

TECHNICAL BULLETIN

TB-0162

Overhead conductor stringing tables

Background

Standard stringing tables for bare conductor have traditionally been developed and incorporated into both design and construction standards (MDI 0031 and MCI 0005 respectively), to enable construction crews to correctly string conductors by measuring the sag.

In rural areas where large span lengths are often encountered, measuring the sag in a particular span is often difficult, resulting in the possibility of either an over or under tensioned conductor. Over tensioned conductors can lead to premature failure of both the conductor and fittings while an under tensioned conductor may lead to insufficient ground clearance under maximum operating temperature.

Actions

To address this situation, additional stringing tables have been developed that enable conductors to be tensioned with the aid of a dynamometer. Two conductors that are typically used for these longer spans are Hydrogen (7/4.5 AAAC) and Cherry (6/4.75 + 7/1.60 ACSR) and the following new stringing tables refer:

- Stringing table 3/T is now available for Hydrogen to supplement existing table No.3 (20.5% CBL @ 5°C), and;
- Stringing table 3A/T is now available for Cherry to supplement existing table No. 3A (22% CBL @ 5°C).

It must be noted that the use of these new stringing tables will require the design project drawing to reference the ruling span for the particular stringing section.

Unlike sag tables that are suitable for a range of conductor sizes, tension tables are conductor size specific and therefore must only be used for the conductor nominated in the table.

It is not intended to prepare tension tables for smaller size or low tension conductors as the tension incremental changes between varying ambient temperatures are usually below values that can accurately be controlled during the tensioning process. The existing sighting board method is to remain for these situations.

Contact: Stewart Daniel

Ph no: 9853 5934

Date: 31 December 2018

Authorised by: Jude Perera, Manager Primary Systems

51 Huntingwood Drive, Huntingwood NSW 2148

Telephone: 131 081 Fax: (02) 9853 6000

Postal Address: PO Box 6366 Blacktown NSW 2148.

Page 1 of 2



Table 3A/T - ACSR/GZ (6/4.75 + 7/1.60 - Cherry) - Tension in kiloNewtons - Armour rods and vibration dampers must be fitted

	Ambient Temperature in °C							
Ruling Span (m)	5	10	15	20	25	30	35	40
100	8.90	8.10	7.35	6.65	6.00	5.43	4.93	4.49
110	8.84	8.07	7.35	6.68	6.08	5.54	5.06	4.65
120	8.77	8.03	7.35	6.72	6.15	5.64	5.19	4.80
130	8.71	8.00	7.35	6.75	6.21	5.73	5.31	4.93
140	8.64	7.97	7.35	6.78	6.27	5.82	5.42	5.06
150	8.58	7.94	7.35	6.81	6.33	5.90	5.52	5.18
160	8.51	7.90	7.35	6.84	6.39	5.98	5.62	5.29
170	8.45	7.88	7.35	6.87	6.44	6.05	5.71	5.40
180	8.39	7.85	7.35	6.90	6.49	6.12	5.79	5.50
190	8.34	7.82	7.35	6.92	6.53	6.19	5.87	5.59
200	8.28	7.79	7.35	6.94	6.58	6.25	5.95	5.68
210	8.23	7.77	7.35	6.96	6.62	6.30	6.02	5.76
220	8.18	7.75	7.35	6.99	6.66	6.36	6.08	5.83
230	8.14	7.73	7.35	7.00	6.69	6.40	6.14	5.91
240	8.09	7.70	7.35	7.02	6.72	6.45	6.20	5.97
250	8.05	7.69	7.35	7.04	6.75	6.49	6.26	6.04
260	8.02	7.67	7.35	7.05	6.78	6.54	6.31	6.09
270	7.98	7.65	7.35	7.07	6.81	6.57	6.35	6.15
280	7.95	7.64	7.35	7.08	6.84	6.61	6.40	6.20
290	7.92	7.62	7.35	7.09	6.86	6.64	6.44	6.25
300	7.89	7.61	7.35	7.11	6.88	6.67	6.48	6.30
310	7.86	7.60	7.35	7.12	6.90	6.70	6.52	6.34
320	7.84	7.58	7.35	7.13	6.92	6.73	6.55	6.39

Tensions given are for initial conditions (un-stretched conductor)

Tensions are based on 22% CBL at 5°C

Table 3/T - AAAC (7/4.5 - Hydrogen) - Tension in kiloNewtons - Armour rods and vibration dampers must be fitted

	Ambient Temperature in °C							
Ruling Span (m)	5	10	15	20	25	30	35	40
90	6.21	5.58	4.98	4.43	3.94	3.52	3.15	2.84
100	6.16	5.55	4.98	4.47	4.01	3.61	3.26	2.97
110	6.10	5.52	4.98	4.50	4.07	3.69	3.37	3.09
120	6.04	5.49	4.98	4.52	4.12	3.77	3.47	3.20
130	5.98	5.46	4.98	4.55	4.17	3.84	3.56	3.31
140	5.93	5.43	4.98	4.58	4.22	3.91	3.64	3.40
150	5.87	5.41	4.98	4.60	4.27	3.97	3.72	3.49
160	5.82	5.38	4.98	4.63	4.31	4.03	3.79	3.57
170	5.77	5.36	4.98	4.65	4.35	4.09	3.86	3.65
180	5.72	5.33	4.98	4.67	4.39	4.14	3.92	3.72
190	5.68	5.31	4.98	4.69	4.42	4.19	3.98	3.79
200	5.64	5.29	4.98	4.70	4.45	4.23	4.03	3.85
210	5.60	5.27	4.98	4.72	4.48	4.27	4.08	3.91

Tensions given are for initial conditions (un-stretched conductor)

Tensions are based on 20.5% CBL at 5°C