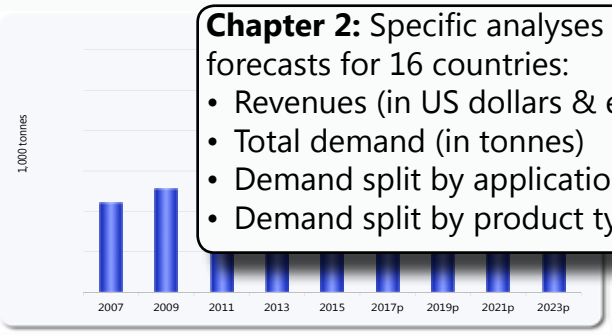
Table: Demand for plastics for extrusion in Western Europe from 2007 to 2023 – split by major countries

in million tonnes	2007	2009	2011	2013	2015	2017p	2019p	2021p	2023p	2015 - 2023
PVC	X	X	X	X	X	X	X	X	X	X% p.a.
LLDPE	X	X	X	X	X	X	X	X	X	X% p.a.
LDPE	X	X	X	X	X	X	X	X	X	X% p.a.
PP	X	X	X	X	X	X	X	X	X	X% p.a.
HDPE	X	X	X	X	X	X	X	X	X	X% p.a.
PS	X	X	X	X	X	X	X	X	X	X% p.a.
PET	X	X	X	X	X	X	X	X	X	X% p.a.
Other	X	X	X	X	X	X	X	X	X	X% p.a.
Total	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X% p.a.**

Table: Demand for plastics for extrusion in Western Europe from 2007 to 2023 – split by types of plastics

2.5.1 China

Demand for plastics for extrusion amounted to X million tonnes in 2015 which corresponds to a growth rate of X% p.a. from 2007 to 2015. We expect demand in China to continue to rise by X % per year to approx. X million tonnes in 2023. At a dynamic growth rate, revenues rose to USD X billion in 2015. This market value corresponded to roughly X % of overall revenues in Asia-Pacific. Market value will rise to approx. USD X billion in 2023. This constitutes an average increase of X% per year.



Chapter 2: Specific analyses and forecasts for 16 countries:

- Revenues (in US dollars & euros)
- Total demand (in tonnes)
- Demand split by applications
- Demand split by product types

Graph: Demand for plastics for extrusion in China from 2007 to 2023

By far, the most important product is PVC; in 2015, about X million tonnes of this product were processed. The second highest market volume of about X million tonnes was registered by PP. The highest growth rates of X% p.a. between 2015 and 2023 are forecast for HDPE. In total, all products are likely to develop dynamically. With almost X million tonnes, demand of the segment packaging accounted for the largest share of demand in China in 2015. The construction industry ranked a close second. The highest relative increase between 2015 and 2023, we forecast for the segment transportation. Demand is projected to increase at an AAGR of X%.

in 1.000 Tonnen	2007	2009	2011	2013	2015	2017p	2019p	2021p	2023p	2015-2023
Verpackungen	X	X	X	X	X	X	X	X	X	X% p.a.
Bauindustrie	X	X	X	X	X	X	X	X	X	X% p.a.
Fahrzeugindustrie	X	X	X	X	X	X	X	X	X	X% p.a.
E&E	X	X	X	X	X	X	X	X	X	X% p.a.
Industrie	X	X	X	X	X	X	X	X	X	X% p.a.
Sonstige	X	X	X	X	X	X	X	X	X	X% p.a.
Total	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X% p.a.**

Tabelle: Verbrauch von Kunststoffen für die Extrusion in China von 2007 bis 2023 – aufgeteilt nach Anwendungen

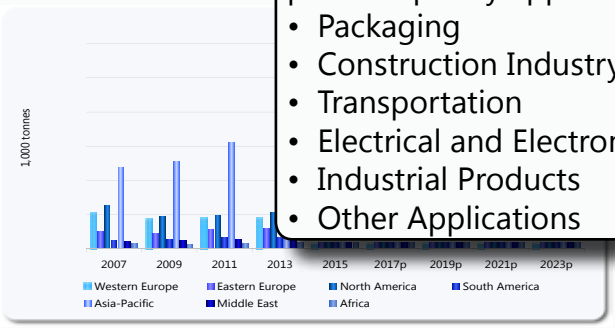
Obgleich die chinesische Bauindustrie aktuell durch die insgesamt etwas eingetrübte Konjunktur negativ beeinträchtigt wird, erwarten wir mittelfristig dennoch ein weiteres Wachstum. Bezüglich neu fertig gestellter Gebäude (nach Fläche) war im Jahr 2015 jedoch ein leicht rückläufiger Trend zu beobachten. Grund hierfür ist unter anderem die Antikorruptionspolitik der Regierung. Die Politik versucht demgegenüber aber auch durch die Senkung der Kreditzinsen den Wohnungsbau wieder anzukurbeln. Auch die Gründung der Asiatischen Infrastrukturinvestmentbank soll neue Investitionschancen kreieren. Impulse für die Bauwirtschaft kommen derweil aus der anhaltend hohen Urbanisierungstendenz der Bevölkerung. Für 2016 gibt es erste Anzeichen einer kleinen Erholung des Wohnungsbaus. So erwarten wir nach den aktuellen Zahlen des ersten Halbjahres 2016 einen Anstieg der Baufertigstellungen im Wohnungsbau für das Gesamtjahr 2016 im Bereich von knapp 7 %. Hier wird bis zu einem gewissen Grad auch die schwache Entwicklung aus dem Vorjahr ausgeglichen. Mittelfristig werden aber auch im Wohnungsbau nicht die hohen Wachstumsraten früherer Jahre erreicht werden. Im Gewerbebau stagniert der Markt wohl auch im Jahr 2016 weiterhin. Im Tiefbau will der chinesische Staat weiterhin massiv in den Ausbau der Infrastruktur investieren, um der derzeitigen Konjunkturabschwächung entgegenzuwirken. Aufgrund zunehmender finanzieller Engpässe werden PPP-Projekten immer beliebter. Gerade im Eisenbahnbau, dem öffentlichen Nahverkehr sowie bei der Wasser- und Stromversorgung...

3.1.3 Construction Industry

About X million tonnes of plastics for extrusion were utilized worldwide in the construction industry in 2015. We forecast total consumption volume in this segment to rise at average rates of, X% p.a. to a volume of approx. X million tonnes in 2023. Major consumer of plastics for extrusion is Asia-Pacific that processed X million tonnes in 2015, followed by North America and Western Europe. Asia-Pacific will continue to account for more than X% of the world's demand in the construction industry, registering a market volume of approx. X million tonnes in 2023. We expect North American producers to continue to exceed demand in Western Europe. The Middle East is likely to generate the second stron
surpassed only by the region Asia-Pacif

Chapter 3: Demand for plastics split by applications:

- Packaging
- Construction Industry
- Transportation
- Electrical and Electronics
- Industrial Products
- Other Applications



Graph: Global demand for plastics for extrusion in the construction industry from 2007 to 2023 – split by regions

The most important plastic products in the construction industry are pipes, windows, and insulation materials. However, besides these, many other components are made of plastics. Among these are floors, covers, facade elements, coatings, films, sheets, sealants, doors, small parts, and fastenings which are summed up in this study in the category "other products". Global increase in demand for plastic pipes is mainly generated by the growing consumption in the emerging countries. Additionally, new construction plays a more important role in these countries than in the further developed industrial states where, for example, sewage and potable water networks are already widely developed. In these countries, renovation and exchange of the existing networks is more important than the development of new, unsettled areas. Due to the quickly progressing urbanization, densification of the residential areas and their pipeline systems are an important topic in many cities of emerging countries. In general, demand for pipes in a country is to a large extent dependent on the development of the particular activities in civil engineering and building construction. Applications of pipes like sewage disposal, potable water supply, or cable protection are directly connected to the situation of the construction industry.

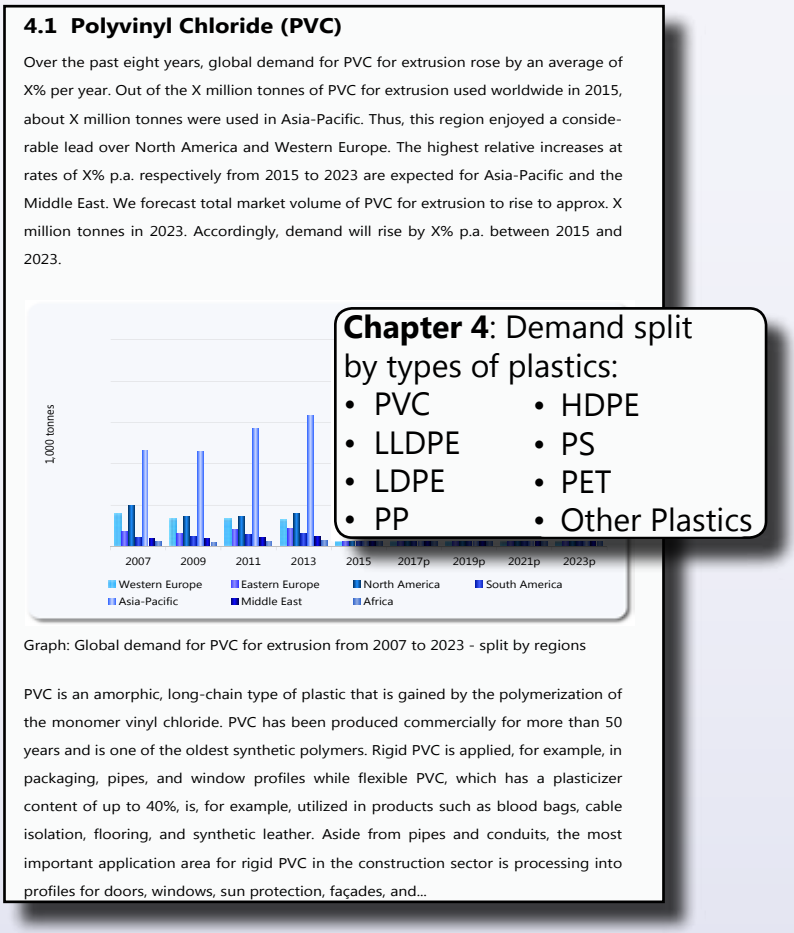
From a global perspective, demand for plastic windows in the segment residential construction will exhibit higher growth rates than the segment non-residential construction. The prospects of growth in the construction segments new construction and renovation are globally rather balanced. However, from a regional or national perspective, development of the particular construction segments can differ strongly from this pattern. Demand for plastic windows is to a large extent influenced by the developments within the national construction industries. These can be very different from country to country and can change significantly over the years. Plastic windows are able to benefit from state regulations that aim towards a more energy efficient construction method in many countries. Windows made from plastics offer very good possibilities in this respect. Programs such as the LEED certification (Leadership in Energy and Environmental Design) or other international and national initiatives are supposed to increase the incentives of keeping an eye on the sustainability and energy efficiency within the building construction. Since rise in cost for energy has to be expected on the long term, energy efficient windows present the possibility of saving energy and thus money. Currently, the European market still accounts for more than one third of global demand. However, the European share on the world market will decrease further in the upcoming years. The highest growth rates are generated outside the industrial countries, for example in the regions Asia-Pacific or Middle East & Africa. A growth of population, rising average income, as well as a rapid urbanization constitute growth factors in these regions. Even in countries where plastic windows only played a minor role compared to other materials until now (e.g. Brazil, India, Mexico), there is an enormous growth potential on the medium to long term.

By far the most important plastic in this application area is PVC. In 2015, about X million tonnes of this material were used. All other products accounted for considerably lower market shares. We expect growth rates of between X% and X% p.a. for all types of plastics in the upcoming eight year period.

in million tonnes	2007	2009	2011	2013	2015	2017p	2019p	2021p	2023p	2015 - 2023
PVC	X	X	X	X	X	X	X	X	X	X% p.a.
LLDPE	X	X	X	X	X	X	X	X	X	X% p.a.
LDPE	X	X	X	X	X	X	X	X	X	X% p.a.
PP	X	X	X	X	X	X	X	X	X	X% p.a.
HDPE	X	X	X	X	X	X	X	X	X	X% p.a.
PS	X	X	X	X	X	X	X	X	X	X% p.a.
PET	X	X	X	X	X	X	X	X	X	X% p.a.
Other	X	X	X	X	X	X	X	X	X	X% p.a.
Total	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X% p.a.**

Table: Global demand for plastics for extrusion in the construction industry from 2007 to 2023 – split by types of plastics

The degree of importance various application areas have for the different types of pipes varies considerably. For example, pipes made of polyvinyl chloride (PVC) are relatively cheap and are thus used extensively in the sewage, potable water, and cable protection sectors. While pipes based on polypropylene and polyethylene are still in the process of challenging the dominance of PVC pipes in potable water supply, they are already playing a notable part in both gas supply and in industrial applications. During the upcoming years, the utilization of other plastics, such as polybutylene, polyamide (PA) and acrylonitrile-butadiene-styrene (ABS) is likely to become more and more wide-spread.



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- ☐ Propylene - China
- ☐ Propylene - USA
- ☐ Solvents
- ☐ Stabilizers
- ☐ Styrene
- ☐ Surfactants
- ☐ Titanium Dioxide
- ☐ Toluene
- ☐ Urea
- ☐ Xylene

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- ☐ Expandable Polystyrene
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- ☐ Polyethylene - LLDPE
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- ☐ Polyvinyl Chloride
- ☐ Silicones
- ☐ Synthetic Rubber
- ☐ Thermoplastic Elastomers

Industry

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- ☐ Adhesives - World
- ☐ Automotive Plastics - World
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- ☐ Construction Plastics - World
- ☐ Doors & Windows - Europe
- ☐ Insulation Materials - Europe
- ☐ Insulation Materials - World
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- ☐ Paints & Varnishes - World
- ☐ Pipes - Europe
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- ☐ Plastic Injection - World
- ☐ Plastic Pipes - Europe
- ☐ Plastic Pipes - World
- ☐ Plastic Windows - World
- ☐ Printing Inks - World

Packaging

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