Sudatel Telecom Group

Network Division

PDD & Planning

REQUEST FOR PROPOSALS

Technical Specifications for

35m & 45m Self -Support Tower for 2026 Project

1 SCOPE

Sudatel asking for proposal to supply 35m & 45m Self -Support Tower as per below specifications.

1.1 Standard Supply Scope:

The supply scope includes supply of the: -

1.1.1 Angles, bolts, base plates, access ladder, antenna mounts, platforms, templates, anchor bolts and galvanization.

1.1.2 One steady obstruction light with two lamps.

1.1.3 Lightening rod with 70mm2 down conductor.

1.2 Bill of Quantity:

Description	Height	QTY
Normal Tower	35M	146
Normal tower	45M	20
Total		**166**

TECHNICAL SPECIFICATIONS

1.2 General:

1.2.1 Max survival 3 second gust wind speed = 160 Km/Hr.

1.2.2 Max operational 3 second gust wind speed = 120 Km/Hr.

1.2.3 Max design antenna loads 9 panel antennas at top with 18 RRU + 2 MW Dishes each 0.6m & 2MW Día 1.2m 2MW Día 1.8m. For 35&45 type

1.2.4 Allowable sway 0.5°.

1.2.5 The design is according to TIA-EIA-222G.

1.2.6 Towers are equipped with internal access ladder with safety cage.

1.2.7 Towers will be supplied with single steady double obstruction light at top.

1.2.8 The lightning and earthing conductors has across sectional area of 70mm^2.

1.2.9 All towers are angles, 4-Leg's type.

1.2.10 Tower lifespan: >30years

1.2.11 Tower warranty: >3years

1.3 Loading:

1.3.A -Tower 45 &35 type (The maximum number of MW and Antenna).

1.3.A.1 six (6) GSM antenna277×43×19.6 cm (weight 60 kg each).

1.3.A.1.2 three (3) GSM antenna 270×30×8.9 cm (weight 25 kg each).

1.3.A.2.1 (2) 1.2m MW dishes (weight 45 kg each).

1.3.A.2.2 (2) 1.8 m MW dishes (weight 90 kg each).

1.3.A.2.3 Two (2) 0.6m MW dishes (weight 15 kg each).

1.3.A.4 18 RRU (weight 20 kg each) Heights.

1.3.A.5 six RF GSM antenna 277×43×19.6 cm at top

1.3.A.6 six RF GSM antenna 270×30×8.9 cm at top -6.0 m

1.3.A.7 1 MW dish 1.8 m dia at top -2m at rotation (0).

1.3.A.8 1 MW dish 1.8 m dia at top -3m at rotation (180).

1.3.A.9 1 MW dish 1.2 m dia at top -4m at rotation (120).

1.3.A.10 1 MW dish 1.2 m dia at top -5m at rotation (270).

1.3.A.11 1 MW dish 0.6 m dia at top -6m at rotation (0).

1.3.A.12 1 MW dish 0.6 m dia at top -6m at rotation (180).

1.3.A.13 Each 2(two) RRU will be installed behind the antenna.

Kindly note that the above dead loads are the maximum required for the design, and the supplier must consider the optimum design, with calculating the steel structure including all the accessories needed such as coaxial, feeders, jumpers, ladders, horizontal members, platforms, handrails, climbing ladders steps Etc.

Live load including the weight and movements of installation and maintenance team should be considered during the design (4 persons at a time). Horizontal members, platforms rails, climbing ladders steps shall be designed to withstand a vertical load of 1.5KN at any point

1.4 The listed standard shall be followed in tower design:

1.4.1 BS.449 Part 1: Specifications for the use of structural steel in building. (Imperial units).
1.4.2 BS.449 Part 2: Specifications for the use of structural steel in building. (Metric units).
1.4.3 BS.729 Specification for the hot dip galvanized coatings on iron and steel articles.
1.4.4 BS.4190 Specification for ISO metric black hexagon bolts, nuts and screws.
1.4.5 BS.4360 Specification for wieldable structural steels.
1.4.6 BS.4848 PART4: Specification for hot-rolled structural steel sections. Equal and unequal angle.
1.4.7 BS.4848 PART2: Hot-rolled structural steel sections. Specification for hot finished hollow section.

1.4.8 BS.5135 Specification for ARC welding of carbon and carbon manganese steels.
1.4.9 BS.6651 Code of practice for protection of structure again lighting

2 GENERAL REQUERMENT

2.1 Design Calculations:

The bidder shall submit detailed structural calculations for the 35m&45m high light self-supporting tower.

2.2 Marking:

All structural members are to be punch marked sequentially before galvanizing in order to identify every member during erection. Such marking information shall be provided in the diagrams to be provided.

2.3 Galvanizing:

All steel work and fittings used in the assembly of towers except those used in concrete foundation, shall be galvanized by the hot dip process after fabrication.

If, for manufacturing reasons, the bidder proposes a treatment other than hot dip galvanizing for certain parts of the tower, he shall state specifically the fittings to be so treated and process to be used.

2.3.1 The quality standard of the Zincification layer is:

Appearance: Surface of Zincification layer should be smooth in practicability. No burrs, agglomeration or dropping burls on the surface. No disfigurement s of over-eroded by the acid and iron revealed.

Thickness of the zincification should not be less than 610g/m2 (i.e., 86μm).

Equality: zincification layer should be equal, and steel should not expose after being eroded four times by vitriol.

Adhesion quality: zincification layer should be combined fast with the basic metal. In the hammer knocking test, fault of peeling off and heaving should not be accepted.

3.2.2 Steelworks forming portion of the foundation shall be galvanized down to a depth of not less than thirty [30] cm under the surfaces of the concrete.

3.2.3 Painting or cadmium plating shall not be used in any instance as a sole of means protection against corrosion except for repair purposes.

2.4 Packing of Towers:

At least the following requirements shall be met.

2.4.1 Tower members shall be supplied sorted.

2.4.2 Angles and Channels shall be tied securely at each end with steel wires.

2.4.3 Plates shall be tied securely together by-passing wire through holes.

2.4.4 Bolts, nuts, and washers shall be packed in strong bags or metallic.

3.3.5 Clip angles, brackets, similar loose pieces shall be securely tied together through holes and wrapped with steel wires.

2.5 Documentation:

2.5.1 Two sets of complete documentation shall be provided (hardcopy and softcopy). It shall cover the following:

2.5.2 Tower design, assembly, and calculation (safety cage/climbing ladder/).

2.5.3 Materials quality certification.

2.5.4 Installation of each structure and other ancillary items includes:

a. Drawings of foundation.
b. Installation drawings of mounting poles.
c. Systematic drawing of lightning-proof system.
d. Drawings of Obstruction lights.
e. Drawings of earthing system.

THE END