

Plymouth Tube

Taking manufacturing excellence



Plymouth Tube Co. in the United States is an international manufacturer of specialty tubing in carbon steel, alloy steel, stainless steel and nickel alloys. The company takes much pride in its unique market approach and is keen to develop its international business. *Stainless Steel World* went to Warrenville, IL, to speak with Vice President Sales & Marketing Steve Thornton and General Manager at the company's East Troy facilities, Dan Janikowski to learn more about Plymouth Tube's efforts for achieving "manufacturing excellence".

By Sarah Thompson and Michael van Wijngaarden

"For Plymouth Tube," says Vice President, Sales & Marketing Steve Thornton, "manufacturing excellence is how we create value for our customers. The value may take the form of reliability, responsiveness, lower cost, needs satisfaction, lower cost of ownership, higher inventory turns, etcetera. We are focused on delighting our customers."

Building long-term relationships with its customers is Plymouth Tube's main goal as Mr Thornton further explains: "In order to build up a long term relationship with your customers you need to know what it is they are looking for and work closely with them to find a solution. This is why, with our decentralized organizati-

on, we can put all our energy into finding the right solutions for all of our customers." These customers can be found in the power generation industry, petrochemical industry, oil and gas industry, aerospace industry and the semiconductor industry. In these industries, about 20 per cent of Plymouth Tube's sales are achieved abroad, primarily in India and China.

Plymouth Tube's core products are precision tubing and extruded shapes in carbon steel, alloy steel, stainless steel, nickel alloys and titanium and from a product strategy perspective the company is currently very focused on increasing its foreign business, where it can be very competitive. Mr Thornton adds: "In order to fulfill

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our international goals we have set up offices in China, Japan and Mexico and have defined very specific marketing campaigns for those countries. We have also identified a unique market approach which enables us to serve our customers reliably and effectively." This unique approach involves dealing directly with end users as well as fabricators and engineering companies, which comprise the company's wide customer base.

UNIQUE

"In order to best serve the market, we have set up a number of dedicated teams, as mentioned above, across the world. Our market-oriented teams consist of both sales and technical staff and are focused on acquisitioning new business in their individual market areas. They give us a tremendous competitive edge because of their unique focus on developing a specific market segment and their ability to respond quickly to our customers' needs by spending time with them." Mr Thornton was keen to emphasize how Plymouth Tube likes to provide its customers with the right expertise, the right knowledge and the right products. "We want to make sure we cater precisely to the customers' individual tubing needs. This approach has downsized our market reach but has tremendously improved the amount of business we have."

TOOLS OF THE TRADE

In order to be successful, Plymouth Tube's market teams use specific tools that help them increase business and offer the highest possible service to customers. One way they company does this is to organize face-to-face meetings. "Simple as it may sound, these meetings

have more to them than one might think," says Mr Thornton: "Customer interviews and customer surveys are the key to our face-to-face meetings. Developed exclusively for our top 20 per cent of customers, these meetings are aimed at fine-tuning and understanding the customer's needs before we come up with a tailor-made solution." General Manager at the company's East Troy facilities, Dan Janikowski added: "We have developed a spreadsheet that compares many of the different factors in the material selection for power plant condensers, which accounts for about 70 per cent of our business. Information gathered at the meetings is entered into the spreadsheet, which allows us to come up with attractive solutions for the customer's tubing needs. The second step is to organize a seminar on-site with the customers' technical and management staff to present that solution. The company is never obliged to buy our solutions, even at this stage, but this method has proven to be very successful. About 75 to 80 per cent of these meetings result in additional business." Further to deploying the company's highly-trained market teams, Plymouth Tube also organizes regular assessments with its key customers in order to strengthen the face-to-face channel and improve its services if necessary. "These assessments are geared to identify areas of improvement or additional services we can offer our customers in order for them to be successful. If our customers are successful, so are we."

KNOWLEDGE & CONSULTANCY

Customer assessments often lead to free-of-charge consulting services that Plymouth Tube offers to its customers. With increasingly more and more end user companies cutting back on in-house expertise, Plymouth Tube feels it their responsibility to offer its customers the knowledge and expertise essential to material selection and the product's applications. Mr Janikowski commented: "It is essential to be able to provide our

About Plymouth Tube Company

Established in 1924, Plymouth Tube Company is a privately held international manufacturer that operates a large network of metalworking mills in the United States. The company is a global supplier of specialty tubing in carbon steel, alloy steel, stainless steel and nickel alloys. Plymouth Extruded Shapes, a member of the Plymouth Tube Company, manufactures near-net extruded shapes in carbon steel, alloy steel, stainless steel, nickel based alloy and titanium. Plymouth Tube manufactures tubing in sizes from 1/2 to 2-1/2 inches (12 – 65 mm) in diameter, and in continuous lengths up to 150 feet (45 m). To produce feedwater heater tubing Plymouth Tube has state-of-the-art U-bending and stress relieving equipment. Such tubing is used in fossil, nuclear, geothermal and hydroelectric power stations throughout the world.



customers with in-depth technical information about our products and their applications. As the number of technical experts decrease in end user companies, through retirement for example, the more need there is for expertise at the other end of the supply chain. We have this in house here at Plymouth Tube."

"The sales and customer service teams need to be able to offer support in a wide variety of areas before, during and after the sale," Mr Janikowski continued. "We often need to find a different approach to customer service, depending on the customer and its specific needs. We can then provide a full package of technical and commercial information including advice on material selection for example. We are always up front about a material's performance and the cost considerations, which is essential considering the highly delicate nature of the applications our products are used in. With companies that tend to be more conservative in their material selection, we consider it our mission to tell them there are often far more cost-effective material solutions than the ones they may be used to, and this is irrespective of whether or not our products can provide the solution."

SEA-CUREÒ

Of course Plymouth Tube can offer its customers cost-effective solutions and high-quality products which lie core to the company's success. The company specializes in the production of ferritic stainless steel products. When asked which product should be in the lime light Mr Thornton replied: "SEA-CUREÒ". SEA-CUREÒ accounts for a large portion of the company's product range which was added with the acquisition of the company's East Troy facilities in 2005. Mr Thornton

Xtra-Low Stress

Plymouth recognized in the mid 1960's the value of producing a 300 series steel tube that has the lowest residual stress possible thus making it less susceptible to stress corrosion cracking. Ultimately, the power generation industry lowered its recommendation for specifying feedwater heater tube circumferential hoop stress from 10 ksi to 5 ksi as a result of this capability has now supplied the energy industry for over four consecutive decades with near zero residual stress in both seamless and welded for pressure applications.

The Louisiana facility is a redraw facility and as a result can provide small heavy wall tubes that can be used in power generation high pressure steam feedwater heaters. Many of these units are now approaching 40 years in service cycle. Another important aspect of the tubing is the cold work imparted on the weld even for wall gauges down to 20 BWG. An ID tool is employed on the product at this facility followed by a controlled atmosphere continuous bright anneal.

Plymouth successfully markets its products in Europe, the Middle East, India, Japan, Taiwan and South Korea. The success is attributed to its core product strengths that provide the customer a high quality value and its technical team that is strategically located in or near these markets.

added: "SEA-CUREÒ is one of the products we want to globalize. It offers the same type of performance as titanium at a fraction of the price and therefore offers a great alternative for companies that seek an economically priced high-performance alloy."

As an alternative to titanium, this product is an interesting development. General Manager Dan Janikowski was quite happy to disclose part of the secret of SEA-CUREÒ. "It is a high-performance material that boasts high chromium and high molybdenum levels, resulting in a material that can provide similar corrosion performance to titanium. On the other hand, SEA-CUREÒ has a very low nickel-content which gives it a tremendous price advantage."

SEA-CUREÒ has been around since 1980. Since then, 70 million feet has been delivered, of which 58 million feet has gone into power plant condensers. Mr Janikowski mentioned that all the power plant condensers that have chosen SEA-CUREÒ are still using the original tubing they supplied.

To finish off the ideal tubing solution and manufacturing excellence, Plymouth Tube offers same day respon-

Manufacturing Excellence at Plymouth Tube and how it is taken to the marketplace

Manufacturing Excellence is a way of doing business that Plymouth Tube utilizes to drive waste out of all of our processes. It consists of assessing each individual value stream of the business and creating value from performing actions like 80/20 analysis, Topgrading, having safe, clean and orderly work areas (5-S), TPM, standard work, etc. Plymouth discovered that this same philosophy can be applied to our top customers. This is implemented by conducting regular "Discovery Interviews" with our customers. The purpose of the discovery interview is to identify unmet or unknown customer needs. These are supported by offering a full range of value added services that center around helping the customer remove waste from his processes, either by Plymouth personnel or by outside consultants. By offering these services we show our customers that we are willing and committed to invest in their long term success as well as ours.

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se to customer inquiries and guarantees on-time delivery. This includes a no fault return policy, so that if a customer is not satisfied with a product, Plymouth Tube will take it back without discussion. Mr Thornton: "Plymouth Tube's commitment to customer satisfaction goes even beyond its return policy. If a customer is not satisfied with the product, Plymouth Tube will send a mill representative to the customers' location in order to try to fix the problem on site, minimizing any impact to their organization."

EXCELLENCE

Clearly, SEA-CUREÒ provides Plymouth Tube with a powerful tool for expanding into other markets as well. The company has therefore set the wheels in motion to expand its market reach. Mr Janikowski: "We are committed to globalizing a number of products, including SEA-CUREÒ. For this specific material we have already identified a growing demand from industries that involve desalinization applications. Within these industries there has been a move away from more expensive titanium and cupro-nickel materials in favor of SEA-CUREÒ. The fact that we have recently won a large order from a European company illustrates the confi-

About SEA-CUREÒ

SEA-CUREÒ stainless steel is a super ferritic alloy designed for high resistance to chloride corrosion, especially in seawater. Commercially introduced in 1979, SEA-CUREÒ stainless has been a success story, with more than 70,000,000 feet (~20,000,000 meters) of the alloy operating in various applications around the world. These include seawater cooled steam condensers, desalination, chemical heat exchangers and medical devices. During the past twenty years the composition was refined to produce today's high-performance alloy. SEA-CUREÒ stainless is unique in the stainless steel family because of this excellent chloride pitting and crevice corrosion resistance, exceptionally high strength, low work hardening rate, extremely high modulus of elasticity and exceptional resistance to stress corrosion cracking. The combination of high elastic modulus and high strength allows the use of thinner cross section tubing without vibration. SEA-CUREÒ is a registered Trademark of Plymouth Tube Company. SEA-CUREÒ tubing is manufactured and tested to the requirements and tolerances of ASTM A-268, A-803, ASME SA-268 and SA-803 and U.S. Patents 4,119,765 and 4,942,922.

dence that the industry has in this product." In conclusion, a unique product range, well thought out customer service and expert technical support combine to make what Plymouth Tube calls 'manufacturing excellence'. Mr Thornton: "We achieve this manufacturing excellence by providing extraordinary performance from each of our mills, exceptional quality products and successful international sales, all these elements are essential to our success." Then there is the competitive edge, which according to Mr Thornton and Mr Janikowski is Plymouth Tube's international team.