

The InspectTech® Ultrasonic monitor for pipe skelp or strip material is a multi-channel unit that measures and records material gauge as well as checking for laminations and segregations in the material.

The monitor is used in pipe and tube manufacture as well as in plate and strip mills. In addition to locating defective areas in the material, information is gathered relating to gauge variations and data can be stored for maximum, minimum and average wall thickness.

Coverage from 10% to 100% of material surface.

Unused transducers can be "parked" to suit different strip widths.

Alarm function can be tailored to defect size or area.

Full storage and recall of previous set-ups.

Comprehensive data logging facility - test data can be archived.

Outer transducers can be set up to follow strip edges.

Modern quality standards and specifications are increasingly concerned with lamination defects and their detection and elimination from finished products. The tube and pipe industry is no exception to this, and the current API specifications require testing for laminations in several important material categories. Pipe for service in sour gas lines is especially targeted to be free from major laminations, in some cases requiring 100% coverage of the surface area of the skelp.

In tube and pipe facilities, the skelp monitor is usually at the entry table of the mill, in a location where the material can be controlled to run smoothly.

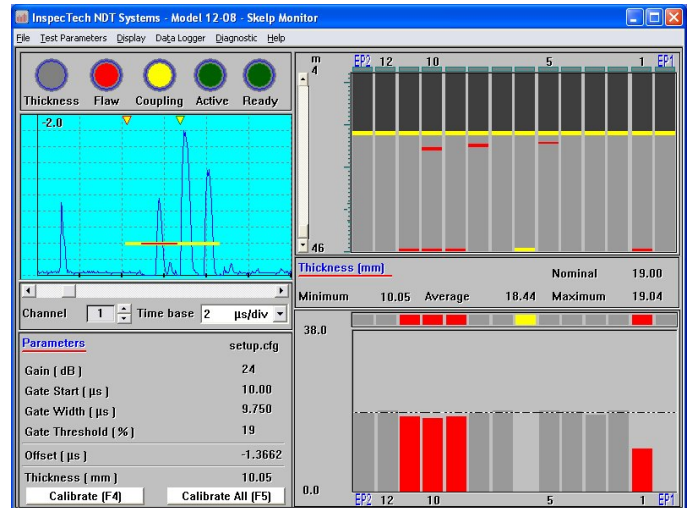


The InspeTech skelp monitor uses dual element ultrasonic transducers that are coupled to the strip under test with water or mill coolant. Each transducer is installed in a dedicated arm with its own hardened wear shoe and coupling liquid supply.

To accommodate different widths of strip or skelp, transducer arms can be positioned individually on a crossbar that straddles the line. Unused transducers are simply lifted into a "park" position, and they become inoperative when parked.

Undulations and twists in the tested material are compensated by the individual transducer holders, which include both pivot and swivel actions. In addition, bouncing of the transducer arms is minimized by a pneumatic system that applies constant downward force to the test heads.

Proximity sensors detect the ends of the strip as they approach, and all transducers are raised in unison to avoid damage from jagged or hooked strip ends.



The user interface includes the capability to select accept/reject criteria and also provides a visual presentation of the test in progress as a 2-D colour-coded scrollable strip chart.

The system is based on the InspeTech thickness gauge. To permit high-speed testing, each transducer is serviced by an independent signal processing channel without any multiplexing. The InspeTech thickness gauge includes the following important features:

- Very high resolution and wide measurement range.
- Remote pulsers with a wide-band preamplifiers.
- RF signal display.
- One-step set-up and calibration of all channels.
- Fast dual AGC circuitry.
- Communication with data logging software.



In certain situations, the skelp edges may not follow an exact line, but the edges must be tested nonetheless. In these cases, any two transducers may be set up as edge-following transducers. This requires the simple addition of a tracking guide to the outside edges of the arms at the strip edges.