

THE EFFECT OF THERMAL AND MECHANICAL PROPERTIES OF THE METALS ON THE LASER TUBE BENDING PROCESS

Khalil Ibraheem Imhan^{1, 2}, BTHT Baharudin¹, Azmi Zakaria¹, Mohd Idris Shah B Ismail¹, Naseer Mahdi Hadi Alsabti² and Ahmad Kamal Ahmad²

¹University Putra Malaysia, Malaysia

²Laser Research Centre-Ministry of Science and Technology, Iraq

Numerous studies have been conducted to evaluate each parameter of the material properties factor. In this paper, an analytical examination has been employed to study the impact of different material specifications by using the MATLAB package. The thermal expansion coefficient is directly proportional to the bending angle while the specific heat and the density are inversely proportional to the bending angle. Furthermore, Aluminium had the highest bending angle in most tested conditions; the Stainless Steel 304 came next.

theeqar@live.com