World Academy of Science, Engineering and Technology
International Journal of Geotechnical and Geological Engineering
Vol:14, No:01, 2020

The Viscosity of Xanthan Gum Grout with Different pH and Ionic Strength

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Abstract : Xanthan gum (XG) an eco-friendly biopolymer has been recently explicitly investigated for ground improvement approaches. Rheological behavior of this additive strongly depends on electrochemical condition such as pH, ionic strength and also its content in aqueous solution. So, the effects of these factors have been studied in this paper considering various XG contents as 0.25, 0.5, 1, and 2% of water. Moreover, adjusting pH values such as 3, 5, 7 and 9 in addition to increasing ionic strength to 0.1 and 0.2 in the molar scale has covered a practical range of electrochemical condition. The viscosity of grouts shows an apparent upward trend with an increase in ionic strength and XG content. Also, pH affects the polymerization as much as other parameters. As a result, XG behavior is severely influenced by electrochemical settings

Keywords : electrochemical condition, ionic strength, viscosity, xhanthan gum
Conference Title : ICAAG 2020 : International Conference on Advanced and Applied Geomechanics
Conference Location : Dublin, Ireland
Conference Dates : January 30-31, 2020