

# DIN EN 16185-1:2020-08 (E)

## Railway applications - Braking systems of multiple unit trains - Part 1: Requirements and definitions (includes Amendment A1:2020)

---

<b>Contents</b>		<b>Page</b>
European foreword .....		3
1	Scope .....	4
2	Normative references .....	4
3	Terms and definitions .....	6
4	Symbols and abbreviations .....	8
5	Design principles .....	8
5.1	General requirements .....	8
5.2	Brake equipment types .....	12
5.3	Dynamic brakes .....	14
5.4	Friction brake .....	16
5.5	Eddy current brake .....	22
5.6	Magnetic track brake .....	22
5.7	Non-conventional brake systems .....	22
5.8	Emergency brake concept .....	22
5.9	Service braking .....	27
5.10	Wheel slide protection .....	31
5.11	Brake functions to keep a train stationary .....	32
5.12	Location of the control devices .....	34
5.13	Fault monitoring and diagnostics .....	36
5.14	Driver's brake test .....	39
5.15	Power supply .....	41
5.16	Enhancement of wheel-rail adhesion .....	42
5.17	Maintenance .....	43
6	Braking performance .....	43
6.1	General .....	43
6.2	Relevant load conditions .....	44
6.3	Emergency braking .....	44
6.4	Service braking .....	45
6.5	Thermal requirements .....	45
6.6	Adhesion values .....	45
Annex A(normative) Brake performance categories .....		47
Annex B(informative) Explanation of "proven design" concept .....		51
Annex C(normative) Minimum values of bending radii for steel pipes .....		52
Annex ZA(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2016/797/EU aimed to be covered .....		53
Bibliography .....		56