

Annex-3.4.6.b Brake Tables

<p style="text-align: center;">TABLE : 1 (RPTT Table 3) BRAKING SHEET (For 700 meters of braking distance) I: For trains operating with fast-acting brakes II: For trains operating with slow-acting brakes</p>																						
Gradient (‰)	Type of brake	SPEED (km/s)																				
		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
		BRAKE PERCENTAGE																				
0	I	6	6	6	6	8	11	14	18	23	28	34	41	48	57	66	77	88	95	104	114	125
	II	6	6	6	6	8	11	15	20	26	33	41	51	62	76	93	-	-	-	-	-	-
1	I	6	6	6	7	9	12	15	19	24	29	35	42	50	58	68	78	90	96	105	116	128
	II	6	6	6	7	9	12	16	21	27	34	42	53	64	78	95	-	-	-	-	-	-
2	I	6	6	6	8	10	13	16	20	25	31	37	44	51	60	69	80	91	98	107	118	130
	II	6	6	6	8	10	13	18	23	29	36	44	54	66	80	97	-	-	-	-	-	-
3	I	6	6	7	9	11	14	18	22	27	32	38	45	53	62	71	82	93	100	109	120	133
	II	6	6	7	9	11	15	19	24	30	37	46	56	68	82	99	-	-	-	-	-	-
4	I	6	6	8	10	12	15	19	23	28	34	40	47	54	63	73	83	94	101	111	121	-
	II	6	6	8	10	12	16	20	26	32	39	48	58	70	85	-	-	-	-	-	-	-
5	I	7	7	9	11	13	16	20	24	29	35	41	48	56	65	74	85	96	103	112	123	-
	II	7	7	9	11	14	17	22	27	33	41	50	60	72	87	-	-	-	-	-	-	-
6	I	7	8	10	12	15	18	21	26	31	36	43	50	58	67	76	87	97	105	114	125	-
	II	7	8	10	12	15	19	23	28	35	42	51	62	74	89	-	-	-	-	-	-	-
7	I	8	9	11	13	16	19	23	27	32	38	44	52	59	68	78	89	99	106	116	127	-
	II	8	9	11	13	16	20	24	30	36	44	53	64	76	91	-	-	-	-	-	-	-
8	I	9	10	12	14	17	20	24	29	34	39	46	53	61	70	80	91	100	108	118	129	-
	II	9	10	12	14	17	21	26	32	38	46	55	66	78	93	-	-	-	-	-	-	-
10	I	11	12	14	17	19	23	27	31	37	43	49	56	64	74	83	94	103	111	121	133	-
	II	11	12	14	17	20	24	29	35	41	49	59	70	83	98	-	-	-	-	-	-	-
12	I	13	14	16	19	22	25	29	34	40	45	52	60	68	77	87	97	107	-	-	-	-
	II	13	14	16	19	23	27	32	38	45	53	63	74	87	-	-	-	-	-	-	-	-
14	I	15	17	19	21	24	28	32	37	42	49	55	63	71	80	91	100	-	-	-	-	-
	II	15	17	19	22	25	30	35	41	48	56	66	78	91	-	-	-	-	-	-	-	-
16	I	17	19	21	24	27	31	35	40	45	52	58	66	75	84	94	103	-	-	-	-	-
	II	17	19	21	24	28	32	38	44	52	60	70	82	95	-	-	-	-	-	-	-	-
18	I	19	21	23	26	29	33	38	43	48	55	62	69	78	87	97	107	-	-	-	-	-
	II	19	21	23	27	31	35	41	47	55	64	74	86	99	-*	-	-	-	-	-	-	-
20	I	21	23	25	28	32	36	40	46	51	58	65	73	81	91	100	-	-	-	-	-	-
	II	21	23	26	29	33	38	44	51	58	67	78	90	-	-	-	-	-	-	-	-	-
22	I	23	25	28	31	34	38	43	48	54	61	68	76	85	94	104	-	-	-	-	-	-
	II	23	25	28	32	36	41	47	54	62	71	82	94	-	-	-	-	-	-	-	-	-
25	I	26	29	31	34	38	42	47	53	59	66	73	81	90	99	-	-	-	-	-	-	-
	II	26	29	32	36	40	46	52	59	67	76	87	-	-	-	-	-	-	-	-	-	-

TABLE : 2 (RPTT Table 4)

BRAKING SHEET

(For 1000 meters of braking distance)

I: For trains operating with fast-acting brakes

II: For trains operating with slow-acting brakes

Gradient (%)	Type of brake	SPEED (km/s)																												
		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160
		BRAKE PERCENTAGE																												
0	I	6	6	6	6	6	6	8	11	13	18	22	26	32	38	44	51	58	65	73	82	90	100	110	122	135	149	164	180	196
	II	6	6	6	6	6	8	11	14	18	22	27	33	39																
1	I	6	6	6	6	6	7	9	12	15	19	23	28	33	39	46	52	60	67	75	83	92	102	113	124	137	152	166	182	198
	II	6	6	6	6	6	9	12	15	19	23	28	34	40																
2	I	6	6	6	6	6	8	10	13	16	20	24	29	34	41	47	54	61	68	76	85	94	104	114	126	139	154	168	185	201
	II	6	6	6	6	7	10	13	16	20	25	30	36	42																
3	I	6	6	6	6	7	9	11	14	17	21	26	30	36	42	49	55	63	70	78	87	96	106	116	128	142	156	170	187	204
	II	6	6	6	7	9	11	14	18	22	26	31	37	43																
4	I	6	6	6	6	8	10	12	15	18	23	27	32	37	44	50	57	64	72	80	88	98	108	118	130	144	158	173	190	206
	II	6	6	6	8	10	12	15	19	23	28	33	39	45																
5	I	6	6	6	7	9	11	13	16	20	24	28	33	39	45	52	58	66	73	82	90	99	110	120	133	146	161	175	192	208
	II	6	6	7	9	11	14	17	20	25	29	34	40	47																
6	I	6	6	7	8	10	12	14	17	21	25	30	35	40	46	53	60	67	75	83	92	101	112	122	135	148	163	178	194	211
	II	6	7	8	10	12	15	18	22	26	31	36	42	48																
7	I	6	7	8	9	11	13	15	19	22	26	31	36	41	48	54	61	69	76	85	94	103	113	124	137	150	166	180	197	214
	II	7	8	9	11	13	16	19	23	27	32	37	43	50																
8	I	6	7	9	10	12	14	16	20	23	28	32	37	43	49	56	63	70	78	86	95	105	115	126	138	152	168	182	199	216
	II	8	9	10	12	14	17	20	24	29	34	39	45	52																
10	I	8	9	10	12	14	16	18	22	26	30	35	40	46	52	59	66	74	81	90	99	108	119	130	143	157	172	187	204	221
	II	10	11	13	15	17	20	23	27	32	37	42	48	55																
12	I	10	11	12	14	16	18	21	24	28	33	38	43	48	55	62	69	77	85	93	102	112	123	134	147	161	177	192	209	
	II	12	13	15	17	19	22	26	30	34	40	45	52	59																
14	I	12	13	14	16	18	21	24	28	32	36	41	47	53	59	66	73	81	90	98	107	117	128	140	153	168				
	II	15	16	18	20	23	27	30	34	39	44	50	57	64																
17	I	13	15	16	18	20	23	26	30	34	39	44	50	55	62	69	76	84	93	101	111	121	132	143						
	II	17	18	20	23	25	29	32	36	41	47	53	60	67																
20	I	16	17	19	21	23	27	30	34	38	43	48	54	60	67	74	81	89	98	107	116	127	138	149						
	II	20	22	24	26	29	33	36	41	46	52	58	65	73																
22	I	18	19	21	23	25	29	32	36	41	46	51	57	63	70	76	84	92	101											
	II	22	24	26	29	32	35	39	44	49	55	62	69	77																
25	I	20	22	24	26	28	32	35	40	45	50	55	61	67	74	81	89	97	106											
	II	25	27	30	33	36	40	44	48	54	60	67	74	83																
27	I	22	23	25	28	30	34	38	43	47	53	58	64	70	77	84	92	101	110											
	II	27	29	33	35	39	43	47	51	57	63	70	78	83																
30	I	24	26	28	31	33	37	41	46	51	57	62	68	75	82	87	97	106	115											
	II	31	33	36	39	43	47	51	56	62	68	75	84	93																

TABLE : 3

BRAKING SHEET

(For 1000 meters of braking distance)

I: For trains operating with fast-acting brakes

II: For trains operating with slow-acting brakes

Gradient (%)	Type of brake	SPEED (km/s)																				
		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
		BRAKE PERCENTAGE																				
36	I	69	72	75	78	82	87	92	97	104	110	118	125	134	143	153	163	174	186	198	-	-
	II	76	80	85	90	97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

COMMENTS

- Trains are prepared in such a way that they have enough braked weight to safely stop at a distance of 1000 meters in TMS and DRS areas and 700 meters in other areas.
- Table No. 2 in TMS and DRS areas and No. 1 in other areas is used in calculating the braking requirements of trains whose speed is reduced based on operation. In the brake tables No. 1 and No. 2, the figures in the part where the highest gradient of the tracks in the area where the train will run and the train speed intersect are taken as precedent for braking. For speeds below 20 Km/h, figures required for 20 Km/h are regarded. Here, the brake type indicated with I is for fast-acting brakes, and the brake type indicated with II is for slow-acting brakes. For gradients that are not in the table, the figures in the upper row are regarded.
- Table 3 shall be used for gradient 36 per mille in TMS regions.