

FERRITE TESTING



**TOMTEC NDT MARINE
SERVICES PTE LTD**

FERRITE TESTING is a non-destructive testing method which provides critical data for austenitic stainless steel and duplex materials. The delta ferrite percentage or number allows a technical assessment of material corrosion susceptibility, mechanical properties, service reliability. It is a fast, inexpensive, and accurate way to measure delta ferrite content in austenitic and duplex stainless steels. Proper ferrite content provides a balance between ductility, toughness, corrosion resistance and crack prevention.

Ferrite content is usually specified for a stainless-steel welding job, predicted using methods available and then actual value is measured by instruments after welding. Ferrite content is measured as a number and the common terminology to deal with this is Ferrite Number (FN).



The FERITSCOPE® FMP30 measures the ferrite content in austenitic and duplex steel according to the magnetic induction method. A magnetic field generated by a coil begins to interact with the magnetic portions of the specimen. The changes in the magnetic field induce a voltage proportional to the ferrite content in a second coil. This voltage is then evaluated. All magnetic portions in the otherwise non-magnetic structure are measured, i.e., in addition to delta ferrite and other ferritic portions also strain-induced martensite, for example.

TOMTEC Provides inspection ranges from

- ✓ Austenitic stainless steel/Duplex stainless steels
 - ❖ Welds (Tubing, etc.)
 - ❖ Normal constructions steel with Austenitic chrome alloyed steel, welded cladding (E.g. Boilers, Vessels, etc.)
- ✓ Weldments, Castings, Forgings, Weld Overlays, Wrought materials
- ✓ Weld materials
 - ❖ Butt/fillet welds
 - ❖ Category A – D welds
 - ❖ Stainless weld overlays on non – ferrous interfaces
- ✓ In-service and in-construction components



Advantages

- ✓ Rapid and accurate analysis
- ✓ Highly portable digital technology
- ✓ Variable calibration in both Ferrite Number (FN) and % Ferrite (FN) using AWS standards
- ✓ Testing instruments meets all requirement of ASNI/AWS A4.2 and DIN EN ISO 8249
- ✓ Calibration is traceable to internationally approved IIV secondary calibration standards

At TOMTEC, our trained and qualified technicians use Fischer's FERITSCOPE® FMP30 to measure ferrite content in conformance with AWS 4.2, ISO 13520, ISO 8249, BS EN ISO 17655, as well as various other military, civilian, and customer specific standards and requirements.

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