

ISO 5101:2026-01 (E)

Road vehicles - Field load specification for brake actuation and modulation systems

Contents		Page
Foreword	v
Introduction	vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	General	4
5	Percentiles of field coverage	5
6	Base assumptions and boundary conditions	6
6.1	General	6
6.2	Lifetime specifications	6
6.2.1	Vehicle lifetime	6
6.2.2	Standstill events, slopes and durations	6
6.2.3	Standstill duration distribution	7
6.2.4	Brake duration distribution	7
6.2.5	Distribution of lateral acceleration	8
6.2.6	Vehicle speed at the beginning of braking events	8
6.3	Number of brake operations	9
6.4	Temperature distributions	11
6.4.1	Global environmental temperature distribution T_{env}	11
6.4.2	Temperature distribution at mounting location T_{mount}	12
6.5	Brake pedal application profile	17
6.5.1	Parameters for brake pedal apply and release time	17
6.5.2	Modulation of deceleration during braking events	18
7	Braking system usage	19
7.1	Base brake function (BBF)	19
7.2	Base brake function for vehicles with regenerative braking (BBF with recuperation)	19
7.2.1	General	19
7.2.2	Phases of generator involvement in a braking event	19
7.2.3	Classification of braking events	20
7.2.4	Calculation method	24
7.3	Dynamic stability functions	28
7.3.1	Electronic brake force distribution (EBD)	28
7.3.2	Antilock braking system (ABS)	28
7.3.3	Traction control (TCS)	30
7.3.4	Electronic stability control (ESC)	34
7.3.5	Trailer sway control (TSC)	38
7.3.6	Roll-over mitigation functions (ROM)	38
7.4	Brake torque optimizing functions	39
7.4.1	Brake booster support functions (BBS)	39
7.4.2	Hydraulic brake assist (HBA)	50
7.4.3	Hydraulic rear-brake boost (HRB)	50
7.4.4	Fading support (FS)	51
7.4.5	Brake preconditioning (BP)	52
7.5	Assistance functions	54

7.5.1	Standstill management (SSM)	54
7.5.2	Hill descent control (HDC)	59
7.5.3	Adaptive cruise control (ACC)	60
7.5.4	Parking assist (PA)	65
8	Substitution methods	68
8.1	Dependent functions	68
8.1.1	Substitution of ABS functions	68
8.1.2	Substitution of SSM functions	69
8.1.3	Substitution of fading support manoeuvres	71
8.1.4	Substitution of brake disc wiping manoeuvres	71
8.1.5	Substitution of base brake functions	71
8.1.6	Substitution of hill descent control manoeuvres	71
	Bibliography	72