Abstract
A welding procedure (WPS) for MIL A46100 steel armor joints using the gas metal arc welding process (GMAW) was developed and qualified according to mechanical and non-destructive (NDT) requirements of military codes. Obtained results were compared to shielded metal arc welding (SMAW) procedures used to weld this type of steel. It was found that designed WPS is a suitable option to weld MIL A46100 armors according to the results obtained. In addition, a narrower heat affected zone (HAZ) was obtained with designed WPS which should lead to a better in-service armor performance according to results of previous studies. Finally, an increase in Charpy v-notch (CVN) test impact energy compared to the SMAW procedure was found.

Keywords
Gas metal arc welding (GMAW), welding procedure specification (WPS), MIL A 46100 armor steel.