

In-Service Conformity (ISC)

ISC testing according to EU Regulation 2017/1151 as amended by EU
Regulation 2018/1832

Final Report - ISC testing for 2023

Table 1. Revision management

Rev.	Date	Comments
00	2024-03-28	Final report



Glossary

Table 2. Glossary of terms

Term	Description
ISC	In-Service Conformity
GTAA	Granting Type Approval Authority
STA	Swedish Transport Agency
RDE	Real Driving Emission
PEMS	Portable Emission Measurement System
VIN	Vehicle Identification Number
UND	Undecided
NTE	Not to exceed
COC	Certificate of Conformity
ECG	Emissions Characteristics Group
MRO	Mass In Running Order
OBD	On Board Diagnostics
ICE	Internal Combustion Engine
NOVC	Not Off Vehicle charging
OVC	Off Vehicle charging
HEV	Hybrid Electric Vehicle
WLTP	Worldwide Harmonised Light Vehicles Test Procedure
CO	Carbon Monoxide
HC	Hydro Carbons
NMHC	Non-Methane Hydro Carbons
THC	Total Hydro Carbons
NOx	Nitrogen Oxides
PM	Particle Mass
PN	Particle Number

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A. Quick overview and main conclusions

As of 01 January 2020, Granting Type Approval Authorities (GTAA) are required to perform ISC testing. These new requirements are contained within Annex II, Part B, of Regulation (EU) 2017/1151, as amended by 2018/1832. The regulation also opens up the possibility for accredited laboratories and technical services to conduct ISC testing, in the following referred to as third party testing. This Final report summaries the testing for ISC-2023 conducted by manufacturers, third parties and the Swedish Transport Agency (STA). STA is the GTAA in Sweden.

STA has issued emission type approvals (e5*715/2007*2018/1832*....) for ten manufacturers qualified for the ISC testing program, where sales per ISC-Family in EU>5000 vehicles for previous year.

- Ford-Werke GmbH
- Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S.
- Hyundai Motor Manufacturing Czech s.r.o.
- Jaguar Land Rover Limited
- Kia Corporation
- Kia Slovakia s.r.o (No GTAA testing 2023)
- Volvo Cars Corporation
- Ford Motor Company of Australia Pty Ltd
- BMW AG
- SAIC Motor Corporation Limited (One ISC-family in GTAA testing 2023)

SAIC Motor Corporation Limited, fulfill the sales of 5000 vehicles in EU for the previous year for two families but STA could not find test objects in these families with high enough mileage > 15000km. Instead STA choose to retest the ISC family from ISC-2022 with mileage >15000km. Kia Slovakia s.r.o don't have any ISC-family valid for testing 2023.

Test results exceeding legal limits have been observed on one vehicle in the Type1 test in the GTAA 2023 testing program.

Table 3. Summary of planned and performed tests and outcome from STA and third party testing.

ISC-2023	Planned vehicles	Tested vehicles	PASS	FAILED
STA	51	52	51	1
3 rd Parties	2	2	2	0

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B. ISC activities performed by the manufacturer in the previous year:

1. Information gathering by manufacturer

No data available

2. ISC testing by manufacturers

This section is an overview of the testing performed per manufacturer. The results of the testing are reported according to STA interpretation of the legislation 2017/1151 Article 9 and 2018/1832 Annex II, described in section F in this report.

If sales numbers pass the mark of 5000 / ISC family in EU for the previous year, a statistical folder is opened for that ISC family.

As long as the sales pass the mark of 5000 / ISC family in EU the time period between commencing two in-service conformity checks by the manufacturer for a given ISC-family shall not exceed 24 month.

When the sales figures for an ISC family drops below 5000 vehicles for the previous year the requirements for ISC checks are applicable for 5 years for vehicles of that ISC family.

As the results show in the next sections, most manufacturers follow the interpretation that STA has made in how the manufacturers should perform the ISC testing. For those who make a different interpretation, the performed tests are reported according to STA's interpretation.

Explanation for upcoming tables on ISC manufacturer testing.

PASS = Statistical folder is closed with an approved result

UND = Undecided, not enough vehicles tested within the 24 month period for a statistical folder decision

UND = Undecided, the 24-month period between testing of the ISC-family has expired, the legal requirement not met

END ISC = Testing for the ISC-family is finalised, five year after the last COC is issued (with sales for the previous year > 5000)

2.1 Ford-Werke GmbH

Table 4. ISC-families to test (Type 1) and status by Ford-Werke GmbH.

Qualified for ISC test Sales for previous year>5000 vehicles				ISC-Family	Status: PASS / UND (undecided)							
2020	2021	2022	2023		2020	2021	2022	2023	2024	2025	2026	2027
x	x	-	-	11-WF0-D10	PASS	UND	UND	UND			END ISC	
x	x	-	-	5-WF0-D25* 11-WF0-D6*	PASS	UND	UND				END ISC	
x	x	-	-	5-WF0-P28* 11-WF0-P9*	PASS	UND	UND	UND			END ISC	
-	x	x	-	11-WF0-P16	-	PASS	UND	UND				END ISC
x	x	-	-	11-WF0-D8	PASS	UND	UND	UND			END ISC	
x	x	-	-	5-WF0-D13	PASS	UND	UND				END ISC	
x	x	-	-	5-WF0-D14	PASS	UND	UND				END ISC	
-	x	x	x	5-WF0-P27	-	PASS	PASS					
x	-	-	-	11-WF0-P7	PASS	UND	UND			END ISC		
x	-	-	-	11-WF0-P8	PASS	UND	UND	UND		END ISC		
x	-	-	-	11-WF0-P20* 11-WF0-P22*	PASS	UND	UND	UND		END ISC		
x	-	-	-	11-WF0-D16	PASS	UND	UND			END ISC		
-	x	x	x	5-WF0-P34	-	PASS	UND					
-	x	x	-	5-WF0-D41	-	UND	UND	PASS				END ISC
-	x	x	x	5-WF0-D42	-	PASS	PASS					
-	x	x	x	5-WF0-D40	-	UND	UND	PASS				
-	x	-	x	5-WF0-D36	-	PASS	PASS					
-	-	-	x	5-WF0-D37	-	-	-	PASS				
-	-	x	x	5-WF0-D38	-	-	PASS					

*Request from Ford to merge ISC-families with identical specifications, agreed with STA.

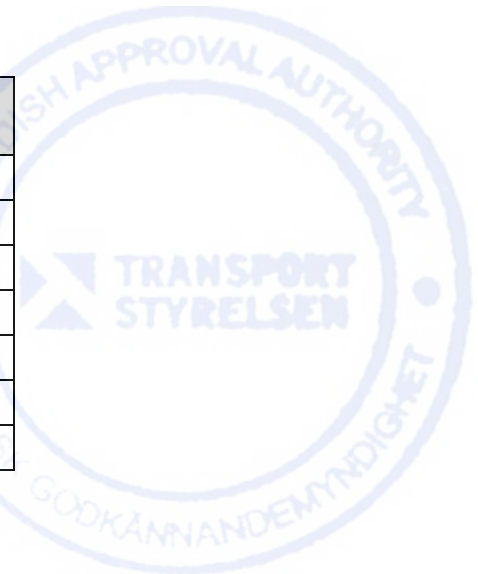
2.2 Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S

Table 5. ISC-families to test (Type 1) and status by Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S.

Qualified for ISC test Sales for previous year>5000 vehicles				ISC-Family	Status: PASS / UND (undecided)							
2020	2021	2022	2023		2020	2021	2022	2023	2024	2025	2026	2027
x	x	-	-	11-HAO-1	PASS		PASS				END ISC	
x	-	-	-	11-HAO-2	PASS		PASS			END ISC		
x	x	-	-	11-HAO-3	PASS		PASS				END ISC	
x	x	-	-	11-HAO-4	PASS		PASS				END ISC	
-	-	x	x	5-HAO-1	-	-	PASS					
-	-	x	x	5-HAO-3	-	-	PASS					
-	-	x	x	5-HAO-4	-	-	PASS					
-	x	x	x	5-HAO-17	-	PASS		UND				
-	x	x	x	5-HAO-18	-	PASS		UND				

Table 6. Additional RDE-test by Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S.

Test	ISC-Family	Tested vehicles	Cold Start	Hot Start	Status
1	11-HAO-1	1	x	x	PASS
2	11-HAO-2	1	x	x	PASS
3	11-HAO-3	1	x	x	PASS
4	11-HAO-4	1	x	x	PASS
5	5-HAO-1	1	x	x	PASS
6	5-HAO-3	1	x	x	PASS
7	5-HAO-4	1	x	x	PASS



2.3 Hyundai Motor Manufacturing Czech s.r.o

Table 7. ISC-families to test (Type 1) and status by Hyundai Motor Manufacturing Czech s.r.o.

Qualified for ISC test				ISC-Family	Status: PASS / UND (undecided)							
Sales for previous year>5000 vehicles					2020	2021	2022	2023	2024	2025	2026	2027
-	x	-	-	11-HMM-5	-	PASS	PASS				END ISC	
-	x	-	-	11-HMM-6	-	PASS	PASS				END ISC	
-	x	-	-	11-HMM-8		PASS	PASS				END ISC	
-	x	-	-	11-HMM-10	-	PASS		UND			END ISC	
-	x	-	-	11-HMM-11	-	PASS		UND			END ISC	
-	x	-	-	11-HMM-12	-	PASS		UND			END ISC	
-	x	x	-	11-HMM-4 11-HMM-13	-	PASS		UND				END ISC
-	x	-	-	11-HMM-14	-	PASS		UND			END ISC	
-	x	-	-	11-HMM-15	-	PASS		UND			END ISC	
-	-	x	x	5-HMM-1	-	-	PASS					
-	-	x	x	5-HMM-2	-	-	PASS					
-	-	x	-	5-HMM-3	-	-	PASS					END ISC
-	-	x	-	5-HMM-4	-	-	PASS					END ISC
-	-	x	x	5-HMM-5	-	-	PASS	UND				
-	-	x	x	5-HMM-12	-	-	PASS					
-	-	-	x	5-HMM-14	-	-	-	UND				
-	-	-	x	5-HMM-15	-	-	-	PASS				
-	-	x	x	5-HMM-17	-	-	PASS					
-	-	x	x	5-HMM-18	-	-	PASS					
-	-	x	x	5-HMM-19	-	-	PASS					
-	-	x	x	5-HMM-20	-	-	PASS					

*ISC-families 11-HMM-4 and 11-HMM-13 are the same with identical specifications, agreed with STA.

Table 8. Additional RDE-test by Hyundai Motor Manufacturing Czech s.r.o.

Test	ISC-Family	Tested vehicles	Cold Start	Hot start	Result
1	11-HMM-15	1	x		PASS
1	5-HMM-4	1	x		PASS

2.4 Jaguar Land Rover Limited

Table 9. ISC-families to test (Type I) and status by Jaguar Land Rover Limited.

Qualified for ISC test				ISC-Family	Status: PASS / UND (undecided)							
Sales for previous year > 5000 vehicles					2020	2021	2022	2023	2024	2025	2026	2027
2020	2021	2022	2023		2020	2021	2022	2023	2024	2025	2026	2027
x	-	-	-	11-SAJ-001	PASS	PASS	PASS			End ISC		
-	-	x	x	5-SAJ-026	-	-	PASS	PASS				
-	-	-	x	5-SAL-028	-	-	-	PASS				

2.5 Kia Corporation

Table 10. ISC-families to test (Type I) and status by Kia Corporation.

Qualified for ISC test				ISC-Family	Status: PASS / UND (undecided)							
Sales for previous year > 5000 vehicles					2020	2021	2022	2023	2024	2025	2026	2027
2020	2021	2022	2023		2020	2021	2022	2023	2024	2025	2026	2027
x	x	x	-	11-KMC-4	PASS	PASS	PASS					END ISC
x	x	-	-	11-KMC-5	PASS		PASS				END ISC	
x	x	-	-	11-KMC-7	PASS		PASS				END ISC	
x	x	-	-	11-KMC-8	PASS		PASS	PASS			END ISC	
-	-	x	x	5-KMC-12	-	-	PASS					
-	-	x	x	5-KMC-13	-	-	PASS					
-	x	x	x	5-KMC-14	-	PASS		PASS				
-	-	x	x	5-KMC-15	-	-	PASS					
-	-	-	x	5-KMC-16	-	-	-	PASS				

Table 11. Additional RDE-test by Kia Corporation

Test	ISC-Family	Tested vehicles	Cold start	Hot start	Result
1	11-KMC-4	1	x	x	PASS
2	11-KMC-5	1	x	x	PASS
3	11-KMC-7	1	x	x	PASS
4	11-KMC-8	1	x	x	PASS
5	5-KMC-13	1	x	x	PASS
6	5-KMC-14	1	x	x	PASS
7	5-KMC-15	1	x		PASS
8	5-KMC-16	1	x	x	PASS

2.6 Kia Slovakia s.r.o

Table 12. ISC-families to test (Type 1) and status by Kia Slovakia s.r.o.

Qualified for ISC test				ISC-Family	Status: PASS / UND (undecided)							
Sales for previous year > 5000 vehicles					2020	2021	2022	2023	2024	2025	2026	2027
x	x	-	-	11-HMM-5	PASS	PASS				END ISC		
x	x	-	-	11-HMM-6	PASS	PASS				END ISC		
x	x	-	-	11-HMM-8	PASS	PASS				END ISC		
x	x	-	-	11-HMM-15	UND	UND	PASS	UND		END ISC		
-	-	x	-	5-KMC-1	-	-	PASS				END ISC	
-	-	x	-	5-KMC-2	-	-	PASS				END ISC	
-	-	x	-	5-KMC-4	-	-	PASS				END ISC	
-	-	x	-	5-KMC-5	-	-	PASS	UND			END ISC	

Table 13. Additional RDE-test by Kia Slovakia s.r.o.

Test	ISC-Family	Tested vehicles	Cold start	Hot start	Status
1	5-KMC-1	1	x		PASS

2.7 Volvo Cars Corporation

Table 14. ISC-families to test (Type I) and status by Volvo Cars Corporation.

Qualified for ISC test				ISC-Family	Status: PASS / UND (undecided)							
Sales for previous year > 5000 vehicles					2020	2021	2022	2023	2024	2025	2026	2027
x	x	-	-	5-YV1-012	PASS	PASS	UND			END ISC		
x	x	-	-	5-YV1-016	PASS	PASS	UND			END ISC		
-	x	x	-	5-YV1-020	-	PASS	UND				END ISC	
-	x	x	-	5-YV1-021	-	PASS	PASS				END ISC	
-	x	x	x	5-YV1-022	-	PASS	UND					
-	x	x	x	5-YV1-023	-	PASS	PASS					
-	x	x	x	5-YV1-026	-	PASS	UND					
-	x	x	x	5-YV1-027	-	PASS	PASS					
-	-	-	x	5-YV1-030	-	-	-	UND				
-	-	x	x	5-YV1-031	-	-	PASS					

2.8 Ford Motor Company of Australia Pty Ltd

Table 15. ISC-families to test (Type 1) and status by Ford Motor Company of Australia Pty Ltd.

Qualified for ISC test Sales for previous year > 5000 vehicles				ISC-Family	Status: PASS / UND (undecided)							
2020	2021	2022	2023		2020	2021	2022	2023	2024	2025	2026	2027
-	x	x	-	5-6FP-D32	-	UND	UND	UND				END ISC
-	x	x	-	5-6FP-D33	-	UND	UND	UND				END ISC
-	-	-	x	5-6FP-D49	-	-	-	UND				
-	-	-	x	5-6FP-D50	-	-	-	PASS				

2.9 BMW AG

Table 16. ISC-families to test (Type 1) and status by BMW AG.

Qualified for ISC test Sales for previous year > 5000 vehicles				ISC-Family	Status: PASS / UND (undecided)							
2020	2021	2022	2023		2020	2021	2022	2023	2024	2025	2026	2027
-	-	x	x	5-WBA-DH13	-	-	PASS					
-	-	-	x	5-WBA-DH14	-	-	-	UND				
-	-	-	x	5-WBA-O21	-	-	-	UND				
-	-	-	x	5-WBA-O35	-	-	-	UND				

2.10 SAIC Motor Corporation Limited

Table 17. ISC-families to test (Type 1) and status by SAIC Motor Corporation Limited.

Qualified for ISC test Sales for previous year > 5000 vehicles				ISC-Family	Status: PASS / UND (undecided)							
2020	2021	2022	2023		2020	2021	2022	2023	2024	2025	2026	2027
-	-	x	x	5-LSJ-1	-	-	PASS	UND				
-	-	-	x	5-LSJ-2	-	-	-	UND				
-	-	-	x	5-LSJ-3	-	-	-	UND				

C. ISC activities performed by accredited laboratories or technical services in the previous year:

2 Information gathering an risk assessment

No data available

3 ISC testing from accredited laboratories or technical services

Table 18. Third party ISC testing performed during 2023.

Test	STA-Ref	Manufacturer	ISC-Family	Technical service	Test type	Status
1	2023-8019	Jaguar Land Rover Limited	5-SAJ-001	JRC	1+1a	PASS
2	2023-8020	Jaguar Land Rover Limited	5-SAJ-001	JRC	1+1a	PASS

Please refer to Annex XI – 3rd party testing, for results.



D. ISC activities performed by the granting type approval authority in the previous year:

5. Information gathering and risk assessment

A common risk assessment methodology was applied for all manufacturers applicable for ISC testing by the GTAA. Type 1 and 1a tests were conducted for this ISC program.

As a first step, all e5*715/2007*2018/1832* emissions approvals that were applicable to GTAA ISC testing were identified for the manufacturer. Each approval was accompanied by the associated IP and ISC (PEMS) families, 2022 sales volumes and warranty claims.

Risk Rating – Based on manufacturer-specific data

This part of the risk rating draws upon the information available from the manufacturer during the initial information gathering step. The rating is built of three parameters, which can each effectively be treated as a form of probability marker, a component of risk for each ISC family:

- *Rate of emissions-related warranty claims or repairs (%)*
The number of warranty claims or repairs divided by the number of sales in 2022.
- *Sales compared to average ISC family registrations in EU (%)*
Comparing average number of registrations per manufacturer (based on ACEA EU figures), to the sales volume 2022 of the ISC family. This is analogous to the EXPOSURE of these vehicles emissions in market.
- *ISC family complexity (%)*
Calculated by taking the number of IP families in an ISC family and dividing by the total number of IP families across all ISC families. This metric is thought to provide an indication of ISC family complexity, since a greater number of IP families generally corresponds to a greater number of vehicle configurations being available. More configurations arguably adds complexity for a manufacturer in terms of ensuring robust powertrain design and calibration to support compliant emissions performance across a broad range of configurations, where characteristics such as rated engine power, vehicle mass, exhaust system layouts (and more) could differ considerably within the definition of an ISC (PEMS) family.

These three parameters were then averaged for each ISC family to generate Risk Rating value (%).

When the risk assessment based on the initial information gathering is complete, a number of other factors are also taken into account before the families to be tested within this year's ISC program are selected.

- STA ISC-testing history.
- Reports and information from other authorities, technical services or institutes that somehow identify vehicles where there is an increased risk that the exhaust emissions would exceed the applicable legal requirement.

6. ISC testing (including selection of ISC families and final results)

Table 19. GTAA ISC-2023 testing programme, for detailed test result, see section and annex for each manufacturer.

Sec.	Manufacturer Test Comment	ISC-Family	Planned Vehicles	Tested Vehicles	Result
6.1	Ford-Werke GmbH	5-WF0-D36	3	3	PASS
		5-WF0-P34	3	4	PASS
6.2	Hyundai Assan Otomotiv Sanayi Tic A.S	5-HAO-4	3	3	PASS
		5-HAO-3	3	3	PASS
6.3	Hyundai Motor Manufacturing Czech s.r.o.	11-HMM-8	3	3	PASS
		11-HMM-5	3	3	PASS
6.4	Jaguar Land Rover Limited	5-SAL-028	3	3	PASS
		11-SAL-005	3	3	PASS
6.5	Kia Corporation	5-KMC-14	3	3	PASS
		5-KMC-12	3	3	PASS
6.6	Kia Slovakia s.r.o.	-	0	0	
	<i>No testing 2023</i>	-	0	0	
6.7	Volvo Cars Corporation	5-YV1-031	3	3	PASS
		5-YV1-026	3	3	PASS
6.8	Ford Motor Company of Australia Pty Ltd	5-6FP-D49	3	3	PASS
		5-6FP-D50	3	3	PASS
6.9	BMW AG	5-WBA-DH14	3	3	PASS
		5-WBA-O21	3	3	PASS
6.10	SAIC Motor Corporation Limited	5-LSJ-1	3	3	PASS
	<i>Only one ISC family tested 2023</i>	-	0	0	

6.1 Ford-Werke GmbH

Table 20. Ford-Werke GmbH ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-WF0-D36				ISC family 2 5-WF0-P34			
No. of vehicles tested (Type 1 and RDE)		3				4			
IP families tested	Vehicle 1	IP-V362_2019_00046-WF0_1		Type 1: 2023-06-14 RDE: 2023-06-15	IP-C519_2019_00022-WF0-1		Type 1: 2023-09-20 RDE: 2023-06-21		
	Vehicle 2	IP-V362_2019_00046-WF0_1		Type 1: 2023-08-22 RDE: 2023-08-23	IP-C519_2022_00003-WF0-1		Type 1: 2023-09-22 RDE: 2022-09-27		
	Vehicle 3	IP-V362_2019_00046-WF0_1		Type 1: 2023-10-26 RDE: 2023-10-27	IP-C519_2019_00022-WF0-1		Type 1: 2023-09-26 RDE: Not tested		
	Vehicle 4			Type 1: RDE:	IP-C519_2022_00009-WF0-1		Type 1: 2023-12-05 RDE: 2023-12-06		

Table 21. Statistical Folder Status and Test Results ISC family 1 (5-WF0-D36)

		ISC family 1 (5-WF0-D36), Diesel, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 36500km				Vehicle 2 16343km				Vehicle 3 36918km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC													
	NMHC													
	NOX	x				x				x				PASS
	THC+NOX	x				x				x				PASS
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 22. Statistical Folder Status and Test Results ISC family 2 (5-WF0-P34)

		ISC family 1 (5-WF0-P34), Petrol, Direct Injection, NOVC																SAMPLE DECISION
		Vehicle 1 26319km				Vehicle 2 15900km				Vehicle 3 24347km				Vehicle 4 21446km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	E.O.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				x				PASS
	THC	x				x				x				x				PASS
	NMHC	x				x				x				x				PASS
	NOX	x				x					x			x				PASS
	THC+NOX																	
	PM	x				x				x				x				PASS
	PN	x				x				x				x				PASS
RDE	NOX	x				x				Not tested				x				PASS
	PN	x				x				Not tested				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex I – Ford-Werke GmbH for detailed results.

6.2 Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S.

Table 23. Hyundai Assan Otomotiv San ve Tic A.S ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-HAO-4				ISC family 2 5-HAO-3			
No. of vehicles tested (Type 1 and RDE)		3				3			
IP families tested	Vehicle 1	IP050664-NLH-1	Type 1: 2023-06-23		IP-050662-NLH-1	Type 1: 2023-06-13			
			RDE: 2023-06-27			RDE: 2023-06-14			
	Vehicle 2	IP050664-NLH-1	Type 1: 2023-07-11		IP-050662-NLH-1	Type 1: 2023-07-13			
			RDE: 2023-07-12			RDE: 2023-07-14			
	Vehicle 3	IP050665-NLH-1	Type 1: 2023-07-05		IP-050662-NLH-1	Type 1: 2023-07-21			
			RDE: 2023-07-06			RDE: 2023-07-24			

Table 24. Statistical Folder Status and Test Results ISC family 1 (5-HAO-4).

		ISC family 1 (5-HAO-4), Petrol, Direct Injection, NOVC												SAMPLE DECISION
		Vehicle 1 18980km				Vehicle 2 19225km				Vehicle 3 19432km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 25. Statistical Folder Status and Test Results ISC family 2 (5-HAO-3)

		ISC family 2 (5-HAO-3), Petrol, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 23931km				Vehicle 2 16201km				Vehicle 3 16040km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex II – Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S. for detailed results.

6.3 Hyundai Motor Manufacturing Czech s.r.o

Tabell 26. Hyundai Motor Manufacturing Czech s.r.o ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 11-HMM-8			ISC family 2 11-HMM-5		
No. of vehicles tested (Type 1 and RDE)		3			3		
IP families tested	Vehicle 1	IP-110011-TMA-1	Type 1: 2023-11-15	IP-110001-TMA-1	Type 1: 2023-06-02		
			RDE: 2023-11-14		RDE: 2023-06-06		
	Vehicle 2	IP-110011-TMA-1	Type 1: 2023-11-21	IP-110001-TMA-1	Type 1: 2023-08-01		
			RDE: 2023-11-22		RDE: 2022-08-01		
	Vehicle 3	IP-110011-TMA-1	Type 1: 2023-11-28	IP-110001-TMA-1	Type 1: 2023-10-18		
			RDE: 2023-11-29		RDE: 2023-10-19		

Table 27. Statistical Folder Status and Test Results ISC family 1 (11-HMM-8).

		ISC family 1 (11-HMM-8), Diesel, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 92197km				Vehicle 2 52000km				Vehicle 3 71050km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC													
	NMHC													
	NOX	x				x				x				PASS
	THC+NOX	x				x				x				PASS
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 28. Statistical Folder Status and Test Results ISC family 2 (11-HMM-5)

		ISC family 2 (11-HMM-5), Petrol, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 52805km				Vehicle 2 39800km				Vehicle 3 60472km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex III – Hyundai Motor Manufacturing Czech s.r.o for detailed results.

6.4 Jaguar Land Rover Limited

Table 29. Jaguar Land Rover Limited ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-SAL-028				ISC family 2 11-SAL-005			
No. of vehicles tested (Type 1 and RDE)		3				3			
IP families tested	Vehicle 1	IP-21a20p297PAA_01-SAL-1	Type 1: 2023-08-24		IP-20u20d177TAA_01-SAL-1	Type 1: 2023-05-10			
			RDE: 2023-08-24			RDE: 2023-05-12			
	Vehicle 2	IP-21a20p297PAA_01-SAL-1	Type 1: 2023-10-12		IP-20u20d177TAA_01-SAL-1	Type 1: 2023-05-10			
			RDE: 2023-10-13			RDE: 2023-05-11			
	Vehicle 3	IP-21a20p297PAA_01-SAL-1	Type 1: 2023-12-13		IP-20u20d177TAA_01-SAL-1	Type 1: 2024-01-2024			
			RDE: 2023-12-14			RDE: 2024-02-02			

Table 30. Statistical Folder Status and Test Results ISC family 1 (5-SAL-028)

		ISC family 1, (5-SAL-028), Petrol, Direct Injection, OVC												SAMPLE DECISION
		Vehicle 1 18373km				Vehicle 2 21475km				Vehicle 3 20668km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 31. Statistical Folder Status and Test Results ISC family 2 (11-SAL-005)

		ISC family 2, (11-SAL-005), Diesel, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 57125km				Vehicle 2 24500km				Vehicle 3 97493km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC													
	NMHC													
	NOX	x				x				x				PASS
	THC+NOX	x				x				x				PASS
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex IV – Jaguar Land Rover Limited for detailed results.

6.5 Kia Corporation

Table 32. Kia Corporation ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-KMC-14				ISC family 2 5-KMC-12			
No. of vehicles tested (Type 1 and RDE)		3				3			
IP families tested	Vehicle 1	IP-050601-KAN-1	Type 1: 2023-07-23		IP-050597-KNA 1	Type 1: 2023-04-27			
			RDE: 2023-07-13			RDE: 2023-04-26			
	Vehicle 2	IP-050602-KAN-1	Type 1: 2023-09-19		IP-050597-KNA 1	Type 1: 2023-08-08			
			RDE: 2023-09-21			RDE: 2023-08-07			
	Vehicle 3	IP-050601-KAN-1	Type 1: 2023-10-26		IP-050597-KNA 1	Type 1: 2023-08-08			
			RDE: 2023-10-27			RDE: 2023-08-09			

Table 33. Statistical Folder Status and Test Results ISC family 1 (5-KMC-14)

		ISC family 1 (5-KMC-14), Petrol, Direct Injection, NOVC												SAMPLE DECISION
		Vehicle 1 17352km				Vehicle 2 25402km				Vehicle 3 38124km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 34. Statistical Folder Status and Test Results ISC family 2 (5-KMC-12)

		ISC family 2 (5-KMC-12), Petrol, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 38219km				Vehicle 2 32053km				Vehicle 3 31017km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex V – Kia Motor Corporation for detailed results.

6.6 Kia Slovakia s.r.o

No GTAA ISC testing on Kia Slovakia s.r.o in 2023

Table 35. Kia Slovakia s.r.o. ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1		ISC family 2	
No. of vehicles tested (Type 1 and RDE)		0		0	
IP families tested	Vehicle 1			Type 1:	Type 1:
				RDE:	RDE:
	Vehicle 2			Type 1:	Type 1:
				RDE:	RDE:
	Vehicle 3			Type 1:	Type 1:
				RDE:	RDE:

Table 36. Statistical Folder Status and Test Results ISC family 1

		ISC family 1												SAMPLE DECISION	
		Vehicle 1				Vehicle 2				Vehicle 3					
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.		
Type 1	CO														
	THC														
	NMHC														
	NOX														
	THC+NOX														
	PM														
	PN														
RDE	NOX														
	PN														

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 37. Statistical Folder Status and Test Results ISC family 2

		ISC family 2												SAMPLE DECISION	
		Vehicle 1				Vehicle 2				Vehicle 3					
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.		
Type 1	CO														
	THC														
	NMHC														
	NOX														
	THC+NOX														
	PM														
	PN														
RDE	NOX														
	PN														

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

6.7 Volvo Cars Corporation

Table 38. Volvo Cars Corporation ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-YV1-031			ISC family 2 5-YV1-026		
No. of vehicles tested (Type 1 and RDE)		3			3		
IP families tested	Vehicle 1	IP-2021_256H5D-YV1-1	Type 1: 2023-04-28 RDE: 2023-05-02	IP-2019_53615D-YV1-1	Type 1: 2023-05-04 RDE: 2023-05-05		
	Vehicle 2	IP-2021_256H5D-YV1-1	Type 1: 2023-05-05 RDE: 2023-05-09	IP-2019_536L41-YV1-1	Type 1: 2023-05-11 RDE: 2023-11-05		
	Vehicle 3	IP-2021_256H5D-YV1-1	Type 1: 2023-10-20 RDE: 2023-10-24	IP-2019_53615D-YV1-1	Type 1: 2023-07-13 RDE: 2023-07-14		

Table 39. Statistical Folder Status and Test Results ISC family 1 (5-YV1-031)

		ISC family 1 (5-YV1-031), Petrol, Direct Injection, OVC												SAMPLE DECISION
		Vehicle 1 27809km				Vehicle 2 27226km				Vehicle 3 16871km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 40. Statistical Folder Status and Test Results ISC family 2 (5-YV1-026)

		ISC family 2 (5-YV1-026), Petrol, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 25085km				Vehicle 2 16088km				Vehicle 3 16124km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex VII – Volvo Cars Corporation for detailed results.

6.8 Ford Motor Company of Australia Pty Ltd

Table 41. Ford Motor Company of Australia Pty Ltd ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-6FP-D49				ISC family 2 5-6FP-D50			
No. of vehicles tested (Type 1 and RDE)		3				3			
IP families tested	Vehicle 1	IP-P375_2021_00011-6FP-1		Type 1: 2023-06-06 RDE: 2023-06-07	IP-P375_2021_00007-6FP-1		Type 1: 2023-05-23 RDE: 2023-05-24		
	Vehicle 2	IP-P375_2021_00011-6FP-1		Type 1: 2023-07-19 RDE: 2023-07-21	IP-P375_2021_00012-6FP-1		Type 1: 2023-08-17 RDE: 2023-08-22		
	Vehicle 3	IP-P375_2021_00011-6FP-1		Type 1: 2023-08-29 RDE: 2023-08-31	IP-P375_2021_00012-6FP-1		Type 1: 2023-08-18 RDE: 2023-08-21		

Table 42. Statistical Folder Status and Test Results ISC family 1 (5-6FP-D49)

		ISC family 1 (5-6FP-D49), Diesel, Direct Injection, ICE												
		Vehicle 1 16910km				Vehicle 2 17028km				Vehicle 3 22500km				SAMPLE DECISION
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC													
	NMHC													
	NOX	x				x				x				PASS
	THC+NOX	x				x				x				PASS
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 43. Statistical Folder Status and Test Results ISC family 2 (5-6FP-D50)

		ISC family 2 (5-6FP-D50), Diesel, Direct Injection, ICE												
		Vehicle 1 15190km				Vehicle 2 45860km				Vehicle 3 22500km				SAMPLE DECISION
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC													
	NMHC													
	NOX	x				x				x				PASS
	THC+NOX	x				x				x				PASS
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex VIII – Ford Motor Company of Australia Pty Ltd for detailed results.

6.9 BMW AG

Table 44. BMW AG ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-WBA-DH14		ISC family 2 5-WBA-O21	
No. of vehicles tested (Type 1 and RDE)		3		3	
IP families tested	Vehicle 1	IP-0000687-WBA-1	Type 1: 2023-06-01 RDE: 2023-06-02	IP-0000580-WBA-1	Type 1: 2023-05-25 RDE: 2023-05-25
	Vehicle 2	IP-0000687-WBA-1	Type 1: 2023-07-20 RDE: 2023-7-21	IP-0000580-WBA-1	Type 1: 2023-07-28 RDE: 2023-07-31
	Vehicle 3	IP-0000687-WBA-1	Type 1: 2023-08-04 RDE: 2023-08-08	IP-0000580-WBA-1	Type 1: 2023-10-20 RDE: 2023-10-23

Table 45. Statistical Folder Status and Test Results ISC family 1 (5-WBA-DH14)

		ISC family 1, (5-WBA-DH14), Diesel, Direct Injection, NOVC												SAMPLE DECISION
		Vehicle 1 26140km				Vehicle 2 32650km				Vehicle 3 27999km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC													
	NMHC													
	NOX	x				x				x				PASS
	THC+NOX	x				x				x				PASS
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 46. Statistical Folder Status and Test Results ISC family 2 (5-WBA-O21)

		ISC family 2, (5-WBA-O21), Petrol, Direct Injection, ICE												SAMPLE DECISION
		Vehicle 1 27039km				Vehicle 2 25889km				Vehicle 3 45064km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex IX – BMW AG for detailed results.

6.10 SAIC Motor Corporation Limited

Table 47. SAIC Motor Corporation Limited ISC-families from risk assessment and IP families on tested vehicles.

		ISC family 1 5-LSJ-1			ISC family 2		
No. of vehicles tested (Type 1 and RDE)		3			0		
IP families tested	Vehicle 1	IP-AS23P_2020_01-LSJ-1	Type I: 2023-09-06		Type I:		
			RDE: 2023-09-07		RDE:		
	Vehicle 2	IP-AS23P_2020_01-LSJ-1	Type I: 2023-11-08		Type I:		
			RDE: 2023-11-09	RDE:			
	Vehicle 3	IP-AS23P_2020_01-LSJ-1	Type I: 2023	Type I:			
			RDE: 2023	RDE:			

Table 48. Statistical Folder Status and Test Results ISC family 1 (5-LSJ-1)

		ISC family 1 (5-LSJ-1), Petrol, Direct Injection, OVC												SAMPLE DECISION
		Vehicle 1 22199km				Vehicle 2 22000km				Vehicle 3 38679km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX													
	PM	x				x				x				PASS
	PN	x				x				x				PASS
RDE	NOX	x				x				x				PASS
	PN	x				x				x				PASS

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Table 49. Statistical Folder Status and Test Results ISC family 2

		ISC family 2												SAMPLE DECISION
		Vehicle 1				Vehicle 2				Vehicle 3				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type 1	CO													
	THC													
	NMHC													
	NOX													
	THC+NOX													
	PM													
	PN													
RDE	NOX													
	PN													

p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

Please refer to Annex X – SAIC Motor Corporation Limited for detailed results.

7 Detailed investigations

Not applicable.

8 Remedial measures

Not applicable.

E. Assessment of the yearly expected emissions decrease due to any ISC remedial measures

Not applicable.

F. Lessons Learned (including for performance of instruments used)

It has come to our attention that there are different interpretations on the time period for which ISC testing should be performed by the manufacturers described in COMMISSION REGULATION (EU) 2017/1151 Amended by Commission regulation 2018/1832 of 5 November 2018, Article 9 (In service conformity) and Annex II PART B.

STA see two possible interpretations to end the in-service conformity checks for an in-service conformity family.

Start of in-service conformity checks for an in-service conformity family:

- The in-service conformity family becomes valid for in-service conformity checks when the annual sales pass 5000 vehicles for the previous year.
- Perform in-service conformity checks each 24 month as long as the annual sales for the previous year pass 5000 vehicles for the previous year.

End of in-service conformity checks for an in-service conformity family:

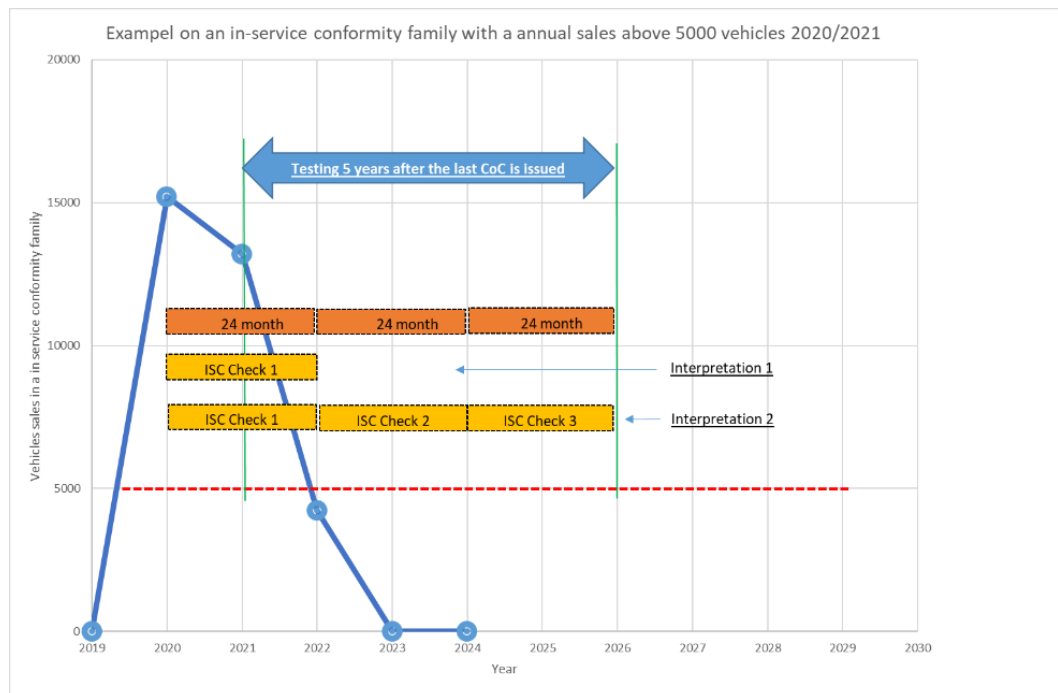
Interpretation 1

- As soon as the annual sales drop below 5000 vehicles for the previous year the requirement for in-service conformity checks ends and no more checks needed.

Interpretation 2

- When the annual sales drop below 5000 vehicles for the previous year (last COC issued), testing should proceed with 24 month interval for 5 years.

Example:



Depending on the interpretation of when to end the ISC testing for a family, there might be large differences with regards to the amount of testing to be required for different manufacturers. In order to secure all TAAs require same level of ISC testing to allow a fair competition between manufacturers, STA has addressed the question to the Forum (meeting forum with EuCom and member states) and is awaiting clarification on the wording in the legislation.

As mentioned in the regulation reference above, vehicles older than 5 years are not in the scope of further testing. However, the understanding is that the intention with the limitation related to the vehicle age is to not only test new cars, but also evaluate the impact related to vehicle aging. In addition, the proposed Euro 7 regulation will extend the ISC family testing to also include vehicles older than 5 years. If ISC testing is to be performed according to interpretation 1, the evaluation does not result in that older vehicles will be tested and the update as proposed in Euro 7 will hence not necessarily provide any difference with regards to the ISC testing (i.e., reduced evaluation of the impact related to vehicle aging).

Based on the above summary, the STA interpretation is according to interpretation 2. This results in that testing will not only be performed related to new vehicles, the ISC should be mandatory 5 years after the last COC is issued and the sales figures for the previous year are above 5000 vehicles, this will result in that also aged vehicles will be evaluated.

G. Report of other invalid tests

After the Type 1 test on vehicle 3 in ISC family 11-SAL-005 for Jaguar Land Rover Limited a fault code from the vehicle was registered in the OBD post-test readout:

P225E NOx Sensor Performance - Signal Biased/Stuck High Bank 1 Sensor 2

The vehicle was then sent to an authorized workshop for repair, after which the test was rerun with approved results.

ANNEXES:**Annex I:** Ford-Werke GmbH, Final_rev00 Report ISC-2023**Annex II:** Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S, Final_rev00 Report ISC-2023**Annex III:** Hyundai Motor Manufacturing Czech s.r.o, Final_rev00 Report ISC-2023**Annex IV:** Jaguar Land Rover Limited, Final_rev00 Report ISC-2023**Annex V:** Kia Corporation, Final_rev00 Report ISC-2023**Annex VI:** Kia Slovakia s.r.o, Final_rev00 Report ISC-2023**Annex VII:** Volvo Cars Corporation, Final_rev00 Report ISC-2023**Annex VIII:** Ford Motor Company of Australia Pty Ltd, Final_rev00 Report ISC-2023**Annex IX:** BMW AG, Final_rev00 Report ISC-2023**Annex X:** SAIC Motor Corporation Limited, Final_rev00 Report ISC-2023**Annex XI:** 3rd party ISC testing, Final_rev00 Report ISC-2023

Annex I – Ford-Werke GmbH, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: Ford-Werke GmbH
Report status: Final_rev00
Report number: ISC-2023-01
Issue date: 2024-03-28

Annex I – Ford-Werke GmbH, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D), Ki included where applicable

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	Nox (mg/km)	Limit NOx (mg/km)	NOx% of Limit	THC+NOx (mg/km)	Limit THC+NOx (mg/km)	THC+NOx % of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-WF0-D36	Vehicle 1	e5*715/2007*2018/1832AP*01739_00	69,9	500	14%	11,0						47,2	80	59%	58,2	170	34%	0,5	4,5	12%	1,2E+10	6E+11	2%
5-WF0-D36	Vehicle 2	e5*715/2007*2018/1832AP*01739_00	116,0	500	23%	13,3						19,8	80	25%	33,1	170	19%	0,4	4,5	8%	9,1E+08	6E+11	0%
5-WF0-D36	Vehicle 3	e5*715/2007*2018/1832AP*01739_00	139,9	500	28%	17,8						30,4	80	38%	48,2	170	28%	0,4	4,5	9%	7,5E+08	6E+11	0%
5-WF0-P34	Vehicle 1	e5*715/2007*2018/1832AP*0640*00	578,5	1000	58%	45,9	100	46%	40,7	68	60%	22,2	60	37%				0,1	4,5	2%	3,3E+10	6E+11	5%
5-WF0-P34	Vehicle 2	e5*715/2007*2018/1832AP*02149*00	224,5	1000	22%	30,3	100	30%	27,3	68	40%	12,3	60	21%				0,0	4,5	1%	7,4E+10	6E+11	12%
5-WF0-P34	Vehicle 3	e5*715/2007*2018/1832AP*0640*00	248,7	1000	25%	37,3	100	37%	32,6	68	48%	67,9	60	113%				0,1	4,5	2%	3,9E+10	6E+11	6%
5-WF0-P34	Vehicle 4	e5*715/2007*2018/1832AP*02150*01	181,6	1000	18%	29,5	100	29%	26,6	68	39%	15,9	60	26%				0,2	4,5	5%	5,7E+10	6E+11	10%

Type 1a (RDE) data from STA test (D), Ki included where applicable

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	Nox Urban (mg/km)	Nox Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-WF0-D36	Vehicle 1	e5*715/2007*2018/1832AP*01739_00	N/A	114,4	9,0E+11	144,9	53,6	47%	3,6E+10	4%	121,5	45,2	40%	3,6E+08	0%
5-WF0-D36	Vehicle 2	e5*715/2007*2018/1832AP*01739_00	N/A	114,4	9,0E+11	4,6	19,9	17%	4,7E+09	1%	4,6	28,0	24%	8,7E+09	1%
5-WF0-D36	Vehicle 3	e5*715/2007*2018/1832AP*01739_00	N/A	114,4	9,0E+11	108,3	31,7	28%	9,9E+10	11%	88,2	27,8	24%	4,2E+09	0%
5-WF0-P34	Vehicle 1	e5*715/2007*2018/1832AP*0640*00	N/A	85,8	9,0E+11	213,1	8,0	9%	6,9E+09	1%	219,0	13,5	16%	1,2E+10	1%
5-WF0-P34	Vehicle 2	e5*715/2007*2018/1832AP*02149*00	N/A	85,8	9,0E+11	182,1	7,4	9%	2,3E+10	3%	162,3	14,9	17%	4,2E+10	5%
5-WF0-P34	Vehicle 3	e5*715/2007*2018/1832AP*0640*00	N/A	-	-	-	-	-	-	-	-	-	-	-	-
5-WF0-P34	Vehicle 4	e5*715/2007*2018/1832AP*02150*01	N/A	85,8	9,0E+11	136,9	7,1	8%	2,6E+10	3%	107,3	15,2	18%	4,9E+10	5%

Vehicle 3 in 5-WF0-P34, not tested in Type 1a due to NOx emissions above the legislation limit in Type 1 test

Annex II – Hyundai Assan Otomotiv Sanayi Ve Ticaret A.Ş, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: Hyundai Assan Otomotiv Sanayi Ve Ticaret A.Ş.
Report Status: Final_rev00
Report Number: ISC-2023-02
Issue date: 2024-03-28

Annex II – Hyundai Assan Otomotiv Sanayi Ve Ticaret A.Ş, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D)

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	Nox (mg/km)	Limit NOx (mg/km)	NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-HAO-4	Vehicle 1	e5*715/2007*2018/1832AP*0664*00	206,4	1000	21%	14,8	100	15%	11,3	68	17%	11,5	60	19%	0,2	4,5	4%	6,8E+10	6E+11	11%
5-HAO-4	Vehicle 2	e5*715/2007*2018/1832AP*0664*00	337,8	1000	34%	20,2	100	20%	16,4	68	24%	12,1	60	20%	0,2	4,5	3%	5,4E+10	6E+11	9%
5-HAO-4	Vehicle 3	e5*715/2007*2018/1832AP*0665*01	180,9	1000	18%	16,7	100	17%	13,9	68	20%	13,6	60	23%	0,2	4,5	3%	5,8E+10	6E+11	10%
5-HAO-3	Vehicle 1	e5*715/2007*2018/1832AP*0662*01	160,0	1000	16%	15,9	100	16%	13,1	68	19%	11,1	60	18%	0,1	4,5	1%	8,7E+09	6E+11	1%
5-HAO-3	Vehicle 2	e5*715/2007*2018/1832AP*0662*01	178,9	1000	18%	18,2	100	18%	14,2	68	21%	9,9	60	16%	0,2	4,5	3%	3,9E+10	6E+11	7%
5-HAO-3	Vehicle 3	e5*715/2007*2018/1832AP*0662*01	200,1	1000	20%	18,3	100	18%	14,1	68	21%	12,3	60	21%	0,2	4,5	4%	8,1E+10	6E+11	14%

Type 1a (RDE) data from STA test (D)

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	Nox Urban (mg/km)	Nox Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-HAO-4	Vehicle 1	e5*715/2007*2018/1832AP*0664*00	N/A	85,8	9,0E+11	85,0	7,1	8%	5,4E+10	6%	50,6	8,3	10%	3,2E+10	4%
5-HAO-4	Vehicle 2	e5*715/2007*2018/1832AP*0664*00	N/A	85,8	9,0E+11	178,1	8,4	10%	5,2E+10	6%	226,9	8,2	10%	3,4E+10	4%
5-HAO-4	Vehicle 3	e5*715/2007*2018/1832AP*0665*01	N/A	85,8	9,0E+11	150,5	10,9	13%	2,0E+10	2%	88,2	18,7	22%	2,9E+10	3%
5-HAO-3	Vehicle 1	e5*715/2007*2018/1832AP*0662*01	N/A	85,8	9,0E+11	117,5	5,9	7%	3,2E+10	4%	92,8	6,7	8%	2,3E+10	3%
5-HAO-3	Vehicle 2	e5*715/2007*2018/1832AP*0662*01	N/A	85,8	9,0E+11	89,8	6,1	7%	5,5E+10	6%	94,4	7,6	9%	4,6E+10	5%
5-HAO-3	Vehicle 3	e5*715/2007*2018/1832AP*0662*01	N/A	85,8	9,0E+11	81,7	2,9	3%	5,2E+10	6%	36,6	1,9	2%	3,2E+10	4%

Annex III – Hyundai Motor Manufacturing Czech s.r.o, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: Hyundai Motor Manufacturing Czech s.r.o
Report status: Final_rev00
Report number: ISC-2023-03
Issue date: 2024-03-28

Annex III – Hyundai Motor Manufacturing Czech s.r.o, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D), Ki included where applicable

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	NOx (mg/km)	Limit NOx (mg/km)	NOx% of Limit	THC+NOx (mg/km)	Limit THC+NOx (mg/km)	THC+NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
11-HMM-8	Vehicle 1	e5*715/2007*2018/1832DG*1255*02	111,3	500	22%							46,3	80	58%	75,8	170	45%	0,3	4,5	6%	2,4E+10	6E+11	4%
11-HMM-8	Vehicle 2	e5*715/2007*2018/1832DG*1255*02	164,0	500	33%							30,9	80	39%	64,3	170	38%	0,2	4,5	4%	1,1E+09	6E+11	0%
11-HMM-8	Vehicle 3	e5*715/2007*2018/1832DG*1255*02	158,3	500	32%							47,3	80	59%	74,7	170	44%	0,2	4,5	4%	4,3E+09	6E+11	1%
11-HMM-5	Vehicle 1	e5*715/2007*2018/1832DG*1248*02	325,2	1000	33%	15,0	100	15%	13,3	68	20%	20,9	60	35%				0,3	4,5	6%	4,8E+10	6E+11	8%
11-HMM-5	Vehicle 2	e5*715/2007*2018/1832DG*1248*01	210,1	1000	21%	12,9	100	13%	11,6	68	17%	24,0	60	40%				0,4	4,5	8%	3,6E+10	6E+11	6%
11-HMM-5	Vehicle 3	e5*715/2007*2018/1832DG*1248*01	489,3	1000	49%	17,8	100	18%	15,8	68	23%	20,9	60	35%				0,3	4,5	6%	9,6E+09	6E+11	2%

Type 1a (RDE) data from STA test (D), Ki included where applicable

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	NOx Urban (mg/km)	NOx Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
11-HMM-8	Vehicle 1	e5*715/2007*2018/1832DG*1255*02	N/A	168,0	9,0E+11	26,9	32,9	20%	9,2E+08	0%	42,5	61,8	37%	2,7E+08	0%
11-HMM-8	Vehicle 2	e5*715/2007*2018/1832DG*1255*02	N/A	168,0	9,0E+11	40,4	33,3	20%	8,7E+09	1%	51,4	40,0	24%	6,7E+09	1%
11-HMM-8	Vehicle 3	e5*715/2007*2018/1832DG*1255*02	N/A	168,0	9,0E+11	81,1	48,2	29%	1,2E+11	13%	141,7	55,7	33%	2,5E+11	28%
11-HMM-5	Vehicle 1	e5*715/2007*2018/1832DG*1248*02	N/A	126,0	9,0E+11	220,4	23,5	19%	2,4E+10	3%	85,5	18,7	15%	3,0E+10	3%
11-HMM-5	Vehicle 2	e5*715/2007*2018/1832DG*1248*01	N/A	126,0	9,0E+11	15,9	57,2	45%	2,9E+10	3%	19,8	15,2	12%	1,9E+10	2%
11-HMM-5	Vehicle 3	e5*715/2007*2018/1832DG*1248*01	N/A	126,0	9,0E+11	350,7	11,9	9%	7,1E+09	1%	153,4	12,8	10%	8,1E+09	1%

Annex IV – Jaguar Land Rover Limited, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: Jaguar Land Rover Limited
Report status: Final_rev00
Report number: ISC-2023-04
Issue date: 2024-03-28

Annex IV – Jaguar Land Rover Limited, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D), Ki included where applicable

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	NOx (mg/km)	Limit NOx (mg/km)	NOx% of Limit	THC+NOx (mg/km)	Limit THC+NOx (mg/km)	THC+NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-SAL-028	Vehicle 1	e5*715/2007*2018/1832AP*1715*01	231,1	1000	23%	14,5	100	14%	11,9	68	17%	9,5	60	16%				0,6	4,5	13%	3,5E+10	6E+11	6%
5-SAL-028	Vehicle 2	e5*715/2007*2018/1832AP*1715*01	223,9	1000	22%	15,9	100	16%	13,4	68	20%	12,5	60	21%				0,3	4,5	6%	4,9E+10	6E+11	8%
5-SAL-028	Vehicle 3	e5*715/2007*2018/1832AP*1715*01	165,1	1000	17%	13,1	100	13%	10,9	68	16%	9,9	60	17%				0,3	4,5	6%	4,8E+10	6E+11	8%
11-SAL-005	Vehicle 1	e5*715/2007*2018/1832DG*0528*00 Corr 01	92,1	500	18%							76,6	80	96%	103,7	170	61%	1,0	4,5	22%	1,3E+11	6E+11	22%
11-SAL-005	Vehicle 2	e5*715/2007*2018/1832DG*0528*00 Corr 01	34,3	500	7%							57,8	80	72%	79,7	170	47%	1,0	4,5	22%	2,0E+11	6E+11	33%
11-SAL-005	Vehicle 3	e5*715/2007*2018/1832DG*0528*00 Corr 01	95,9	500	19%							78,2	80	98%	113,9	170	67%	0,6	4,5	12%	5,8E+10	6E+11	10%

Type 1a (RDE) data from STA test (D), Ki included where applicable

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	NOx Urban (mg/km)	NOx Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-SAL-028	Vehicle 1	e5*715/2007*2018/1832AP*1715*01	N/A	85,8	9,0E+11	114,2	13,0	15%	1,2E+10	1%	165,0	20,5	24%	3,2E+10	4%
5-SAL-028	Vehicle 2	e5*715/2007*2018/1832AP*1715*01	N/A	85,8	9,0E+11	108,9	9,6	11%	6,5E+09	1%	90,9	13,0	15%	1,3E+10	1%
5-SAL-028	Vehicle 3	e5*715/2007*2018/1832AP*1715*01	N/A	85,8	9,0E+11	102,1	7,7	9%	7,9E+10	9%	123,6	11,7	14%	1,8E+10	2%
11-SAL-005	Vehicle 1	e5*715/2007*2018/1832DG*0528*00 Corr 01	N/A	168,0	9,0E+11	29,7	37,5	22%	1,8E+10	2%	50,6	35,4	21%	1,3E+10	1%
11-SAL-005	Vehicle 2	e5*715/2007*2018/1832DG*0528*00 Corr 01	N/A	168,0	9,0E+11	17,5	29,2	17%	2,8E+10	3%	36,5	46,1	27%	7,0E+10	8%
11-SAL-005	Vehicle 3	e5*715/2007*2018/1832DG*0528*00 Corr 01	N/A	168,0	9,0E+11	35,4	32,8	20%	7,8E+10	9%	54,3	57,5	34%	1,9E+11	21%

Annex V – Kia Corporation, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: Kia Corporation
Report status: Final_rev00
Report number: ISC-2023-05
Issue date: 2024-03-28

Annex V – Kia Corporation, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D)

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	Nox (mg/km)	Limit NOx (mg/km)	NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-KMC-14	Vehicle 1	e5*715/2007*2018/1832AP*0601*02	221,5	1000	22%	18,1	100	18%	14,2	68	21%	13,0	60	22%	0,1	4,5	3%	6,2E+10	6E+11	10%
5-KMC-14	Vehicle 2	e5*715/2007*2018/1832AP*0602*00	209,4	1000	21%	23,2	100	23%	19,7	68	29%	18,2	60	30%	0,2	4,5	3%	1,2E+11	6E+11	21%
5-KMC-14	Vehicle 3	e5*715/2007*2018/1832AP*0601*00	155,6	1000	16%	18,6	100	19%	15,1	68	22%	9,7	60	16%	0,2	4,5	4%	9,6E+10	6E+11	16%
5-KMC-12	Vehicle 1	e5*715/2007*2018/1832AP*0597*00	514,1	1000	51%	18,1	100	18%	16,0	68	23%	13,9	60	23%	0,4	4,5	8%	2,4E+11	6E+11	40%
5-KMC-12	Vehicle 2	e5*715/2007*2018/1832AP*0597*00	449,6	1000	45%	22,9	100	23%	20,6	68	30%	8,7	60	15%	0,3	4,5	6%	2,7E+11	6E+11	45%
5-KMC-12	Vehicle 3	e5*715/2007*2018/1832AP*0597*00	338,7	1000	34%	29,3	100	29%	26,7	68	39%	9,2	60	15%	0,5	4,5	11%	3,1E+11	6E+11	52%

Type 1a (RDE) data from STA test (D)

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	Nox Urban (mg/km)	Nox Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-KMC-14	Vehicle 1	e5*715/2007*2018/1832AP*0601*02	N/A	85,8	9,0E+11	108,2	3,6	4%	5,2E+10	6%	148,6	4,1	5%	4,1E+10	5%
5-KMC-14	Vehicle 2	e5*715/2007*2018/1832AP*0602*00	N/A	85,8	9,0E+11	71,5	12,6	15%	5,9E+10	7%	33,2	26,3	31%	5,2E+10	6%
5-KMC-14	Vehicle 3	e5*715/2007*2018/1832AP*0601*00	N/A	85,8	9,0E+11	114,1	2,9	3%	8,8E+10	10%	110,2	5,7	7%	1,1E+11	12%
5-KMC-12	Vehicle 1	e5*715/2007*2018/1832AP*0597*00	N/A	85,8	9,0E+11	239,7	16,5	19%	1,4E+11	15%	514,1	17,7	21%	2,9E+11	32%
5-KMC-12	Vehicle 2	e5*715/2007*2018/1832AP*0597*00	N/A	85,8	9,0E+11	79,8	10,5	12%	6,7E+10	7%	158,4	9,0	10%	1,3E+11	14%
5-KMC-12	Vehicle 3	e5*715/2007*2018/1832AP*0597*00	N/A	85,8	9,0E+11	139,6	8,9	10%	9,8E+10	11%	213,4	10,1	12%	1,8E+11	20%

Annex VI – Kia Slovakia s.r.o, Final_rev00 Report ISC-2023

ISC year:	2023
Manufacturer:	Kia Slovakia s.r.o
Report status:	Final_rev00
Report number:	ISC-2023-06
Issue date:	2024-03-28

No tests performed in ISC-2023.

Annex VII – Volvo Cars Corporation, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: Volvo Cars Corporation
Report status: Final_rev00
Report number: ISC-2023-07
Issue date: 2024-03-28

Annex VII – Volvo Cars Corporation, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D)

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	NOx (mg/km)	Limit NOx (mg/km)	NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-YV1-031	Vehicle 1	e5*715/2007*2018/1832AP*00835*00	116,8	1000	12%	6,3	100	6%	4,8	68	7%	21,9	60	36%	0,3	4,5	7%	3,0E+10	6E+11	5%
5-YV1-031	Vehicle 2	e5*715/2007*2018/1832AP*00835*00	141,7	1000	14%	9,1	100	9%	7,2	68	11%	19,7	60	33%	0,2	4,5	5%	1,7E+10	6E+11	3%
5-YV1-031	Vehicle 3	e5*715/2007*2018/1832AP*00835*00	74,2	1000	7%	4,0	100	4%	3,1	68	4%	16,6	60	28%	0,3	4,5	6%	3,1E+10	6E+11	5%
5-YV1-026	Vehicle 1	e5*715/2007*2018/1832AP*0240*03	212,8	1000	21%	26,4	100	26%	17,1	68	25%	24,9	60	41%	0,3	4,5	6%	6,5E+09	6E+11	1%
5-YV1-026	Vehicle 2	e5*715/2007*2018/1832AP*0231*02	168,4	1000	17%	14,8	100	15%	10,4	68	15%	14,1	60	23%	0,5	4,5	12%	2,1E+10	6E+11	4%
5-YV1-026	Vehicle 3	e5*715/2007*2018/1832AP*0240*02	143,9	1000	14%	16,6	100	17%	13,0	68	19%	16,8	60	28%	0,1	4,5	2%	1,1E+10	6E+11	2%

Type 1a (RDE) data from STA test (D)

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	NOx Urban (mg/km)	NOx Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-YV1-031	Vehicle 1	e5*715/2007*2018/1832AP*00835*00	N/A	85,8	9,0E+11	74,1	12,4	14%	4,3E+09	0%	16,8	11,4	13%	2,1E+09	0%
5-YV1-031	Vehicle 2	e5*715/2007*2018/1832AP*00835*00	N/A	85,8	9,0E+11	85,1	11,2	13%	9,1E+09	1%	28,7	11,4	13%	9,8E+09	1%
5-YV1-031	Vehicle 3	e5*715/2007*2018/1832AP*00835*00	N/A	85,8	9,0E+11	94,5	12,6	15%	8,5E+09	1%	29,6	19,1	22%	1,6E+10	2%
5-YV1-026	Vehicle 1	e5*715/2007*2018/1832AP*0240*03	N/A	85,8	9,0E+11	93,4	13,4	16%	2,2E+09	0%	62,0	15,1	18%	5,1E+09	1%
5-YV1-026	Vehicle 2	e5*715/2007*2018/1832AP*0231*02	N/A	85,8	9,0E+11	79,5	6,0	7%	3,8E+09	0%	34,3	5,1	6%	7,9E+09	1%
5-YV1-026	Vehicle 3	e5*715/2007*2018/1832AP*0240*02	N/A	85,8	9,0E+11	54,6	5,8	7%	2,7E+09	0%	56,0	11,3	13%	7,2E+09	1%

Annex VIII – Ford Motor Company of Australia Pty Ltd, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: Ford Motor Company of Australia Pty Ltd
Report status: Final_rev00
Report number: ISC-2023-08
Issue date: 2024-03-28

Annex VIII – Ford Motor Company of Australia Pty Ltd, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D), Ki included where applicable

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	NOx (mg/km)	Limit NOx (mg/km)	NOx% of Limit	THC+NOx (mg/km)	Limit THC+NOx (mg/km)	THC+NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-6FP-D49	Vehicle 1	e5*715/2007*2018/1832AR*00844*00	19,2	740	3%	21,6	125	17%	27,7	125	13%	0,5	4,5	10%	5,9E+08	6E+11	0%
5-6FP-D49	Vehicle 2	e5*715/2007*2018/1832AR*00844*00	30,7	740	4%	22,5	125	18%	31,3	125	15%	0,4	4,5	8%	1,5E+10	6E+11	2%
5-6FP-D49	Vehicle 3	e5*715/2007*2018/1832AR*00844*00	37,7	740	5%	37,7	125	30%	27,6	125	13%	0,5	4,5	11%	1,8E+10	6E+11	3%
5-6FP-D50	Vehicle 1	e5*715/2007*2018/1832AR*0214*06	52,7	740	7%	29,8	125	24%	36,7	125	17%	0,3	4,5	6%	1,9E+08	6E+11	0%
5-6FP-D50	Vehicle 2	e5*715/2007*2018/1832AR*00845*00	134,7	740	18%	76,7	125	61%	90,6	125	42%	2,4	4,5	54%	1,5E+10	6E+11	2%
5-6FP-D50	Vehicle 3	e5*715/2007*2018/1832AR*00845*00	121,6	740	16%	62,8	125	50%	74,7	125	35%	2,4	4,5	54%	1,6E+11	6E+11	27%

Type 1a (RDE) data from STA test (D), Ki included where applicable

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	NOx Urban (mg/km)	NOx Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-6FP-D49	Vehicle 1	e5*715/2007*2018/1832AR*00844*00	N/A	178,8	9,0E+11	27,0	38,3	21%	3,6E+10	4%	12,0	25,4	14%	2,6E+10	3%
5-6FP-D49	Vehicle 2	e5*715/2007*2018/1832AR*00844*00	N/A	178,8	9,0E+11	8,0	21,0	12%	1,4E+10	2%	7,6	24,2	14%	2,4E+10	3%
5-6FP-D49	Vehicle 3	e5*715/2007*2018/1832AR*00844*00	N/A	178,8	9,0E+11	15,4	19,7	11%	1,4E+10	2%	25,9	23,3	13%	2,6E+10	3%
5-6FP-D50	Vehicle 1	e5*715/2007*2018/1832AR*0214*06	N/A	178,8	9,0E+11	35,7	21,3	12%	1,8E+10	2%	49,6	34,2	19%	4,6E+10	5%
5-6FP-D50	Vehicle 2	e5*715/2007*2018/1832AR*00845*00	N/A	178,8	9,0E+11	106,4	52,3	29%	2,2E+09	0%	131,3	60,3	34%	2,7E+09	0%
5-6FP-D50	Vehicle 3	e5*715/2007*2018/1832AR*00845*00	N/A	178,8	9,0E+11	89,2	48,9	27%	1,2E+11	13%	88,4	50,9	28%	1,9E+11	21%

Annex IX –BMW AG, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: BMW AG
Report status: Final_rev00
Report number: ISC-2023-09
Issue date: 2024-03-28

Annex IX –BMW AG, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D), Ki included where applicable

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	NOx (mg/km)	Limit NOx (mg/km)	NOx% of Limit	THC+NOx (mg/km)	Limit THC+NOx (mg/km)	THC+NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-WBA-DH14	Vehicle 1	e5*715/2007*2018/1832AP*00834*00	137,1	500	27%							39,8	80	50%	54,9	170	32%	0,7	4,5	15%	8,4E+09	6E+11	1%
5-WBA-DH14	Vehicle 2	e5*715/2007*2018/1832AP*00834*00	172,8	500	35%							45,8	80	57%	62,1	170	37%	0,7	4,5	16%	6,2E+07	6E+11	0%
5-WBA-DH14	Vehicle 3	e5*715/2007*2018/1832AP*00834*00	149,2	500	30%							44,4	80	55%	58,4	170	34%	0,8	4,5	18%	5,3E+10	6E+11	9%
5-WBA-O21	Vehicle 1	e5*715/2007*2018/1832AP*0731*01	219,9	1000	22%	19,6	100	20%	15,0	68	22%	15,1	60	25%				0,1	4,5	2%	9,1E+09	6E+11	2%
5-WBA-O21	Vehicle 2	e5*715/2007*2018/1832AP*0731*01	218,1	1000	22%	18,8	100	19%	15,1	68	22%	13,6	60	23%				0,2	4,5	4%	2,0E+08	6E+11	0%
5-WBA-O21	Vehicle 3	e5*715/2007*2018/1832AP*0731*01	275,0	1000	27%	20,7	100	21%	16,3	68	24%	12,1	60	20%				0,1	4,5	2%	4,5E+09	6E+11	1%

Type 1a (RDE) data from STA test (D), Ki included where applicable

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	NOx Urban (mg/km)	NOx Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-WBA-DH14	Vehicle 1	e5*715/2007*2018/1832AP*00834*00	N/A	114,4	9,0E+11	47,3	7,3	6%	1,4E+09	0%	129,7	17,5	15%	2,9E+09	0%
5-WBA-DH14	Vehicle 2	e5*715/2007*2018/1832AP*00834*00	N/A	114,4	9,0E+11	0,6	23,3	20%	2,0E+08	0%	0,6	49,7	43%	2,6E+08	0%
5-WBA-DH14	Vehicle 3	e5*715/2007*2018/1832AP*00834*00	N/A	114,4	9,0E+11	20,3	24,9	22%	2,0E+09	0%	66,9	49,4	43%	2,8E+09	0%
5-WBA-O21	Vehicle 1	e5*715/2007*2018/1832AP*0731*01	N/A	85,8	9,0E+11	121,9	6,1	7%	6,9E+09	1%	128,9	10,9	13%	8,7E+09	1%
5-WBA-O21	Vehicle 2	e5*715/2007*2018/1832AP*0731*01	N/A	85,8	9,0E+11	79,1	9,9	12%	7,2E+09	1%	20,9	13,6	16%	9,2E+09	1%
5-WBA-O21	Vehicle 3	e5*715/2007*2018/1832AP*0731*01	N/A	85,8	9,0E+11	106,7	7,6	9%	1,3E+09	0%	109,0	13,2	15%	2,1E+09	0%

Annex X –SAIC Motor Corporation Limited, Final_rev00 Report ISC-2023

ISC year: 2023
Manufacturer: SAIC Motor Corporation Limited
Report status: Final_rev00
Report number: ISC-2023-10
Issue date: 2024-03-28

Annex X –SAIC Motor Corporation Limited, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from STA test (D)

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	THC (mg/km)	Limit THC (mg/km)	THC% of Limit	NMHC (mg/km)	Limit NMHC (mg/km)	NMHC% of Limit	NOx (mg/km)	Limit NOx (mg/km)	NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
5-LSJ-1	Vehicle 1	e5*715/2007*2018*1832AP*00743*01	134,6	1000	13%	20,0	100	20%	16,7	68	24%	8,7	60	14%	0,2	4,5	4%	6,3E+09	6E+11	1%
5-LSJ-1	Vehicle 2	e5*715/2007*2018*1832AP*00743*01	175,7	1000	18%	22,8	100	23%	19,0	68	28%	6,5	60	11%	0,1	4,5	1%	9,4E+08	6E+11	0%
5-LSJ-1	Vehicle 3	e5*715/2007*2018*1832AP*00743*01	220,6	1000	22%	28,0	100	28%	22,9	68	34%	8,5	60	14%	0,2	4,5	4%	6,1E+08	6E+11	0%

Type 1a (RDE) data from STA test (D)

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	NOx Urban (mg/km)	NOx Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
5-LSJ-1	Vehicle 1	e5*715/2007*2018*1832AP*00743*01	N/A	85,8	9,0E+11	639,3	9,0	10%	4,9E+09	1%	81,8	11,9	14%	4,7E+09	1%
5-LSJ-1	Vehicle 2	e5*715/2007*2018*1832AP*00743*01	N/A	85,8	9,0E+11	73,3	15,3	18%	4,6E+08	0%	70,4	37,4	44%	9,1E+08	0%
5-LSJ-1	Vehicle 3	e5*715/2007*2018*1832AP*00743*01	N/A	85,8	9,0E+11	49,4	2,9	3%	1,1E+08	0%	33,4	4,4	5%	2,0E+08	0%

Annex XI- 3rd party, Final_rev00 Report ISC-2023

ISC year:	2023
Manufacturer:	3rd party
Report status:	Final_rev00
Report number:	ISC-2023-11
Issue date:	2024-03-28

Annex XI- 3rd party, Final_rev00 Report ISC-2023

Type 1 (WLTP) data from third party testing

ISC-family	STA ref	Emission Type Approval	CO (mg/km)	Limit CO (mg/km)	CO% of Limit	NOx (mg/km)	Limit NOx (mg/km)	NOx% of Limit	THC+NOx (mg/km)	Limit THC+NOx (mg/km)	THC+NOx% of Limit	PM (mg/km)	Limit PM (mg/km)	PM% of Limit	PN (#/km)	Limit PN (#/km)	PN% of Limit
11-SAJ-001	Vehicle 1	e5*715/2007*2018/1832DG*1202*00	79,7	500	16%	41,1	80	51%				0,2	4,5	4%	3,4E+10	6E+11	6%
11-SAJ-001	Vehicle 2	e5*715/2007*2018/1832DG*1202*00	56,4	500	11%	33,8	80	42%				0,3	4,5	7%	7,1E+10	6E+11	12%

Type 1a (RDE) data from third party testing

ISC-Family	STA ref	EmissionTypeApproval	Limit CO NTE (mg/km)	Limit NOx NTE (mg/km)	Limit PN NTE (#/km)	CO Totaltrip (mg/km)	Nox Totaltrip (mg/km)	Nox Totaltrip % of NTE	PN Totaltrip (#/km)	PN Totaltrip % of NTE	CO Urban (mg/km)	NOx Urban (mg/km)	NOx Urban % of NTE	PN Urban (#/km)	PN Urban % of NTE
11-SAJ-001	Vehicle 1	e5*715/2007*2018/1832DG*1202*00	N/A	168,0	9,0E+11	114,1	94,5	56%	6,5E+11	72%	125,7	88,2	52%	6,3E+11	70%
11-SAJ-001	Vehicle 2	e5*715/2007*2018/1832DG*1202*00	N/A	168,0	9,0E+11	99,0	41,5	25%	4,8E+11	53%	45,7	67,3	40%	6,4E+11	71%