

An invention is related to ship-building, air-craft building, power engineering industry and other industrial branches where the welding constructions are produced by using higher and high solid steels (bainite, martensite and bainite-martensite types). The invention consists in the treatment of welding joints with their heating by the way of arc welding within an infusible electrode under protection of inert gases to a temperature detected by the structure of overheating section in the area of thermal influence, when processing the heating of welding joints their primary temperature and time are to be detected by means of computer programs or experimentally. The proposed invention allows to reach the high stability of welding joints, especially in the area of thermal influence up to the formation of cool cracks and brittle failures with absence of thermal furnaces or heaters; to cut down manpower and power expenditures and simplify the technology of thermal treatment of welding joints, reduce costs of welding constructions and their production period.