

## SYSTEM OF ELECTRIFICATION \*

	Specification	Value	Measuring unit	Permitted deviation	
				Class I	Class II
1.	Voltage of electrical overhead wire	25 000	V	+10% -24%	+10% -24%
2.	Frequency of electrical overhead wire	50	Hz	±2	±2
3.	Minimum height dimension of electrical overhead wire above rail level: above level crossings: 6000 mm	5050**	mm	+20 -0	+20 -0
4.	Minimum height dimension of electrical overhead wire above level crossings	6000	mm	+20 -0	+20 -0
5.	Maximum height dimension of electrical overhead wire above rail level	6150	mm	+0 -20	+0 -20
6.	Staggering of electrical overhead wire: ±300 mm	±300	mm	±10	±30
7.	Staggering of electrical overhead wire built before 1992 (tolerated value)	±400	mm	±10	±30
8.	Maximum permissible height lift of overhead wire during the passage of pantograph	120	mm		
9.	Pre-sag of wire	0	mm		
10.	Pantograph (static) contact force	75	N	±5	±5
11.	Section insulator - Permitted height difference of overhead wire connection		mm	±5	±15

\* In compliance with National Railway Regulation, Volume I (Ministry of Economy and Transport, 2004)

\*\* Exceptions:

The height of the overhead wire

- a) varies between 4820-4990 mm at the Budapest Keleti pu. station above certain tracks in profiles 11-12.
- b) on the Budapest Keleti pu.-Ferencváros line between profiles 31-32 above left track is 4940 mm, above right track 4990 mm
- c) in the Budapest Déli pu. tunnel between profiles 14-17 above left track is 4800 mm, above right track 4850 mm
- d) on the Kelenföld-Háros line between profiles 36-37 above right track is 5000 mm
- e) on the Gödöllő - Aszód line in profile 373 above right track is 5020 mm
- f) at station Hatvan between profiles 659-669 above track V, and above the crossing of tracks IV-V is 5020 mm
- g) varies in Miskolc-Rendező pu. marshalling yard in profiles 2-3 above certain tracks between 5002-5035 mm
- h) varies at Budapest Nyugati pu. station in profiles 19-22 above different tracks between 4820-4910 mm
- i) at Kőbánya teher pu. station in profiles 68-69 above track VIII is 4940 mm
- j) on the Mende-Sülysáp line in profiles 237-238 above both tracks is 5030 mm
- k) on the Debrecen-Apafa line in profiles 2230-2231 above right track is 4950 mm
- l) at Békéscsaba station in profiles 857-858 above track I is 4980 mm, above track XV 5000 mm, above track XVI 4980 mm
- m) at Pécs station in profiles 48-49 above track II is 5030 mm, above track III 5000 mm, above track IV 4990 mm
- n) at Tüskevár station in profiles 999-1000 above through track I is 5020 mm

All the electrified lines on the railway network of MÁV Zrt are rated as Class I.

### Voltage of the electrical overhead wire in electrified border crossings

#### MÁV Zrt.

	Name of the border crossing	Infrastructure Managers	Voltage/frequency of the overhead wire	
			MÁV Zrt	Next IM
1.	Hegyeshalom - Nickelsdorf	MÁV/ÖBB	25 kV/50 Hz	15 kV/16 2/3 Hz
2.	Gyékényes - Koprivnica	MÁV/HŽ	25 kV/50 Hz	25 kV/50 Hz
3.	Kelebia - Subotica	MÁV/ŽS	25 kV/50 Hz	25 kV/50 Hz
4.	Lőkősháza - Curtici	MÁV/CFR	25 kV/50 Hz	25 kV/50 Hz
5.	Hidasnémeti - Căna	MÁV/ŽSR	25 kV/50 Hz	3 kV DC
6.	Szob - Sturovo	MÁV/ŽSR	25 kV/50 Hz	25 kV/50 Hz
7.	Komárom - Komarno	MÁV/ŽSR	25 kV/50 Hz	25 kV/50 Hz
8.	Óriszentpéter - Hodoš	MÁV/SŽ	25 kV/50 Hz	25 kV/50 Hz

#### GYSEV Zrt.

	Name of the border crossing	Infrastructure Managers	Voltage/frequency of the overhead wire	
			GYSEV Zrt.	Next IM
1.	Sopron - Baumgarten	GYSEV	25 kV/50 Hz	25 kV/50 Hz
2.	Harka - Deutschkreutz	GYSEV/ÖBB	25 kV/50 Hz	25 kV/50 Hz
3.	Fertőszentmiklós - Pamhagen	GYSEV	25 kV/50 Hz	25 kV/50 Hz
4.	Rajka - Rusovce	GYSEV/ŽSR	25 kV/50 Hz	25 kV/50 Hz