

Manufacturing Process Approval Tests for Crankshafts

Amended Guidance

Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use

Reason for Amendment

The *Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use* specifies that manufacturing process approval tests are required for solid crankshafts manufactured using special forging processes (for example, RR forging, TR forging, stamp forging, etc.), semi-built-up crank throws and full-built-up crank webs (hereinafter all three are collectively referred to as “crankshafts”) to confirm production quality, etc. The aforementioned guidance also specifies that tensile test for evaluating strength as well as bend (or impact) test for evaluating ductility and toughness are required for all of crankshafts during these approval tests.

With respect to the specimens used for the aforementioned tests, the current ClassNK Rules specify that test specimens are to be taken the same way from relevant locations on crankshafts. However, a review of the these requirements was conducted, and it was determined that more accurate specimen taking could be achieved if consideration was given to not only the general configuration and structure of the crankshaft being tested, but also the relevant stresses generated, the directions of applied stresses and the relevant stress concentrations in each part of the crankshaft. Accordingly, relevant requirements were amended to specify that necessary and sufficient consideration be given to type of test be carried out with respect to test specimen sampling locations.

Outline of Amendment

Amended the sampling positions of tensile test and impact test (or bend test) required as part of the manufacturing process approval tests for crankshafts.