

CORROSION MONITORING

ABSTRACT

A plate-like test coupon 1 for monitoring corrosion of a metal member under heat transfer conditions in an actual plant is made of the same material as that the metal member of the actual plant. The test coupon 1 is provided with a sheet-like heating element 4 which is bonded to the entire rear surface of the test coupon 1 by adhesives 5. The sheet-like heating element 4 is a plate comprising a heating resistor 2 made of thin metallic foil which is arranged in zigzag shape and an insulating synthetic resin 4a wherein the heating resistor 2 is molded in the synthetic resin 4a. Ends of two coated lead wires 3 are also molded in the synthetic resin 4a. The cores of the coated lead wires 3 extend still outside of coated portions and to be connected to both terminals of the heating resistor 2, respectively. The test coupon 1 is brought in contact with corrosive fluid and the current to the heating resistor 2 is controlled in such a manner that the test coupon 1 is subjected to the same heat transfer conditions as that of the monitoring object. Metal pieces 21, 21', for enabling the monitoring under conditions simulating the environment that corrosion problem is apt to occur in an actual plant, are welded at a spot welding portion 23 and there is a crevice between the metal pieces 21, 21'. An end of a coated lead wire 26 for potential measurement is connected to the metal piece 21 by soft soldering or the like, and the connected portion is coated by insulating material. A sheet-like heating element 22 is bonded to the outside surface of the metal piece 21 by adhesives and coated by insulating material 25. The test coupons 31 are immersed into test water and potential between a reference electrode 33 and the test coupon is measured to monitor corrosion.

(Fig. 1)