

Structural Analysis of Circular Shaped Elevated Water Tank with Different Staging Pattern

Anurag Sunil Mhaske and Prof. G. P. Deshmukh

Department of Civil Engineering

Pankaj Laddhad Institute of Technology & Management Studies, Buldana, Maharashtra, India

Abstract: *Frame type is the most commonly used production in practice. The main components of the frame type of staging are columns and braces. In the frame statement, the columns are located on the periphery, and it is connected internally by mounting at different levels. The production acts as a bridge between the container and the foundation for the transfer of cargo acting on the tank. In elevated water tanks, the head's requirement for water distribution is met by adjusting the height of the staging site. Frame type setting is generally considered to be best for setting the side resistance shaft type due to the high redundancy and greater ability to absorb seismic energy through inelastic actions. The framed production has many flexible elements in the form of braces and columns to withstand lateral loads. The simulation is performed in the STAAD-PRO software for the circular water tank, a rectangular water tank with a different pattern. Results obtained in terms of movement, moment and stress.*

Keywords: Staging, water tank, circular and rectangular.

REFERENCES

- [1]. Issar Kapadia, Purav Patel, Nilesh Dholiya and Nikunj Patel (2017). "Design, Analysis and Comparison of Underground Rectangular water tank by using STAAD Provi8 software". International Journal of Scientific Development and Research (IJSDR), January 2017, Volume 2, Issue 1, ISSN: 2455-2631.
- [2]. B.V. Ramana Murthy, M Chiranjeevi. "Design of Rectangular Water Tank by Using Staad Pro Software". - International Journal of Computer Science information and Engg., Technologies, issue 6-volume 1, series 3, ISSN 2277-4408.
- [3]. Thalapathy. M, Vijaisarathi. R. P, Sudhakar. P, Sridharan. V, Satheesh. V. S(2016). "Analysis and Economical Design of Water Tanks". International Journal of Innovative Science, Engineering & Technology, Vol. 3, Issue 3, ISSN 2348 – 7968.
- [4]. Nallanathel. M, Ramesh. B, Jagadeesh. L(2018). "Design and Analysis of Water Tanks using Staad Pro". International Journal of Pure and Applied Mathematics, Vol.119, No.17, 3021-3029 pp, ISSN: 1314-3395 (onlineversion).url: <http://www.acadpubl.eu/hub/> Special Issue.
- [5]. Nikunj. P, Mistry. J., "Analysis of Circular Water Tank Stresses Under Hydrostatic Loading by Using Stadd Pro Software". Indian Journal of Research, Vol. 5, Issue 9, September 2016.
- [6]. Dubey. D., Dubey. S., Bajpai.Y.K., "Wind Force Analysis of Intze Type Water Tank in Various Wind Zones Using STAAD-PRO". International Journal of Advance Engineering and Research Development, Volume 4, Issue 6, June -2017, e-ISSN (O): 2348-4470, p-ISSN (P): 2348-6406.
- [7]. Patel Kulvendra. "Wind and Seismic Analysis of Elevated Tank using Staad Pro". International Research Journal of Engineering and Technology, Vol. 05, Issue 10, Oct 2018, e-ISSN: 2395-0056, p-ISSN: 2395-0072.
- [8]. KavithaHarsha, K.S.K.Karthik Reddy, Kondepudi Sai Kala, "Seismic Analysis and Design of INTZE Type Water Tank", International Journal of Science Technology & Engineering, Volume 2, Issue 03, Sept-2015.
- [9]. Smt. Dhotre, Chandrakala and Jawalkar G.C, "Analysis on Overhead Circular water tank for various bearing capacity with sloping ground", International Journal of Scientific & Engineering Research, Volume 6, Issue 5, ISSN: 2229-5518, May-2015.

- [10]. Bhandari.M , Karan Deep Singh, “Economic Design of Water Tank of Different Shapes With Reference To IS: 3370-2009”, International Journal of Modern Engineering Research (IJMER), Volume 4, Issue 12, ISSN: 2249-6645, Dec-2014.
- [11]. Bhandari .M , Karan Deep Singh, “Comparative Study of Design of Water Tank With Reference to IS 3370”, International Journal of Emerging Technology and Advanced Engineering, Volume 4, Issue 11, ISSN: 2250-2459, Nov-2014.
- [12]. Ranjit Singh Lodhi, Dr.Abhay Sharma, Dr.Vivek Garg, “Design of Intze Tank in Perspective of Revision of IS :3370”, International Journal of Scientific Engineering and Technology, Volume No.3, Issue No.9, pp:1193-1197, ISSN :2277-1581, Sep-2014.
- [13]. Neeta .K Meshram, Dr. P. S. Pajgade, “Comparative Study of Water Tank Using Limit State Method and Working Stress Method”, International Journal of Research in Advent Technology, Volume 2, Issue 8, ISSN: 2321-9637, Aug-2014.
- [14]. Aditya Wad, Gore N. G, Salunke P. J, Sayagavi V. G, “Cost Optimization of Rectangular RCC Underground Tank”, International Journal of Recent Technology and Engineering (IJRTE), Volume 3, Issue 3, ISSN: 2277-3878, July-2014.
- [15]. Manish N. Gandhi, Rajan .A, “Necessity of Dynamic Analysis of Elevated Water Storage Structure Using Different Bracing in Staging”, International Journal of Research in Advent Technology, Volume 2, Issue 2, ISSN:2321-9637, Feb-2014.