

Changes to legislation: There are currently no known outstanding effects for the Regulation (EU) 2016/1628 of the European Parliament and of the Council, ANNEX IV. (See end of Document for details)

ANNEX IV

Non-road steady-state test cycles (NRSC)

TABLE IV-1: NRSC TEST CYCLES FOR ENGINES OF CATEGORY NRE

Category	Speed operation	Purpose	Sub-category	NRSC
NRE	variable	Variable-speed engine having a reference power of less than 19 kW	NRE-v-1 NRE-v-2	G2 or C1
		Variable-speed engine having a reference power greater than or equal to 19 kW but not more than 560 kW	NRE-v-3 NRE-v-4 NRE-v-5 NRE-v-6	C1
		Variable-speed engine having a reference power greater than 560 kW	NRE-v-7	C1
	constant	Constant-speed engine	NRE-c-1 NRE-c-2 NRE-c-3 NRE-c-4 NRE-c-5 NRE-c-6 NRE-c-7	D2

TABLE IV-2: NRSC TEST CYCLES FOR ENGINES OF CATEGORY NRG

Category	Speed operation	Purpose	Sub-category	NRSC
NRG	variable	Variable-speed engine for generating set	NRG-v-1	C1
	constant	Constant-speed engine for generating set	NRG-c-1	D2

TABLE IV-3: NRSC TEST CYCLES FOR ENGINES OF CATEGORY NRSH

Category	Speed operation	Purpose	Sub-category	NRSC
----------	-----------------	---------	--------------	------

Changes to legislation: There are currently no known outstanding effects for the Regulation (EU) 2016/1628 of the European Parliament and of the Council, ANNEX IV. (See end of Document for details)

NRSh	variable or constant	Engine having a reference power of not more than 19 kW, for use in hand-held machinery	NRSh-v-1a NRSh-v-1b	G3
------	----------------------	--	------------------------	----

TABLE IV-4: NRSC TEST CYCLES FOR ENGINES OF CATEGORY NRS

Category	Speed operation	Purpose	Sub-category	NRSC
NRS	variable < 3 600 rpm	Variable-speed engine having a reference power of not more than 19 kW, intended for operation < 3 600 rpm	NRS-vi-1a NRS-vi-1b	G1
	variable \geq 3 600 rpm; or constant	Variable-speed engine having a reference power of not more than 19 kW, intended for operation \geq 3 600 rpm; constant-speed engine having a reference power of not more than 19 kW	NRS-vr-1a NRS-vr-1b	G2
	variable or constant	Engine having both a reference power of between 19 kW and 30 kW and a total swept volume of less than 1 litre	NRS-v-2a	G2
		Engine having a reference power greater than 19 kW, other than engine having both a reference power of between 19 kW and 30 kW and a total swept volume of less than 1 litre	NRS-v-2b NRS-v-3	C2

Changes to legislation: There are currently no known outstanding effects for the Regulation (EU) 2016/1628 of the European Parliament and of the Council, ANNEX IV. (See end of Document for details)

TABLE IV-5: NRSC TEST CYCLES FOR ENGINES OF CATEGORY IWP

Category	Speed operation	Purpose	Sub-category	NRSC
IWP	variable	Variable-speed engine intended for propulsion that operates on a fixed-pitch propeller curve	IWP-v-1 IWP-v-2 IWP-v-3 IWP-v-4	E3
	constant	Constant-speed engine intended for propulsion that operates with a controllable-pitch or electrically coupled propeller	IWP-c-1 IWP-c-2 IWP-c-3 IWP-c-4	E2

TABLE IV-6: NRSC TEST CYCLES FOR ENGINES OF CATEGORY IWA

Category	Speed operation	Purpose	Sub-category	NRSC
IWA	variable	Variable-speed engine intended for auxiliary use on inland waterway vessels	IWA-v-1 IWA-v-2 IWA-v-3 IWA-v-4	C1
	constant	Constant-speed engine intended for auxiliary use on inland waterway vessels	IWA-c-1 IWA-c-2 IWA-c-3 IWA-c-4	D2

TABLE IV-7: NRSC TEST CYCLES FOR ENGINES OF CATEGORY RLL

Category	Speed operation	Purpose	Sub-category	NRSC
RLL	variable	Variable-speed engine for propulsion of locomotives	RLL-v-1	F
	constant	Constant-speed engine for	RLL-c-1	D2

Changes to legislation: There are currently no known outstanding effects for the Regulation (EU) 2016/1628 of the European Parliament and of the Council, ANNEX IV. (See end of Document for details)

		propulsion of locomotives		
--	--	---------------------------	--	--

TABLE IV-8: NRSC TEST CYCLES FOR ENGINES OF CATEGORY RLR

Category	Speed operation	Purpose	Sub-category	NRSC
RLR	variable	Variable-speed engine for propulsion of railcars	RLR-v-1	C1
	constant	Constant-speed engine for propulsion of railcars	RLR-c-1	D2

TABLE IV-9: NRSC TEST CYCLES FOR ENGINES OF CATEGORY SMB

Category	Speed operation	Purpose	Sub-category	NRSC
SMB	variable or constant	Engines for propulsion of snowmobiles	SMB-v-1	H

TABLE IV-10: NRSC TEST CYCLE FOR ENGINES OF CATEGORY ATS

Category	Speed operation	Purpose	Sub-category	NRSC
ATS	variable or constant	Engines for propulsion of ATVs or SbS	ATS-v-1	G1

Non-road transient test cycles

TABLE IV-11: NON-ROAD TRANSIENT TEST CYCLE FOR ENGINES OF CATEGORY NRE

Category	Speed operation	Purpose	Sub-category	NRSC
NRE	variable	Variable-speed engine having reference power greater than or equal to 19 kW but not more than 560 kW	NRE-v-3 NRE-v-4 NRE-v-5 NRE-v-6	NRTC

Changes to legislation: There are currently no known outstanding effects for the Regulation (EU) 2016/1628 of the European Parliament and of the Council, ANNEX IV. (See end of Document for details)

TABLE IV-12: NON-ROAD TRANSIENT TEST
CYCLE FOR ENGINES OF CATEGORY NRS⁰

Category	Speed operation	Purpose	Sub-category	
NRS	variable or constant	Engine having a reference power greater than 19 kW, other than engine having both a reference power of between 19 kW and 30 kW and a total swept volume of less than 1 litre	NRS-v-2b NRS-v-3	LSI-NRTC

a Only applicable for engines with maximum test speed $\leq 3\,400$ rpm.

Changes to legislation:

There are currently no known outstanding effects for the Regulation (EU) 2016/1628 of the European Parliament and of the Council, ANNEX IV.