



# Hall Longmore

## Electric Resistance Welded Pipe ERW/HFI

Hall Longmore uses the high frequency induction heating (HFI) process to manufacture pipes ranging in nominal diameter from 219 mm (8,58 inch) to 610 mm (24 inch), and in wall thickness as shown in Table 1.

Edge milled steel coil is mechanically formed into pipe after which a high-frequency electrical current is applied to fuse pipe skelp to form a weld. Unlike the arc-welding process, no filler material is added. The weld joint becomes a homogeneous part of the completed pipe.

In order to ensure completely smooth pipes, welds are scarfed both internally and externally. Immediate confirmations of welds are assured as pipes pass through a multi-probe ultrasonic inspection system located after the welding and scarfing stations.

Following ultrasonic assessment, weld joints are induction heated to normalise the metallic structure of the weld. Normalising also improves toughness of the steel in the region and significantly decreases the weld line corrosion effect.

Prior to hydrostatic testing, pipes are sized to required tolerances before being cut to length and the ends bevelled. Weld seams is again ultrasonically tested.

Pipes are inspected, weighed and can be varnished and marked prior to final inspection and dispatch, or transferred to the coating and lining plants for corrosion protection treatment.



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# ERW manufacturing facilities

Hall Longmore ranks amongst the most reputable ERW pipe producers internationally and satisfies specifications set by leading oil and gas companies.

## Coil Magazine and Decoiling

The Hall Longmore 30 ton/ 2,5 m OD coil magazine and decoiling station for constant strip feeding, is recognised as one of the most modern in the world.



**Coil magazine decoiling**

## Edge Milling

The Linsinger Edge Milling equipment has the capability of precision milling high-grade steel up to X70. It is possible to edge mill a maximum width of 15 mm/side at a speed of 19 m/minute at a wall thickness of 12,7mm.



**Steel strip lamination inspection**

## Steel Strip Lamination Inspection

It is important that steel strip is inspected for lamination defects in order to ensure overall quality of the line pipe. Edge Lamination and Strip Width Ultrasonic Inspection systems employed in-line are constantly monitoring the possible occurrence of such defects using equipment supplied by Krautkrämer-Germany.



**Edge milling**

## Round Forming

The most advanced automatic forming system comprising pre-forming cage, breakdown, edge forming and final forming cage, ensures perfect shape and edge geometry which is required for a consistent quality weld especially in high steel grades.



**Round forming**

## Welding / High frequency induction

The 1000 kW High Frequency Contact Welder ensures full control of the welding process for repeatable high quality welds particularly in high steel grades. Frequency range > 100 kHz.

## In-line Ultrasonic Systems

The ultrasonic systems designed by Krautkrämer monitor the weld integrity and measure weld bead geometry after internal and external scarfing. Mill operators therefore maintain consistent quality at the most critical zone in the pipe: the weld seam.



**In-line Ultrasonic Systems**

# Electric Resistance Welded Pipe ERW

## Seam Annealing

Post welding the heat-affected zone is seam annealed to ensure a fine grained micro structure with superior mechanical properties.



Seam annealing

## Sizing, Cut-off and Bevelling

This completes final pipe geometry to meet client specification requirements.



Sizing, cut-off

## Hydrostatic Testing and Final Ultrasonic Inspection

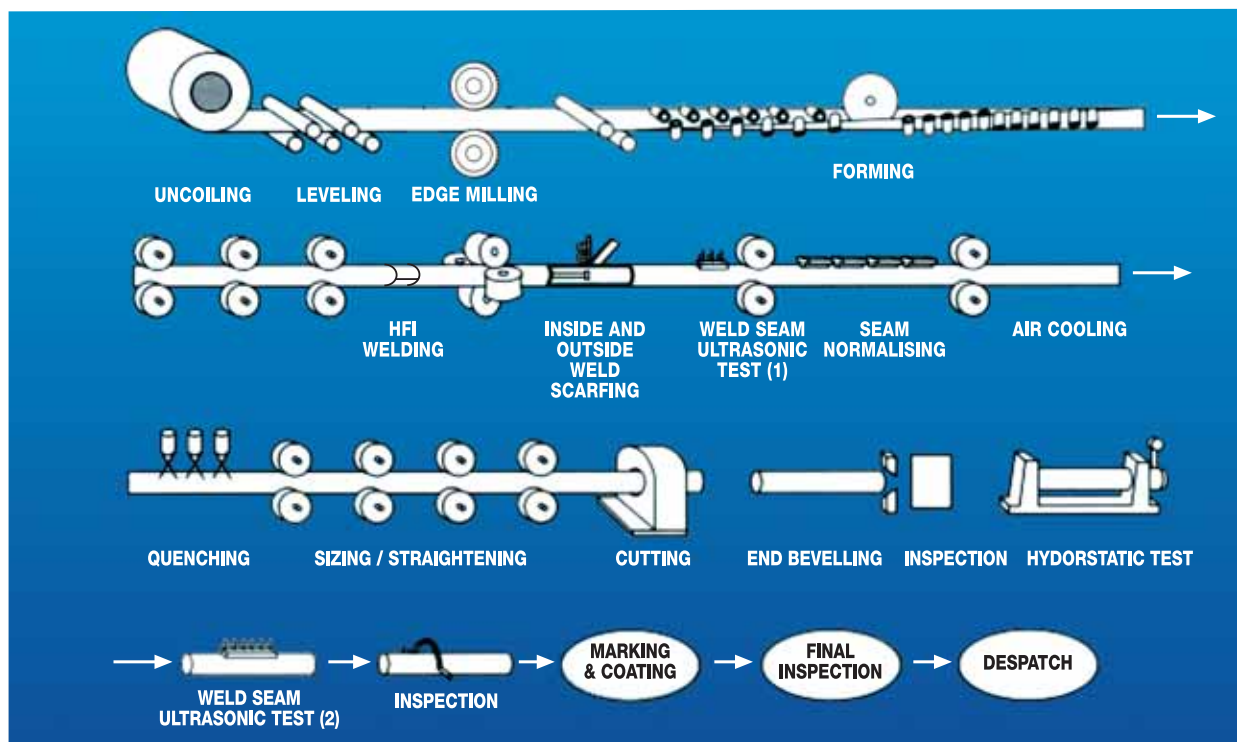
This process qualifies pipe integrity with testing pressures of up to 300 bar and six ultrasonic probes with full coupling control for final weld inspection. Pipe ends are manually inspected ultrasonically when required.



Hydrostatic testing and ultrasonic inspection

## In-house Testing Facilities

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



ERW manufacturing process

# ERW Range

Table 1.

Outside Diameter		Ins	8	10	12	14	16	18	20	24
		mm	219,1	273,1	323,9	355,6	406,4	457	508	610
Wall Thickness	Ins									
	mm									
0,177	4,5									
0,188	4,8									
0,197	5,0									
0,219	5,6									
0,237	6,0									
0,250	6,4									
0,277	7,0									
0,307	7,8									
0,315	8,0									
0,344	8,7									
0,365	9,3									
0,375	9,5									
0,394	10,0									
0,472	12,0									
0,500	12,7									

## MANUFACTURING PROCESSES

Production Range of Welded Steel Line Pipe (limited at higher steel grades)  
Any other diameters / thicknesses available on request.

ELECTRIC RESISTANCE WELDED (ERW)  
Range 219 – 610 mm

STEEL GRADE AVAILABILITY  
SANS 1431 Gr. 300WA  
API 5L X42 to PSL 1  
API 5L X52; X65 to PSL 1 or 2  
Other grades available on request

LENGTHS  
9,144 metres (30 feet)  
12,192 metres (40 feet)  
18,288 metres (60 feet)  
Other lengths available on request

Standard   
Non- Standard 

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