

Welding Consumables in Industry

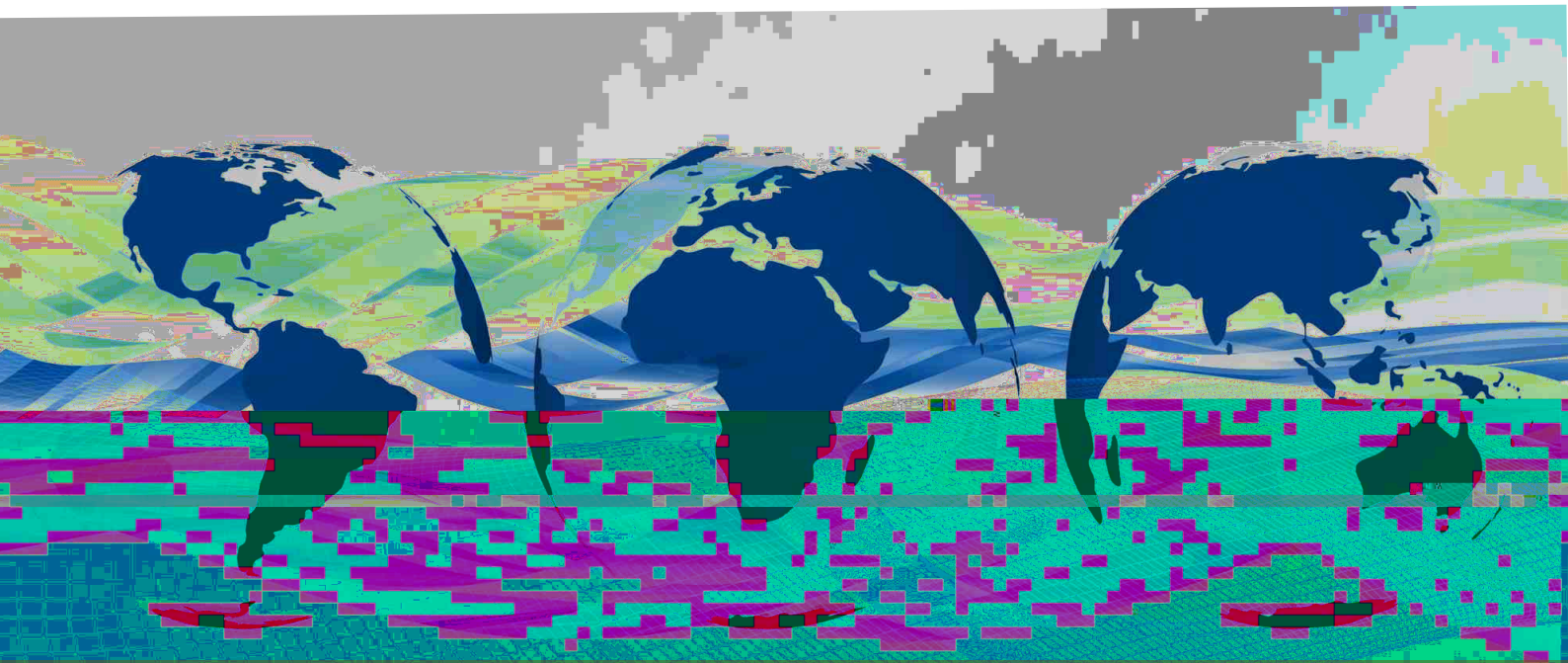
Pipe Mill & Process Piping



TIENTAI

AN ILLINOIS TOOL WORKS COMPANY

[http : // www.tientai.com](http://www.tientai.com)



TIENTAI ELECTRODE CO., LTD.

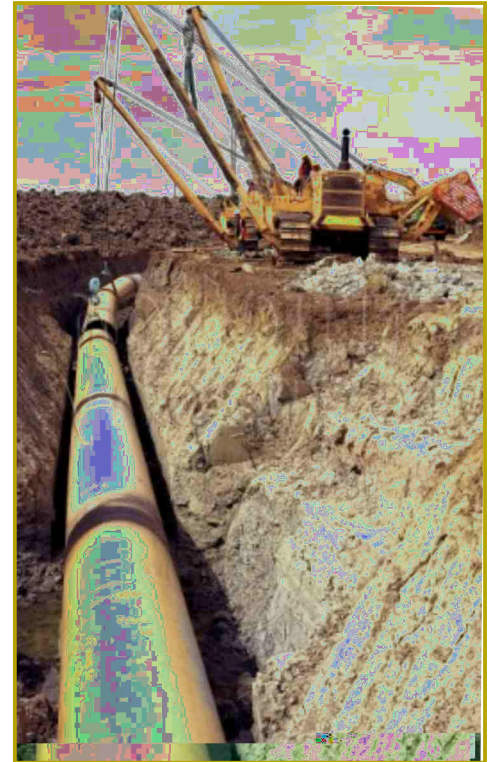
Illinois Tool Works Inc. (NYSE:ITW) designs and produces an array of highly engineered fasteners and components, equipment and consumable systems, and specialty products and equipment for customers around the world. A Fortune 200 diversified manufacturing company with more than 100 years of history. ITW's 650 decentralized business units in 45 countries employ nearly 49,000 men and women who are focused on creating value-added products and innovative customer solutions.

"During its more than 100 years of existence, ITW's recipe for success has been focused on creating "value-added products for key customers around the world. We do this by growing our business and making acquisitions which provide additional product solutions to our customers.

Many of our best product innovations come from simple observation coupled with a keen understanding of our customers' needs. Most companies design products specifically to increase sales volume. ITW's main goal is not to create a best seller, but to enhance customers. To attain that goal, our product design engineers develop value-added, proprietary products. Our unique approach begins at our customers' plants or worksites. By working closely with our customers, we determine how an ITW product or process could provide a better solution. Proof of our highly innovative culture is seen in our patent activities. In 2004, we had more than 16,000 unexpired patents and pending patent applications worldwide, including 2,900 U.S. Patents and 1,116 pending U.S. Applications. We typically rank in the top 100 of patent issuers in the U.S.

Pipe Mill & Process Piping

For global Pipe equipments and construction, TienTai provide consumables with top quality and specialized welding services.



Spiral pipe

The base material is classified in acc. API-5L or in acc. ISO standards. The wall thickness is mostly maximized up to 25mm. Typical wall thickness are 9 - 12 - 17 - 22 mm, most diameters used are 960 -1016 and 1220. Length can vary , much used is 12 and-or 18m.

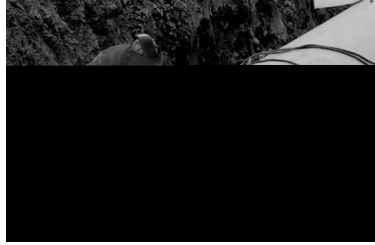
Longitudinal pipe

The base material is classified in acc. API-5L or in acc. ISO standards. The wall thickness is mostly maximized up to 50.8mm.

Your Perfect Welding Solutions

The limited page cannot afford whole specific contents of products and techniques. Please contact us if further information required.





Introduction for Pipe-Mill welding

- ✦ For transport of water > oil and gas.
- ✦ Piling pipe for bridges.
- ✦ Piling pipe for foundations.
- ✦ Offshore(Jackets).
- ✦ Pipe for heavy constructions.

Pipe-Mill Characteristics

Standard line pipe is still commonly designated by its "X" grade. This designation comes from the API 5L specification for line pipe. The "X" in the designation

Introduction for TIENTAI Products

No .	Specimen	CVN -10 °C (J)				R.A (%)			
		1	2	3	Ave	1	2	3	Ave
TF-650 x TSW-E41	Weld-Bead	175	145	185	168	75	55	80	70
	H.A.Z	185	180	200	188	80	60	85	75

Macro Structure (TF-650*TSW-E41)

AWS Spec. :F9A6-EF3-F3
Parent plate : X80
Flux : TF-650
Wire : TSW-E41
Heat Input : 45KJ/cm
Travel Speed : 170cpm 8

Bead Appearance (TF-650*TSW-E41)

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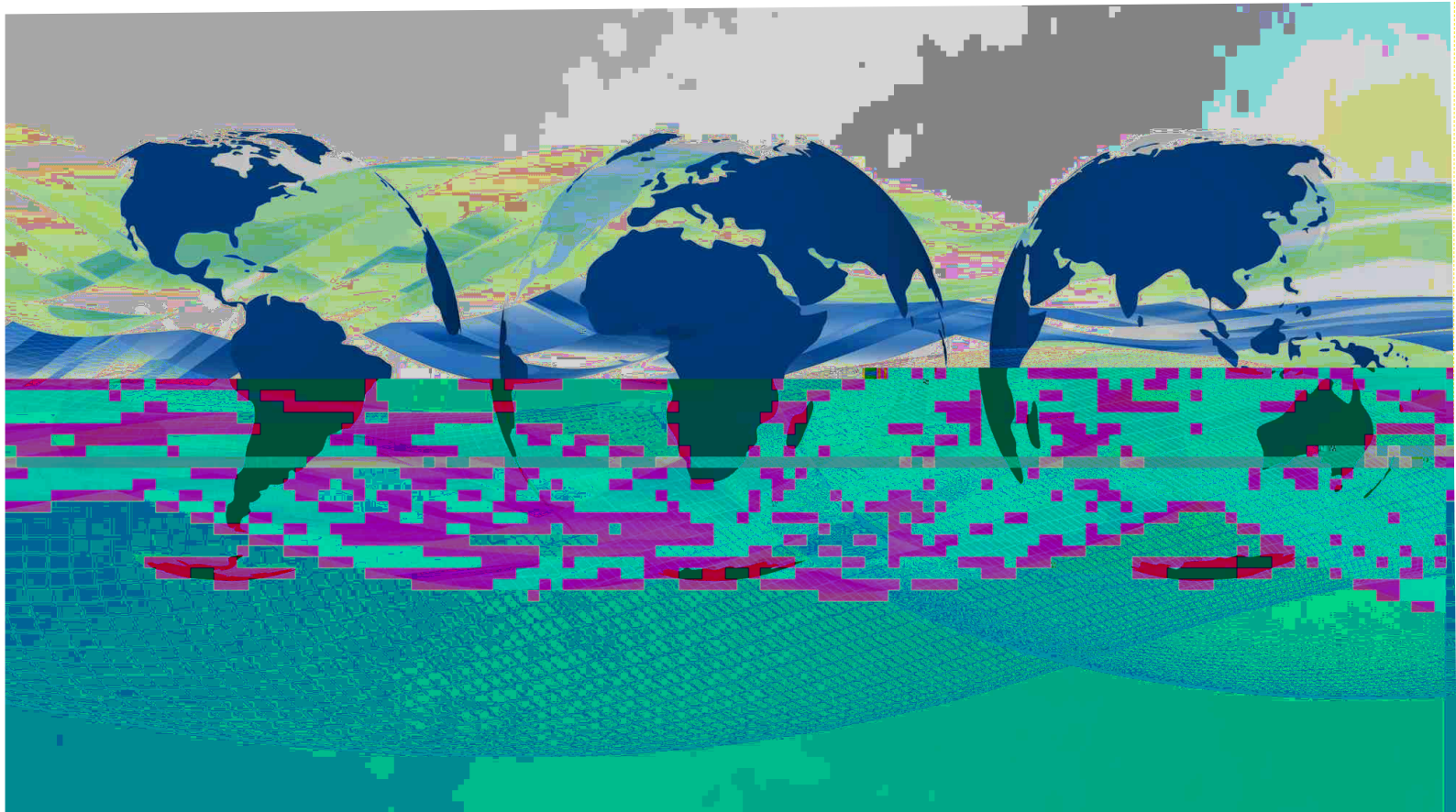
Typical mechanical properties of weld metal:

Product Name		Yield Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Charpy V-Notch (J)	Temperature (°C)	PWHT
TS-308LB		380	590	53	35	-196	-
TS-309LB		440	570	40	72	-46	-
TS-316LB		392	539	50	41	-196	-
TFW-308LP		390	555	42	-	-	-
TFW-309LP		420	565	37	-	-	-
TFW-316LP		370	552	41	-	-	-
TM-56		450	550	30	74	-30	-
Product Name	Wire	Yield Stress (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Charpy V-Notch (J)	Temperature (°C)	PWHT
TF-385	TSW-12KM	480	550	33	33	-20	-
	TSW-12KH	529	589	30	43	-29	-
	TSW-E12	617	656	29	-	-	-
TF-565	TSW-12KM	460	530	30	40	-40	-
	TSW-12KH	508	600	31	32	-50	AW
	TSW-E12	546	614	26	60	-30	AW
	TSW-12KM	443	496	37	40	-30	AW
		459	546	38	93	-50	AW
TF-650	TSW-12KH	413	521	34	102	-50	620°C x1hr
	TSW-E12	516	570	27	94	-46	AW
	TSW-E13	614	672	27	97	-40	AW
	TSW-E41	617	706	27	50	-50	AW
	SubCor H12KN	579	652	28	76	-46	AW

Your Perfect Welding Solutions

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All data of our products in this brochure are upon careful investigation and intensive research. However, we do not assume any liability for their correctness, please contact our staff before adoption.

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