

Patent Right	Date	January 28, 2020	Court	Intellectual Property High Court, First Division
	Case number	2019 (Gyo-Ke) 10031		
- A case in which the patent of the invention titled "WELDED STEEL PIPE FOR LINE PIPE WITH EXCELLENT LOW-TEMPERATURE TOUGHNESS AND MANUFACTURE THEREOF" was judged such that it could not have been easily conceived of from the cited invention.				

Case type: Rescission of Appeal Decision of Refusal

Result: Granted

References: Article 29, paragraph (1), item (iii), paragraph (2) of the Patent Act

Related rights, etc.: Patent Application No. 2013-28145

Decision of JPO: Invalidation Trial No. 2017-4028

Summary of the Judgment

1. This case is a lawsuit seeking rescission of the JPO decision dismissing the request for an appeal against the examiner's decision of refusal of the invention titled "WELDED STEEL PIPE WITH EXCELLENT LOW-TEMPERATURE TOUGHNESS AND MANUFACTURE THEREOF".

As the reasons for rescission, Plaintiff alleged non-fulfillment of the procedural requirement and an error in judgment of inventive step.

2. This judgment held roughly as below on the error in judgment of inventive step and rescinded the JPO decision.

(1) The invention of the present application and the cited invention both relate to a welded steel pipe for line pipe in which an abutting portion of a steel plate formed having a tubular shape is welded by one layer on inner and outer surfaces, respectively in the order of the inner surface and the outer surface by submerged arc welding and are in common in the technical field.

However, the invention of the present application and the cited invention are different in the problem to be solved, since the invention of the present application prescribes an upper limit and a lower limit of $L2/L1$ with improvement of low-temperature toughness in a welding heat affected zone on the outer surface as the problem, while the cited invention prescribes an upper limit and a lower limit of $W2/W1$ with prevention of a low-temperature crack generated in the seam welding portion in the weld metal on the inner surface as the problem. Moreover, the invention of the present application is to suppress coarsening of a grain diameter by reducing the outer surface input heat on the heat affected zone on the outer surface,

while the cited invention is to reduce a tensile stress in a welding line direction generated in the weld metal of preceding seam welding (inner surface), and Cited Document 1 does not have description or suggestion on replacement of $W2/W1$ with $L2/L1$ for improvement of the low-temperature toughness in the welding heat affected zone on the outer surface, and means for solving the problem is also different.

In the cited invention, if $L2/L1$, which is a ratio of the distance from the base material surface to a meeting portion of the inner/outer surface welding lines, is employed instead of $W2/W1$, which is a thickness of the weld metal at a position of a center in a welding bead width, the thickness of an excess portion and the thickness of the weld metal including the distance from the meeting portion of the inner/outer surface welding lines to a distal end of the outer surface weld metal are not considered. Moreover, even if $W2/W1$ is constant, if a weld penetrating amount of the weld metal on the inner surface side is changed, $L2/L1$ is varied and thus, $W2/W1$ has no correlation with $L2/L1$, and $L2/L1$ is not unambiguously determined with respect to $W2/W1$.

According to the above, it cannot be considered that there is motivation to replace $W2/W1$ in the cited invention with $L2/L1$.

(2) $W2/W1$ is optimized on the basis of a residual stress in the weld metal under a condition that a tensile strength of the steel plate is 850 MPa or more and 1200 MPa or less, while Cited Document 1 does not have description or suggestion on a change of it to one less than 850 MPa. Even by considering that manufacture of the welded steel pipe for line pipe with excellent low-temperature toughness by performing submerged arc welding of the abutting portion of the steel plate with the tensile strength corresponding to a circumferential direction of the steel pipe ranging from 600 to 800 MPa by one pass each from inner/outer surfaces had been known at the time of filing of the present application (Cited Document 2), it cannot be considered that there is motivation to make the change to one with the tensile strength of the steel plate ranging from 570 to 825 MPa in the cited invention in which $W2/W1$ is optimized under the condition that the tensile strength of the steel plate is 850 MPa or more and 1200 MPa or less.

(3) Thus, the invention of the present application cannot be considered to have been easily conceived of on the basis of the art in the cited invention and Cited Document 2.