

Government of India
Ministry of Communication & Information Technology
Department of Telecom
Sanchar Bhawan, 20-Ashoka Road, New Delhi-110001
(DS Cell)

No. 820-01/2006-LR(Vol.II)Pt.

Dated : 19.03.13

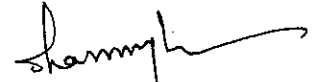
To

All Internet Service Providers

Sub.: Mandatory use of Telecom Tower standards issued by Telecommunications Engineering Centre.

Please find enclosed herewith letter No. 16-10/2012-CS-III(Pt.1) dated 11.12.2012 & No. 16-10/2012-CS-III(Pt.1) dated 08.03.2013 for information and further action at your end.

Encl. : as above



(Sanjay Kumar)
ADG (ISP-I)

Tel. No. : 23036482/6165

Government of India
Ministry of Communications & IT
Department of Telecommunications
Sanchar Bhawan, 20-Ashoka Road, New Delhi-110001
(Carrier Services Cell)

No. 16-10/2012-CS-III(Part-I)

Dated 11.12.2012

To.
All Telecom Service Providers


Subject: Mandatory use of Telecom Tower Standards issued by Telecommunication Engineering Centre.

A DoT Committee on BTS Towers has recommended that telecom towers established/used by Telecom Service Providers (TSPs) should conform to applicable Generic Requirements (GRs) issued by Telecommunication Engineering Centre (TEC), Department of Telecommunications, Government of India. In this connection, it has been decided that telecom towers, erected/used by the TSPs with effect from 01.04.2014, shall conform to the Generic Requirements of Towers issued by TEC.

2. A list of TEC GRs for Telecom Towers is attached herewith along with the broad specifications and features of the towers.

3. The Telecom Service Providers may suggest new designs, if any, alongwith specifications that may be developed as TEC GRs. It is proposed that few such designs, as suggested by TSPs, shall be vetted for structural safety, construction practice, material properties, etc before being approved. The TSPs may suggest the new designs along with all the details of the tower to TEC by 31st January, 2013 so that such designs can be short-listed and vetted for structural safety etc and corresponding GRs can be issued to ensure that the specifications are ready well in advance for usage before the due date, that is, 01.04.2014.

Encl: A/A


11.12.2012
(S.T. Abbas)
Director(CS-III)

Copy to:

- (i) Sr DDG(TEC) for information & necessary action.
- (ii) Sr. DDG(AS)/DDG(DS) for information please.

Tower Comparison Table

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
1	15 Meter Self Supporting Mast	G/MST-01/01.OCT96 (Reaffirmed as per Minutes of DCC DL.25/04/03.)	15M	Light weight yagi antenna	198 Km/hr	1m x 1m	259kg +/- 3% & 18.47 Kg of foundation grillage	
2	40 Meter Narrow Base Heavy Weight Tower	GR/TWR-02/02.MAY 2004 (Reaffirmed May 2008)	40M	Either two parabolic microwave dish solid antennas of 2.4 m dia or 4 nos of 3.0m dia grid paraboloid antennas at any. level /position /orientation /configuration.	200 Km/hr (wind zone vi of IS:875)	square base of 2 m	<p>(i) Tower Superstructure: 11736 Kg +/- 3%</p> <p>(ii) Ladder, two platforms, wave guide rack and Support : 2147 Kg +/- 3%</p> <p>** Additional Platform at 17.5m level, if required. 706.00 Kg +/- 3%</p> <p>(iii) Material for fixing of tower super structure foundation: 706.88 Kg +/- 3%</p> <p>(iv) Antenna Fixtures (4) : 686.88 Kg +/- 3%</p> <p>(v) Aviation Lamp bracket and fixtures: 7.5 Kg +/- 3%</p>	

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
3	60 Meter Heavy Weight M/W Tower	G/TWR-03/01. JAN2000 (Amendment No. 1 dated 07/06/2005)	60M	Maximum of four parabolic microwave solid dish antennas of 4m dia.	200 Km/hr	square base of 11 m	42715.54 Kg \pm 3%	
4	40 Meter Narrow Base Light Weight Tower	GR/TWR-04/01.DEC2000 (Amendment No. 1 dated 19/10/2001 & Amendment No. 2 dated 29/06/2005) & Amendment No. 3 dated 04/07/2005	40M	Maximum of two grid parabolic antennas of 3m dia. at the top of the tower. The tower shall be able to load a combination of more than two grid parabolic antennas of smaller dias. (i.e. 1.2m, 1.4m, 1.8m, 2.4m.) at tower heights i.e. 28.5m and 18.5m. A sample of combinations of different smaller sizes of grid antennas which can be installed at different levels simultaneously in	200Km/hr	square base of 2 m	Total Weight of Tower for: 10318 Kg \pm 3% Pile Foundation Total Weight of Tower for: 9785 Kg \pm 3% Raft Foundation <u>For WLL/GSM antenna loading (as per clause 1.2)</u> Total Weight of Tower for: 10173.5 Kg \pm 3% Pit type Foundation	

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
				<p>lieu of 2 nos. of grid antennas of 3m dia at the top, are as under: -</p> <p>(a) 4 grid antennas: 2 nos. of 2.4m dia at 28.5m & 2 nos. of 2.4m dia at 18.5m levels.</p> <p>(b) 6 grid antennas: 2 nos. of 1.2m dia at 40m, 2 nos. of 2.4m dia at 28.5m and 2 nos. of 2.4m dia at 18.5m levels.</p> <p>(c) 4 grid antennas: 2 nos. of 3m dia at 28.5m, and 2 nos. of 2.4m dia at 18.5m levels.</p> <p>(d) 6 grid antennas: 2 nos. of 1.2m dia at 40m, 2 nos. of 1.8m dia at</p>				

Sl No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
5	30 Meter Narrow Base Heavy Weight Tower	GR/TWR-05/01.DEC2000 (Amendment No.1 Dated : 14/06/2005)	30M	<p>28.5m and 2 nos. of 3m dia at 18.5m levels.</p> <p>(e) 6 grid antennas: 2 nos. of 1.8m dia. at 40m, 2nos of 1.8m dia at 28.5m , and 2 nos. of 2.4m dia. at 18.5m levels</p> <p>(f) 6 grid antennas: 2 nos. of 1.2m dia. at 40m, 2 nos. of 1.2m dia at 28.5m, and 2 nos. of 2.4m dia at 18.5m levels</p>	200 Km/hr	square base of 1.7 m	9910.56 Kg \pm 3%	

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
6	20 Meter Narrow Base Heavy Weight Tower	GR/TWR-06/01.DEC2000 (Amendment No.1 Dated : 14/06/2005)	20M	antennas at top position. The tower shall also be able to hold (support) a combination of more than 4 grid parabolic antennas of smaller diameter (i.e. 1.2 metre, 1.4 metre, 1.8 metre).	200 Km/hr	square base of 1.4 m	5940 Kg \pm 3%	
				Maximum of either two parabolic microwave dish solid antennas of 2.4 metre dia or 4 Nos. of 3.0 metre dia Grid parabolic antennas at top position. The tower shall also be able to load (support) a combination of more than 4 grid parabolic antennas of smaller diameter (i.e. 1.2 metre, 1.4 metre, 1.8 metre.)				

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
7	30 Meter Narrow Base Light weight Tower	GR/TWR-07/01.DEC2002 (Amendment No.1 Dated 30/05/2007)	30M	Maximum of two grid paraboloid antennas of 3 m dia. at the top of the tower or 6 Nos. of rectangular panel antennas for wireless systems such as GSM / CDMA etc.	200Km/hr	square base of 1.7 m	7712 Kg \pm 3% Inclusive of (i) 1 no. antenna mount fixtures (Leg mount) for grid parabolic antennas (ii) 1 no. antenna mount fixtures (Face mount) for grid parabolic antennas and (iii) 6 nos. antenna mount fixtures for GSM/WLL rectangular panel antennas	
8	20 Meter Narrow Base Light Weight Tower	GR/TWR-08/01.DEC2002 (Amendment No.1 Dated 30/05/2007)	20M	Maximum of two grid paraboloid antennas of 3m,dia. at the top of the tower or 6 Nos. of rectangular panel antennas for wireless systems such as GSM / CDMA etc.	200Km/hr	square base of 1.4 m	4334 Kg \pm 3% (Inclusive of (i) 1 no. antenna mount fixture (Leg mount) for grid parabolic antennas (ii) 1 no. antenna mount fixture (Face mount) for grid parabolic antennas and (iii) 6 nos. antenna mount fixtures for GSM/WLL rectangular panel antennas)	

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
9	Roof Top Tower for Cellular Mobile Systems (30/25/20/15 /10 M Tower)	GR/TWR-09/01.FEB2004 (Amendment No.1 Dated 22/04/2008)	30/25/20/15/10 M	(A) The 20, 25, and 30 m towers shall be able to support the loading of the antennas as given below: a) 6 nos. of panel antennas for WLL systems at top platform; b) 3 nos. of 0.6m dia microwave solid dish antennas at a platform 5m below the top platform; c) 6 nos. of panel antennas for GSM systems at a platform 10 m below the top platform. (B) The 15 and 10 m towers shall be able	200Km/hr	30m: square base of 3514 mm 25m: square base of 3088 mm 20m: square base of 2655 mm 15m: square base of 2217 mm 10m: square base of 1774 mm	Weight of Towers is inclusive of all parts of Superstructure (except antenna mounting arrangement) as well as Foundation (including base plate, anchor bolts & template but excluding RCC) given below: 30m : 6792 Kg. 25m : 5480 Kg. 20m : 4354 Kg. 15m : 3001 Kg. 10 m : 2012 Kg.	

Sl. No	GR Title	GR No.	Height	No. of antenna load.	Wind speed	Base dimension	Weight	Remarks
10	60 Meter Narrow Base Light Weight Tower for Cellular Systems	GR/TWR-10/01.NOV 2004	60M	<p>to support the loading of the antennas as given below:</p> <p>a) 6 nos. of panel antennas for GSM/WLL systems at top platform</p> <p>b) 3 nos. of 0.6m dia Microwave solid dish antennas at a platform 5m below top platform</p>	200 Km/hr)		<p>(i) 29.337 Ton (excluding RCC, antenna fixtures & optional platform)</p> <p>(ii) 893 kg of antenna fixture including face mounting and leg mounting fixtures.</p> <p>(iii) 471 kg of optional platform (With tolerance of $\pm 3\%$)</p>	
				<p>Following combination of antennas:</p> <p>(i) 6 panel antennas for WLL systems at 57.5 m;</p> <p>(ii) 6 panel antennas of GSM systems at 47.5 m;</p> <p>(iii) 3 solid dish antennas, each of 0.6 m, at 52.5 m.</p>				

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
11	40.30 & 20 meter Towers for Cellular Systems	GR/TWR-11/01.DEC 2004	40/30/20 M	<p>(i) The 40 and 30 m towers shall be able to support the loading of the antennas as given below:</p> <p>a) 6 Nos. of panel antennas for WLL systems at top platform;</p> <p>b) 3 Nos. of 0.6m dia microwave solid dish antennas at a platform 5m below the top platform;</p> <p>c) 6 Nos. of panel antennas for GSM systems at a platform 9.5m below the top platform.</p> <p>(ii) The 20 m tower shall be able to support the loading of the antennas as given below:</p>	200Km/hr	<p>40m: square base of 4500mm</p> <p>30m: square base of 3498mm</p> <p>20m: square base of 2560mm</p>	<p><u>40 m Tower</u></p> <p>(i) Weight of Tower, inclusive of all parts of Superstructure (excluding the weight of antenna mounting arrangement as mentioned below) as well as Foundation (including base plate, anchor bolts but excluding RCC) : 9878 kg.</p> <p>(ii) Wt. of CDMA, Microwave & GSM antenna mounting arrangement: 670 kg</p> <p><u>30 m Tower</u></p> <p>(i) Weight of Tower, inclusive of all parts of Superstructure (excluding the weight of antenna mounting arrangement as mentioned below) as well as Foundation (including base plate, anchor bolts but excluding RCC): 6610 kg</p> <p>(ii) Wt. of CDMA, Microwave</p>	

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
				<p>a) 6 Nos. of panel antennas for GSM/WLL systems at top platform</p> <p>b) 3 Nos. of 0.6m dia microwave solid dish antennas at a platform 5m below top platform</p>			<p>& GSM antenna mounting arrangement: 670 kg</p> <p><u>20 m Tower</u></p> <p>(i) Weight of Tower, inclusive of all parts of Superstructure (excluding the weight of antenna mounting arrangement as mentioned below) as well as Foundation (including base plate, anchor bolts but excluding RCC): 3848 kg</p> <p>(ii) Wt. of CDMA, Microwave & GSM antenna mounting arrangement: 481 kg</p>	
12	40 meter tower for cellular system (up to 170 km ph wind speed	GR/TWR-12/01. JUN 2005 (Amendment No.1 Dated 17.05.2006 & Amendment No. 2 Dated 04.07.2008)	40M	<p>Support antennas as given below:</p> <p>a) 6 panel antennas for GSM/WLL systems at 1m below the top.</p> <p>b) 3 microwave solid dish antennas of 0.6m dia at 4 m below</p>	170K.m/hr	Square base of 2m sides	<p>(i) Weight of Tower, inclusive of all parts of Superstructure (excluding the weight of antenna mounting arrangement i.e. antenna fixtures) as mentioned below as well as Foundation (including base plate, anchor bolts but excluding RCC): 8623 kg.</p>	

Sl. No	GR Title	GR No.	Height	No. of antenna load	Wind speed	Base dimension	Weight	Remarks
				the top c) 6 panel antennas for GSM/ WLL systems at 6 m below the top			(ii) Wt. of GSM antenna mounting arrangement (per antenna): 38 kg (iii) Wt. of WLL antenna mounting arrangement (per antenna): 32 kg	

Urgent
Reminder

Government of India
Ministry of Communications & IT
Department of Telecommunications
713, Sanchar Bhawan, 20-Ashoka Road, New Delhi-110001.
(Carrier Services Cell)

No. 16-10/2012-CS-III(Part-I)

Dated: 08.03.2013

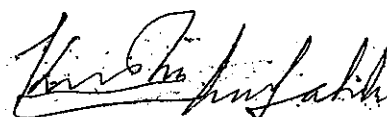
To,
All Telecom Service Providers

Subject:- Mandatory use of Telecom Tower Standards issued by
Telecommunication Engineering Centre.

Kindly refer to letter of even no. dated 11.12.2012 regarding the above mentioned subject. The requisite suggestions in this regard are still awaited.

2. It is once again requested to send suggestions directly to TEC so that such designs can be short-listed and vetted for structural safety etc and corresponding GRs can be issued to ensure that specifications are ready well in advance for usage before the due date, i.e. 01.04.2014. The requisite suggestions may kindly be provided on priority basis.

This issues with the approval of DDG(CS).



(K.C. Singha)

Under Secretary(CS-III)

Tel. No. 23372628

Copy to:

- (i.) Sr.DDG(TEC) for information.
- (ii.) Sr. DDG(AS)/DDG(DS), DoT for issue of reminder to Access Service Providers and Internet Service Providers respectively(Copy of TEC letter is enclosed).

Dir ~~DS III~~ Njan
12/3

ADG (ISP-I)

Relin
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