

Non-destructive Testing for Machinery Installations

Amended Rules and Guidance

Rules for the Survey and Construction of Steel Ships Part D
Rules for the Survey and Construction of Inland Waterway Ships
Guidance for the Survey and Construction of Steel Ships Parts D and N
Guidance for the Survey and Construction of Inland Waterway Ships

Reason for Amendment

It is specified in the ClassNK Rules that a non-destructive testing is to be conducted, such as radiographic testing, ultrasonic testing, liquid penetrant tests, magnetic particle tests, depending on the purposes of machinery installations, to confirm the soundness of the welding for boiler shells, pressure vessels, piping etc. (hereinafter called “welding for machinery installations”). The testing procedures are specified based on industrial standards such as JIS.

Likewise, ISO also specifies the standards related to non-destructive testing as ISO 17636. ISO 17636 specified the procedures for radiographic testing using radiographic films, however, in order to respond to the recent development of technology of radiographic testing in a digital method using no radiographic films, has been amended to include the procedures for both testing.

The testing procedures for radiographic testing using radiographic films specified in ISO 17636 are similar to those for welding for machinery installations in the ClassNK Rules. Further, the ClassNK Rules have already specified that digital radiographic testing may be applied to welding for ship structure. As the testing procedures specified in ISO 17636 are applicable to welding for machinery installations, all relevant requirements were amended to allow radiographic testing in a digital method subject to consideration on a case-by-case basis.

Further, JIS B 8201, which specifies the testing procedures and construction of stationary steel boilers, accepts ultrasonic testing in lieu of radiographic testing. In addition, the performance of ultrasonic testing conducted by Society for pressure vessels and piping, etc. was examined. Based on the consideration of the above, all relevant requirements were amended to allow ultrasonic testing in lieu of radiographic testing for welding of boiler shells, subject to consideration on a case-by-case basis.

Outline of Amendment

- (1) Specified that radiographic testing may be conducted with a radiographic film or in a digital method in accordance with ISO 17636.
- (2) Specified that ultrasonic testing may be conducted for boiler shells in lieu of radiographic testing.