



Hall Longmore

Spiral Welded Pipe SAW

Hall Longmore uses the submerged arc-welding (SAW) process to manufacture spiral welded pipe. This entails helically forming a hot-rolled steel strip and welding it both internally and externally to create a weld seam stronger than the parent metal.

Immediately after welding, seams are ultrasonically inspected to ensure the quality of each weld. Thereafter pipes are cut to length, ends are bevelled and pipes are hydrostatically tested and inspected for final approval. A facility also exists for full length radiographic testing of pipes and ends.

From the mill and testing bays, pipes proceed to belling, lining and/or coating in accordance with specifier and customer requirements.

Spiral welded pipes are produced in outside diameters ranging from 660 mm - 2 540 mm, and in wall thickness as shown in Table 1.



Spiral manufacturing facilities

The D1900 Spiral mill features the latest welding and ultrasonic technology for the manufacture of spiral welded pipe. The mill conforms to the highest specifications required by leading water, oil and gas customers.

Edge Milling and Helical Forming

Hot rolled strip in coil form is fed through an edge milling unit followed by edge defect ultrasonic testing. Strips are helically formed between 3 roller beds.

Internal and External Welding

Spiral pipe is welded using the submerged arc welding process with 2 internal and 2 external welding heads in a tandem configuration.

Seam Tracking and Weld Control

An automatic seam tracking system ensures real-time consistent weld bead positioning for both internal and outer welds.

The weld control system not only ensures automatic temperature control but has a data collection / memory system for setup optimisation.

Flux Recycling

A flux feed/recycling unit controls flux temperature, humidity and flow rate. Equipment was designed and built by U&S Sweisstechnik of Germany.



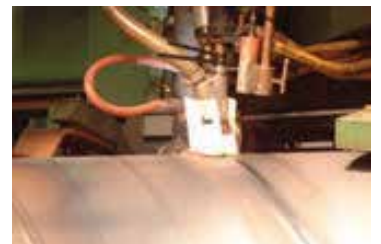
Edge milling



Helical forming



Internal & external welding



Seam tracking & welding



Flux recycling

Quality Inspection

After forming and welding, pipes are inspected in line for body lamination and weld defects using automatic ultrasonics.

Cut Off

Pipes are cut to length using an automatic plasma cut-off system.

Finishing and Final Inspection

Pipes pass through auxiliary machines which bevel pipe ends and hydrostatically test. A facility exists for full length radiographic inspection inclusive of pipe ends.

In-house Testing Facilities

Facilities include: Hardness and tensile strength; Charpy V-notch testing; Spectrographic and Metallographic assessment and drop weight tear testing machine (DWTT).



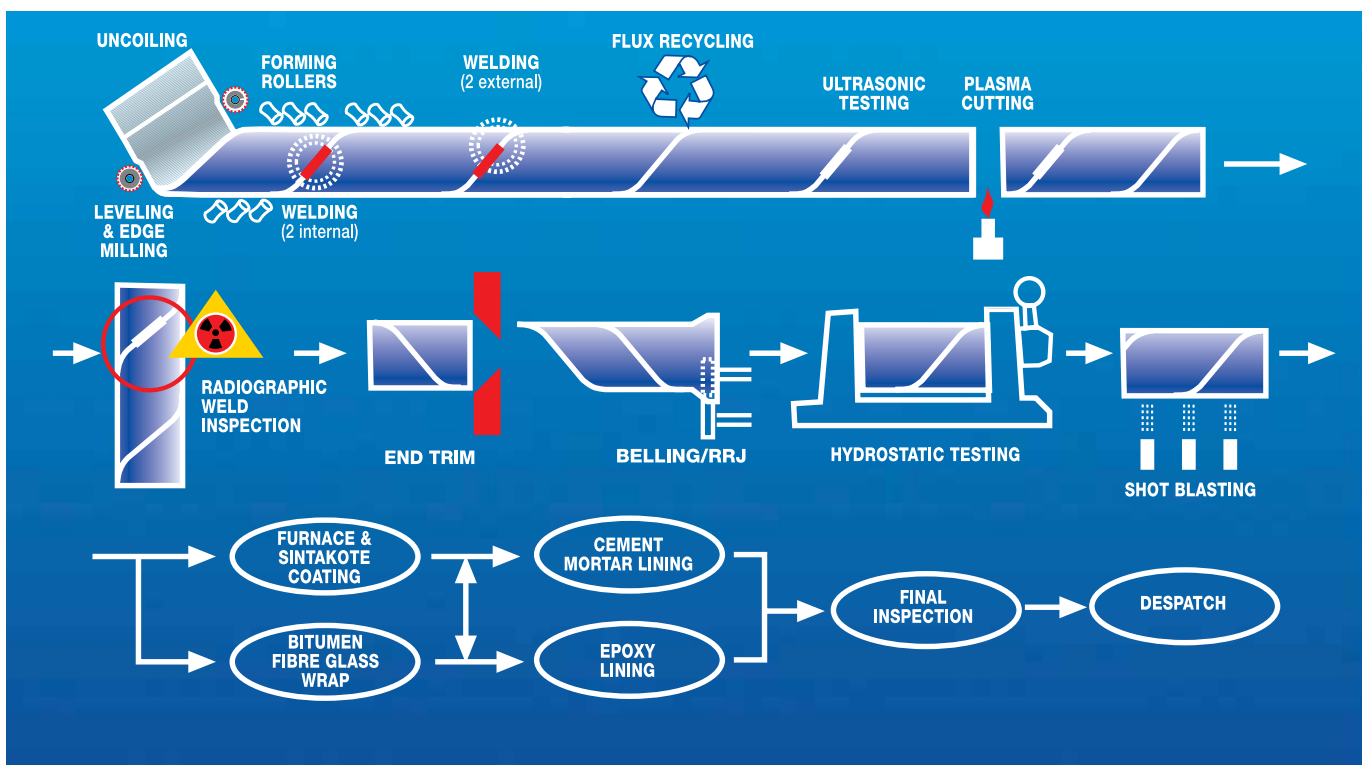
Quality inspection



Plasma cut-off system



Full length radiographic inspection



The D1900 SAW manufacturing process

SAW Range

Table 1.

Outside Diameter		SPIRALLY WELDED (SAW) PRODUCTION RANGE																									
		28	30	32	34	36	38	40	42	44	46	48	52	56	60	64	68	72	76	80	84	90	92	96½	100		
Wall Thickness	Ins	mm	600	711	762	813	864	914	965	1016	1067	1118	1168	1219	1321	1422	1524	1626	1727	1829	1930	2032	2134	2286	2337	2400	2540
	Ins	mm																									
0,177	4,5																										
0,188	4,8																										
0,197	5,0																										
0,203	5,2																										
0,210	5,3																										
0,219	5,6																										
0,237	6,0																										
0,250	6,35																										
0,277	7,0																										
0,281	7,1																										
0,307	7,8																										
0,312	7,9																										
0,315	8,0																										
0,322	8,2																										
0,330	8,4																										
0,344	8,7																										
0,365	9,3																										
0,375	9,5																										
0,394	10,0																										
0,406	10,3																										
0,438	11,1																										
0,469	11,9																										
0,472	12,0																										
0,500	12,7																										
0,551	14,0																										
0,562	14,3																										
0,591	15,0																										
0,625	15,9																										
0,630	16,0																										
0,666	17,5																										
0,709	18,0																										
0,719	18,3																										
0,750	19,0																										
0,787	20,0																										

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Hall Longmore

Osborn Road, Wadeville,
Johannesburg, South Africa
Tel: + 27 11 874 7300
Fax: + 27 11 824 4962
E-mail: info@hall-longmore.co.za
Web: www.hall-longmore.co.za

