

**REPORT ON EVALUATION OF ANALYSIS AND DESIGN OF 100m TALL LATTICE GUYED  
WIND MAST**  
**Report No. DRD/CE/YMD-8/11-12/1**

December 2, 2011

M/s Clique Consultants Pvt Ltd had approached IIT Bombay vide their letter No. CC 11 / C500 / 268 dated 07-11-2011 for evaluation of analysis and design of 100m Tall Lattice Guyed Wind Mast along with two structural drawings for their client M/s Ramkrishna Iron Works Private Limited.

Followings are the salient points of the analysis and design.

1. The 100m tall mast has been designed for wind speed of 120 MPH at the base.
2. The structure has been designed as '**temporary structure**' with a maximum life span of about **24 months**.
3. Wind Loading has been considered in conformity to IS : 875 and also cross checked with IS 802.
4. The lattice tower has been supported at 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m and 98m levels by 8mm dia. Galvanized Guy cables of grade 1960MPa.
5. Non-linear static analysis of the guyed mast has been done with the help of SAP2000 software by modeling guy wire as Cable Element and Lattice Tower Members as Frame Elements.
6. It has been shown by the client that the forces in all Lattice and Cable Elements are within Permissible Limits. Further, the deflection at tip of the mast has been observed to be within permissible limits and the Cable Anchor Blocks are found safe against Uplift, Sliding and Overturning.

The IIT Bombay consultants reviewed the documents and drawings provided to them as per the usual evaluation practice. On the basis of the review, several comments / observations / queries / suggestions were made vide interim reports, meetings and telephonic conversations.

Subsequently, revised documents and drawings were provided to the IIT Bombay consultants for review. Comments / observations / queries / suggestions were made on the revised sets also.

Further clarifications / documents were submitted to the IIT Bombay consultants.

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