IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 2, March 2022
Impact Factor: 6.252

Structural Analysis of Circular Clarifier by STAAD-PRO software

Ankit Umakant Tayde and Prof. P. O. Modani
Department of Civil Engineering
Pankaj Laddhad Institute of Technology & Management Studies, Buldana, (M.S), India

Abstract: *Modern designs of the cleaner design are plates. These plates effectively remove high suspended solids present in the water. The clarity of the liquid overflow and the discharge density under the stream are the two main requirements for the process of all equipment for settling gravity. In many applications, the area required to ensure the desired spillage clarity exceeds that required to thicken settled solids. This means that the lower section in the cylindrical settling tank, including the brakes and the drive mechanism, is excessively dimensional. Pre-treatment is provided to the water so that it is suitable for further treatment, which makes it suitable for use in a particular process. The present work deals with the circular clarifier and the different models as per the seismic zones. The results observed in terms of the displacement, reactions, principal stress.*

Keywords: Circular Clarifier, Reinforcement, Analysis and Moments

REFERENCES

[1]. Ghawi A. Hadi Jozef Kris (2007a).” Design and Optimization of a Sedimentation Tank in Slovakia with CFD Modeling” 10th International Symposium on Water Management and Hydraulic Engineering 2007 with special emphasis on the impact of hydraulic engineering construction on the environment, 4 –9 September 2007. Šbenik, Croatia.

[2]. Ghawi A. Hadi, Jozef Kris (2007b). A Numerical Model of Flow in Sedimentation Tanks in Slovakia, Third International PhD Symposium in Engineering, 25-26 October 2007, Hungary University of Pollack Mihály Faculty of Engineering, Pécs, Hungary

[3]. Ghawi A. Hadi, Jozef Kris (2007c). Improved, Modeling, Simulation and Operational Parameters of Settling Tank. 6th International Conference of PhD Students, University of Miskolc, Hungary, 12- 18 August 2007, pp. 69-75.

[4]. Henze, M., Gujer, W., Mino, T. and van Loosdrecht, M. (2000) Activated Sludge Models ASMI, ASM2. ASM2d and ASM3, IWA Publishing, London, England.

[5]. Henze, M., van Loosdrecht, M.C.M., Ekama, G. and Brdjanovic, D. (2008) Biological Wastewater Treatment Principles, Modelling and Design. IWA Publishing, Glasgow.

[6]. Jayanti S. Narayanan S., (2004). Computational study of particle-eddy interaction in sedimentation tanks, J. Environmental Eng., 130 (1), 37-49.

[7]. Jeppsson, U. (1996) Modelling Aspects of Wastewater Treatment Processes. PhD Thesis, IEA, Lund Institute of Technology, Lund.

[8]. Krebs, P. (1991). The hydraulics of final settling tanks, Wat. Sci. Tech., 23 Kyoto, 1037-1046.

[9]. Krebs, P. Vischer, D. Gujer, W. (1995). Inlet-structure design for final clarifiers, Journal of Environmental Engineering, 121(8), 558-564.

[10]. Lakehal D., Krebs P., Krijgsman J. Rodi W. (1999). Computing shear flow and sludge blanket in secondary clarifiers. J. Hydr. Engrg., 125(3), pp. 253-262.

[11]. Mannina, G., Di Trapani, D., Viviani, G. and Odegaard, H. (2011) Modelling and Dynamic Simulation of Hybrid Moving Bed Biofilm Reactors: Model Concepts and Application to a Pilot Plant. Biochemical Engineering Journal , 56, 23-36. https://doi.org/10.1016/j.bej.2011.04.013

[12]. Martinez, Elizabeth, "Designing a Clarifier to Recover W astewater Algae Biomass for Production of Biofuels", All Graduate Plan B and other Reports, 723, 2015. (https://digitalcommons. usu.edu/gradreports/723)

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 2, March 2022
Impact Factor: 6.252

[13]. Metcalf and Eddy (1991) Wastewater Engineering, Treatment, Disposal, Reuse. 3rd Edition, McGraw-Hill, Inc., New York.

[14]. Mihaela Flora and Lucia Vilceanu, "About sedimentation process in secondary clarifier", Annals of faculty engineering Hunedoara – International Journal of Engineering, Issue 4, 2016.

[15]. Park, H.D., Chang, L.S. and Lee, K.J. (2015) Principles of Membrane Bioreactors for Wastewater Treatment. CRC Press, New York, U.S.

[16]. Pollert, J. ml., Koní.ek, Z., Thoeye, Ch., Boonen, I., Gunther, P.: Optimalization of secondary clarifier using 3D modeling of sludge. In: World Water congress and Exhibition - Abstracts. Oxfod: IWA, 2008.

[17]. Pollert, J. ml., Pavlí.ková I., Todt, V.: Optimalizace dosadzovacíh nárži Ú.OV Praha matematický modelem (Optimalization of secondary clarifier Praha by thee mathematical model). In: Mětskévody, 2010, Brno, ARDEC, 2010, 113-121, ISBN 978-80-8602071-6.

[18]. S. K. Saleem and B. Ravi Kumar, "Analysis and Design of Multi Storyed Building By Using ETABS", Anveshana's international journal of research in engineering and applied sciences, Volume 2, Issue 1 (2017, Jan).