



CBI  
*Ministry of Foreign Affairs*

# **CBI Product Factsheet:**

# **Steel Flanges in Europe**

## Introduction

European imports of steel flanges reached €927 million in 2014 and are expected to be relatively stable in the coming few years, with a developing country share of 30 to 35%. The main importers of steel flanges are Germany, the United Kingdom and the Netherlands, and Italy may be an interesting focus country because of its strong market for developing country imports. The chemical and energy industries provide good opportunities for developing country suppliers.

## Product description



A flange is an external or internal rim or ridge at the end of a pipe, steam cylinder or other pieces of equipment, mostly for attachment to another object. Flanges are also commonly used to connect valves to pipework, enabling easier removal and maintenance. These products are used in almost all industries in which pipes are used to transport liquids, bulks, gases or combinations such as in the petrochemical, food processing, energy, water and/or oil and gas industries.

This product survey covers flanges made of stainless steel, iron and steel. Flanges can be either flat (cast iron or ductile iron) or raised face (cast steel or stainless steel).

In cooperation with industry specialists, products have been selected that are of interest to developing country exporters. In this survey, these products are treated as one product group, especially with regard to industry demand, trade and production. Thus, flanges refer to the product selection presented in Table 1, unless stated otherwise.

**Table 1: Selected products based on CN and Prodcom nomenclature**

CN code	Prodcom code	Description
730721	27222010	Flanges of stainless steel (excl. cast products)
730791	27222010	Flanges of iron or steel (excl. cast or stainless products)

Source: CN and Prodcom Nomenclature

## Labelling and packaging

Flanges are individually packed in sealed polyethylene bags, separated by corrugated cardboard and tightly packed in wooden boxes. Large flanges are separated by wooden clamps. The size of the boxes depends on the weight and handling capacity. Customers may also have their own additional packaging requirements and preferences. Individual box packaging or other modes are often requested. Batch numbers may also be required on individual boxes.

EU [Packaging and packaging waste](#) legislation restricts the use of certain heavy metals and states other requirements. There are also requirements for [Wood packaging materials used for transport](#) (WPM), such as packing cases, boxes, crates, drums, pallets, box pallets, and dunnage.

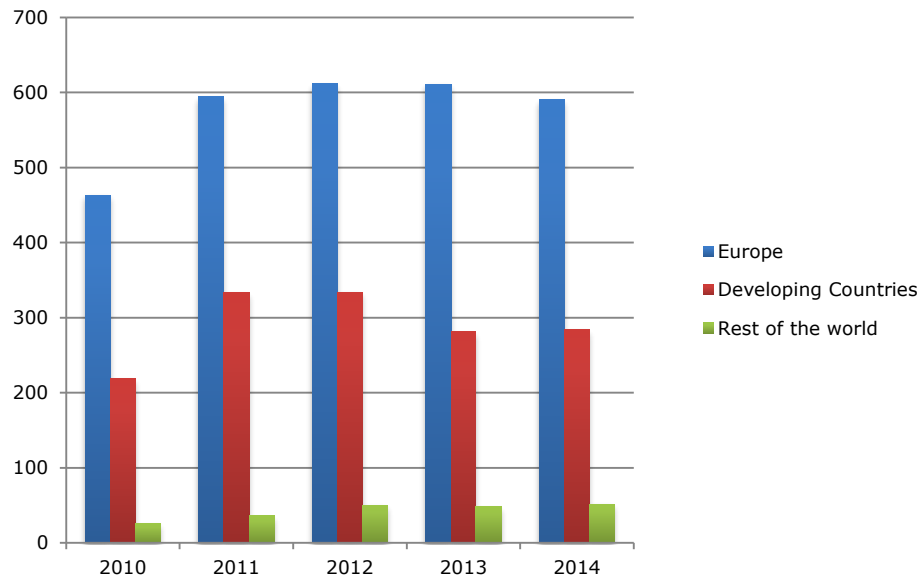
### Tips:

- The chemical industry would be a market to explore for developing country suppliers because quality requirements are lower than for other industries because pressures and temperatures are not very high.
- Additional information on packaging can be found on the [ITC website](#).

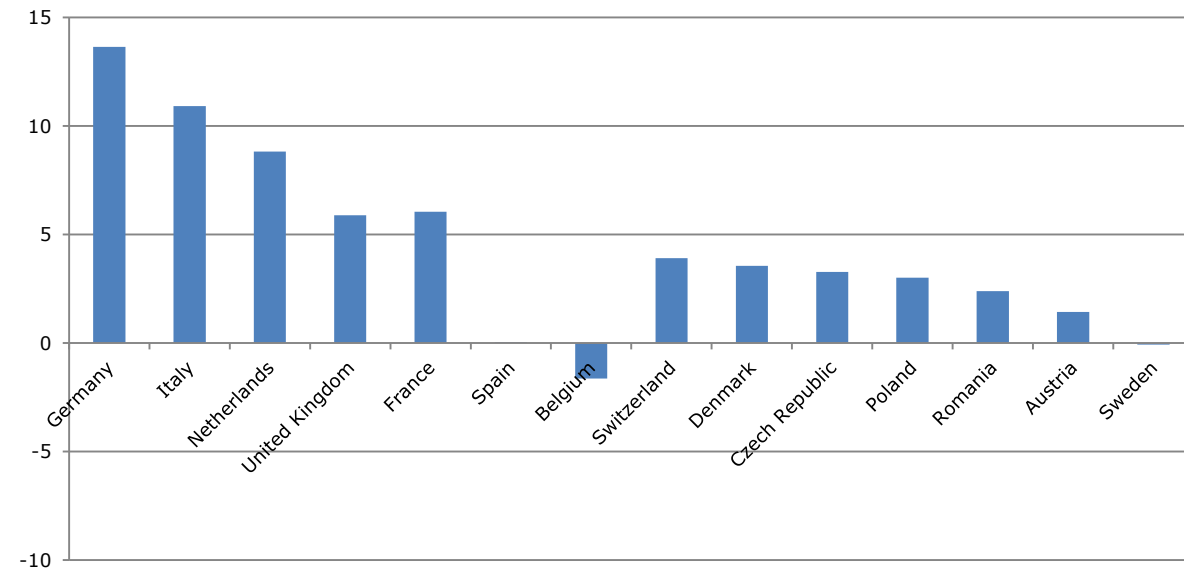
## Demand

### Imports

**Figure 1: Imports of flanges to Europe by main origin, € million, 2010-2014**



**Figure 2: Absolute growth in flange imports from developing countries 2010-2014, € million (countries in range of largest importers)**



Source: Trademap

- After a peak of €996 million in 2012, European imports of flanges reached €927 million in 2014. Average annual growth in 2010-2014 was 7.0% mainly because of the weak reference year. Imports of flanges are expected to be relatively stable in the coming few years.
- The developing country share in European imports ranged from 30 to 35% in the period 2010-2014. Most imports originated from intra-Europe sources (64% of all imports). For the foreseeable future, the developing country share is forecast to be relatively stable between 30 and 35%.
- The leading importer is Germany (22% of European imports), followed by the UK (12%) and the Netherlands (9.9%). Germany leads in developing country imports, ahead of Italy, the Netherlands and the UK.

## Leading suppliers

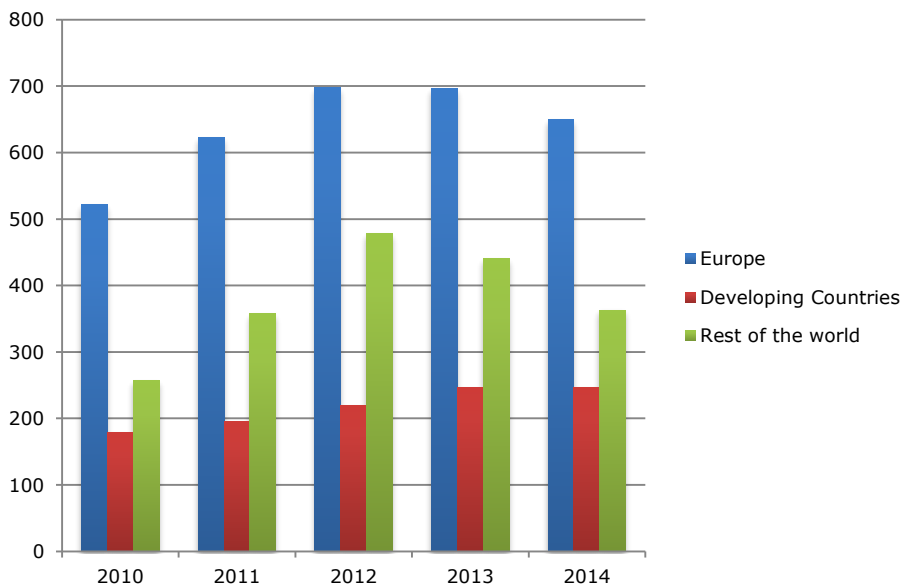
- Most leading suppliers of flanges to Europe are developed countries. The three top suppliers are China, Italy and Germany.
- China is the main developing country supplier, with a value of €202 million in 2014 (over 20% of total imports). Other developing country exporters to Europe are India (69 million) and Turkey (€4.6 million).
- USA is by far the largest supplier in the category 'rest of the world', followed by Korea.

### Tips:

- Benchmark your company against your peers in European countries, China, India and Turkey. Several factors can be taken into account, such as market segments served, perceived price and quality level, and countries served. A useful source to find exporters/producers of flanges per country is the [ITC Trademap](#).
- As mass production is increasingly shifting to low-cost countries, such as China, industry experts advise manufacturers in other developing countries to focus as much as possible on custom-made production because it is difficult to compete with China.

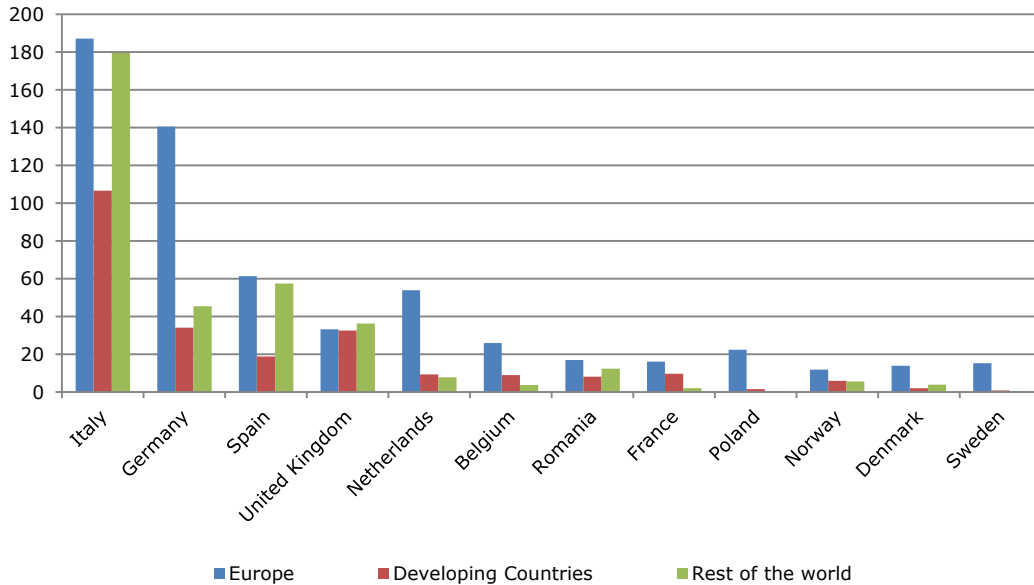
## Exports

Figure 3: European exports of flanges, by main destination, € million, 2010-2014



Source: Trademap

**Figure 4: Main exporters of flanges, € million, 2014**

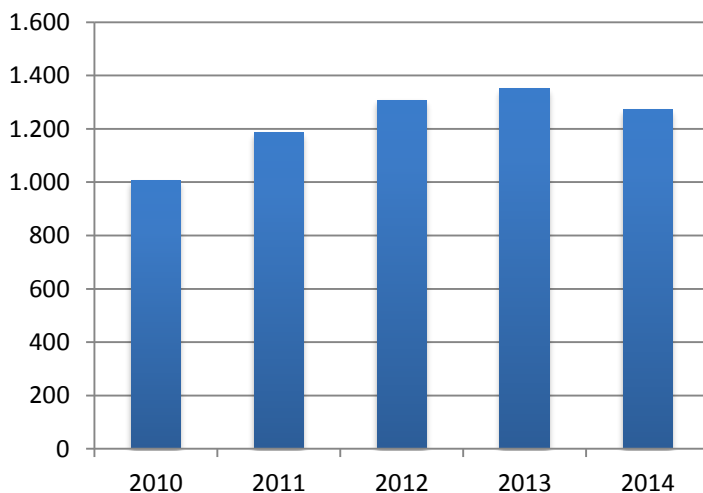


Source: Trademap

- After a peak of almost €1.4 billion in 2012, European exports of flanges amounted to almost €1.3 billion in 2014. Average annual growth of 7.1% in 2010-2014 was mainly the result of the weak reference year (2010) and strong growth in European demand in the period 2010-2014. European exports of flanges are expected to stabilise in the coming few years.
- Developing country share in European exports reached 20% in 2014, and is forecast to show small growth in the range of 2 to 4%.
- Most exports go to intra-Europe destinations (52% of all exports), including some re-export of imports originally from developing countries.
- The leading exporter is Italy, accounting for 38% of total exports from Europe, ahead of Germany (21%), Spain (11%) and the UK (8.1%).

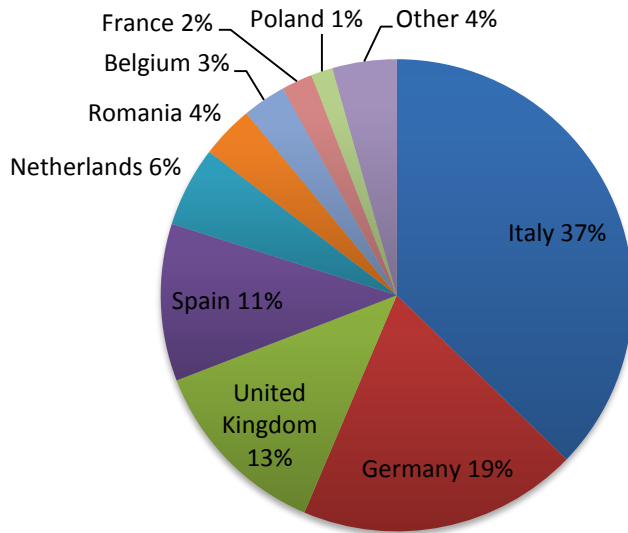
## Production

**Figure 5: European production of flanges, 2010-2014, € million**



Source: Eurostat Prodcorn

**Figure 6: Main European producers of flanges, 2014**



Source: Eurostat Prodcorn

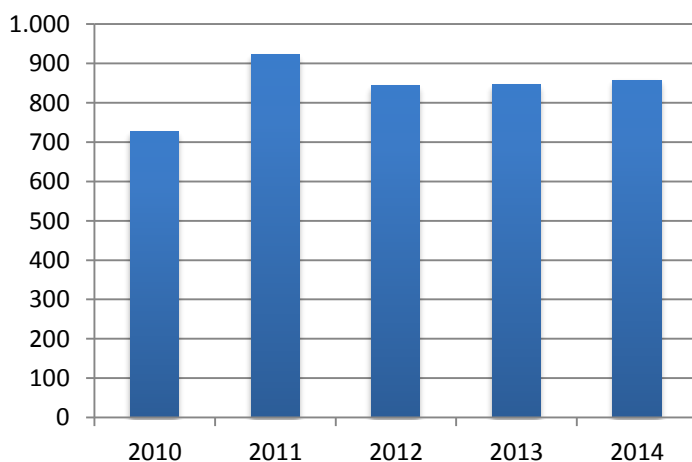
- After peaking at almost €1.4 billion in 2013, European production totalled almost €1.3 billion in 2014. The average annual increase was 6.1% in the period 2010-2014.
- Italy accounted for 37% of the total European production in 2014, and Germany for 19%.

**Tip:**

- In addition to Germany and Italy, there is considerable production output in the UK and Spain (see Figure 1). The presence of producers in these countries offers opportunities for subcontracting to developing country exporters. Links to databases of producers of flanges are given under Useful Sources (see below).

**Apparent demand**

**Figure 7: Apparent demand for flanges in Europe, 2010-2014, € million**



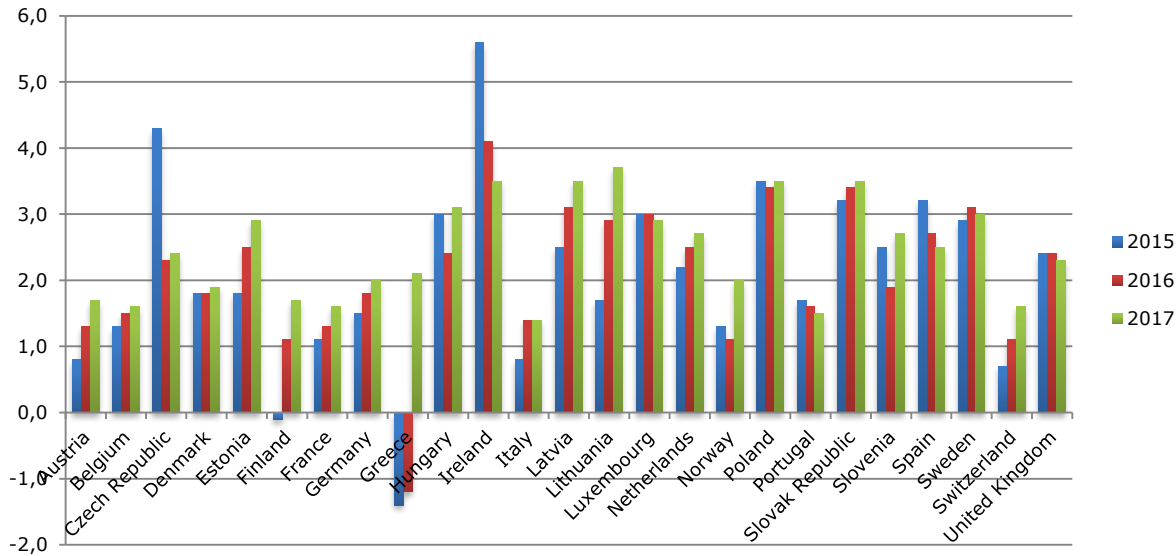
Source: Eurostat Prodcorn

- European demand totalled €858 million in 2014, after an average annual increase of 4.2% in the period 2010-2014. This growth is attributed to growth following a period of decline due to the financial crisis in 2009 and 2010. Between 2012 and 2014, demand stabilised at around €850 million.
- The countries with the largest apparent demand for flanges are Germany and the UK.

- According to industry experts, European demand in terms of volume is mainly for standard flanges (70-80%), with the balance for special flanges (20-30%).
- The market in Western Europe is more or less saturated and in the next few years will be mainly for replacement flanges.

## Macroeconomic indicators

Figure 13: Real GDP, percentage change on the previous year



Source: OECD Economic Outlook 96 database

- The major determinant of flanges demand is in end-user industries, such as oil and gas, food processing, and water and wastewater. Demand depends increasingly on demand for replacement parts as well as for new equipment. In turn, demand is stimulated by economic growth. In almost all European countries, GDP is expected to continue to grow year-on-year in the foreseeable future. This is a good basis for estimating demand for and growth in imports in the coming few years.
- Profitability of flange imports is influenced by the euro/US dollar exchange rate, as many engineered components sourced globally are paid in US dollars. While the exchange rate was not forecast to go beyond 0.80 until 2020, an exchange rate was between 0.88 and 0.93 in the period March to October 2015. This has a large impact on the price of imports. If this situation remains stable for some years, it will have a negative impact on European imports paid for in US dollars versus local European production.

### Tip:

- If the euro remains at approximately US\$ 0.90, developing country producers should increasingly focus on cost reduction to remain competitive in Europe.

For more information, see [CBI Trade Statistics for pipes and process equipment](#).

## Trends offering opportunities

### Sustainability

Environmental protection has become a strategic political issue. In the pipes and process equipment industry, the search for energy efficiency and limiting CO<sub>2</sub> and NO<sub>x</sub> emissions is leading to an increase in innovative production techniques, resulting in increased efficiency and less waste. End-users are increasingly asking for innovative products, such as highly efficient pumps, lighter pipes and leak-free flanges.

### Refurbishment and maintenance of power stations

New EU emission legislation coming into effect in 2016 makes the energy sector a promising market for the next few years. Power stations will need to be refurbished to meet these requirements. In addition, due to overcapacity and

fluctuating demand, most power stations start up on Mondays and shut down on Fridays. Regular shutdowns and re-starts put tremendous strain on all equipment, requiring more maintenance and replacement of worn-out parts.

## Downturn European oil industry

The European oil sector is expecting an extended downturn. Short term, this may lead oil companies to put off or postpone investments, such as the purchase or replacement of equipment including flanges.

## Globalisation

Increasing globalisation has led to pressure on prices and has stimulated or even forced several European manufacturers to specialise and to focus on high-value added products. As a result, some special flanges are only produced in Europe. These flanges are specially design, are made of special steel alloys (such as, Incoloy, and titanium steel) and have sealing rings made of metal or high quality polymers, such as Teflon and PEEK. Since the workability of such flanges is extremely difficult, their price can be as high as €2,000 to 3,000 per unit.

Meanwhile, production of commodities is gradually shifting to low-cost countries.

### Tips:

- Invest in R&D to develop sustainable solutions, such as leak-free flanges.
- Focus on sectors that provide opportunities for developing country suppliers, such as chemical and energy industries.

For more information on general trends, see [CBI Trends for pipes and process equipment](#).

## Market requirements

An overview of legislative requirements is presented in the [European buyer requirements for pipes and process equipment](#) on the Market Intelligence Platform of CBI. The requirements for flanges do not differ significantly from those for the general sector.

For more information on gaining access to the European market, see the [European Union Export Helpdesk](#), the [ITC Market Access Map](#) and the [ITC Standards Map](#).

There are many different flange standards worldwide. To allow easy functionality and inter-changeability within each standard, these are designed with standardised dimensions. Common world standards are ASA/ANSI/ASME (USA), EN/DIN (Europe), BS10 (UK/Australia), and JIS/KS (Japan/Korea). In most cases, these are not interchangeable, for instance, an ANSI/ASME flange will not mate with a JIS flange. Further, many flanges in each standard are divided into pressure classes, enabling flanges to taking different pressure ratings. Again, these are not generally interchangeable, for instance, an ANSI/ASME 150 will not mate with an ANSI/ASME 300.

The [ISO standard](#) for flanges is ISO 7005-1:2011:

- This standard establishes a base specification for pipe flanges suitable for general purpose and industrial applications including, but not limited to, chemical processing, electric power generating, and petroleum and natural gas industries. It places responsibility for the selection of a flange series on the purchaser. It is applicable to flanges in facilities processing and handling a wide variety of fluids, including steam, pressurised water and chemical, petroleum, natural gas and related products.
- This standard is also applicable to packaged equipment piping, which interconnects individual pieces or stages of equipment in a packaged equipment assembly for use in facilities processing and handling various types of fluids, including steam and chemical, petroleum, natural gas or related products.

## Tariffs

For flanges, [a 3.7% duty](#) is levied on imports to the EU from countries outside the EU. Several countries benefit from a preferential 0% tariff, such as Indonesia, Pakistan, Vietnam, the Philippines, Bosnia and Egypt. It is only possible to claim preferential tariff treatment with a Certificate of Origin, which can be validated by a local Chamber of Commerce.

### Tips:

- Make sure you know which standards your customer needs your products to comply with.
- Search BS or EN norms in the [online shop of the British Standards Organisation](#).



## Competition

As competition for flanges does not differ significantly from the sector in general, see [CBI Competition for pipes and process equipment](#) and [CBI Top 10 Tips for Doing Business with European Buyers](#).

## Trade channels and market segments

An overview of trade channels and market segments in the [European channels and segments for pipes and process equipment](#) is available on the Market Intelligence Platform of CBI.

Trade channels and market segments for flanges do not differ significantly from those for the general sector.

Some importers are:

- Belgium: [FBF](#)
- Germany: [RFF](#), [Stahl + Plastic Flanschen](#) and [Erzet](#)
- Italy: [Steel Trade](#)
- Netherlands: [Noxon Stainless](#), [Dylan Group](#) and [Snel Staal](#)
- Spain: [Comeval](#) and [Tubinox](#)
- United Kingdom: [Hygienic Stainless Steels](#), [Special Piping Materials](#) and [Global Pipe Components](#)

Due to intensive competition for standard flanges from low-cost countries, manufacturers in Europe have specialised in products that are relatively difficult to make. These 'specials' are very expensive, require more specific knowledge, can have diameters of up to several metres, and are increasingly made of special materials, such as super duplex or stainless steel.

Highly specialised manufacturers in Europe are:

- Belgium: [FloWell](#) and [Hertecant](#)
- Germany: [W Maass](#), [Brück](#), [Kiel Flanschen](#) and [Flanschenfabrik Hüttental](#)
- France: [Lumox](#)
- Italy: [Elster](#) and [STF](#)
- Netherlands: [Astava](#)
- Spain: [Ulma Forging](#)
- United Kingdom: [Micro Metalsmiths](#) and [J.R. Whitehead](#)

## Market prices for steel flanges

Prices are dictated by large importers/stockists and are influenced by, for instance, steel price levels and nickel prices on the London Metal Exchange (LME). Over the last five years, most producers have dealt with price fluctuations by using contracts that include stipulations governing increases in raw material prices. Developing country exporters are also advised to take sufficient measures to ensure continuous access to raw materials at stable prices.

Prices for flanges are presented on the following websites:

- [Econosto](#) - Dutch importer (you need to register)
- [Waffenschmidt](#) - German importer.
- [Rubinettere Bresciane](#) - Italian producer also an importer. Registration gives access to catalogues and prices.
- [Pipe fittings](#) - online shop from the USA.
- [Matthew Davis](#) - Australian supplier, with price list under construction in January 2016).

Check the listing of a specific product to obtain a rough indication of the price level. These prices have to be treated with extreme caution because prices depend on many aspects, such as specifications, volumes, and the application for which they are used.

## Price structure

To run a profitable business, importers/stockists must mark up their landed cost price by 15 to 35%. The mark up of agents varies between 1 and 8%, depending on the product and the size of the order.

Margins for flanges sold by the producer are quite low, ranging from 5 to 10%, and sometimes even as low as 3%. Big margins are often made by importers, ranging from 60 to 80%.

To establish an export price, you need to consider the many factors involved in pricing for the domestic market:

- Aim to charge a price the market will bear and keep in mind the quality/price ratio of your products, which should be in line with competitor prices.

- Pricing is a mix of knowing your domestic costs and calculating costs you will incur in delivering and supporting your activities in a foreign market.
- Use contracts with variable material costs. It is important to set the reference index for fluctuations in agreement with the buyer. Use, for example, the steel index of the [London Metal Exchange](#).
- Bear in mind that it is not easy to increase prices once you have agreed to deliver at a certain price. The negotiated price should never be below your cost price, except for the first order. In this context, you may accept a loss if larger quantities and thus lower costs are expected for the following orders. No European buyer will accept an unreasonable or unexpected price increase after the first order.
- The negotiated price depends on the delivery conditions, the means of payment, credit terms and currency risks, quantities, and the means of transport.
- Exchange rates fluctuate. Cover this risk by including the currency risk in the contract. This practice has been accepted in international business transactions for a few years now.

#### Tips:

- Use contracts with variable material costs.
- Include the currency risk in the contract.

### Useful sources

- Finding prospects: [ABC Business Directories](#), [EuroPages](#), [Kompass](#) and [Thomas Global Register](#).
- International associations: [European Sealing Association](#) ([Flange Gaskets Division](#)).
- International magazines and news: [International Journal of Pressure Vessels and Piping](#), [Offshore Technology](#), [Valve World](#).
- Trade fairs: [Achema](#), [Hannover Messe](#), [Pumps and Valves](#), [Tube](#).
- Trade fair databases: [AUMA](#), [Eventseye](#).
- Other: [EU Export Helpdesk](#), [Kwintessential](#).

For more information, see [CBI Finding Buyers](#) in the Pipes and Process Equipment sector.



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This survey was compiled for CBI by Globally Cool – Creative Solutions for Sustainable Business in collaboration with CBI sector expert Josef Jilek.

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