



Clique

CONSULTANTS PVT. LTD.

ENGINEERING CONSULTANTS

Our Ref. No. CC 17 / C500 / 015

Date : Mar 01, 2017

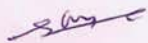
TO WHOMSOEVER IT MAY CONCERN


This is to certify that at the request of M/s Ramkrishna Iron Works Private Limited , their Design of 150M Tall Lattice Wind Mast having below mentioned specifications was evaluated and verified by us for Structural Stability:

1. 150m Tall Slender Lattice Structure Supported by Inclined Pre-Tensioned Wireropes
2. Wind Loading in conformity to IS : 875 - 2015, Part 3 – Wind Loads; Basic Wind Velocity:55mtr / sec
3. Lattice Structure is 450mm x 450mm, formed using Four Corner Legs of SHS 60 x 60 x 5 upto 80m from Base and 350mm x 350mm formed using Four Corner Legs of SHS 40 x 40 x 4 above 80m, Lacing & Batten Members of 12mm Square Bars and Section Flange Members of ISA 50 x 50 x 6, all Grade 250MPa (Clique Drg No. C500 / CI / GA / A0 / 103 Rev. R0 dtd 01.03.2017)
4. Wireropes adopted are 8mm dia Galvanised Steel Wire-ropes in 6 x 19 (12 / 6 / 1) Construction in Conformity to IS:2266 : Steel Wire Ropes for General Engineering Purpose - Specification, of Grade 1570MPa as under:
 - 4.1 Upto 110m Level : Fibre Core Steel Wire Ropes with Minimum Breaking Force of 31kN
 - 4.2 120m Level & Above : Steel Core Steel Wire Ropes with Minimum Breaking Force of 33kN
5. Pre-Tensioning in Wirerope : 2.5kN upto 110m Level and 3.0kN for 120m Level & Above
6. Wirerope Anchoring Blocks, in Concrete Construction, on Four Orthogonal Directions(Clique Drg No. C500 / CI / GA / A1 / 106, Rev. R0 dtd 01.03.2017) are as under:
 - 6.1 1800 mm Long x 1800mm Wide x 1500mm Deep placed at 20m from Mast Centre
 - 6.2 2300 mm Long x 2300mm Wide x 1500mm Deep placed at 40m from Mast Centre
 - 6.3 2400 mm Long x 2400mm Wide x 1500mm Deep placed at 60m from Mast Centre
 - 6.4 2200 mm Long x 2200mm Wide x 1500mm Deep placed at 75m from Mast Centre
7. Central Mast is supported on 2300 mm x 2300mm x 500mm Thick Concrete Footing , Founded @ 1500mm below Ground Level
8. On Each of Four Orthogonal Directions, One Set of Cables is Anchored 20m from Mast Centre and tied with Lattice Structure at 10,20,30m and 40m Level
9. On Each of Four Orthogonal Directions, Another Set of Cables is Anchored 40m from Mast Centre and tied with Lattice Structure at 50m,60m,70m and 80m Level
10. On Each of Four Orthogonal Directions, Another Set of Cables is Anchored 60m from Mast Centre and tied with Lattice Structure at 90m, 100m,110m and 120m Level
11. On Each of Four Orthogonal Directions, Another Set of Cables is Anchored 75m from Mast Centre and tied with Lattice Structure at 130m, 140m and 148m Level
12. Forces in all Lattice and Cable Elements are found within Permissible Limits
13. Cable Anchor Blocks are found safe against Uplift, Sliding and Overturning
14. Boom Arm made of 38mm OD x 4.5mm thk MS Pipe (Clique Drg No. C500 / CI / GA / A3 / 104 Rev. R0 dtd 01.03.2017) is certified Structurally Adequate.


After due verification, including Non-Linear Analysis, it is certified that the design as submitted by M/s Ramkrishna Iron Works Private Limited is structurally sound and stable in conformity to IS : 800, and IS : 875 - 2015, Part 3 upto 55mtr / sec wind velocity.

For Clique Consultants Private Limited,


A D Paranjape, Director
MIE (India) Regn No. M 041815


Encl : Analysis & Design Review Report
(C500 / CI / DS / A4 / 101, Rev R0 dtd 01.03.2017)

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