

Welding Consumables in Industry

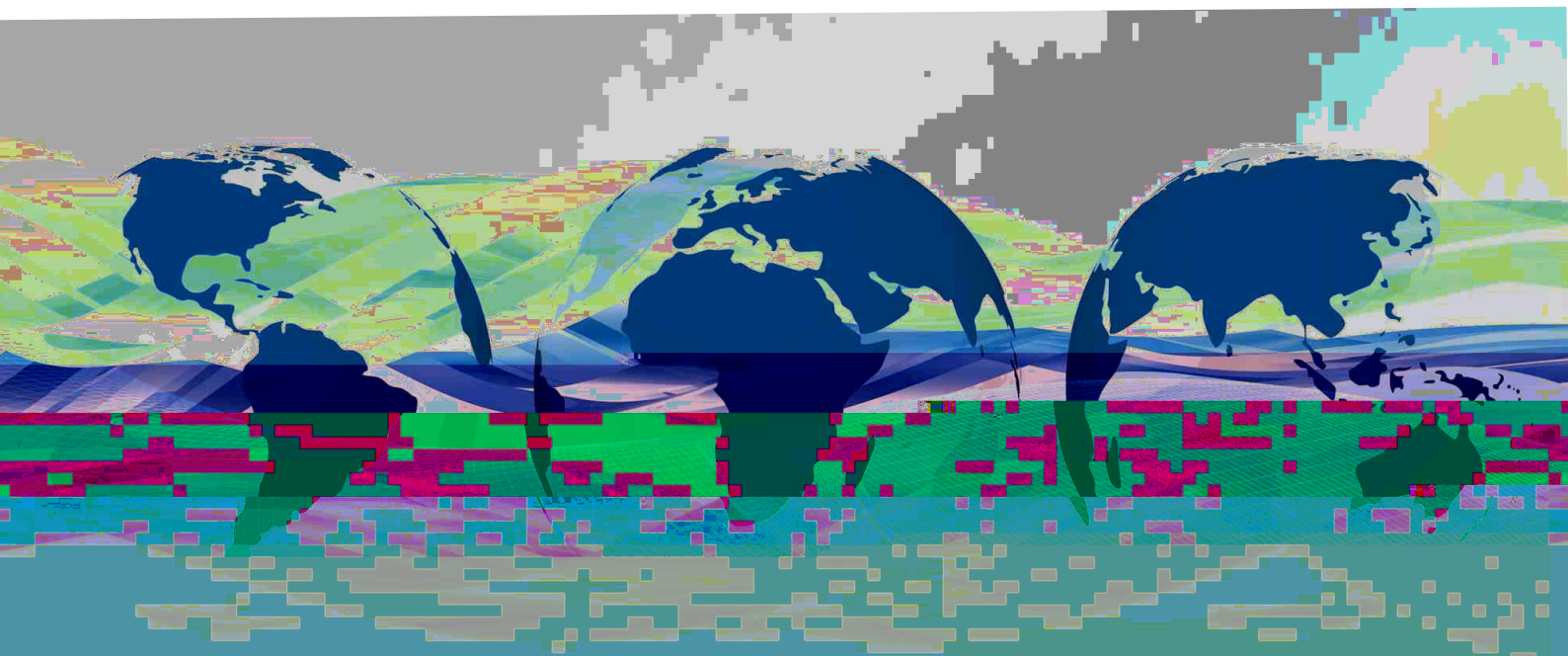
Pressure Vessel



TIENTAI

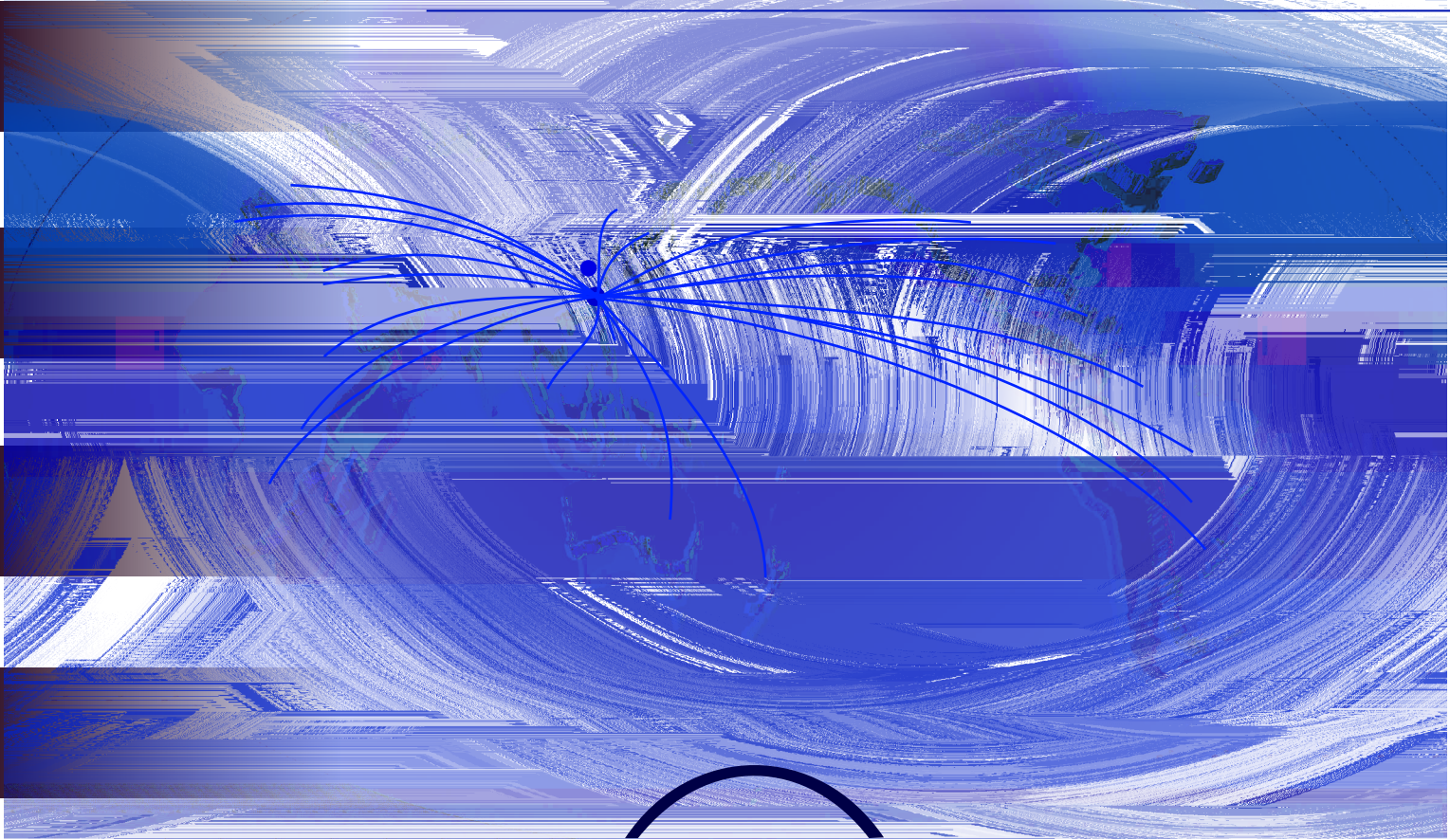
AN ILLINOIS TOOL WORKS COMPANY

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TIENTAI ELECTRODE CO., LTD.

ITW- Tradition of Excellence



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.

Pressure Vessel

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



Total Solutions for Pressure Vessel Welding

- ☆Saving cost of base materials in effect .
- ☆Conforming to the requirement of effective and high tensile welding.
- ☆Outstanding performance in welding.
- ☆Applying in stainless and carbon steel.
- ☆Effective strip cladding.

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



Base Metal		SAW		
Steel Type	Steel Grade	Flux	Wire	AWS Spec.
C-Mn	ASME A516, G70	TF-250	TSW-12KH	F7A8/P8-EH12K



Typical chemical composition of weld metal (wt%)

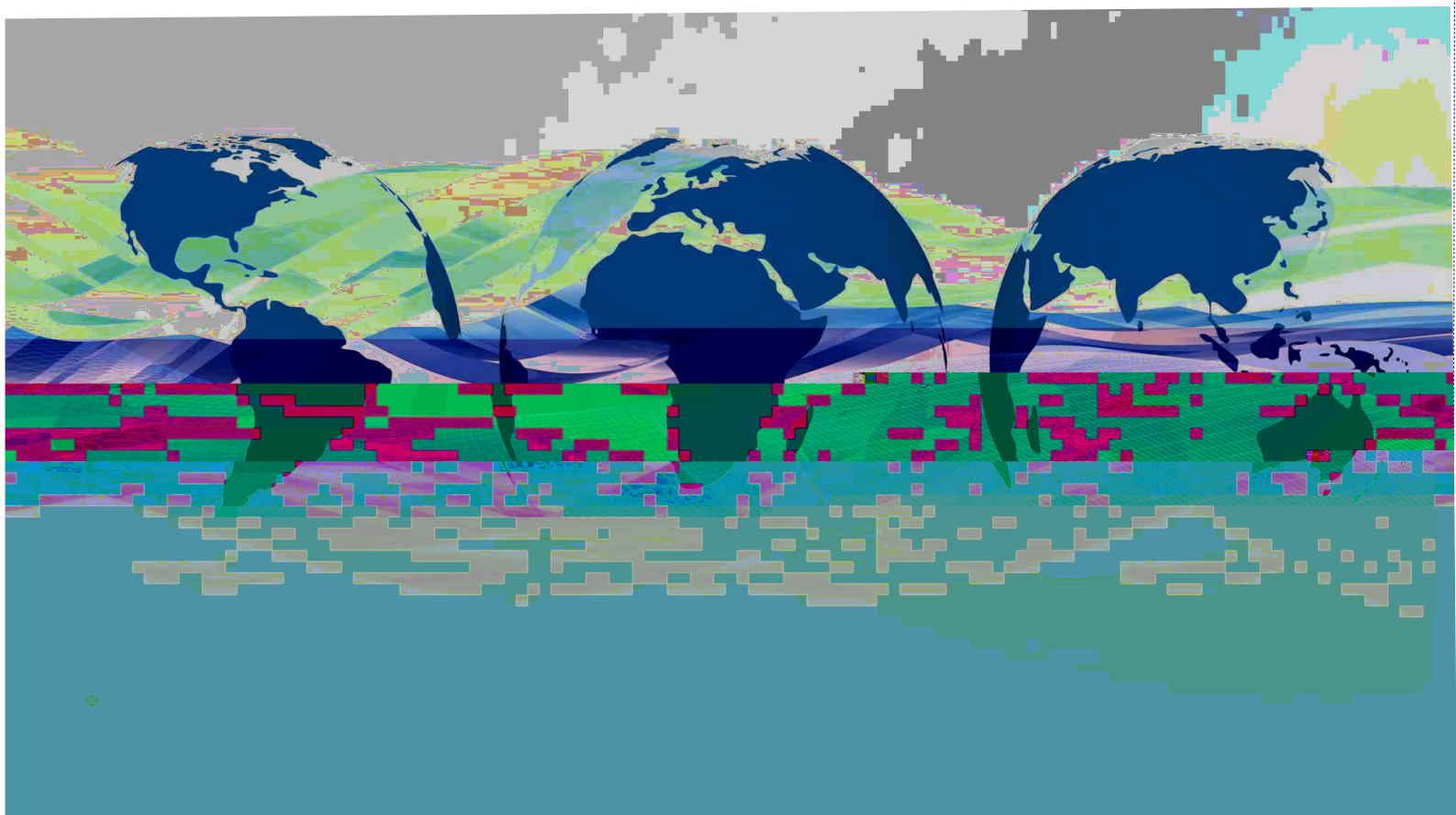
TFW-309LNb	All weld metal	0.027	0.50	1.9	12.7	-	0.025	0.007	Cr:23.5, Nb:0.77
	2mm from the surface	0.04	0.46 TM	1.32	9.95		0.022	0.009	Cr:19.0, Nb:0.58
TFW-309LT		0.026	0.62	1.75	13.00	0.11	0.022	0.009	Cr:24.07, Cu:0.11
TFW-309LMo		0.025	0.57	1.50	12.7	2.35	0.023	0.007	Cr:20.93, Nb:0.6
TFW-K7	TFW-347	0.058	0.54	1.48	10.5	0.10	0.029	0.009	Cr:19.56, Nb:0.54
TF-250	TSW-12KH	0.038 TM	0.36	0.53	4	-	0.015	0.015	Cu:0.026
		0.09	0.22	0.81	-	0.47	0.014	0.004	
	TSW-E23	0.07	0.24	0.63	-	0.93	0.009	0.004	
TFS-330		0.04	0.46	1.78	9.30	-	0.028	0.009	Cr:19.2
		0.04	0.47	1.57	12.3	-	0.023	0.005	
		0.04	0.50	1.73	10.2	1.89	0.025	0.008	
		0.035	0.45	1.43	13.63	3.38	0.025	0.013	
TFS-330 2-TFS-330		0.03	0.58	1.82	10.20	0.10	0.03	0.01	Nb:0.70, Cr:18.99
		0.02	0.56 TM	1.45	9.00	2.82	0.02	0.01	
	1-28	0.02	0.58	1.39	10.01	0.11	0.02	0.01	
		0.02	0.58	1.31	13.17	0.10	0.02	0.01	
		0.02	0.52	1.62	11.30	2.20	0.02	0.01	
		0.02	0.57	1.28	13.25	2.61	0.02	0.01	
		0.02	0.57	1.28	13.25	2.61	0.02	0.01	
ML-305									
	1st layer	0.04	0.53	1.51	10.1	0.12			Cu:0.06, Nb:0.63,Cr:19.2

Typical mechanical properties of weld metal:

TFW-309LNb	-	678	32	-	-	-	
TFW-309LT	423	580	34	-	-	-	
TFW-309LMo	-	685	33	-	-	-	
TFW-347L	-	627	35	-	-	-	
TF-250	TSW-12KH	483	567	34	175	-50	-
					120	-60	
		415	526	34	209	-50	620°C * 1hr
	TSW-E22				172	-60	
		518	605	28	183	-29	690°C * 1hr
	TSW-E23	574	671	26	210	-29	690°C * 1hr
					110	-40	
TFS-300	TW-308L	-	570	40	80	-30	690°C * 1hr
					100	-30	
	TW-309L	-	545	38	45	110	-
					40	-196	
	TW-316L	-	550	43	60	110	-
					35	-196	
	TW-317L	-	578	36	50	-110	-
TFS-330	TW-347	460	620	36	40	-196	-
					40	-196	-
	TW-2209	591	780	31	74	-40	-
					56	-196	-
	TW-308L	377	545	43	40	-196	-
					40	-196	-
TFS-303	TW-316L	375	560	40	67	-100	-
	TW-317L	443	576	24	70	-196	-
TFS-340	TW-61	470	700	35	75	-196	-
	TW-17	470	710	40	67	-196	AW
TFS-340	TW-61	503	754	46	57	-196	AW
	TW-17	490	706	32			

The Portfolio of Brands





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