

Part III

Analysis of Company Information

In 2002 and 2003 Heinz H. Pariser Alloy Metals and Steel (SA) visited stainless steel consumers in North America, Western Europe and Asia. With the exception of 25 visits to Western European companies, South African representatives of the Fridge committee attended all of these meetings.

For the purpose to discuss BPSFC supply opportunities from South Africa, 1,350 companies were contacted, of which 778 responded.

1. Organisation of Meetings

In general, the interest to hear about BPSFC supply opportunities from South Africa was weak in all three target regions. It was difficult to find adequate counterparts in the stainless steel fabricating industry or to interest people for the idea to purchase BPSFC from overseas. Of the responding 778 companies approx 700 companies were not willing to meet for discussion of this subject.

Most frequently given reasons for non interest:

- **Lack of time**
- **In-house production process: no use of BPSFCs at all**
- **Purchased volumes too small**
- **Companies do not produce anymore (cutlery, flatware)**
- **BPSFCs available nearby**
- **South Africa too far away to supply BPSFCs in time**
- **Some people clearly expressed that they do not like South Africa as country (negative image of Africa)**

Visited Companies by Area / Country

500/15/T1(4)

North America	Asia	Western Europe		
<p><i>- United States</i></p> <p>Autofry Beverage Air Bon Chef CDC Elkay Insinkerator Lambertson Industrie Marlo Manufacturing MG Newell Corp. Moyer Diebel / Champion National Bar Systems Perlick Corporation Polar Ware Spartanburg Stainless Vollrath Company LLC Wells / Bloomfield</p>	<p><i>- China / Hong Kong</i></p> <p>Artsstar Chigo Kangbao Rixing Rongsheng Wah Keung Wei Yit <i>- Malaysia</i> BT Engineering Jinhui Juramatics Kim Ban <i>- South Korea</i> INI Steel Tong Yang Moolsan</p>	<p><i>- Italy</i></p> <p>Alessi Becchetti Candy Electrolux Enofrigo ELICA Foinox IME LSI Merloni Ronda Smeg Whirlpool Zani <i>- France</i> Charvet Fours Fringand SEB</p>	<p><i>- Germany</i></p> <p>Blanco Blefa Blomberg Hupfer Krones Meiko Mueller Pott Rational Rösle Schmolz & Bickenbach Schrader Wiegand (GEA) <i>- Switzerland</i> Franke Forster Hamo Stöcklin</p>	<p><i>- United Kingdom</i></p> <p>Alumask Grundy Counterline GDA Hiram Wild Olympic Pland Stainless Viscount <i>- Netherlands</i> ATAG Hendi Ifö-Kampri Roba SSP Lichtenvoorde</p>
Total 16	Total 13	Total 46		

In addition to the above mentioned companies, five associations were visited in China and South Korea. These, however, were contacted for background information and are thus not included in the forthcoming BPSFC analysis.

In the following sections, background to the visits in Europe, America and Asia is presented.

2. Synopsis of Visits

After the visits were concluded, a file with “Company Profiles North America, Western Europe and Asia” was prepared and handed over to IDC/SASSDA/DTI. In this file, detailed information not only on the visited companies, but also on the telephone interviews is contained and available for further reference. In the following, a synopsis describe the overall attitude and expectations of the visited firms.

2.1 Visits in Western Europe

The people met at the 46 companies in Western Europe were interested in information about South Africa's BPSFC supply opportunities and the impression was created that there are many other (mostly local) companies that offer BPSFCs. In many cases, companies were reporting on long term relationships with companies and people they know personally.

The most positive reaction experienced during the visits was the offer to send drawings to South Africa (Stöcklin) for quotations of course. Such an offer might be a good starting point for future cooperation.

Big fabricators visited are white good producers, small household appliances and sinks manufacturers. In these product groups, the mass product manufacturers are highly concentrated:

Around 10-15 companies share the global appliance market (Electrolux, Whirlpool, Candy, Merloni, BSH, Miele, Teka (Spain), LG, Samsung (both Korea), Arcelik (Turkey), Maytag (USA)). They are facing the entry of a new cheap competitor from China (Haier) which may be followed by further new entrants from China or even India.

Both the sinks and household appliance market are shared between five companies:

Product	
Appliances	Electrolux, Whirlpool, Candy, Merlomi, ELICA
Household Appliances	SEB
Kitchen Aid/sinks	Blanco, Franke
Beverage Plants	Krones

The advantage to supply to the big companies is the opportunity to sell large quantities of standardised products. The disadvantage is that there is only a finite number of big consumers.

After the discussion, the stainless steel consumption of these big companies can than be estimated as follows:

Product	SS Demand In '000 tpa	Of which BPSFC In tpa
White Goods	150	7,500
Small Household Appliances	15	3,500
Sinks	40	4,000

Most of the visited companies have common strategies:

- Wide product range offered: Companies can not make all parts / products / components in-house
- companies manufacture globally, they have a worldwide system of subsidiaries with own requirements
- complex purchasing organisation (washing machine divisions in a company may have other purchasers than refrigerators),
- pressure to reduce cost,
- it is difficult to achieve fast decisions due to complex company organisation.

The product programs offered at fabricators consist of

- products manufactured by themselves ("core business")
- and products bought in

to complete the product range offered. Manufacturers of white goods for instance also offer microwave ovens but purchase them in Asia. SEB also buys finished appliances from competitors and sell them under their own name. For these by-products, companies are always interested in getting new suppliers.

There are also some parts almost all visited companies were interested in: stainless steel cabinets, doors and railings for appliances. However, they prefer a nearly finished component ready for assembly, to a half-finished BPSFC they have to process in further steps.

Another interest identified was for simple blanks for washing machine drums and pot manufacturing at Whirlpool and SEB.

ELICA's, Krones' and Merloni's manager indicated straight away that they were not interested in South African BPSFC supply now or in future. Elica already has a production division making cabinets, doors etc. not only for themselves and but also for other companies; Krones does not use and Merloni's current company policy is not to buy BPSFCs from sources outside Italy. Other companies (Candy, Electrolux, Whirlpool) indicated that it might be difficult to supply BPSFCs to them due to the complex company organisations. Very often different committees or people from different countries have to discuss and decide before a company will make a decision about implementing BPSFC supply.

Big producers have also semi-independent buyers at subsidiaries. Electrolux for instance was interested in supply options to Egypt, where they produce washing machines under license. This could perhaps be a back door entry. Other companies (Whirlpool and Merloni) have also subsidiaries outside the envisaged target markets that might have their own purchasing ideas.

Big companies are facing strong competition and the white good companies know the structure of their competitors and know who is supplier or which cost the others might have. So they are always interested to find better suppliers delivering the same constant quality at lower cost.

The transparency in the white goods / small household appliances / sinks business might even lead to a big success if a BPSFC supplier could prove that he can offer competitively at better cost. The other fabricators will be automatically interested as well.

Most respondents stressed that they are looking for cheaper supply options than they currently have. South Africa is unfortunately not considered as possible supplier because it is not in the people's mind every day as China, for example. Additionally, people are sceptical about receiving quality from South Africa.

Some companies had the same BPSFC suppliers for a long time. The companies Donelly and Ametech supply SEB with stampings for many years. Italian BPSFC companies supply mostly into Northern Italy.

Medium and Small Sized Companies

All other visited companies can be subsumed to this group:

Product	
Appliances	ATAG, Blomberg, GDA and Smeg
Cutlery / Flat- and Holloware	Pott, Hiram Wild (both cutlery), Alessi, Becchetti, Zani Serafino, Rösle
Catering / Ovens	Charvet, Counterline, Enofrigo, Foinox, Fours Fringnand, Hendi, Hupfer, Ifö-Kampri, Rational, Viscount Catering
Sinks / Sanitaryware	Pland Stainless
Processing Equipment / Containers / Vessels	IME, Hamo, Müller GmbH, SSP Lichtenvoorde
Building / Construction	Forster
Chemical Equipment	GEA Wiegand

The companies mentioned above consume all less than 5,000 tpy of stainless steel each. Some of them – for instance Pott and Hiram Wild – use even below 100 t per annum.

There are also some similarities between most of them:

- Product ranges limited, specialised in a certain group of products (exceptions: Alessi and Smeg) or market niches
- Companies manufacture only at one location
- Purchasers are responsible for all products bought in
- Pressure to reduce cost only in some segments (i.e. catering)
- No company hierarchy

Appliance makers face the pressure from big companies. Therefore GDA and Blomberg are not independent anymore, while ATAG's strategy has become to assemble. Such a situation could make it a perfect company for start of a BPSFC supply. However, there might be some resistance (distance, suppliers in the neighbourhood) to overcome for South African sources.

Cutlery / Holloware makers strategy has developed differently: premium products in an unique design are offered. For all of them design is everything. Not one of the European companies produces standard designed mass product cutlery or pots. They also try to find their own distribution solutions: Pott or Alessi sell only in selected shops.

Manufacturers are forced to state the difference to imported standard products from Asia. If they don't, they would either die or have to shift production to China. Some companies (Alessi, Rösle) even chose a mixed strategy: some of their products are manufactured domestically, others (more standardised products) are made by partners in Asia.

Catering represents one of the interesting segments for future BPSFC supply in Europe. The segment is struggling with severe problems (stagnation, low prices, over-capacities). One way to overcome these problems is to buy standard parts from other companies. But catering companies have to sell single solutions to each customer. Therefore a considerable part of the work they do is still done by hand. Parts they are always interested in are gastronomic containers, inserts for displays or simple parts (tubing, stabilisation parts etc.). The numbers of the standardized products sold reach from a few hundred to thousands.

The processing industry is not an important segment for BPSFC. Manufacturers are very specialised in one or two products only. The companies visited have all in-house processing equipment, but they are interested to buy in special finished parts nevertheless. Therefore it might be of interest to approach them for supply of such products.

The companies in this section have a simple purchasing structure: One person is responsible for all purchased products. Therefore the statements by Becchetti, Blomberg, Foinox, Fours Fringnand, GDA, Hamo, IME, Müller and Viscount Catering that they are definitely not BPSFC consumers, can not be doubted. They could be very valuable however, for other purposes: cutlery and holloware manufacturers might be future design partners in the South African industry; Pland and GEA Wiegand might be

interested to source finished products or start a long term partnership with South African manufacturers of finished products.

South Africa could also be an interesting country for investment in new businesses of the visited companies, even those that are not interested in BPSFCs.

Many of the companies in this field survived in special niches where the cost pressure is lower or have a developed unique product that can not easily be copied by other companies. They companies are not forced to find alternatives to existing systems of material / product procurement.

Special Segments

Some companies are not “fabricators” of BPSFCs. These European companies are:

- LSI, Roba and Schmolz + Bickenbach, which are stainless steel distributors and
- Ronda, which is a BPSFC manufacturer and would be competitor to South Africa.

There may be possibilities to supply automotive parts to Schmolz + Bickenbach. Ronda is an interesting specialist company using 2,000 tpa of stainless steel. As BPSFC supplier, they offer gastronorm containers in different sizes, furniture parts (drawers), cabinets and doors. They do not make only simple blanks, they offer value added products and components that can be used in assembling and also mail boxes as special product offered. This could also be a strategy for South African companies.

Summarising the W. European visits, the following table shows a breakdown of the visited companies into “Prospective Customers” and “Not Interested”

	Prospective Customers	Not Interested
Italy	Alessi Candy Electrolux Enofrigo Merloni Smeg Whirlpool	Becchetti Elica Foinox IME LSI Ronda Zani Serafino
France	Charvet SEB Group	Fours Fringnand
Germany	Blanco Hupfer Meiko Rational Rösle	Blefa Blomberg Krones Müller Pott Schmolz+Bickenbach Schrader Wiegand (GEA)
Netherlands	ATAG Hendi Ifö-Kampri SSP Lichtenvoorde	Roba
Switzerland	Franke Forster Stöcklin	Hamo
UK	Alumask Grundy Counterline Pland Stainless	GDA Hiram Wild Olympic Catering Viscount Catering
TOTAL	24 Companies	22 Companies

2.2 Visits in North America

In total 16 companies were visited in the United States. They were mainly concentrated in the East Coast area and the Chicago region.

In contrast to the European companies, most were small to medium sized companies. They expressed a certain interest in receiving BPSFCs from South Africa. However, there are some hurdles to overcome to succeed in the North American market. For instance, South Africa specifically has to face the price competition from Asia and in-house production strategy of some producers. These invested in modernisation of in-house production facilities over the last years and it would be difficult to compete in such circumstances. Obviously, only a massive cost advantage from overseas supply could make them rethink their strategy.

The visits were focussed on the segments catering equipment, cutlery, flat- and holloware and sinks. Visited companies were Autofry, Beverage Air, Bon Chef, CDC, Elkay, In-Sink-Erator, Lambertson, Marlo, MG Newell, Moyer Diebel, National Bar Systems, Perlick, Polar Ware, Spartanburg Stainless, Vollrath and Wells/Bloomfield,

Autofry is a medium sized deep fryers manufacturer. The company is open for discussion and they have an assembly strategy making it interesting for South African BPSFC suppliers. Parts supplied to them could be doors and cabinets. However, supply volumes are limited due to the small number of products manufactured. A supply to Autofry could only become interesting if other and similar companies in the region would also consider buying from South African sources.

Beverage Air manufacturers beverage production equipment, pizza and sandwich preparation lines. A product supplied to them could be door cut outs or complete doors. However, door volumes are small and a general decision about outsourcing would have to be taken first.

Bon Chef is a small supplier to the food service industry such as catering companies. The company has own production equipment but imports finished products such as chafers and flatware from China and South Korea. Bon Chef is prepared to send drawings for finished parts supply to interested companies in South Africa.

CDC makes stainless steel tanks and containers for chemical industry, winery and brewery applications. The company is small but is interested in stainless steel sheet and IBC containers from South Africa. BPSFC supply is not relevant for them.

Elkay is a manufacturer of sinks. The company is equipped with all necessary in-house production facilities. It seems to be difficult to supply BPSFC to them.

In-Sink-Erator explained that they are interested only in fittings. They manufacture everything still in-house. They have to be considered as not interesting for future supply.

Lambertson (sinks / sanitaryware) is another case because the company generally sources a large portion of their products from overseas. Major suppliers are from China, South Korea and Taiwan.

Marlo Manufacturing makes food service equipment. The company produces over thousand different products. Currently, they are interested in bowls for sinks, sourced in South Korea at present. South African supply could be an alternative.

MG Newell: the company is interested in pumps, valves, fittings and tubings for in-house made processing and packaging equipment. Production is hardly standardised. Therefore, it will be difficult to offer BPSFCs to them. The company is competitor to ALFA Laval, APV and the German company Krones.

Moyer Diebel: the company manufactures two standardised types of industrial dish washers for hospitals, schools and canteens. They have invested in production facilities for doors, cabinets and other parts which earlier might have been supplied as BPSFCs from South Africa.

National Bar Systems: National Bar produces bar equipment and beverage equipment for bars. The production is not very standardised. Small quantities of BPSFC might be supplied from South Africa.

Perlick: the company is bar and beverage equipment, tapping equipment and brewery fittings (installation of bars) maker. There seems to be a supply option for non-patented parts for which they are looking for new suppliers.

Polar Ware: production of cutlery. Finished products are of interest but BPSFC are difficult to sell to Polar Ware.

Spartanburg Stainless Products produce beer kegs, IBC containers and automotive parts. In beer kegs and IBC containers they are the dominating company in the United States. They would be interested in co-operation with South African beer keg and IBC container manufacturers. They are no potential user of BPSFCs.

Vollrath: the company is the largest supplier of deep drawn stainless steel insets. They already purchase insets from other companies (China for instance). South Africa's quality and price has to compete with the Chinese offers. Vollrath's decisions to buy are commercially driven.

Wells / Bloomfield: Wells / Bloomfield manufacture commercial cooking equipment for restaurants. The company is developing a global sourcing strategy, of which supply from South Africa could be a part. But the company also has facilities to produce BPSFCs themselves. Therefore, it might be difficult to supply Wells / Bloomfield.

The following table gives an overview by prospective and non-prospective clients for BPSFCs.

	Prospective Customer	Not Interested
North America	Autofry	Elkay
	Beverage Air	In-Sink-Erator
	Bon Chef	MG Newell
	CDC	National Bar Systems
	Lambertson	Perlick
	Marlo	Spartanburg Stainless
	Moyer Diebel	
	Polar Ware	
	Vollrath	
	Wells / Bloomfield	
TOTAL	10 Companies	6 Companies

2.3 Visits in Asia

In Asia, visits to 13 companies and 5 associations in China/Hong Kong, Malaysia and South Korea were made.

The aim of the visits was different to the aim of the European and American visits. It was clear from the beginning that the Asian markets can be no potential market for South African BPSFC supply. The intention was to find out about how the Asian market is working.

Companies visited were mostly small to medium sized apart from Chinese Rixing and Chigo Air-Conditioning companies. All companies except Kangbao, Rongsheng and Chigo work in the metal goods sector. Kangbao and Rongsheng are electrical appliances companies, meaning rice cooker ovens, microwave ovens, sterilisation equipment for restaurants. Chigo Air-Conditioning manufacturers air conditioning systems for houses, partly in co-operation with South Koreans.

In general, the visited companies can not be considered so-called “sweat shops”. Most production processes were fully automated. The in-house production concept was used at each of the companies. They also follow a “zero waste” strategy: that there is no waste or scrap at the end of production processes. The companies use remaining parts to make other products out of it or sell them to other companies.

Several companies, such as Rixing and Chigo, work in co-operation with operations abroad but do not use parts from overseas.

In general, two types of companies have to be distinguished in China:

- companies mainly working for the local market (Rongsheng, Kangbao, Chigo) and
- export products manufacturers such as Rixing and the other visited cutlery and flatware manufacturers.

Compared to European or American companies visited the workforce was much higher as some simple processes (for instance bending / packaging) are still done by hand. The working time in China is higher than in Malaysia or South Korea. The workers still have a six day working week with 48 hours. At bigger companies, employees live in blocks on the factory ground. The payment varies. In cities it is normally three times higher than in the countryside. Labour cost are between US\$ 300 and 1,000 per month. It is mentioned that due to tax reasons hidden salary parts are paid in addition such as rent or food. However, most of the companies made a clean and well-organised impression.

In general, Chinese were interested in two things: to get a foot into new export markets (South Africa) and to find people for new investment in China (from South Africa).

Visits to Chinese associations made clear that there is also regional competition for investments. In general, regional organisations such as the visited Jiangmen Bureau of Foreign Trade and Economic Cooperation support investors in finding business partners in China, market information or building ground. The regional office in Jiangmen concentrated for instance on flatware and cutlery producers.

Rixing was one of the projects they supported. The company is brandnew, has a full automatic production process and already a throughput of 10,000 tpy of stainless steel. The company works in co-operation with European flatware producers. The factory was absolutely clean and equipped with latest machinery. Compared to Rixing, cutlery companies visited in Europe (Hiram Wild and Pott) were more in the nature of a sweatshop than Rixing.

Rixing can stand as an example for a modern cutlery / flatware complex investment in South Africa. They have low labour cost, high productivity and modern design. Design is developed in Europe by business partners for which Rixing is working. Their output is destined more for the European / American market than for the Asian market.

It is obvious that Asian companies learnt to export well designed flatware and cutlery to Europe and America. They are in this business long enough to know what the Western markets want. South African companies could possibly profit from this knowledge if they can find partners in Asia.

Business in China works in a different way than in Germany or the United States. Everything is linked to a personal basis in a kind of network system. Companies know each other very well and competitors knew up front that we intended to visit both companies. Chinese entrepreneurs are also very open for new ideas to suggest or to find out if there are additional opportunities to make business. It was typical in the meetings that Chinese came up with new ideas and other people that could be interesting to talk to.

The Malaysian companies made a poorer impression. They were smaller, older, less export oriented and less organised. It seems that it also a question of different mentalities. In the visited areas Kuala Lumpur and Ipoh, many companies were working in garages. The products were not high and production and other organisation was a little bit chaotic.

Visited companies in South Korea made a more westernised impression. The salaries are lower than in Europe and America but much higher than in the nearby Chinese market. The visited South Korean company Tong Yang Moolsan is both a re-roller and cutlery manufacturer. They already have a subsidiary for cutlery in China where they can benefit from cost advantages. They said that many Korean companies shift part of their production to China. In general, the Koreans are very patriotic and do not easily shift production to other countries, but it seems that in some product segments it is impossible to stay in Korea if a company has to survive.

The visited South Korean steel association expressed their special interest to work together with South African companies to develop the South African stainless steel building and construction segment. They emphasised that they are interested to export South Korean knowledge of stainless steel in buildings, a technology in which South Korea is leading globally.

	Prospective Customer	Not Interested
China / Hong Kong		Artsstar
		Chigo
		Kangbao
		Rixing
		Rongsheng
		Wah Keung
		Wei Yit
Malaysia		BT Engineering
		Jinhui
		Juramatics
		Kim Ban
South Korea		INI Steel
		Tong Yang Moolsan
TOTAL		13 Companies

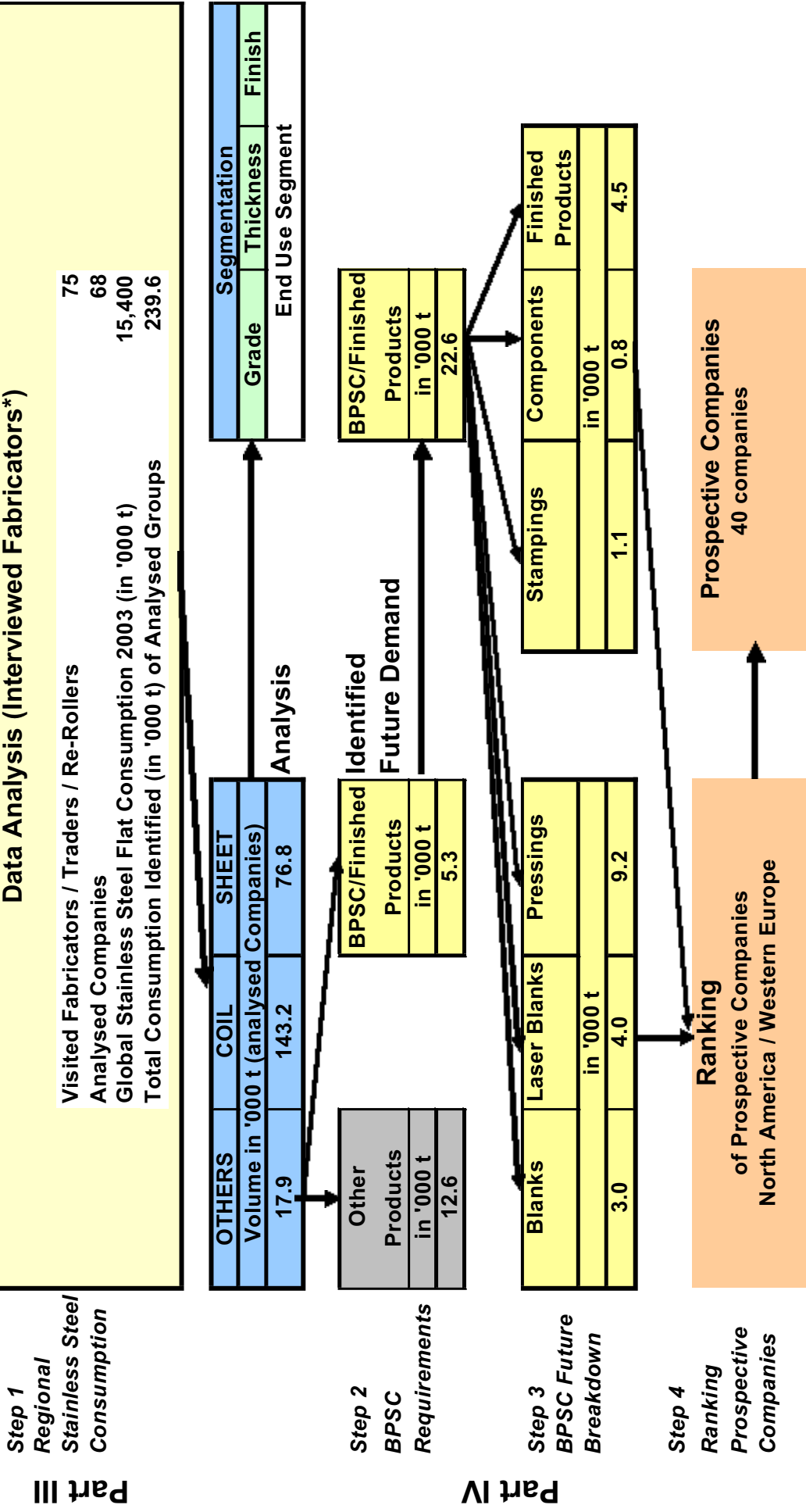
3. Company Demand Analysis

In this *Data Analysis* section, the information gathered on the interviewed companies identified as stainless steel users and thus, potential BPSFC users, are discussed in terms of:

- Total stainless steel consumption
- Total stainless steel consumption by end use sectors
- BPSFC consumption and future requirement
- Companies interested in supply of BPSFCs from South Africa
- Top Prospects for Potential Supply with BPSFCs (including short profiles of important fabricators)

The following picture describes the basic structure of this chapter. Firstly, data of visited companies are analysed by product group, grade, thickness and surface finishes (step 1). This results in identification of BPSFC demand (step 2). Secondly, the identified BPSFC requirement is broken down into blanks, laser blanks, pressings, stampings, components and finished products (step 3). At last, identified BPSFC consumers are ranked and classified into a “prospective” or “non-prospective” cluster (step 4).

Basic Structure of Part III & IV



*) selected fabricators excluding traders and producers

3.1 Stainless Steel Use of Visited Companies

The stainless steel consumption of all the targeted companies amounted to 239,600 t.p.a. Judging from the high volumes of stainless steel used in these regions, it would seem that overall good stainless steel supply opportunities exist.

The major portion of this consumption is centred in Western Europe where large manufacturers with often-high stainless steel usage are found. The majority of the stainless steel used is in the form of coil (74%) and sheet (18%). These companies often have long-term relationships with major stainless steel suppliers and enjoy certain benefits such as discounts that will make them reluctant to easily reconsider their material purchase options.

The portion of “other” material, which includes BPSFC and finished products, is small, amounting to about only 0.9% of the total consumption. From the onset this should indicate that the potential market for BPSFC is not very large and that volume requirements should theoretically be limited. However, some companies did express interest along with certain expectations, so that South African suppliers will have to employ particular strategies in their approach to ensure success.

3.1.1 Stainless Steel Product Mix

While 75 companies have been visited during this canvass, 68 out of them could be used as basis for this analysis:

Total 75 visited companies

- 3 traders
- 1 re-roller
- 3 unavailable information from ATAG, Becchetti and Enofrigo.

Basis 68 companies for this analysis.

It was decided to use for this chapter not only the information of the 40 companies that were found to be “prospective”, means possible clients. It was thought counterproductive not to use any information that became available from the visits.

The synopsis shows the breakdown of total tonnage of the canvassed companies from different angles. Details for the segments follow on the next pages.

The next table gives an overview about distribution by segments. Details are given on the following pages.

Consumption Structure of Interviewed Companies

Product Mix (in '000 t)									
Product Form		Grade		Thickness		Surface Finish		End Use	
Item	in '000 t	Item	in '000 t	Item	in '000 t	Item	in '000 t	Item	in '000 t
<i>Coil</i>	143.2	304	137.3	0.5 - 0.7	133.8	No.1	2.3	<i>Metal Goods</i>	79.1
<i>Sheet</i>	76.8	316	3.2	0.8 - 1.0	46.1	IIIb	4.5	<i>Electro</i>	126.4
<i>Others</i>	17.9	430	88.5	1.2 - 2.0	42.7	IIIc	78.8	<i>Engineering</i>	11.6
			Others	8.9	2.5 - 4.5	15.3	IIId	136.6	<i>Building & Construction</i>
<i>Allocated</i>	238.0		238.0		238.0		238.0		241.3
<i>Non-Allocated</i>	1.7		1.7		1.7		1.7		0.0
Total	239.6		239.6		239.6		239.6		241.3

500/21/T1

3.1.1.1 Products Forms:

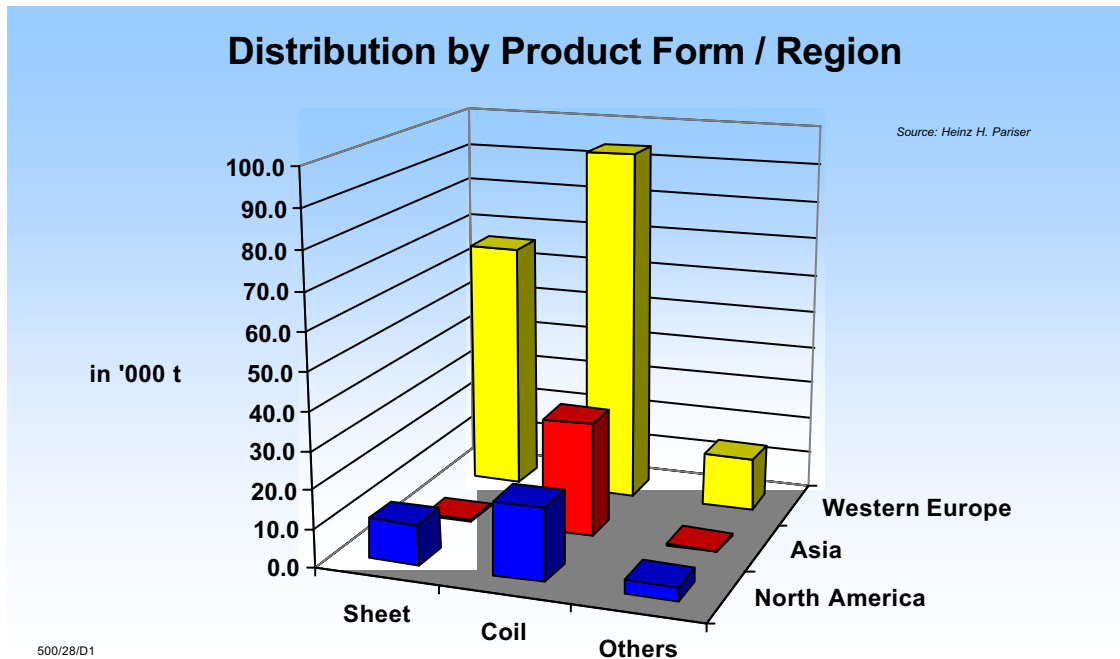
The largest overall demand was recorded for coil products, accounting for 61.5% of the recorded stainless consumption.

Demand of Selected Regions by Product Form

500/28/ProductGroups1

Region	Sheet	Coil	Others	Total
	in '000 t			
North America	10.6	19.1	3.5	33.1
Western Europe	66.1	94.0	14.0	174.0
Asia	0.2	30.1	0.5	30.8
TOTAL	76.8	143.2	17.9	238.0
in %	32.3	60.2	7.5	100.0

The majority of the companies in this analysis are situated in Western Europe, therefore its tonnage is also over proportional in the overall analysis. In West. Europe coil is the most used product type (54%) followed by sheet (38%). The profile is quite similar for North America, yet Asia has an affinity for mainly coil material (99%).



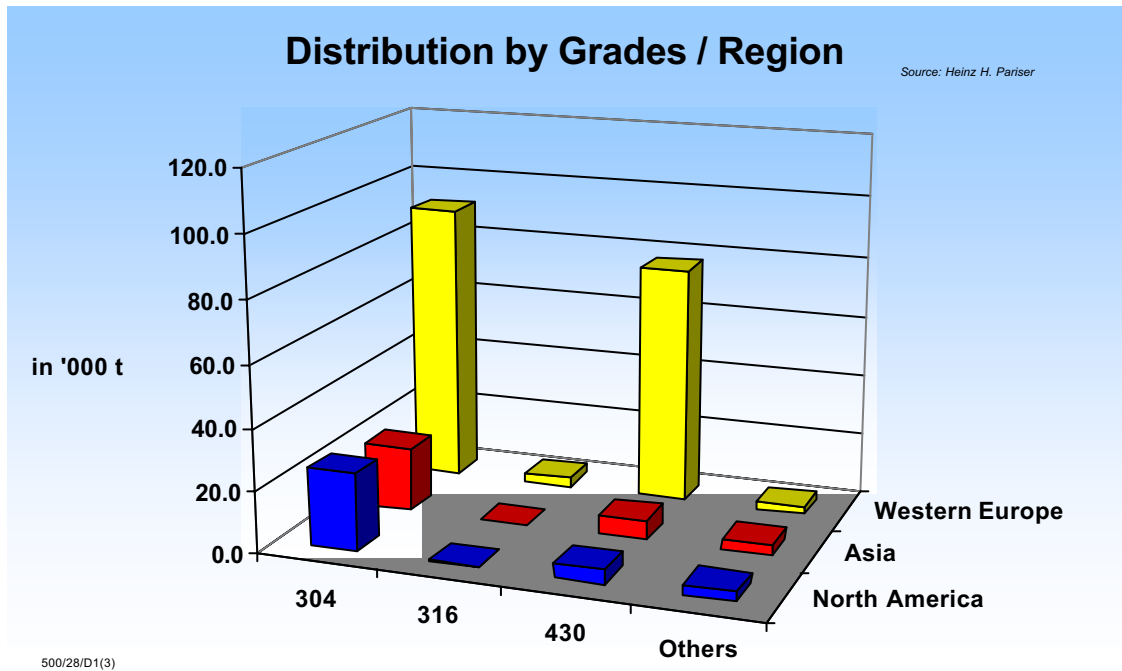
3.1.1.2 Grades

Not surprisingly, the data for consumption by grade reveals that the Grade 304 remains the dominant grade used in all three regions. However, in Western Europe, the interest in Grade 430 is also high (45%). 430 is used in the appliance industry, which was one major interest Sphere of this report. Others include grades such as 301, 305, 321, 420, 430 or 409, used mostly sporadically or by certain individual companies.

Demand of Selected Regions by Grades

500/28/Grades1

Region	304	316	430	Others	Total
	in '000 t				
North America	25.1	0.3	4.6	3.1	33.1
Western Europe	91.3	2.9	77.5	2.3	174.0
Asia	20.9	0.0	6.5	3.4	30.8
TOTAL	137.3	3.2	88.5	8.9	238.0
in %	57.7	1.3	37.2	3.7	100.0



3.1.1.3 Thickness

The predominant thickness of material applied is in the range of: 0.5 mm – 0.7 mm (56%) 0.8 mm – 1.0 mm (19%) respectively 1.2 mm – 2 mm (18%). Only some 6% of material was used in thickness of 2.5 mm – 4.5 mm.

The preference for material thickness seems varied in the different regions. In Western Europe the trend is towards thinner material (0.5 mm – 0.7 mm) with a 62% ratio. The usage is distributed more evenly in the North American market with the following ratios: 0.5 mm – 0.7 mm accounting for 27%; 0.8 mm – 1.0 mm for 28% and 1.2 mm – 2.0 mm for 43%.

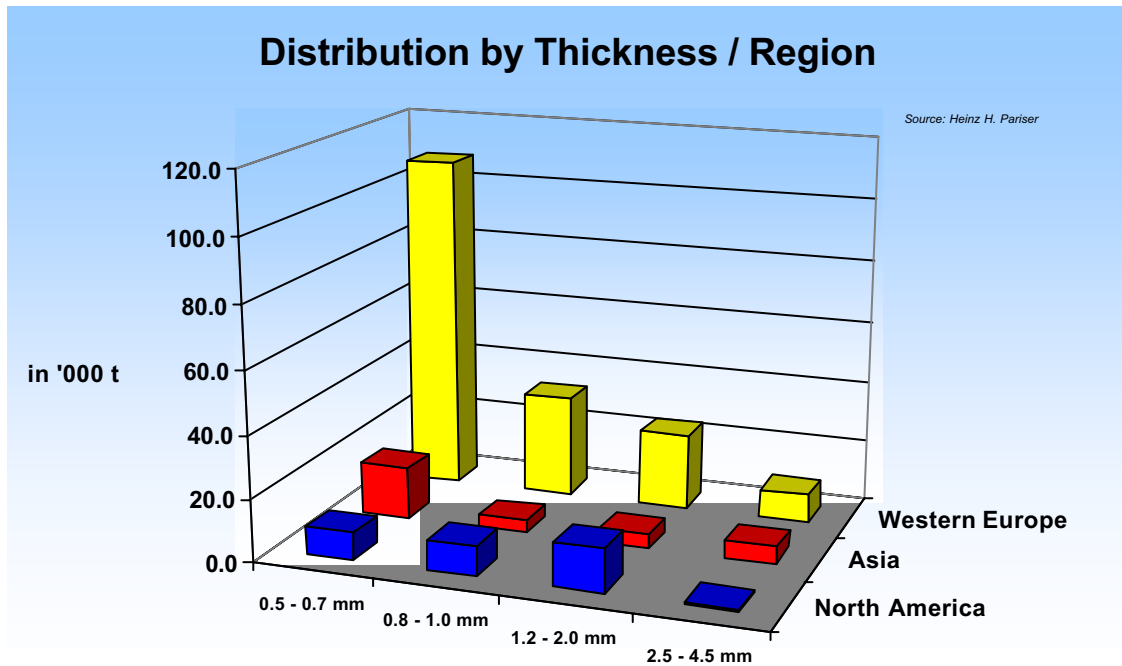
The Asian market shows interest mainly in 0.5 mm – 0.7 mm (55%) and fairly evenly usage of the remaining thickness material.

Material thinner than 0.5 mm or thicker than 4.5 mm was not identified. Material thinner than 0.5 mm is typically precision strip and thicker than 4.5 mm hot rolled plate or sheet. Both categories were not in the focus of the study. Thickness between 2.1 mm and 2.4 mm was also not identified.

Demand of Selected Regions by Thickness

500/28/1 thickness1

Region	0.5 - 0.7 mm	0.8 - 1.0 mm	1.2 - 2.0 mm	2.5 - 4.5 mm	Total
	in '000 t				
North America	9.0	9.4	14.1	0.6	33.1
Western Europe	108.1	32.7	24.2	9.1	174.0
Asia	16.8	4.0	4.4	5.5	30.8
TOTAL	133.8	46.1	42.7	15.3	238.0
in %	56.2	19.4	18.0	6.4	100.0



500/28/D1(2)

3.1.1.4 Surface Finish

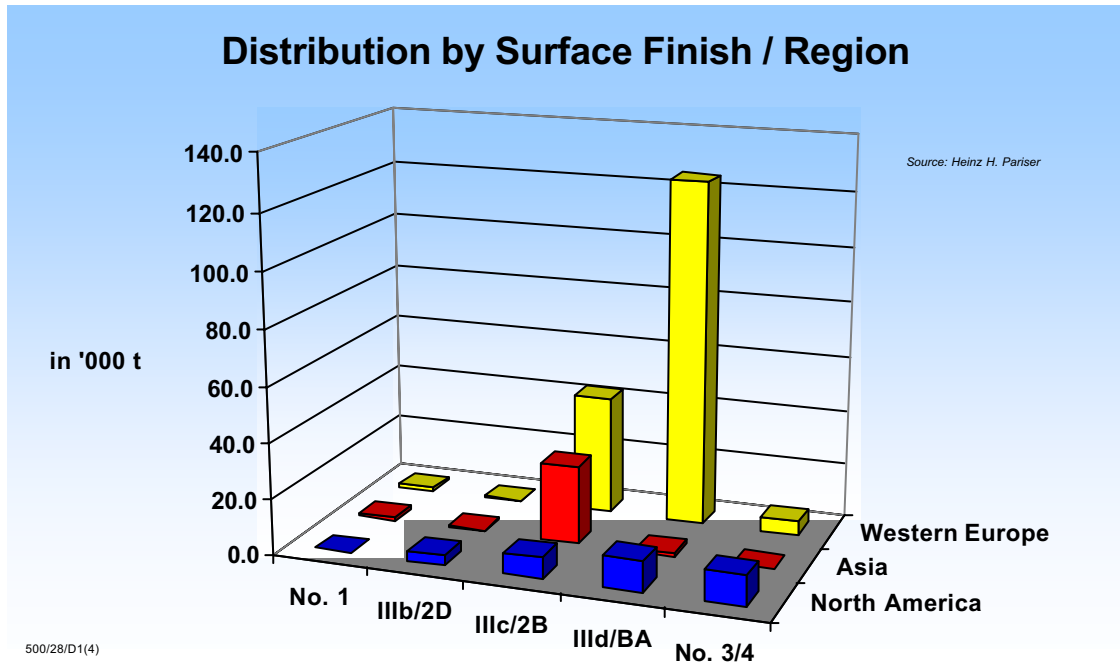
The surface finish probability leaned towards the Bright Annealed finish - IIIId/BA – with 57%, followed by IIIc/2B with 33%.

Considering regions, the most used surface finish for material is individualised. In Western Europe, the predominant surface finish used is IIIId/BA (71%). In North America the trend is towards IIIId/BA (32%) and No.3/4 (33%) and in Asia the predominant choice is IIIc/2B (92%).

Demand of Selected Regions by Surface Finish

500/28/Finishes1

Region	No. 1	IIIb/2D	IIIc/2B	IIIId/BA	No. 3/4	Total
	in '000 t					
North America	0.1	3.8	7.7	11.1	10.5	33.1
Western Europe	1.2	0.3	42.9	124.5	5.1	174.0
Asia	1.0	0.5	28.3	1.0	0.0	30.8
TOTAL	2.3	4.5	78.8	136.6	15.7	238.0
in %	1.0	1.9	33.1	57.4	6.6	100.0



3.2 End Use Material Combinations

“Material combinations” explains the use of stainless steel according to the concept of probabilities. Given that the information on stainless steel consumption was collected in terms of consumption by product form, dimension and finish – without the interdependence of these variables being considered – the data was analysed on the basis of probabilities. It is assumed, and has been credited to be, that these variables of stainless steel are independent. This means that stainless steel could take any form – coil, sheet or other – be any grade, dimension and finish:

$$P(\text{coil}) = \frac{\text{Qt. Coil consumed}}{\text{Total Qt. Stainless Steel consumed}}$$

For example, the probability of the stainless steel taking on the form of coil (= P (coil)) is equal to the total amount of coil consumed by a segment (Qt. Coil consumed) divided by the total stainless steel consumed by that segment (Total Qt Stainless Steel consumed).

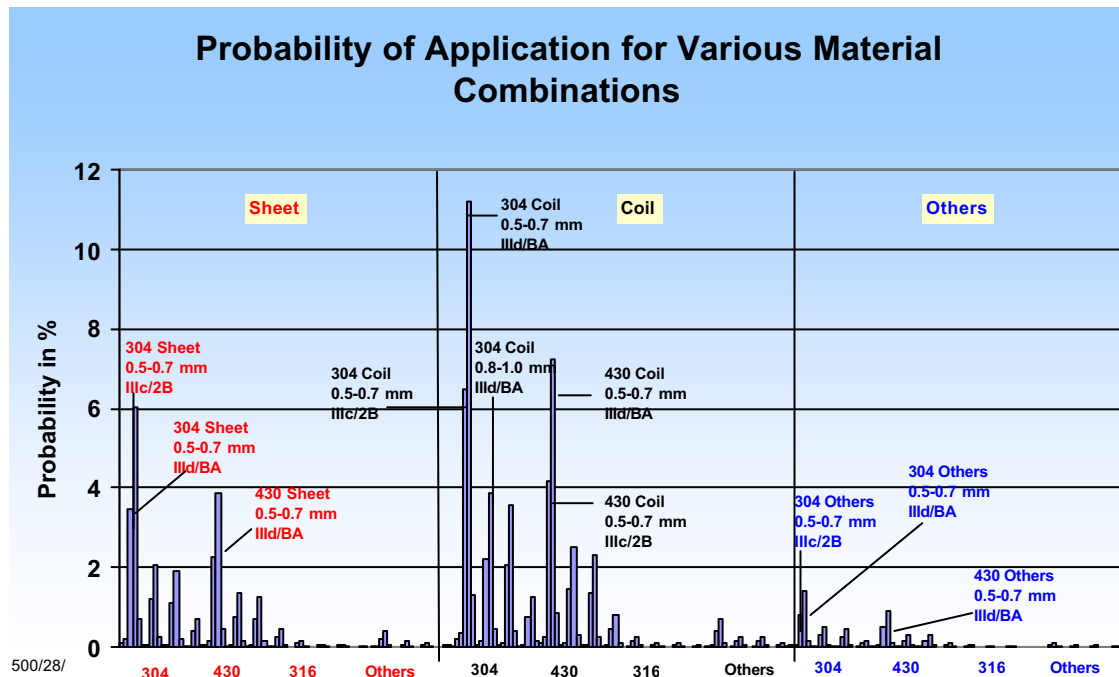
To assess the probability of a company’s stainless steel order, taking the form of, e.g. Coil, 304, 0.8 – 1.0 mm, IIIc/BA; the probabilities for each of these variables are multiplied.

P (Coil) x P (304) x P (0.8 – 1.0 mm) x P (IIIId/BA)

On hand of these results, we are able to assess the most common stainless steel product combinations applied within each end use sector.

In total, 240 combinations are possible for the use of stainless steel by product type, grade, thickness and surface finished. Combinations presented below give the most common combinations identified at visited companies. Each column of the following graph represents one individual combination. The graph combines the above discussed variables neatly, indicating what a possible order for stainless steel material could consist of. The top three combinations are:

1. Coil; 304; 0.5 mm – 0.7 mm; IIIId/BA
2. Coil; 430; 0.5 mm – 0.7 mm; IIIId/BA
3. Coil; 304; 0.5 mm – 0.7 mm; IIIc/2B



3.2.1 Breakdown of Stainless Steel Consumption in End Use

One way of establishing the future developments of a stainless steel using company is to consider its activities in the particular end use sector it operates in. The information presented in this chapter – stainless steel consumption by product, grade, thickness and surface finish - is now further applied to the various end use sectors:

- Metal Goods
- Electro & Electronic
- Engineering
- Building & Construction

Note that tubular goods and transport were omitted as none of the selected companies qualified.

The following table and graph present a breakdown by end use and regions:

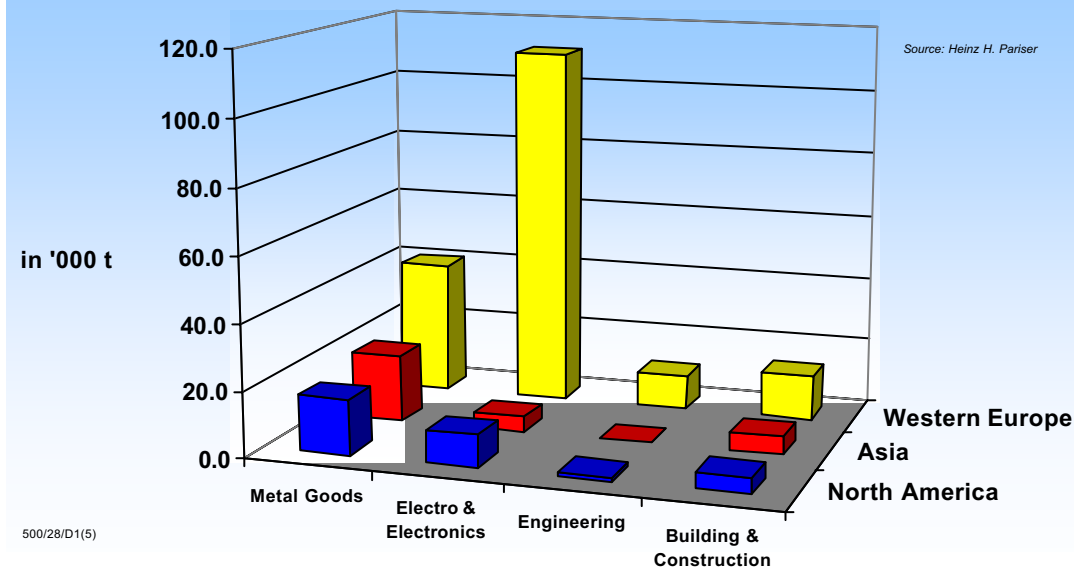
Demand of Selected Regions by End Use Segment *)

500/28/EndUse1

Region	Metal Goods	Electro & Electronics	Engineering	Building & Construction	Total
	in '000 t				
North America	17.1	10.0	1.1	5.0	33.1
Western Europe	40.7	111.0	10.4	13.6	175.7
Asia	20.7	4.5	0.1	5.6	30.8
TOTAL	78.5	125.4	11.6	24.2	239.6
in %	32.7	52.4	4.8	10.1	100.0

*) including ATAG, Becchetti, Enofrigo

Distribution by End Use Segment / Region



Electromechanical / Electronics present the most prominent group with a share of 52% on stainless steel consumption at interviewed companies. This strong position a result of the concentration of appliances producers among the visited companies in Western Europe. Second ranking is metal goods, which is the by far largest segment in North America (52 %) and Asia (67 %).

The following table breaks down further the End-uses of Stainless Steel by product type, grade, thickness and surface finish.

Distribution by Major Segments

500/01/T1

Structure by	Metal Goods	Electro & Electronic	Engineering	Building & Construction	Total
in t					
Product Type *)					
Sheet	16,882	48,470	7,471	4,010	76,833
Coil	53,605	70,000	0	19,640	143,245
Others	7,318	5,970	4,089	500	17,877
TOTAL	77,805	124,440	11,560	24,150	237,955
Grade					
304	61,846	43,249	9,310	22,902	137,307
316	790	380	1,790	250	3,210
430	9,005	78,980	100	460	88,545
Others	6,164	1,831	360	538	8,893
TOTAL	77,805	124,440	11,560	24,150	237,955
Thickness *)					
0.5 - 0.7 mm	22,219	102,220	704	8,705	133,848
0.8 - 1.0 mm	21,514	16,190	955	7,477	46,136
1.2 - 2.0 mm	26,978	5,950	1,821	7,968	42,717
2.5 - 4.5 mm	7,094	80	8,080	0	15,254
TOTAL	77,805	124,440	11,560	24,150	237,955
Surface Finishes					
No. 1	1,003	0	1,290	0	2,293
IIIb/2D	3,772	350	356	50	4,528
IIIc/2B	44,930	17,154	7,975	8,753	78,812
IIId/BA	25,453	97,158	50	13,987	136,648
No. 3/4	2,647	9,778	1,889	1,360	15,674
TOTAL	77,805	124,440	11,560	24,150	237,955

*) deviations: not all details available from interviewed companies

3.2.2 Metal Goods

The majority of the visited companies are grouped under the Metal Goods sector. This sector encompasses mostly flat material uses for hollowware, cutlery, catering equipment, kegs and medical appliances etc.

In the previous chapter, the following end use sectors were mentioned:

- Metal Goods
- Electro & Electronic
- Engineering
- Building & Construction

The **Transport sector** which is not included in the previous analysis of chapter III continues to undergo several changes including some exciting developments for the stainless steel industry. Again, the boost in stainless steel use originates from Asia. India was known to experiment with manufacturing train coaches entirely from stainless steel.

The race for new sources of energy is casting a searchlight on Liquid Natural Gas (LNG). The production of tankers to carry this gas is planned and could offer supply opportunities for stainless steel.

Product Form

Coil products are most applied in this sector (69%) with the majority of the remaining portion being sheet (22%).

Metal Goods - Demand by Product Form

Company	Sheet	Coil	Others	Total
	in t			
Western Europe				
Alessi	500		500	1,000
Alumask Grundy			300	300
Blanco	450	4,050		4,500
Blefa		10,000		10,000
Charvet	400		200	600
Counterline	500			500
Franke AG	40	160		200
Hendi	300		300	600
Hiram Wild		75		75
Hupfer	950	50		1,000
Ifö-Kampri	400		100	500
Müller GmbH	600			600
Olympic Catering	100			100
Pott	80			80
Rational	4,000			4,000
Rösle	200	800		1,000
Ronda	2,500			2,500
SEB Group		6,200	3,800	10,000
Stöcklin		850	150	1,000
Viscount Catering	1,000			1,000
Zani Serafino	500			500
Subtotal	12,520	22,185	5,350	40,055
North America				
Bon Chef	40		60	100
CDC			150	150
In Sink Erator		250		250
Lambertson Industries	2,400		1,600	4,000
Marlo Manufacturing Company	900		100	1,000
National Bar Systems Manufacturing	47		3	50
Polar Ware Company	400	3,600		4,000
Spartanburg Stainless Products	400	3,600		4,000
Vollrath Company LLC	175	3,325		3,500
Subtotal	4,362	10,775	1,913	17,050
Asia				
Artsstar		2,000		2,000
Juramatics		25	5	30
Rixing		10,000		10,000
Tong Yang Moolsan		8,500		8,500
Wah Keung			50	50
Wei Yit		120		120
Subtotal		20,645	55	20,700
TOTAL	16,882	53,605	7,318	77,805
in %	21.7	68.9	9.4	100.0

500/25/Product Groups

□ **Grade**

The overwhelming choice here is Grade 304 that accounts for almost 80% of the material, and only 12% is Grade 430.

Metal Goods - Demand by Selected Grades

Company	304	316	430	Others	Total
	in t				
Western Europe					
Alessi	950		50		1,000
Alumask Grundy	300				300
Blanco	4,500				4,500
Blefa	10,000				10,000
Charvet	600				600
Counterline	250		250		500
Franke AG	198			2	200
Hendi	500		100		600
Hiram Wild			50	25	75
Hupfer	1,000				1,000
Ifö-Kampri	475			25	500
Müller GmbH	450	150			600
Olympic Catering	100				100
Pott	78			2	80
Rational	4,000				4,000
Rösle	1,000				1,000
Ronda	2,500				2,500
SEB Group	7,000		2,400	600	10,000
Stöcklin	650	350			1,000
Viscount Catering	850	75	75		1,000
Zani Serafino	500				500
Subtotal	35,901	575	2,925	654	40,055
North America					
Bon Chef	100				100
CDC	135	15			150
In Sink Erator	250				250
Lambertson Industries	2,400		1,600		4,000
Marlo Manufacturing Company	300		700		1,000
National Bar Systems Manufacturing	50				50
Polar Ware Company	3,400		600		4,000
Spartanburg Stainless Products	1,200	200		2,600	4,000
Vollrath Company LLC	3,325		175		3,500
Subtotal	11,160	215	3,075	2,600	17,050
Asia					
Artsstar	2,000				2,000
Juramatics	25		5		30
Rixing	9,000		1,000		10,000
Tong Yang Moolsan	3,600		2,000	2,900	8,500
Wah Keung	40			10	50
Wei Yit	120				120
Subtotal	14,785		3,005	2,910	20,700
Total	61,846	790	9,005	6,164	77,805
in %	79.5	1.0	11.6	7.9	100.0

500/25/Grades

□ **Thickness**

The choice in material thickness is varied: 35% of the material is between 1.2 mm and 2.0 mm, the balance is almost equally split between 0.5 mm – 0.7 mm (29%) and 0.8 mm – 1.0 mm (28%).

Metal Goods - Demand by Selected Thickness

Company	0.5 - 0.7 mm	0.8 - 1.0 mm	1.2 - 2.0 mm	2.5 - 4.5 mm	Total
in t					
Western Europe					
Alessi		700	300		1,000
Alumask Grundy			300		300
Bianco	1,755	2,475	270		4,500
Blefa			9,850	150	10,000
Charvet	150	170	230	50	600
Counterline	50	125	325		500
Franke AG	30	150	20		200
Hendi	100	200	250	50	600
Hiram Wild	20	30		25	75
Hupfer		850	150		1,000
Ifö-Kampri		190	270	40	500
Müller GmbH		350	250		600
Olympic Catering		75	25		100
Pott	13	19	14	34	80
Rational		3,800	200		4,000
Rösle	40	700	200	60	1,000
Ronda	2,000	500			2,500
SEB Group	3,900	1,750	4,000	350	10,000
Stöcklin			750	250	1,000
Viscount Catering	500	500			1,000
Zani Serafino		350	150		500
Subtotal	8,558	12,934	17,554	1,009	40,055
North America					
Bon Chef			75	25	100
CDC				150	150
In Sink Erator	125		125		250
Lambertson Industries		1,200	2,800		4,000
Marlo Manufacturing Company			1,000		1,000
National Bar Systems Manufacturing	20	20	10		50
Polar Ware Company	3,400	400	200		4,000
Spartanburg Stainless Products		2,600	1,000	400	4,000
Vollrath Company LLC	2,975	350	175		3,500
Subtotal	6,520	4,570	5,385	575	17,050
Asia					
Artsstar	1,500	500			2,000
Juramatics	21		9		30
Rixing	5,500	3,500	1,000		10,000
Tong Yang Moolsan			3,000	5,500	8,500
Wah Keung		10	30	10	50
Wei Yit	120				120
Subtotal	7,141	4,010	4,039	5,510	20,700
Total	22,219	21,514	26,978	7,094	77,805
in %	28.6	27.7	34.7	9.1	100.0

500/25/Thickness

Surface Finish

The preferred surface finishes are IIIc/2B (58%) and IIIId/BA (33%).

Metal Goods - Demand by Surface Finishes

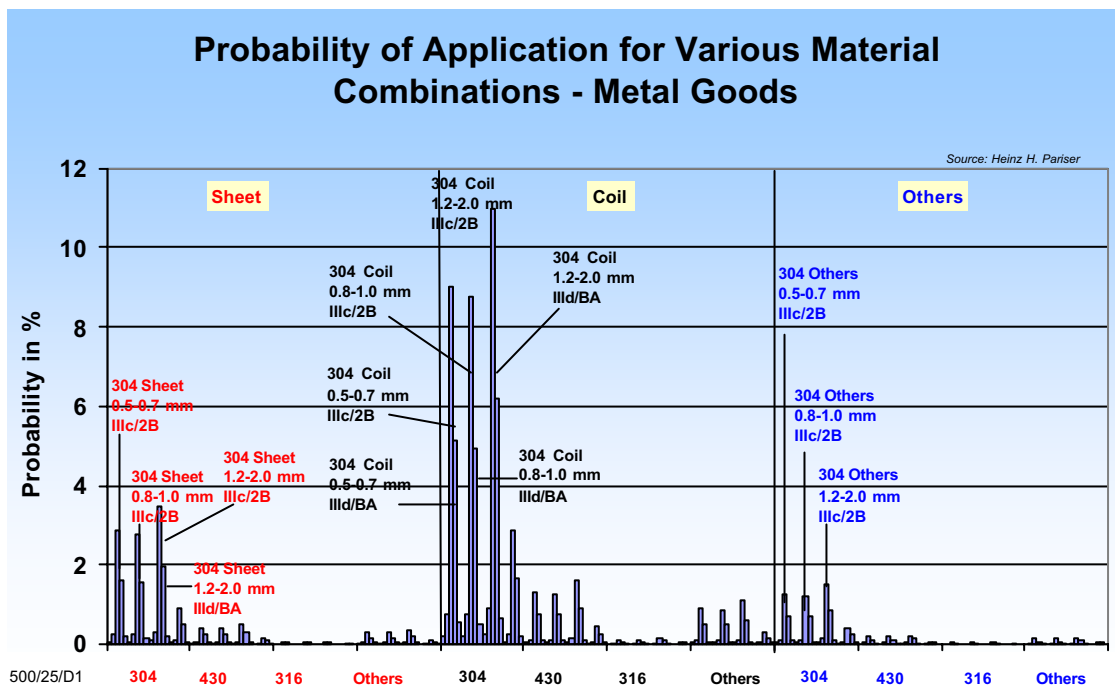
Company	No. 1	IIIb/2D	IIIc/2B	IIIId/BA	No. 3/4	Total
	in t					
Western Europe						
Alessi			400	600		1,000
Alumask Grundy			300			300
Blanco			1,272	3,228		4,500
Blefa			10,000			10,000
Charvet			500	100		600
Counterline					500	500
Franke AG			30	170		200
Hendi				600		600
Hiram Wild				75		75
Hupfer			1,000			1,000
Ifö-Kampri			50	50	400	500
Müller GmbH			600			600
Olympic Catering				100		100
Pott				80		80
Rational			2,400	1,600		4,000
Rösle			250	750		1,000
Ronda			1,000	1,250	250	2,500
SEB Group			1,500	8,500		10,000
Stöcklin			950	50		1,000
Viscount Catering				300	700	1,000
Zani Serafino				500		500
Subtotal			20,252	17,953	1,850	40,055
North America						
Bon Chef				100		100
CDC	3	147				150
In Sink Erator		125	125			250
Lambertson Industries			3,200	400	400	4,000
Marlo Manufacturing Company			1,000			1,000
National Bar Systems Manufacturing			3		47	50
Polar Ware Company			800	3,200		4,000
Spartanburg Stainless Products		3,000	1,000			4,000
Vollrath Company LLC			350	2,800	350	3,500
Subtotal	3	3,272	6,478	6,500	797	17,050
Asia						
Artsstar			2,000			2,000
Juramatics			30			30
Rixing			9,000	1,000		10,000
Tong Yang Moolsan	1,000	500	7,000			8,500
Wah Keung			50			50
Wei Yit			120			120
Subtotal	1,000	500	18,200	1,000		20,700
Total	1.003	3.772	44.930	25.453	2.647	77.805
in %	1.3	4.8	57.7	32.7	3.4	100.0

500/25/Finishes

□ **Material Combinations**

The diagram indicates the following the material combinations that are most likely to be used in the Metal Goods sector. In majority of the cases, the preferred product type is coil, grade 304.

1. Coil; 304; 1.2 mm – 2.0 mm; IIIc/2B
2. Coil; 304; 1.2 mm – 2.0 mm; III d/BA
3. Coil; 304; 0.8 mm – 1.0 mm; IIIc/2B



3.2.3 Electro & Electronic

The highest number of selected companies were grouped under Electro & Electronics uses indicating much activity in the appliance and electrical equipment industries.

The second end use sector is a complex industry as it is heavily linked to consumer trends and technological changes. A large group of the selected companies were placed under this sector as many operate in the appliance and electronic product industries. Many of these companies are large stainless-steel consuming multi-nationals, which make them attractive but impenetrable options. In comparison with Metal Goods, products in this sector are seldom created purely from stainless steel but do contain stainless steel components, e.g. washing machine drums. There is opportunity for producing standardised semi-finished products and other components.

Electronic product manufacturing, such as televisions and mobile phones, use very little stainless steel and certain materials (e.g. nickel containing material) are to be substituted due to cost and technical reasons.

Consumer electronics is still a healthy industry, despite a slow down in some of the Asian markets. The opportunity lies in standardised products, particularly in components for electrical products and electronics. Again, price and quality are the key drivers and since many companies hold long-standing supplier relationships or prefer in-house production, the challenge is clearly defined for South African companies.

White Goods production is already highly concentrated in Western Europe and North America. Producers are under strong price pressure from the retailer side. Therefore, a typical strategy is to produce in a very standardised way under different labels or in the name of a retailer organisation. Another problem they are facing is the competition with low price manufacturers such as Arcelik from Turkey. In this environment some companies are battling to survive such as Blomberg or ELCO Brandt in France.

Kitchen Hoods manufacturers are concentrated in Italy. ELICA is the leading producer in the world. They supply to big players such as BSH, Electrolux or Whirlpool.

Small Appliances Only a handful of companies is left world-wide. Manufacturers are Philips (production facilities shifted to Asia some years ago), SEB and Braun. Most of other brand names belong to one of the mentioned companies. Market leader is SEB in this segment. The price pressure is enormous from the retailer side.

Product Type

Consumers in the Electro & Electronics industry use mostly coil (56%) followed by sheet (39%).

Electro & Electronic - Demand by Product Form

Company	Sheet	Coil	Others	Total
	in t			
Western Europe				
Blomberg		2,500		2,500
Candy		7,000	3,000	10,000
Electrolux		20,000		20,000
ELICA	7,800	200		8,000
Foinox	480			480
Fours Frignand	60			60
GDA		3,750	250	4,000
Hamo	280		70	350
IME	600			600
Meiko	2,000			2,000
Merloni	30,000			30,000
Smeg	2,000	5,000		7,000
Whirlpool		23,500	1,500	25,000
Subtotal	43,220	61,950	4,820	109,990
North America				
Autofry	150			150
Beverage Air	800	3,200		4,000
Moyer Diebel / Champion	1,150		1,150	2,300
Wells / Bloomfield	3,150	350		3,500
Subtotal	5,250	3,550	1,150	9,950
Asia				
Kangbao		3,500		3,500
Rongsheng		1,000		1,000
Subtotal		4,500		4,500
TOTAL	48,470	70,000	5,970	124,440
in %	39.0	56.3	4.8	100.0

500/26/Product Groups

Grade

The preferred grade of stainless steel is the ferritic Grade 430 with a ratio of 64% followed by usage of Grade 304 (35%).

Electro & Electronic - Demand by Selected Grades

Company	304	316	430	Others	Total
	in t				
Western Europe					
Blomberg			2,500		2,500
Candy	1,750	250	8,000		10,000
Electrolux	4,500		15,500		20,000
ELICA	5,200		2,800		8,000
Foinox	415		65		480
Fours Frignand	54			6	60
GDA	200		3,800		4,000
Hamo	320	30			350
IME	600				600
Meiko	1,900	100			2,000
Merloni	5,000		25,000		30,000
Smeg	6,000		1,000		7,000
Whirlpool	8,000		15,700	1,300	25,000
Subtotal	33,939	380	74,365	1,306	109,990
North America					
Autofry	150				150
Beverage Air	3,000		1,000		4,000
Moyer Diebel / Champion	2,185		115		2,300
Wells / Bloomfield Industries	2,975			525	3,500
Subtotal	8,310		1,115	525	9,950
Asia					
Kangbao	500		3,000		3,500
Rongsheng	500		500		1,000
Subtotal	1,000		3,500		4,500
TOTAL	43,249	380	78,980	1,831	124,440
in %	34.8	0.3	63.5	1.5	100.0

500/26/Grades

□ Thickness

Electro & Electronic - Total Demand by Selected Thickness

Company	0.5 - 0.7 mm	0.8 - 1.0 mm	1.2 - 2.0 mm	2.5 - 4.5 mm	Total
	in t				
Western Europe					
Blomberg	1,050	1,450			2,500
Candy	9,600	400			10,000
Electrolux	20,000				20,000
ELICA	5,280	2,720			8,000
Foinox		480			480
Fours Frignand			60		60
GDA	3,800	200			4,000
Hamo		50	300		350
IME		400	120	80	600
Meiko		500	1,500		2,000
Merloni	25,000	5,000			30,000
Smeg	7,000				7,000
Whirlpool	24,000	1,000			25,000
Subtotal	95,730	12,200	1,980	80	109,990
North America					
Autofry			150		150
Beverage Air	1,000	3,000			4,000
Moyer Diebel / Champion	115	115	2,070		2,300
Wells / Bloomfield Industries	875	875	1,750		3,500
Subtotal	1,990	3,990	3,970		9,950
Asia					
Kangbao	3,500				3,500
Rongsheng	1,000				1,000
Subtotal	4,500				4,500
Total	102,220	16,190	5,950	80	124,440
in %	82.1	13.0	4.8	0.1	100.0

500/26/Thickness

The thickness most likely to be used in this sector is primarily 0.5 mm – 0.7 mm (82%), but up to 1.0 mm is also used (13%). Only very few applications require thicker material, but hardly above 2.5 mm.

Surface Finish

Electro & Electronic - Demand of Selected Surface Finishes

Company	No. 1	IIIb/2D	IIIc/2B	IIId/BA	No. 3/4	Total
	in t					
Western Europe						
Blomberg				2,500		2,500
Candy				9,750	250	10,000
Electrolux				20,000		20,000
ELICA			8,000			8,000
Foinox				96	384	480
Fours Frignand			18		42	60
GDA				3,800	200	4,000
Hamo					350	350
IME			486	12	102	600
Meiko			2,000			2,000
Merloni				30,000		30,000
Smeg				7,000		7,000
Whirlpool			1,000	24,000		25,000
Subtotal			11,504	97,158	1,328	109,990
North America						
Autofry					150	150
Beverage Air					4,000	4,000
Moyer Diebel / Champion			1,150		1,150	2,300
Wells / Bloomfield Industries		350			3,150	3,500
Subtotal		350	1,150		8,450	9,950
Asia						
Kangbao			3,500			3,500
Rongsheng			1,000			1,000
Subtotal			4,500			4,500
Total		350	17,154	97,158	9,778	124,440
in %		0.3	13.8	78.1	7.9	100.0

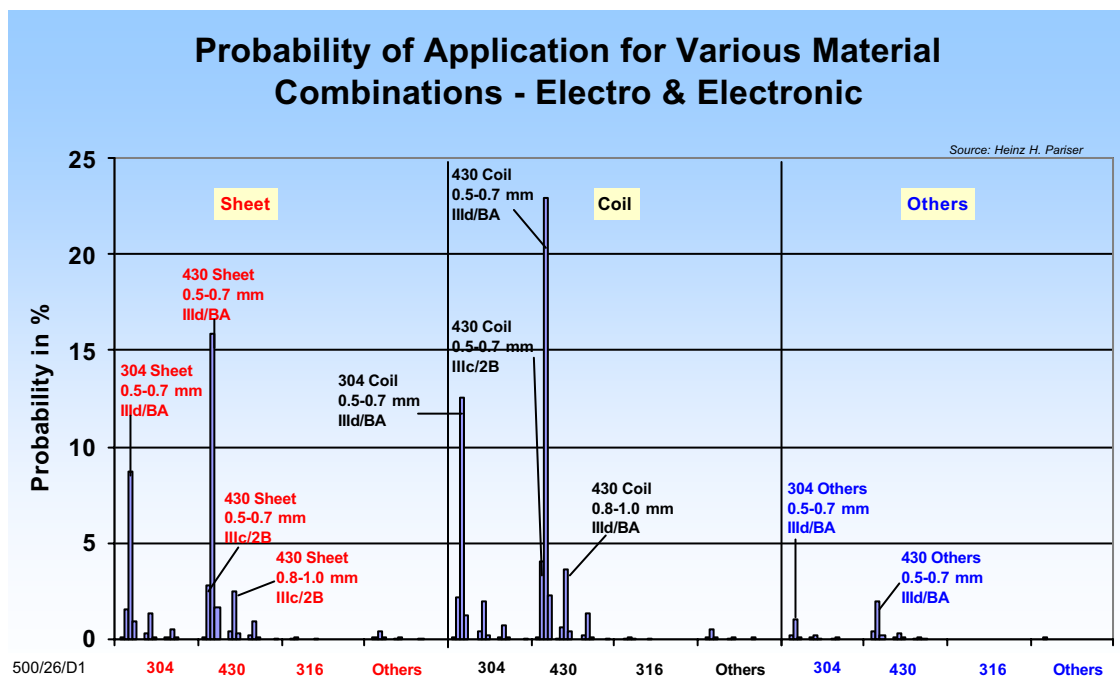
500/26/Finishes

The overwhelming choice for surface finish in this sector is IIId/BA (78%) followed by IIIc/2B (14%).

□ **Material Combinations**

The most likely material combinations are as follows:

1. Coil; 430; 0.5 mm – 0.7 mm; III d/BA
2. Sheet; 430; 0.5 mm – 0.7 mm, III d/BA
3. Coil; 304; 0.5 mm – 0.7 mm; III d/BA
4. Sheet; 304; 0.5 mm – 0.7 mm; III d/BA



3.2.4 Engineering

Renowned companies in developed nations (mostly Europe and America) with varied material requirements dominate the Engineering sector. There is a fairly even spread amongst the material requirements: sheet is the preferred material (64.6%) and the remainder is found as others (35.4%). This is encouraging as “others” imply also BPSFC.

The supply opportunities are complex as most engineering is project related meaning that supply is often once off. It is unclear as to the usage and the future prospects of BPSFC supply.

Heat Exchangers, Vessels

Duplex stainless steel consumption in this product group is increasing. Companies source out standardised heat exchangers and vessels to emerging countries.

Food Processing

Companies are specialised. During the last years beverage filling plants boomed because of a strong demand in plants for PET bottles world wide. However, the fabricators in this business can not be considered as typical BPSFC consumers (low grade of product standardisation).

Product Type

Engineering - Demand by Product Form

Company	Sheet	Coil	Others	Total
	in t			
Western Europe				
GEA Wiegand	1,500			1,500
Krones	3,000		3,000	6,000
Schrader	600		300	900
SSP	1,600		400	2,000
Subtotal	6,700		3,700	10,400
North America				
MG Newell Corporation	65		35	100
Perlick Corporation	656		354	1,010
Subtotal	721		389	1,110
Asia				
Jinhui	50			50
TOTAL	7,471		4,089	11,560
in %	64.6		35.4	100.0

500/27/Product Groups

Grade

The preference in terms of grade is more specific, Grade 304 captures a ratio of 81%, followed by Grade 316 applications of 16%.

Engineering - Demand by Selected Grades

Company	304	316	430	Others	Total
	in t				
Western Europe					
GEA Wiegand	500	700		300	1,500
Krones	5,400	600			6,000
Schrader	425	425		50	900
SSP	1,900		100		2,000
Subtotal	8,225	1,725	100	350	10,400
North America					
MG Newell Corporation	85	15			100
Perlick Corporation	960	50			1,010
Subtotal	1,045	65			1,110
Asia					
Jinhui	40			10	50
Total	9,310	1,790	100	360	11,560
in %	80.5	15.5	0.9	3.1	100.0

500/27/Grades

Thickness

Engineering - Demand by Selected Thickness

Company	0.5 - 0.7 mm	0.8 - 1.0 mm	1.2 - 2.0 mm	2.5 - 4.5 mm	Total
	in t				
Western Europe					
GEA Wiegand			800	1,500	1,500
Krones				5,200	6,000
Schrader				900	900
SSP	300	450	850	400	2,000
Subtotal	300	450	1,650	8,000	10,400
North America					
MG Newell Corporation			40	60	100
Perlick Corporation	404	505	101		1,010
Subtotal	404	505	141	60	1,110
Asia					
Jinhui			30	20	50
Total	704	955	1,821	8,080	11,560
in %	6.1	8.3	15.8	69.9	100.0

500/27/Thickness

In Engineering thicker material is more often applied, illustrated here by the 70% in the 2.5 mm – 4.5 mm range and only 6% in the 0.5 mm – 0.7 mm.

Surface Finish

The most often applied surface finish was IIIc/2B (69%) followed by IIIb/2D.

Engineering - Demand by Selected Surface Finishes

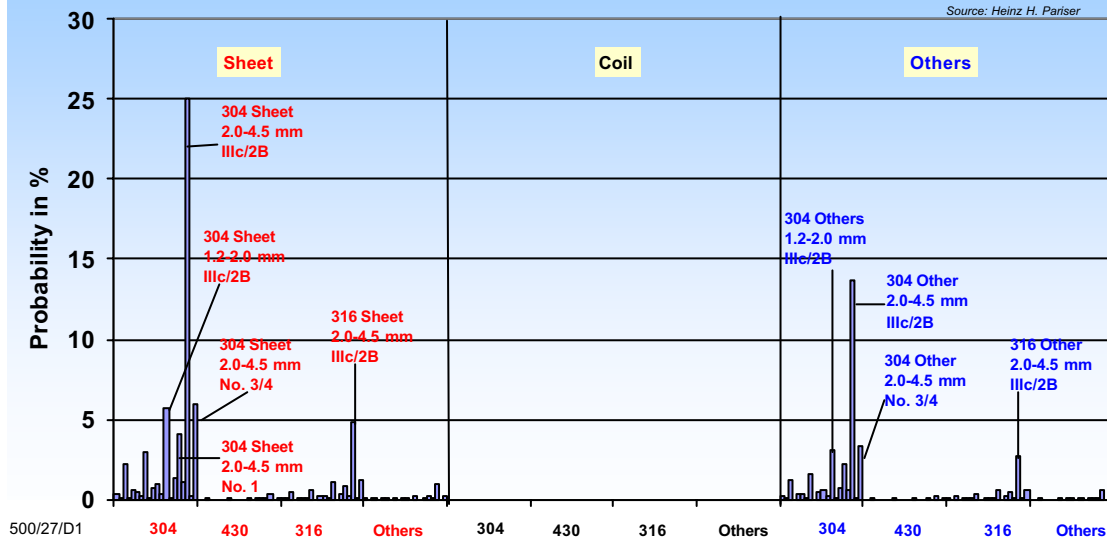
Company	No. 1	IIIb/2D	IIIc/2B	III d/BA	No. 3/4	Total
	in t					
Western Europe						
GEA Wiegand	1,200	200	100			1,500
Krones			6,000			6,000
Schrader			850	50		900
SSP			1,000		1,000	2,000
Subtotal	1,200	200	7,950	50	1,000	10,400
North America						
MG Newell Corporation	50	25	25			100
Perlick Corporation		121			889	1,010
Subtotal	50	146	25		889	1,110
Asia						
Jinhui	40	10				50
Total	1,290	356	7,975	50	1,889	11,560
in %	11.2	3.1	69.0	0.4	16.3	100.0

Material Combinations

This graph illustrates the various material combinations very well:

1. Sheet; 304; 2.0 mm – 4.5 mm; IIIc/2B
2. Other; 304; 2.0 mm – 4.5 mm; IIIc/2B
3. Sheet; 304; 1.2 mm – 2.0 mm: IIIc/2B
4. Sheet; 304; 2.0 mm – 4.5 mm; No 3/4

Probability of Application for Various Material Combinations - Engineering



3.2.5 Building & Construction

The application of stainless steel has always been popular in the Building and Construction sector. The probability data revealed some specifics that could indicate that the stainless steel applied in this sector is relatively standardised.

The Building & Construction industry can suffer most during an economic downturn. However, despite global economic uncertainty, the Building & Construction industries are picking up, particularly in the East. In the Western World, stainless steel usage in architecture is limited to some structural and aesthetic applications. In Asia, stainless steel is very popular and much applied.

Door Frames, Windows Parts

To date, stainless steel doors, door and window frames is not a big market in Europe and America. However, more and more companies offer stainless steel containing products in this segment.

Sinks / Sanitaryware

major producers are Blanco, Rieber and Franke. In America, Kohler and Kindred are well-known. At least, the European producers are already global players with subsidiaries in emerging countries. Franke manufactures already in South Africa. This could be a starting point to attract other producers in this market segment as well.

The data revealed that the material requirements are standardised only coil and sheet. There could be opportunity for component parts and finished products.

Product Type

The most likely materials used in this segment by the selected companies, are coil with a ratio of 81% and sheet with 17%.

Building & Construction - Demand by Product Form

Company	Sheet	Coil	Others	Total
	in t			
Western Europe				
Blanco	750	6,750		7,500
Forster	1,950		50	2,000
Franke AG	760	3,040		3,800
Pland Stainless	150	100	50	300
Subtotal	3,610	9,890	100	13,600
North America				
Elkay	250	4,750		5,000
Asia				
BT Engineering	150		350	500
Chigo		5,000		5,000
Kim Ban			50	50
Subtotal	150	5,000	400	5,550
TOTAL	4,010	19,640	500	24,150
in %	16.6	81.3	2.1	100.0

Grade

The preference for Grade 304 is overwhelming (95%) with the rest split between Grade 316 and Others.

Building & Construction - Demand by Selected Grades

Company	304	316	430	Others	Total
	in t				
Western Europe					
Blanco	7,500				7,500
Forster	1,750	250			2,000
Franke AG	3,762			38	3,800
Pland Stainless	240		60		300
Subtotal	13,252	250	60	38	13,600
North America					
Elkay	4,600		400		5,000
Asia					
BT Engineering	500				500
Chigo	4,500			500	5,000
Kim Ban	50				50
Subtotal	5,050			500	5,550
TOTAL	22,902	250	460	538	24,150
in %	94.8	1.0	0.0	2.2	100.0

Thickness

Building & Construction - Demand by Selected Thickness

Company	0.5 - 0.7 mm	0.8 - 1.0 mm	1.2 - 2.0 mm	2.5 - 4.5 mm	Total
	in t				
Western Europe					
Blanco	2,925	4,125	450		7,500
Forster			2,000		2,000
Franke AG	570	2,945	285		3,800
Pland Stainless		37	263		300
Subtotal	3,495	7,107	2,998		13,600
North America					
Elkay	50	350	4,600		5,000
Asia					
BT Engineering	150		350		500
Chigo	5,000				5,000
Kim Ban	10	20	20		50
Subtotal	5,160	20	370		5,550
TOTAL	8,705	7,477	7,968		24,150
in %	36.0	31.0	33.0		100.0

The need for different thickness as is quite varied although the most preferred thickness is between 0.5 mm – 0.7 mm with a ratio of 36%.

Surface Finish

Building & Construction: Demand by Selected Finishes

Company	No. 1	IIIb/2D	IIIc/2B	IIId/BA	No. 3/4	Total
	in t					
Western Europe						
Blanco			2,728	4,772		7,500
Forster		50		1,250	700	2,000
Franke AG			475	3,325		3,800
Pland Stainless				40	260	300
Subtotal		50	3,203	9,387	960	13,600
North America						
Elkay				4,600	400	5,000
Asia						
BT Engineering			500			500
Chigo			5,000			5,000
Kim Ban			50			50
Subtotal			5,550			5,550
TOTAL		50	8,753	13,987	1,360	24,150
in %		0.2	36.2	57.9	5.6	100.0

Surface finish IIId/BA captured a ratio of 58%, followed by IIIc/2B with 36%. The other finishes in this end use market are ungligible.

Material Combinations

The graph again indicates the most likely combinations for a stainless steel order in the Building & Construction segment:

1. Coil; 304; 0.5 mm – 0.7 mm; IIId/BA
2. Coil; 304; 1.2 mm – 2.0 mm; IIId/BA
3. Coil; 304; 0.8 mm – 1.0 mm; IIId/BA
4. Coil; 304; 0.5 mm – 0.7 mm; IIIc/2B

Probability of Application for Various Material Combinations - Building & Construction

