

【ABSTRACT】

A method for manufacturing an yttrium-based thermal spray coating is disclosed. The method includes spraying yttrium-based granular powder containing a mixture of yttrium compound powder and silica ( $\text{SiO}_2$ ) powder by an atmospheric plasma spraying process to form the yttrium-based thermal spray coating on a base member, in which the yttrium compound is any one selected from  $\text{Y}_2\text{O}_3$ ,  $\text{YOF}$ ,  $\text{YF}_3$ ,  $\text{Y}_4\text{Al}_2\text{O}_9$ ,  $\text{Y}_3\text{Al}_5\text{O}_{12}$  and  $\text{YAlO}_3$ , the silica ( $\text{SiO}_2$ ) occupies 0.1 to 30 wt%, and the yttrium-based thermal spray coating has a value 'L' of 80.0 or greater as a colorimetric measurement value under a plasma exposure condition.

FIG. 1