



Duplex Pipes

Prepared for :

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Introduction

Duplex Supply Inc. are specialized manufacturers, dealers of premier quality Duplex Pipes. We are an innovation driven company, and provide with the best services ever. Right from processing, assembling to logistics, we emphasize a great on the quality. Duplex Pipes are one of our fastest selling products. Rated best in the industry, we are positively recommended by our clients. Duplex Supply Inc. are the suppliers of Duplex Pipes over the past decade. We are one of the in-competitive brands in alloy industry. We go with the saying “Customer is king” thus we make our Clients buying feel esteemed and exemplary. Today, our industry is filled with high volume but low-quality suppliers which are below the line with what the industry requires. Because of such situations, it results in lapse of the quality of goods and hence, the entire project. We also look after it that our industrial Hazards are dumped appropriately and not polluting the environment also we have such procedures in factory by which the harm-full chemicals are directly ventilated which doesn't harms environment and houses located around our factory. We present customers in various countries for all size demand. We have always kept our Vision clear which serves best in acquiring our mission. We modify the changes required in industry with changing time and keep getting superior Control over the quality of our product. The main aim of this organization is to provide commodities of determined quality, in addition to making our client's buying experience world-class and a memorable one. Today our firm is one of the admirable Organization in Industry, Which makes us secluded in such a Competitive Industry. Our Product Reliability and performance has made us one of the top brands. Because of such service our clients recommend us to other prospectors which is more than enough to prove our distinction in steel industry. Duplex Supply Inc. Works in consideration of Clients, Environment and best Quality we do no compromise in these matters. We bring in tremendous experience to the industry. Our process consists of procedural development cycles: designing (also customization provided), the engineering process, machining the raw materials, assembling the parts, testing (hundred percent in house testing), packing and warehousing, logistics and documentation.



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Product

How are duplex pipes made?

Duplex Pipes are long, hollow tubes that are used for a variety of purposes. They are produced by two distinct methods which result in either a welded or seamless pipe. In both methods, raw steel is first cast into a more workable starting form. It is then made into a pipe by stretching the steel out into a seamless tube or forcing the edges together and sealing them with a weld. Duplex Pipes are building material made from an alloy of iron and carbon. It is widely used in the construction industry, but can also be found in a variety of manufacturing and industrial applications. In plumbing systems, pipe can be used to transport liquids and gases for commercial and residential buildings, as well as in municipal water supplies. This material also acts as a structural component for scaffolding and framing systems. The first methods for producing pipe were introduced in the early 1800s, and they have steadily evolved into the modern processes we use today. Each year, millions of tons of steel pipe are produced. Its versatility makes it the most often used product produced by metal industry. Duplex Pipes are found in a variety of places. Since Duplex Pipes are strong, they are used underground for transporting water and gas throughout cities and towns. They are also employed in construction to protect electrical wires. While pipes are strong, they can also be lightweight. This makes them perfect for use in bicycle frame manufacture. Other places they find utility is in automobiles, refrigeration units, heating and plumbing systems, flagpoles, street lamps, and medicine to name a few.



Design

There are two types of Duplex pipes, one is seamless and another has a single welded seam along its length. Both have different uses. Seamless Duplex Pipes are typically more light weight, and have thinner walls. They are used for bicycles and transporting liquids. Seamed pipes are heavier and more rigid. They have a better consistency and are typically straighter. They are used for things such as gas transportation, electrical conduit and plumbing. Typically, they are used in instances when the pipe is not put under a high degree of stress. Certain pipe characteristics can be controlled during production. For example, the diameter of the pipe is often modified depending how it will be used. The diameter can range from tiny Duplex Pipes used to make hypodermic needles, to large pipes used to transport gas throughout a city. The wall thickness of the pipe can also be controlled. Often the type of metal will also have an impact on pipe's strength and flexibility. Other controllable characteristics include length, coating material, and end finish.



Materials

Duplex is becoming more common. They are being offered by all the major stainless steel mills for a number of reasons:

- Higher strength leading to weight saving
- Greater corrosion resistance particularly stress corrosion cracking
- Better price stability
- Lower price

There is a conference on the subject of duplex every 2-3 years where dozens of highly technical papers are presented. There is a lot of marketing activity surrounding these grades. New grades are being announced frequently. Yet, even with all this interest, the best estimates for global market share for duplex are between 1 and 3%. The purpose of this article is to provide a straightforward guide to this steel type. The advantages and disadvantages will be described.

Principle of Duplex

The idea of duplex dates back to the 1920s with the first cast being made at Avesta in Sweden in 1930. However, it is only in the last 30 years that duplex steels have begun to “take off” in a significant way. This is mainly due to advances in steelmaking techniques particularly with respect to control of nitrogen content. The standard austenitic steels like 304 (1.4301) and ferritic steels like 430 are relatively easy to make and to fabricate. As their names imply, they consist mainly of one phase, austenite or ferrite. Although these types are fine for a wide range of applications, there are some important technical weaknesses in both types:

Austenitic – low strength (200 MPa 0.2% PS in solution annealed condition), low resistance to stress corrosion cracking

Ferritic – low strength (a bit higher than austenitic, 250 MPa 0.2% PS), poor weldability in thick sections, poor low temperature toughness

The basic idea of duplex is to produce a chemical composition that leads to an approximately equal mixture of ferrite and austenite. This balance of phases provides the following:

- Higher strength – The range of 0.2% PS for the current duplex grades is from 400 – 550 MPa. This can lead to reduced section thicknesses and therefore to reduced weight. This advantage is particularly significant for applications such as:
 - o Pressure Vessels and Storage Tanks
 - o Structural Applications e.g. bridges
- Good weldability in thick sections – Not as straightforward as austenitics but much better than ferritics.
- Good toughness – Much better than ferritics particularly at low temperature, typically down to minus 50 deg C, stretching to minus 80 deg C.
- Resistance to stress corrosion cracking – Standard austenitic steels are particularly prone to this type of corrosion. The kind of applications where this advantage is important include:
 - o Hot water tanks
 - o Brewing tanks
 - o Process plant
 - o Swimming pool structures



Quality

Duplex Supply Inc. strongly has characteristic Quality control over all our products and our esoteric work quality and product quality makes us one of the top manufacturers in Industry. We provide Best Quality Duplex Pipes. Quality is our peak concern. We sustain high Quality Standards through our Committed Personnel and Sound Infrastructure. Not even a single fitting is left without a 3 layer inspection of chemical test, mechanical test, visual inspection, dimension inspection, pressure test, gauge test and conformity to the order. Quality Assurance System is beacons by Axioms that support our work culture which hooks in respect, self-administration, imaginative-ness and self-articulation. Duplex Supply Inc. is backed by all the possible certifications of a world class mill including ISO 9001:2008, ISO 14001:2007, OH-SAS 18001: 2004 & CE-PED 97/23/EC. We are also members of various renowned agencies and Chambers of Commerce including MASSMA, EEPC, FICCI, FIEO, Indian Merchants Chamber etc.



We are Highly Concerned about our customer's expectations.



We Strain To always act with probity and Honesty.

We Aim To be Paramount in our Industry.

We do our absolute best to esteem our commitments.

We are delighted to be saturated with loads of order 50 days schedule ahead of time. Every single piece of our product is attached with test certificates and authentication certificate of our Quality Product. Day by Day we keep moving to improve Quality of our products for our client. We also welcome any third party inspection from an agency nominated by the customer to comply with NACE 3.2 Certification if required by customer at an extra costs satisfaction. Our Quality Management systems and work plans ensures pursuance of total Quality Management. We never compromise in terms of Quality of Duplex Pipes and also for our other products. We follow stringent Quality Norms and ethics by monitoring each production process which leads in supreme product quality. With years of experience in manufacturing we offer High Quality, Lower cost and Best service. Quality Assurance begins with understanding Customer's needs and is continued till the customer is completely convinced with the delivery of products and services. Duplex Pipes is one of the rough and tough product due to its great quality. We efficiently fulfil customer's needs in terms of Cost, Quality and Delivery.



Why Clients Choose us ?

Our clients have their trust in us and our Products because Duplex Supply Inc. is the most popular vendor of Duplex Pipes. We uniformly export our products to all the 5 continents in the world. Duplex Pipes are supplied majorly in Middle Eastern countries. Our all products are of marvelous quality. We have always followed saying of "Customer is king" for us and their satisfaction is what we aim for. Product replacement warranty is given. Our products can sustain high pressure. As of 2015, we stocked 500 tons of Duplex Pipes, highest in the country. With Duplex Supply Inc. you get un-comparable buying experience of products made from best raw materials. We execute both small and bulk orders. Every 4 months a 3rd party inspection is conducted.

Customer is king

Duplex supply Inc. furnishes MTC with EN10204 NACE 3.1, NACE 3.2 specifications. All clients are provided with a copy of the same. Duplex Supply Inc. have the distributor in more than 15 countries. With ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 certificate We are majestic manufacturer and exporter of Duplex Pipes. Duplex Supply Inc. has emerged to become the most trusted company in several European, African and gulf based companies.

No compromises are made even when it comes to the packing of our products for sea as well as air transport. Also, the raw material taken for manufacturing is of the highest grade. Our specialized logistic team focuses on delivering the first model, which provides for instant dispatch against the receipt of bank transfer copy. At competitive pricing, Duplex Supply Inc. has become the ultimate destination of Duplex Pipes buyers Duplex Supply Inc. is looking forward to providing you with your specialty metal needs. Also the Customization we do on personal demand of customers gets us client satisfaction and our high quality products with flexible pricing makes us admired by our clients our clients feel delighted in buying our products and consumer satisfaction in itself is the biggest achievement for our firm.



Technical Details

Chemical Composition of Duplex 31803, %

	C	Mn	Si	P	S	Cr	Mo	Ni	N	Fe	Other
Min	-	-	-	-	-	21	2.5	4.5	0.08	-	-
Max	0.03	2	1	0.035	0.02	23	3.5	6.5	0.2	Bal	NA

Chemical Composition of Duplex 32205, %

	C	Mn	Si	P	S	Cr	Mo	Ni	N	Fe	Other
Min	-	-	-	-	-	22	3	4.5	0.14	-	-
Max	0.03	2	1	0.035	0.02	23	3.5	6.5	0.2	Bal	NA

Mechanical Properties of Duplex 32205

UTS Min (MPA)	621
Yield Min (MPA)	448
Elongation MIn (%)	25
Hardness Max (HRB)	103
Heat Treatment	1020 - 1100°C



Production



Packaging & Documentation

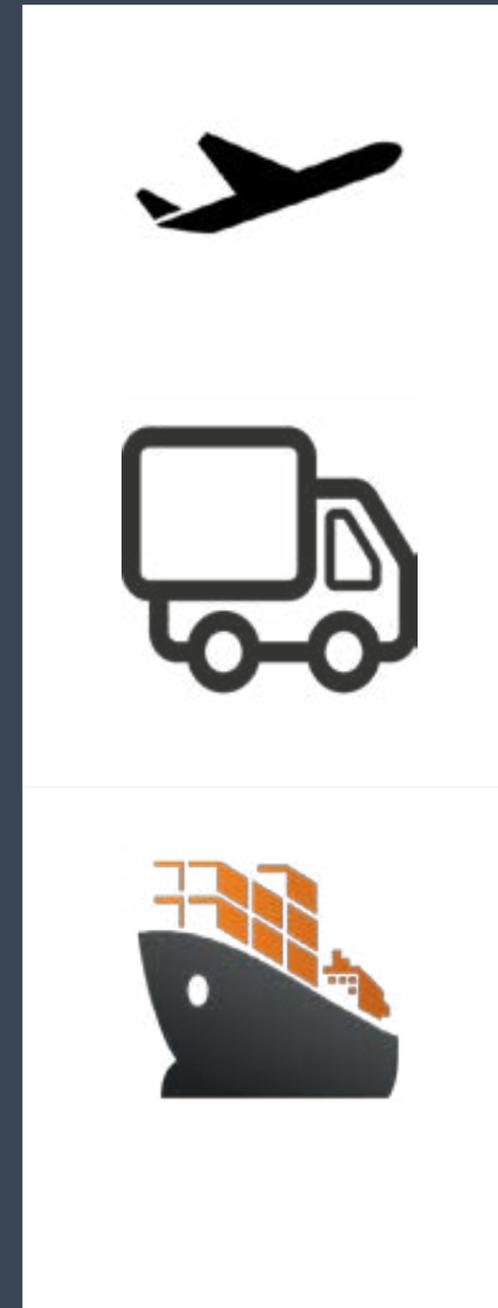
Duplex Pipes are made by two different processes. The overall production method for both processes involves three steps. First, raw steel is converted into a more workable form. Next, the pipe is formed on a continuous or semi-continuous production line. Finally, the pipe is cut and modified to meet the customer's needs.

Pipe making of Duplex Pipes

- Both skelp and billets are used to make Duplex Pipes. Skelp is made into welded pipe. It is first placed on an unwinding machine. As the spool of metal is unwound, it is heated. The metal is then passed through a series of grooved rollers. As it passes by, the rollers cause the edges of the skelp to curl together. This forms an un-welded pipe.
- Inconel next passes by welding electrodes. These devices seal the two ends of the Duplex Pipes together. The welded seam is then passed through a high pressure roller which helps create a tight weld. The pipe is then cut to a desired length and stacked for further processing. Welded steel pipe is a continuous process and depending on the size of the pipe, it can be made as fast as 1,100 ft (335.3 m) per minute.
- When seamless pipe is needed, square billets are used for production. They are heated and moulded to form a cylinder shape, also called a round. The round is then put in a furnace where it is heated white-hot. The heated round is then rolled with great pressure. This high pressure rolling causes the billet to stretch out and a hole to form in the centre. Since this hole is irregularly shaped, a bullet shaped piercer point is pushed through the middle of the billet as it is being rolled. After the piercing stage, the pipe may still be of irregular thickness and shape. To correct this it is passed through another series of rolling mills.

Final processing of Duplex Pipes

After either type of pipe is made, they may be put through a straightening machine. They may also be fitted with joints so two or more pieces of pipe can be connected. The most common type of joint for Duplex Pipes with smaller diameters is threading—tight grooves that are cut into the end of the pipe. The pipes are also sent through a measuring machine. This information along with other quality control data is automatically stencilled on the pipe. The pipe is then sprayed with a light coating of protective oil. Most pipe is typically treated to prevent it from rusting. This is done by galvanizing it or giving it a coating of zinc. Depending on the use of the pipe, other paints or coatings may be used



Duplex Supply Inc. provide the certificate of origin legalized/attested by the chamber. Also, a commercial invoice including HS code is provided. Our product packing lists which come with the product includes a number of boxes, net weight, and gross weight. We provide test certificate certifying NACE MRO103, NACE MR0175 during the delivery of Duplex Pipes to our Clients, Along with this, a raw material test report is provided as well. Our laboratory reports that are NABL approved also is provided to our loyal customers. Other reports like raw material reports, heat treatment charts and letter of guarantee is also provided by Duplex Supply Inc. Our Duplex Pipes are packaged in such a way that no damage is caused during the time of delivery. We provide a free sample kit for all clients against purchase order copy for quality approval free of cost. Request your free sample kit now and get your personalized orders at tip of your We offer price basis depending on your requirements. It can be based on previous works, FOB Nhava sheva, CFR, CIF, CPT your destination port or your door to door delivery duty which can be paid or unpaid finger by ordering it online.





About Duplex Supply Inc.

Duplex Supply Inc. is a privately held stockiest supplier and manufacturer of various alloy and metal products, the head office is located in Mumbai. DSI is committed to provide merit quality serviceability to all its customers with the minimal lead time.

Duplex supply Inc. provides shipping for all over global Customers. DSI has made noteworthy impact in metal Industry. With Duplex Supply Inc. you get un-comparable buying experience of products made from best raw materials. Duplex Supply Inc. has emerged to become the most trusted company in Indian market and in several European, African and gulf based companies. Duplex Supply Inc. is backed by all the possible certifications of a world class mill including ISO 9001:2008, ISO 14001:2007, OHSAS 18001: 2004 & CE-PED 97/23/EC.

“Your wish we Accomplish, You Demand we Deliver”



OUR MISSION

Our Aim is At Business Excellence through Higher business ethics and standards, Optimum use of resources, Spirit of Entrepreneurship.



OUR PRECISION

We are very Accurate from our Production System to our Delivery System we handle all our goods very precisely. We precisely fulfill all our promises to the clients and make sure that they have no complaints regarding our products.



OUR VISION

To provide best Quality products and service to our Clients and fulfilling their demands beyond their expectations and to be globally esteemed organization.



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We Look Forward to Hearing From You...

After knowing about all the information above mentioned regarding our products we look forward a hearing from you regarding any Queries and Orders we are delighted to serve all our customers the existing ones and also we welcome our new customer orders. We assure that our products will never disenchant you.



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