

# In-Service Conformity Report 2024

Swedish Transport Agency, In Service Conformity (ISC)  
testing according to EU Regulation 2017/1151 as amended  
by EU Regulation 2018/1832 (Euro 6-D) and 2023/443  
(Euro 6-E)

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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 (Euro 6-D) and 2023/443 (Euro 6-E). 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 summarizes the testing for ISC2024 conducted by manufacturers, third parties and the Swedish Transport Agency (STA). STA is the GTAA in Sweden.

Included manufacturers in GTAA (STA) ISC2024 testing programme.

- Ford-Werke GmbH
- Hyundai Assan Otomotiv Sanayi Ve Ticaret A.Ş.
- Hyundai Motor Manufacturing Czech s.r.o.
- Kia Corporation
- Kia Slovakia s.r.o.
- Volvo Car Corporation
- Ford Motor Company of Australia Pty Ltd
- BMW AG
- SAIC Motor Corporation Limited
- Volkswagen AG

All opened statistical folders in ISC2024 are now closed with a passed result, see a summary in table 6-1.

Testresults exceeding legal limits have been observed in one Type1 test. After testing a fourth vehicle in the ISC family according to figure 2 in the aforementioned legal text, the statistical folder for the current ISC family was approved.

ISC2024	Planned vehicles	Tested vehicles	PASS tests	FAILED tests
GTAA (STA)	54	55	54	1
3 <sup>rd</sup> Parties	1	1	1	0

Gothenburg, March 2025



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## Glossary

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
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
ETA	Emission Type Approval number
Type1	WLTP test in chassis dynamometer
Type1A	RDE test with PEMS
JRC	Joint Research Centre
ACEA	European Automobile Manufacturers Association
FORUM	Forum for Exchange of Information on Enforcement as established according to article 11 of EU regulation 2018/858

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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 manufacturer

This section is an overview of the testing performed per manufacturer. The results of the testing are reported according to the FORUM<sup>1</sup> consensus reached -22 May 2024 regarding the interpretation of the legislation 2017/1151 Article 9 and 2018/1832 Annex II.

Article 9(3) of Regulation 2017/1151 states:

The requirements for in-service conformity checks are applicable until 5 years after the last Certificate of Conformity or individual approval certificate is issued for vehicles of that in-service conformity family.

#### Explanation for upcoming tables for ISC manufacturer testing.

PASS = Statistical folder for the period is closed with PASS result

x = Valid for ISC testing

- = Not valid for ISC testing

→ = PASS results remain valid. Testing needed the following year.

und = Undecided after 12 of the 24-month period, testing needed the following year.

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

END = Testing for the ISC-family is finalized, five years after the last COC is issued

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<sup>1</sup> Forum for Exchange of Information on Enforcement as established according to article 11 of EU regulation 2018/858



## 2.1 Ford-Werke GmbH

### 2.1.1 Type1

Table 2-1. Ford-Werke GmbH, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
x	x	-	-	-	11-WF0-D10	PASS	→	UND	UND	UND	
x	x	-	-	-	5-WF0-D25 <sup>2</sup> 11-WF0-D6	und	PASS	→	UND	UND	
x	x	-	-	-	5-WF0-P28 <sup>3</sup> 11-WF0-P9	PASS	→	UND	UND	UND	
-	x	x	-	-	11-WF0-P16	-	PASS	→	UND	UND	
x	x	-	-	-	11-WF0-D8	PASS	→	UND	UND	UND	
x	2*x <sup>4</sup>	-	-	-	5-WF0-D13	PASS	PASS	→	UND	UND	
x	x	-	-	-	5-WF0-D14	und	PASS	→	UND	UND	
-	x	x	x	x	5-WF0-P27	-	PASS	→	PASS	→	
x	-	-	-	-	11-WF0-P7	und	PASS	→	UND	UND	END
x	-	-	-	-	11-WF0-P8	PASS	→	UND	UND	UND	END
x	-	-	-	-	11-WF0-P20 <sup>5</sup> 11-WF0-P22	PASS	→	UND	UND	UND	END
x	-	-	-	-	11-WF0-D16	und	PASS	→	UND	UND	END
-	x	x	x	x	5-WF0-P34	-	und	PASS	→	PASS	
-	x	x	-	-	5-WF0-D41	-	und	UND	PASS	→	
-	x	x	x	-	5-WF0-D42	-	und	PASS	PASS	→	
-	x	x	x	x	5-WF0-D40	-	und	PASS	→	PASS	
-	x	-	x	2*x <sup>6</sup>	5-WF0-D36	-	und	PASS	→	PASS	

<sup>2</sup> Request from Ford to merge ISC-families with identical specifications, agreed with STA.

<sup>3</sup> Request from Ford to merge ISC-families with identical specifications, agreed with STA.

<sup>4</sup> Sales number for 2020 >100000 vehicles → two test slots

<sup>5</sup> Request from Ford to merge ISC-families with identical specifications, agreed with STA.

<sup>6</sup> Sales number for 2023 >100000 vehicles → two test slots





Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
-	-	-	x	x	5-WF0-D37	-	-	-	und	PASS	
-	-	x	x	-	5-WF0-D38	-	-	und	PASS	→	
-	-	-	-	x	5-WF0-D55	-	-	-	-	und	

## 2.2 Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S,

### 2.2.1 Type1

Table 2-2. Hyundai Assan Otomotiv Sanayi Ve Ticaret A.S., ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und						
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025	
x	x	-	-	-	11-HAO-1	und	PASS	→	PASS	→		
x	-	-	-	-	11-HAO-2	und	PASS	→	PASS	→	END	
x	x	-	-	-	11-HAO-3	und	PASS	→	PASS	→		
x	x	-	-	-	11-HAO-4	und	PASS	→	PASS	→		
-	-	x	x	x	5-HAO-1	-	-	und	PASS	→		
-	-	x	x	x	5-HAO-3	-	-	und	PASS	→		
-	-	x	x	x	5-HAO-4	-	-	und	PASS	→		
-	-	-	-	-	5-HAO-5	-	-	-	-	PASS		
-	x	x	x	x	5-HAO-17	-	und	PASS	→	PASS		
-	x	x	x	x	5-HAO-18	-	und	PASS	→	PASS		

### 2.2.2 Type1A (RDE)

Table 2-3. Type1A (RDE) tests performed by Hyundai Assan Otomotiv Sanayi Ve Ticaret A.Ş.

ISC-Family	Vehicles	Cold start	Hot start	Status
5-HAO-5	1	x	x	OK
5-HAO-17	1	x	x	OK
5-HAO-18	1	x	x	OK

## 2.3 Hyundai Motor Manufacturing Czech s.r.o

### 2.3.1 Type1

Table 2-4. Hyundai Motor Manufacturing Czech s.r.o, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
-	x	-	-	-	11-HMM-5	-	PASS	→	PASS	→	
-	x	-	-	-	11-HMM-6	-	PASS	→	PASS	→	
-	x	-	-	-	11-HMM-8		PASS	→	PASS	→	
-	x	-	-	-	11-HMM-1 <sup>7</sup> 11-HMM-10	-	und	PASS	→	PASS	
-	x	-	-	-	11-HMM-2 <sup>8</sup> 11-HMM-11	-	und	PASS	→	PASS	
-	x	-	-	-	11-HMM-3 <sup>9</sup> 11-HMM-12	-	und	PASS	→	PASS	
-	x	x	-	-	11-HMM-4 <sup>10</sup> 11-HMM-13	-	und	PASS	→	PASS	
-	x	-	-	x	11-HMM-14	-	und	PASS	→	PASS	
-	x	-	-	-	11-HMM-15	-	und	PASS	→	PASS	
-	-	x	x	x	5-HMM-1	-	-	und	PASS	→	
-	-	x	x	x	5-HMM-2	-	-	und	PASS	→	
-	-	x	-	-	5-HMM-3	-	-	und	PASS	→	
-	-	x	-	-	5-HMM-4	-	-	und	PASS	→	
-	-	x	x	x	5-HMM-5	-	-	PASS	→	PASS	
-	-	x	x	x	5-HMM-12	-	-	und	PASS	→	
-	-	-	x	x	5-HMM-14	-	-	-	und	PASS	
-	-	-	x	x	5-HMM-15	-	-	-	PASS	→	
-	-	x	x	x	5-HMM-17	-	-	und	PASS	→	
-	-	x	x	x	5-HMM-18	-	-	und	PASS	→	
-	-	x	x	x	5-HMM-19	-	-	und	PASS	→	
-	-	x	x	x	5-HMM-20	-	-	und	PASS	→	

<sup>7</sup> ISC-families 11-HMM-1 and 11-HMM-10 are the same with identical specifications, agreed with STA.

<sup>8</sup> ISC-families 11-HMM-2 and 11-HMM-11 are the same with identical specifications, agreed with STA.

<sup>9</sup> ISC-families 11-HMM-3 and 11-HMM-12 are the same with identical specifications, agreed with STA.

<sup>10</sup> ISC-families 11-HMM-4 and 11-HMM-13 are the same with identical specifications, agreed with STA.

## 2.4 Jaguar Land Rover Limited

### 2.4.1 Type1

Table 2-5. Jaguar Land Rover Limited, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
x	-	-	-	-	11-SAJ-001	PASS	→	PASS	PASS	→	END
-	-	x	x	-	5-SAJ-026	-	-	PASS	PASS	PASS	
-	-	-	x	-	5-SAL-028	-	-	-	PASS	PASS	

## 2.5 Kia Corporation

### 2.5.1 Type1

Table 2-6. Kia Corporation, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
x	x	x	-	-	11-KMC-4	und	PASS	→	PASS	→	
x	x	-	-	-	11-KMC-5	und	PASS	→	PASS	PASS	
x	x	-	-	-	11-KMC-7	und	PASS	→	PASS	PASS	
x	x	-	-	-	11-KMC-8	und	PASS	PASS	PASS	PASS	
-	-	x	x	x	5-KMC-12	-	-	und	PASS	→	
-	-	x	x	x	5-KMC-13	-	-	und	PASS	→	
-	x	x	x	x	5-KMC-14	-	und	PASS	PASS	→	
-	-	x	x	x	5-KMC-15	-	-	und	PASS	→	
-	-	-	x	x	5-KMC-16	-	-	-	PASS	→	

### 2.5.2 Type1A (RDE)

Table 2-7. Type1A (RDE) tests performed by Kia Corporation

ISC-Family	Vehicles	Cold start	Hot start	Status
11-KMC-5	1	x	x	OK
11-KMC-7	1	x	x	OK
11-KMC-8	1	x	x	OK

## 2.6 Kia Slovakia s.r.o

### 2.6.1 Type1

Table 2-8. Kia Slovakia s.r.o., ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und						
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025	
x	x	-	-	-	11-HMM-5	und	PASS	→	PASS	PASS		
x	x	-	-	-	11-HMM-6	und	PASS	→	PASS	PASS		
x	x	-	-	-	11-HMM-8	und	PASS	→	PASS	PASS		
x	x	-	-	-	11-HMM-15	und	UND	PASS	→	PASS		
-	-	x	-	-	5-KMC-1	-	-	und	PASS	→		
-	-	x	-	-	5-KMC-2	-	-	und	PASS	→		
-	-	x	-	-	5-KMC-4	-	-	und	PASS	→		
-	-	x	-	-	5-KMC-5	-	-	PASS	→	PASS		

## 2.7 Volvo Cars Corporation

### 2.7.1 Type1

Table 2-9. Volvo Cars Corporation, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und						
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025	
x	x	-	-	-	5-YV1-012	PASS	→	PASS	→	PASS		
x	x	-	-	-	5-YV1-016	PASS	→	PASS	→	PASS		
-	x	x	-	-	5-YV1-020	-	und	PASS	→	PASS		
-	x	x	-	-	5-YV1-021	-	PASS	→	PASS	→		
-	x	x	x	x	5-YV1-022	-	und	PASS	→	PASS		
-	x	x	x	x	5-YV1-023	-	PASS	→	PASS	→		
-	x	x	x	x	5-YV1-026	-	und	PASS	→	PASS		
-	x	x	x	x	5-YV1-027	-	PASS	→	PASS	→		
-	-	-	x	x	5-YV1-030	-	und	PASS	→	PASS		
-	-	x	x	x	5-YV1-031	-	-	und	PASS	→		

## 2.8 Ford Motor Company of Australia Pty Ltd

### 2.8.1 Type1

Table 2-10. Ford Motor Company of Australia Pty Ltd, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
-	x	x	-	-	5-6FP-D32	-	und	UND	-	-	
-	x	x	-	-	5-6FP-D33	-	und	UND	-	-	
-	-	-	x	x	5-6FP-D49 <sup>11</sup>	-	-	-	und	PASS	
-	-	-	x	x	5-6FP-D50 <sup>12</sup>	-	-	-	PASS	→	
-	-	-	-	x	5-6FP-D51	-	-	-	-	und	

## 2.9 BMW AG

### 2.9.1 Type1

Table 2-11. BMW AG, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
-	-	x	x	x	5-WBA-DH13	-	-	und	PASS	→	
-	-	-	x	x	5-WBA-DH14	-	-	-	und	PASS	
-	-	-	-	-	5-WBA-O21 <sup>13</sup>	-	-	-	-	-	
-	-	-	-	-	5-WBA-O35 <sup>14</sup>	-	-	-	-	-	
-	-	-	-	x	5-WBA-DH15	-	-	-	-	und	
-	-	-	-	x	5-WBA-DH16	-	-	-	-	und	
-	-	-	-	x	5-WBA-P38	-	-	-	-	und	

<sup>11</sup> Request from Ford to merge ISC-family 5-6FP-D32 into 5-6FP-D49, with identical specifications.

<sup>12</sup> Request from Ford to merge ISC-family 5-6FP-D33 into 5-6FP-D50, with identical specifications.

<sup>13</sup> Updated sales numbers from BMW AG 2024-05-08, no longer valid for ISC testing

<sup>14</sup> Updated sales numbers from BMW AG 2024-05-08, no longer valid for ISC testing

## 2.10 SAIC Motor Corporation Limited

### 2.10.1 Type1

Table 2-12. SAIC Motor Corporation Limited, ISC-families to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
-	-	x	x	x	5-LSJ-1	-	-	PASS	→	UND	
-	-	-	x	x	5-LSJ-2	-	-	-	und	UND	
-	-	-	x	x	5-LSJ-3	-	-	-	und	UND	

The testing period for all valid ISC families has expired, the legal requirement not met.

## 2.11 Volkswagen AG

### 2.11.1 Type1

Table 2-13. Volkswagen AG, ISC-family to test (Type1) and status

Qualified for ISC test Sales for previous year>5000					ISC-family	Statistical folder status: PASS/UND/und					
2020	2021	2022	2023	2024		2020	2021	2022	2023	2024	2025
-	-	-	-	x	5-VWx- 715W_D54	-	-	-	-	PASS	

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

**3 Information gathering and risk assessment by third part**

No data available

**4 ISC testing performed by third part**

Table 4-1. Third part ISC testing performed during 2024

Test	STA-Ref	Manufacturer	ISC-family	Technical service	Test type	Status
1	2024-616	Jaguar Land Rover Limited	5-SAJ-001	JRC	1+1a	PASS

**4.1 Type1**

Table 4-2. Type1 test result

Test	ISC-family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
1	11-SAJ-001	47,1	-	-	39,5	48,2	0,3	6,1E+10

**4.2 Type1A**

Table 4-3. Type1A test result

Test	ISC-family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
1	11-SAJ-001	57,9	45,1	2,1E+11	103,4	75,2	3,0E+11

**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. Type1 and 1A tests were conducted for this ISC program.

As a first step, all e5\*715/2007\*2018/1832\* and e5\*715/2007\*2023/443\* emissions approvals that were applicable to GTAA ISC testing were identified for each manufacturer. Each approval was accompanied by the associated IP and ISC (PEMS) families, 2023 sales volumes and warranty claims.



## 5.1 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 2023.

### *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 2023 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 (%).

Other factors that are included in the risk assessment before the ISC families to be tested within the yearly ISC programme are selected.

- STA ISC-testing history
- Different Fuels
- Powertrain Architecture
- Fuelling method
- Different transmissions
- 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.

The results of the risk analysis for ISC2024 is presented in Table 6-1.



## 6 GTAA ISC testing

Table 6-1. Summary of the GTAA ISC2024 testing programme. Tested ISC families and the outcome thereof

Sec.	Manufacturer <i>Test/Comments</i>	ISC-family	Planned Vehicles	Tested Vehicles	Result
6.1	Ford-Werke GmbH	5-WF0-D37	3	3	PASS
		5-WF0-P27	3	4	PASS
6.2	Hyundai Assan Otomotiv Sanayi Tic A.S	5-HAO-17	3	3	PASS
		5-HAO-1	3	3	PASS
6.3	Hyundai Motor Manufacturing Czech s.r.o.	5-HMM-5	3	3	PASS
		5-HMM-1	3	3	PASS
6.4	Jaguar Land Rover Limited	-	-	-	-
	<i>no testing</i>	-	-	-	-
6.5	Kia Corporation	5-KMC-16	3	3	PASS
		5-KMC-15	3	3	PASS
6.6	Kia Slovakia s.r.o	5-KMC-5	3	3	PASS
	<i>one ISC family</i>	-	-	-	-
6.7	Volvo Cars Corporation	5-YV1-027	3	3	PASS
		5-YV1-030	3	3	PASS
6.8	Ford Motor Company of Australia Pty Ltd	5-6FP-D50	3	3	PASS
		5-6FP-D51	3	3	PASS
6.9	BMW AG	5-WBA-P38	3	3	PASS
		5-WBA-DH16	3	3	PASS
6.10	SAIC Motor Corporation Limited	5-LSJ-2	3	3	PASS
		5-LSJ-3	3	3	PASS
6.11	Volkswagen AG	5-VWx-715W_D54	3	3	PASS
	<i>one ISC family</i>	-	-	-	-
Total:			54	55	

## 6.1 Ford-Werke GmbH

### 6.1.1 Tested IP-families/Emission Type Approval number

Table 6-2. Ford-Werke GmbH ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-WF0-D37		ISC family2 5-WF0-P27	
No. of vehicles tested Type1 and Type1A(RDE)		3		4	
IP families/ ETA number	1	IP-V362_2021_00035-WF0-1 e5*715/2007*2018/1832AP*00896*00	Type1 2024-06-14	IP-C519_2019_00009-WF0-1 e5*715/2007*2018/1832AP*0555*00	Type1 2024-06-06
			Type1A(RDE) 2024-06-15		Type1A(RDE) 2024-06-07
	2	IP-V362_2021_00035-WF0-1 e5*715/2007*2018/1832AP*00896*00	Type1 2024-08-22	IP-C519_2019_00009-WF0-1 e5*715/2007*2018/1832AP*0555*02	Type1 2024-06-12
			Type1A(RDE) 2024-10-14		Type1A(RDE) Not tested
	3	IP-V362_2021_00035-WF0-1 e5*715/2007*2018/1832AP*00896*00	Type1 2025-01-15	IP-C519_2019_00007-WF0-1 e5*715/2007*2018/1832AP*0565*03	Type1 2024-06-25
			Type1A(RDE) 2025-01-17		Type1A(RDE) 2024-06-26
	4	-	Type1	IP-C519_2019_00007-WF0-1 e5*715/2007*2018/1832AP*0565*00	Type1 2024-07-19
			Type1A(RDE)		Type1A(RDE) 2024-07-23

### 6.1.2 Test results

Table 6-3. Type1 test results for Ford-Werke GmbH

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-WF0-D37	38,3	-	-	24,9	30,8	0,24	5,2E+08
Vehicle2	5-WF0-D37	23,8	-	-	23,5	28,7	0,42	2,6E+09
Vehicle3	5-WF0-D37	41,3	-	-	23,8	30,4	0,42	6,6E+08
Vehicle1	5-WF0-P27	542,4	56,3	48,6	21,8	-	0,20	5,2E+10
Vehicle2	5-WF0-P27	1509,3 <sup>15</sup>	142,3 <sup>16</sup>	122,1 <sup>17</sup>	50,2	-	0,24	1,1E+10
Vehicle3	5-WF0-P27	550,0	37,6	31,7	17,2	-	0,14	3,5E+10
Vehicle 4	5-WF0-P27	544,1	37,4	32,6	18,7	-	0,12	1,4E+10

Table 6-4. Type1A (RDE) test results for Ford-Werke GmbH

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-WF0-D37	13,3	24,0	1,2E+09	32,5	28,5	1,2E+09
Vehicle2	5-WF0-D37	38,0	16,5	6,0E+08	36,6	19,9	1,1E+09
Vehicle3	5-WF0-D37	76,2	29,8	3,6E+09	112,3	31,2	5,4E+09
Vehicle1	5-WF0-P27	371,2	10,9	1,3E+10	208,7	16,7	3,2E+10
Vehicle2	5-WF0-P27	Na	Na	Na	Na	Na	Na
Vehicle3	5-WF0-P27	156,8	8,7	1,4E+10	45,5	8,3	2,1E+10
Vehicle 4	5-WF0-P27	361,4	11,5	8,7E+09	160,0	15,1	9,0E+09

<sup>15</sup> Exceeding the CO legislation limit of 1000 mg/km  
<sup>16</sup> Exceeding the THC legislation limit of 100 mg/km  
<sup>17</sup> Exceeding the NMHC legislation limit of 68 mg/km



### 6.1.3 Statistical folders

Table 6-5. Ford-Werke GmbH, statistical folder status and test results ISC family1 (5-WF0-D37)

		ISC family1 (5-WF0-D37), M1, NOVC, Diesel, Direct Injection												SAMPLE DECISION
		Vehicle1 18690km				Vehicle2 20881km				Vehicle3 23010km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

Table 6-6. Ford-Werke GmbH, statistical folder status and test results ISC family2 (5-WF0-P27)

		ISC family2 (5-WF0-P27), M1, ICE, Petrol, Direct Injection																SAMPLE DECISION
		Vehicle1 40261km				Vehicle2 71985km				Vehicle3 15760km				Vehicle4 55429km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				Not tested				x				x				PASS
RDE	PN	x				Not tested				x				x				PASS

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



## 6.2 Hyundai Assan Otomotiv Sanayi Ve Ticaret A.Ş.

### 6.2.1 Tested IP-families/Emission Type Approval number

Table 6-7. Hyundai Assan Otomotiv San ve Tic A.S ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-HAO-17		ISC family2 5-HAO-1	
No. of vehicles tested Type1 and Type1A(RDE)		3		3	
IP families/ ETA number	1	IP-050529-NLH-1 e5*715/2007*2018/1832AP*0529*03	Type1 2024-05-17	IP-050669-NLH-1 e5*715/2007*2018/1832AP*0669*01	Type1 2024-06-11
			Type1A(RDE) 2024-05-15		Type1A(RDE) 2024-06-12
	2	IP-050529-NLH-1 e5*715/2007*2018/1832AP*0529*03	Type1 2024-05-23	IP-050669-NLH-1 e5*715/2007*2018/1832AP*0669*01	Type1 2024-07-03
			Type1A(RDE) 2024-05-23		Type1A(RDE) 2024-07-04
	3	IP-050529-NLH-1 e5*715/2007*2018/1832AP*0529*03	Type1 2024-05-29	IP-050669-NLH-1 e5*715/2007*2018/1832AP*0669*01	Type1 2024-07-16
			Type1A(RDE) 2024-05-30		Type1A(RDE) 2024-07-18

### 6.2.2 Test results

Table 6-8. Type1 test results for Hyundai Assan Otomotiv San ve Tic A.S

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-HAO-17	193,1	16,9	15,5	9,7	-	-	-
Vehicle2	5-HAO-17	238,7	22,4	20,5	9,4	-	-	-
Vehicle3	5-HAO-17	300,2	19,9	18,0	7,6	-	-	-
Vehicle1	5-HAO-1	276,6	28,5	26,2	8,7	-	-	-
Vehicle2	5-HAO-1	238,7	27,6	25,8	10,1	-	-	-
Vehicle3	5-HAO-1	248,4	26,5	24,1	9,0	-	-	-

Table 6-9. Type1A (RDE) test results for Hyundai Assan Otomotiv San ve Tic A.S

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-HAO-17	82,0	7,1	-	161,9	9,0	-
Vehicle2	5-HAO-17	95,0	6,7	-	107,8	9,0	-
Vehicle3	5-HAO-17	60,3	4,2	-	94,4	5,6	-
Vehicle1	5-HAO-1	86,6	3,8	-	166,9	8,3	-
Vehicle2	5-HAO-1	84,9	2,5	-	162,5	4,4	-
Vehicle3	5-HAO-1	138,5	3,2	-	172,8	4,9	-

### 6.2.3 Statistical folders

Table 6-10. Hyundai Assan Otomotiv San ve Tic A.S, statistical folder status and test results ISC family1 (5-HAO-17)

		ISC family1 (5-HAO-17) , M1, ICE, Petrol, Indirect Injection												SAMPLE DECISION
		Vehicle1 34200km				Vehicle2 21609km				Vehicle3 29603km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX	-				-				-				-
	PM	-				-				-				-
	PN	-				-				-				-
Type1A	NOX	x				x				x				PASS
RDE	PN	-				-				-				-

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

Table 6-11. Hyundai Assan Otomotiv San ve Tic A.S, statistical folder status and test results ISC family2 (5-HAO-1)

		ISC family2 (5-HAO-1) , M1, ICE, Petrol, Indirect Injection												SAMPLE DECISION
		Vehicle1 31067km				Vehicle2 38665km				Vehicle3 39226km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX	-				-				-				-
	PM	-				-				-				-
	PN	-				-				-				-
Type1A	NOX	x				x				x				PASS
RDE	PN	-				-				-				-

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



### 6.3 Hyundai Motor Manufacturing Czech s.r.o.

#### 6.3.1 Tested IP-families/Emission Type Approval number

Table 6-12. Hyundai Motor Manufacturing Czech s.r.o ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-HMM-5		ISC family2 5-HMM-1	
No. of vehicles tested Type1 and Type1A(RDE)		3		3	
IP families/ ETA number	1	IP-0500709-TMA-1 e5*715/2007*2018/1832AP*00709*03	Type1 2024-08-15	IP-0500703-TMA-1 e5*715/2007*2018/1832AP*00703*01	Type1 2024-08-23
			Type1A(RDE) 2024-08-21		Type1A(RDE) 2024-08-21
	2	IP-0500710-TMA-1 e5*715/2007*2018/1832AP*00710*03	Type1 2024-12-17	IP-0500703-TMA-1 e5*715/2007*2018/1832AP*00703*03	Type1 2024-08-15
			Type1A(RDE) 2024-12-18		Type1A(RDE) 2024-08-21
	3	IP-0500709-TMA-1 e5*715/2007*2018/1832AP*00709*01	Type1 2024-12-12	IP-0500703-TMA-1 e5*715/2007*2018/1832AP*00703*03	Type1 2024-12-03
			Type1A(RDE) 2024-12-17		Type1A(RDE) 2024-12-05

#### 6.3.2 Test results

Table 6-13. Type1 test results for Hyundai Motor Manufacturing Czech s.r.o.

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-HMM-5	67,3	8,5	6,2	6,4	-	0,09	8,3E+10
Vehicle2	5-HMM-5	60,2	9,5	6,9	7,0	-	0,43	3,9E+10
Vehicle3	5-HMM-5	118,1	11,0	7,2	5,2	-	0,13	1,1E+10
Vehicle1	5-HMM-1	155,1	14,8	11,8	12,0	-	0,10	2,2E+10
Vehicle2	5-HMM-1	185,9	14,1	11,2	5,1	-	0,17	5,7E+10
Vehicle3	5-HMM-1	165,8	17,0	14,0	5,8	-	0,04	1,3E+09

Table 6-14. Type1A (RDE) test results for Hyundai Motor Manufacturing Czech s.r.o

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-HMM-5	33,2	5,8	5,9E+10	32,9	9,0	6,1E+10
Vehicle2	5-HMM-5	27,5	2,9	9,7E+10	4,0	2,4	1,3E+11
Vehicle3	5-HMM-5	127,9	12,7	1,6E+11	52,5	7,5	3,7E+11
Vehicle1	5-HMM-1	2,5	13,6	6,7E+10	6,7	22,7	1,8E+10
Vehicle2	5-HMM-1	25,6	12,1	8,0E+10	65,0	24,4	5,8E+10
Vehicle3	5-HMM-1	22,1	9,8	1,5E+10	41,4	14,8	8,2E+09

### 6.3.3 Statistical folders

Table 6-15. Hyundai Motor Manufacturing Czech s.r.o, statistical folder status and test results ISC family1 (5-HMM-5)

		ISC family1 (5-HMM-5), M1, NOVC, Petrol, Direct Injection												SAMPLE DECISION
		Vehicle1 16796km				Vehicle2 17783km				Vehicle3 20454km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

Table 6-16. Hyundai Motor Manufacturing Czech s.r.o, statistical folder status and test results ISC family2 (5-HMM-1)

		ISC family2 (5-HMM-1), M1, ICE, Petrol, Direct Injection												SAMPLE DECISION
		Vehicle1 19807km				Vehicle2 19917km				Vehicle3 52536km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

## 6.4 Jaguar Land Rover Limited

Jaguar Land Rover Limited is exempted from ISC2024, no ISC family valid for testing 2024, no ISC family with sales numbers>5000 vehicles. Next testing 2025.



## 6.5 Kia Corporation

### 6.5.1 Tested IP-families/Emission Type Approval number

Table 6-17. Kia Corporation ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-KMC-16		ISC family2 5-KMC-15	
No. of vehicles tested Type1 and Type1A(RDE)		3		3	
IP families/ ETA number	1	IP-050053-KNA-01 e5*715/2007*2018*/1832AP*0616*00	Type1 2024-06-06	IP-050046-KNA-01 e5*715/2007*2018/1832AP*0609*02	Type1 2024-05-14
			Type1A(RDE) 2024-06-07		Type1A(RDE) 2024-05-15
	2	IP-050053-KNA-01 e5*715/2007*2018*/1832AP*0616*00	Type1 2024-06-11	IP-050046-KNA-01 e5*715/2007*2018/1832AP*0609*02	Type1 2024-05-22
			Type1A(RDE) 2024-06-11		Type1A(RDE) 2024-05-24
	3	IP-050053-KNA-01 e5*715/2007*2018*/1832AP*0616*00	Type1 2024-06-18	IP-050045-KNA-01 e5*715/2007*2018/1832AP*0608*01	Type1 2024-06-28
			Type1A(RDE) 2024-06-19		Type1A(RDE) 2024-07-02

### 6.5.2 Test results

Table 6-18. Type1 test results for Hyundai Kia Corporation

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-KMC-16	199,3	22,3	20,6	8,2	-	-	-
Vehicle2	5-KMC-16	220,4	16,8	15,0	9,6	-	-	-
Vehicle3	5-KMC-16	237,0	18,1	16,4	9,0	-	-	-
Vehicle1	5-KMC-15	176,4	16,8	15,3	12,2	-	-	-
Vehicle2	5-KMC-15	177,0	18,8	17,3	10,5	-	-	-
Vehicle3	5-KMC-15	266,0	22,1	20,1	15,2	-	-	-

Table 6-19. Type1A (RDE) test results for Kia Corporation

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-KMC-16	97,0	3,8	-	140,0	6,0	-
Vehicle2	5-KMC-16	110,2	6,8	-	132,9	9,1	-
Vehicle3	5-KMC-16	85,3	6,6	-	186,8	7,3	-
Vehicle1	5-KMC-15	71,7	9,0	-	119,3	12,5	-
Vehicle2	5-KMC-15	72,6	5,4	-	154,0	9,2	-
Vehicle3	5-KMC-15	56,1	3,9	-	80,2	4,1	-



### 6.5.3 Statistical folders

Table 6-20. Kia Corporation, statistical folder status and test results ISC family1 (5-KMC-16)

		ISC family1 (5-KMC-16), M1, ICE, Petrol, Indirect Injection												SAMPLE DECISION
		Vehicle1 24981km				Vehicle2 63170km				Vehicle3 35868km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX	-				-				-				-
	PM	-				-				-				-
	PN	-				-				-				-
Type1A	NOX	x				x				x				PASS
RDE	PN	-				-				-				-

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

Table 6-21. Kia Corporation, statistical folder status and test results ISC family2 (5-KMC-15)

		ISC family2 (5-KMC-15), M1, ICE, Petrol, Indirect Injection												SAMPLE DECISION
		Vehicle1 18045km				Vehicle2 19561km				Vehicle3 53518km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX	-				-				-				-
	PM	-				-				-				-
	PN	-				-				-				-
Type1A	NOX	x				x				x				PASS
RDE	PN	-				-				-				-

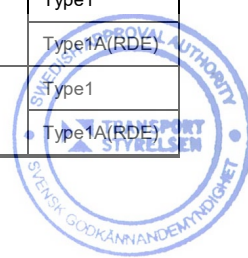
p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

## 6.6 Kia Slovakia s.r.o.

### 6.6.1 Tested IP-families/Emission Type Approval number

Table 6-22. Kia Slovakia s.r.o. ISC-families from risk assessment and IP families on tested vehicles

		ISC family1 5-KMC-5				ISC family2			
No. of vehicles tested Type1 and Type1A(RDE)		3				0			
IP families/ ETA number	Vehicle1	IP-0500717-U5Y-1 e5*715/2007*2018/1832AP*00717*00		Type1 2024-10-02	-	-	-	-	Type1
				Type1A(RDE) 2024-10-07					Type1A(RDE)
	Vehicle2	IP-0500794-U5Y-1 e5*715/2007*2018/1832AP*00794*00		Type1 2024-10-18	-	-	-	-	Type1
				Type1A(RDE) 2024-10-21					Type1A(RDE)



		ISC family1 5-KMC-5			ISC family2			
Vehicle3	IP-0500720-U5Y-1 e5*715/2007*2018/1832AP*00720*00	Type1 2024-12-10		-	Type1			
		Type1A(RDE) 2024-12-11			Type1A(RDE)			

### 6.6.2 Test results

Table 6-23. Type1 test results for Kia Slovakia s.r.o.

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-KMC-5	41,3	-	-	58,4	82,2	0,17	7,7E+08
Vehicle2	5-KMC-5	71,5	-	-	55,4	84,8	0,63	2,7E+11
Vehicle3	5-KMC-5	64,7	-	-	67,3	87,8	0,23	2,6E+10

Table 6-24. Type1A (RDE) test results for Kia Slovakia s.r.o.

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-KMC-5	25,4	28,7	1,7E+09	64,1	37,0	2,7E+09
Vehicle2	5-KMC-5	10,2	56,4	1,1E+09	15,2	55,7	1,1E+09
Vehicle3	5-KMC-5	33,2	19,6	2,3E+10	74,2	26,0	3,6E+10

### 6.6.3 Statistical folder

Table 6-25. Kia Slovakia s.r.o., statistical folder status and test results ISC family1 (5-KMC-5)

		ISC family1 (5-KMC-5), M1, NOVC, Diesel, Direct Injection												SAMPLE DECISION
		Vehicle1 38556km				Vehicle2 34770km				Vehicle3 75545km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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



## 6.7 Volvo Car Corporation

### 6.7.1 Tested IP-families/Emission Type Approval number

Table 6-26. Volvo Cars Corporation ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-YV1-027		ISC family2 5-YV1-030	
No. of vehicles tested Type1 and Type1A (RDE)		3		3	
IP families/ ETA number	1	IP-2020_256K2C-YV1-1 e5*715/2007*2018/1832AP*0677*02	Type1 2024-05-31	IP-2021_225K7F-YV1-1 e5*715/2007*2018/1832AP*00812*01	Type1 2024-07-31
			Type1A(RDE) 2024-06-03		Type1A(RDE) 2024-08-01
	2	IP-2020_256K2C-YV1-1 e5*715/2007*2018/1832AP*0677*02	Type1 2024-05-24	IP-2021_536K8F-YV1-1 e5*715/2007*2018/1832AP*00813*00	Type1 2024-08-01
			Type1A(RDE) 2024-05-27		Type1A(RDE) 2024-08-02
	3	IP-2020_256K2C-YV1-1 e5*715/2007*2018/1832AP*0677*02	Type1 2024-05-17	IP-2021_536K8M-YV1-1 e5*715/2007*2018/1832AP*00814*00	Type1 2024-09-11
			Type1A(RDE) 2024-05-22		Type1A(RDE) 2024-09-12

### 6.7.2 Test results

Table 6-27. Type1 test results for Volvo Car Corporation

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-YV1-027	56,6	-	-	37,5	52,9	0,13	3,6E+08
Vehicle2	5-YV1-027	70,0	-	-	40,6	56,9	0,24	1,0E+10
Vehicle3	5-YV1-027	49,0	-	-	45,0	57,5	0,22	1,2E+09
Vehicle1	5-YV1-030	157,6	11,8	8,7	7,5	-	0,13	2,0E+10
Vehicle2	5-YV1-030	217,5	14,0	10,8	6,9	-	0,14	5,7E+10
Vehicle3	5-YV1-030	230,4	17,7	13,9	10,4	-	0,02	5,5E+10

Table 6-28. Type1A (RDE) test results for Volvo Car Corporation

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-YV1-027	30,3	12,3	2,2E+08	42,4	25,0	4,1E+08
Vehicle2	5-YV1-027	49,2	10,7	1,1E+10	71,3	15,5	1,1E+10
Vehicle3	5-YV1-027	42,5	11,4	2,1E+08	79,6	24,9	3,3E+08
Vehicle1	5-YV1-030	103,5	5,8	1,1E+10	134,9	9,8	2,1E+10
Vehicle2	5-YV1-030	119,3	0,0	3,6E+09	139,7	1,8	6,0E+09
Vehicle3	5-YV1-030	125,3	1,1	1,4E+10	184,0	4,1	1,9E+10

### 6.7.3 Statistical folders

Table 6-29. Volvo Car Corporation, statistical folder status and test results ISC family1 (5-YV1-027)

		ISC family1 (5-YV1-027), M1, M1G, NOVC, Diesel, Direct Injection												SAMPLE DECISION
		Vehicle1 24950km				Vehicle2 44680km				Vehicle3 44764km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

Table 6-30. Volvo Car Corporation, statistical folder status and test results ISC family2 (5-YV1-030)

		ISC family2 (5-YV1-030), M1, M1G, NOVC, Petrol, Direct Injection												SAMPLE DECISION
		Vehicle1 27586km				Vehicle2 33677km				Vehicle3 29500km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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



## 6.8 Ford Motor Company of Australia Pty Ltd

### 6.8.1 Tested IP-families/Emission Type Approval number

Table 6-31. Ford Motor Company of Australia Pty Ltd ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-6FP-D50		ISC family2 5-6FP-D51	
No. of vehicles tested Type1 and Type1A(RDE)		3		3	
IP families/ ETA number	1	IP-P375_2021_00012-6FP-1 e5*715/2007*2018/1832AR*00845*00	Type1 2024-04-23	IP-P703_2022_00018-6FP-1 e5*715/2007*2018/1832AR*02499*00	Type1 2024-08-13
			Type1A(RDE) 2024-04-25		Type1A(RDE) 2024-08-15
	2	IP-P375_2021_00012-6FP-1 e5*715/2007*2018/1832AR*00845*00	Type1 2024-05-03	IP-P703_2022_00007-6FP-1 e5*715/2007*2018/1832AR*00874*01	Type1 2024-08-16
			Type1A(RDE) 2024-05-07		Type1A(RDE) 2024-08-16
	3	IP-P375_2021_00007-6FP-1 e5*715/2007*2018/1832AR*0214*06	Type1 2024-05-03	IP-P703_2022_00007-6FP-1 e5*715/2007*2018/1832AR*00874*01	Type1 2024-10-10
			Type1A(RDE) 2024-05-07		Type1A(RDE) 2024-10-11

### 6.8.2 Test results

Table 6-32. Type1 test results for Ford Motor Company of Australia Pty Ltd

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-6FP-D50	65,1	-	-	27,1	33,9	0,35	3,3E+10
Vehicle2	5-6FP-D50	95,7	-	-	29,6	38,1	0,68	2,9E+09
Vehicle3	5-6FP-D50	67,5	-	-	33,8	43,5	0,00	2,5E+09
Vehicle1	5-6FP-D51	86,6	-	-	17,6	32,2	0,55	4,5E+08
Vehicle2	5-6FP-D51	115,2	-	-	21,3	40,1	0,37	6,9E+08
Vehicle3	5-6FP-D51	101,6	-	-	25,2	42,1	0,41	8,7E+08

Table 6-33. Type1A (RDE) test results for Ford Motor Company of Australia Pty Ltd

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-6FP-D50	22,5	10,8	9,6E+09	44,1	15,9	1,6E+10
Vehicle2	5-6FP-D50	10,8	8,4	9,3E+08	9,8	8,4	4,2E+08
Vehicle3	5-6FP-D50	29,0	14,8	7,8E+08	48,0	19,9	1,2E+09
Vehicle1	5-6FP-D51	24,1	5,8	1,5E+09	36,3	13,6	2,3E+09
Vehicle2	5-6FP-D51	15,5	9,2	2,2E+09	15,5	17,7	2,6E+09
Vehicle3	5-6FP-D51	10,1	0,8	3,7E+08	107,9	10,1	2,9E+08

### 6.8.3 Statistical folders

Table 6-34. Ford Motor Company of Australia Pty Ltd, statistical folder status and test results ISC family1 (5-6FP-D50)

		ISC family1 (5-6FP-D50), N1G, ICE, Diesel, Direct Injection												SAMPLE DECISION
		Vehicle1 28168km				Vehicle2 15719km				Vehicle3 26685km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

Table 6-35. Ford Motor Company of Australia Pty Ltd, statistical folder status and test results ISC family2 (5-6FP-D51)

		ISC family2 (5-6FP-D51), N1G, ICE, Diesel, Direct Injection												SAMPLE DECISION
		Vehicle1 15888km				Vehicle2 18587km				Vehicle3 19018km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

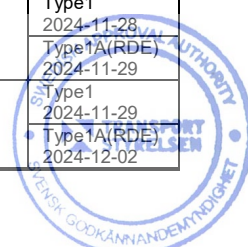
p=pass; f=fail; i.o.=intermediate outlier; e.o.=extreme outlier

## 6.9 BMW AG

### 6.9.1 Tested IP-families/Emission Type Approval number

Table 6-36. BMW AG ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-WBA-P38				ISC family2 5-WBA-DH16			
No. of vehicles tested Type1 and Type1A(RDE)		3				3			
IP families/ ETA number	1	IP-0001035-WBA-1 e5*715/2007*2018/1832AP*02442*00		Type1 2024-07-03 Type1A(RDE) 2024-07-04	IP-0001028-WBA-1 e5*715/2007*2018/1832AP*02493*00		Type1 2024-10-08 Type1A(RDE) 2024-10-15		
	2	IP-0001037-WBA-1 e5*715/2007*2018/1832AP*02466*00		Type1 2024-11-22 Type1A(RDE) 2024-10-24	IP-0001084-WBA-1 e5*715/2007*2023/443EA*02578*00		Type1 2024-11-28 Type1A(RDE) 2024-11-29		
	3	IP-0001037-WBA-1 e5*715/2007*2018/1832AP*02466*00		Type1 2024-10-24 Type1A(RDE) 2024-10-22	IP-0001085-WBA-1 e5*715/2007*2023/443EA*02553*00		Type1 2024-11-29 Type1A(RDE) 2024-12-02		



### 6.9.2 Test results

Table 6-37. Type1 test results for BMW AG

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-WBA-P38	64,8	6,8	6,0	7,0	-	0,28	1,2E+10
Vehicle2	5-WBA-P38	89,4	8,1	6,8	7,4	-	0,14	2,0E+10
Vehicle3	5-WBA-P38	79,9	7,4	6,6	4,8	-	0,30	4,1E+09
Vehicle1	5-WBA-DH16	89,5	-	-	29,5	44,1	0,67	4,5E+07
Vehicle2	5-WBA-DH16	95,7	-	-	30,7	46,0	0,77	4,1E+09
Vehicle3	5-WBA-DH16	72,1	-	-	26,9	40,7	0,77	5,2E+09

Table 6-38. Type1A (RDE) test results for BMW AG

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-WBA-P38	13,0	6,3	1,3E+10	30,7	7,7	2,3E+10
Vehicle2	5-WBA-P38	22,2	7,1	2,2E+10	52,8	12,5	5,4E+10
Vehicle3	5-WBA-P38	0,2	8,0	1,8E+09	0,0	13,1	3,8E+09
Vehicle1	5-WBA-DH16	26,4	9,5	3,7E+08	67,1	18,4	5,7E+08
Vehicle2	5-WBA-DH16	6,5	19,2	3,9E+09	39,7	42,8	7,8E+09
Vehicle3	5-WBA-DH16	0,5	19,2	3,2E+09	0,5	40,4	4,7E+09

### 6.9.3 Statistical folders

Table 6-39. BMW AG, statistical folder status and test results ISC family1 (5-WBA-P38)

		ISC family1 (5-WBA-P38), M1G, OVC, Petrol, Direct and Indirect intake manifold injection												SAMPLE DECISION
		Vehicle1 32488km				Vehicle2 28738km				Vehicle3 29450km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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



Table 6-40. BMW AG, statistical folder status and test results ISC family2 (5-WBA-DH16)

		ISC family2 (5-WBA-DH16), M1G, NOVC, Diesel, Direct injection												SAMPLE DECISION
		Vehicle1 21041km				Vehicle2 21283km				Vehicle3 24568km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

## 6.10 SAIC Motor Corporation Limited

### 6.10.1 Tested IP-families/Emission Type Approval number

Table 6-41. SAIC Motor Corporation Limited ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-LSJ-3				ISC family2 5-LSJ-2			
No. of vehicles tested Type1 and Type1A(RDE)		3				3			
IP families/ ETA number	1	IP-ZS11_2020_01-LSJ-1 e5*715/2007*2018/1832AP*00806*00	Type1 2024-12-03	Type1A(RDE) 2024-12-04	IP-ZS11_2020_02-LSJ-1 e5*715/2007*2018/1832AP*00807*00	Type1 2024-11-22	Type1A(RDE) 2024-11-25		
			Type1 2024-12-03			Type1A(RDE) 2024-11-25			
	2	IP-ZS11_2020_01-LSJ-1 e5*715/2007*2018/1832AP*00806*01	Type1 2024-12-12	Type1A(RDE) 2024-12-13	IP-ZS11_2020_02-LSJ-1 e5*715/2007*2018/1832AP*00807*00	Type1 2025-01-14	Type1A(RDE) 2025-01-15		
			Type1 2024-12-12			Type1A(RDE) 2025-01-15			
	3	IP-ZS11_2020_01-LSJ-1 e5*715/2007*2018/1832AP*00806*01	Type1 2025-01-14	Type1A(RDE) 2025-01-16	IP-ZS11_2020_02-LSJ-1 e5*715/2007*2018/1832AP*00807*00	Type1 2025-01-14	Type1A(RDE) 2025-01-15		
			Type1 2025-01-14			Type1A(RDE) 2025-01-15			

### 6.10.2 Test Results

Table 6-42. Type1 results for SAIC Motor Corporation Limited

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-LSJ-3	543,4	43,2	36,2	24,0	-	0,29	7,2E+10
Vehicle2	5-LSJ-3	303,3	29,4	25,3	24,1	-	0,33	2,2E+11
Vehicle3	5-LSJ-3	666,5	38,5	32,0	29,5	-	0,25	4,0E+11
Vehicle1	5-LSJ-2	239,8	40,8	35,2	37,7	-	-	-
Vehicle2	5-LSJ-2	203,2	32,1	28,0	46,2	-	-	-
Vehicle3	5-LSJ-2	181,8	36,0	31,2	36,4	-	-	-





Table 6-43. Type1A (RDE) results for SAIC Motor Corporation Limited

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-LSJ-3	392,8	11,9	1,9E+11	496,4	22,1	1,3E+11
Vehicle2	5-LSJ-3	158,2	43,1	3,9E+11	158,7	24,6	3,2E+11
Vehicle3	5-LSJ-3	574,1	10,0	3,0E+11	511,1	19,7	2,7E+11
Vehicle1	5-LSJ-2	7,8	55,6	0,0E+00	10,7	56,5	-
Vehicle2	5-LSJ-2	102,4	49,7	0,0E+00	249,2	36,2	-
Vehicle3	5-LSJ-2	166,4	17,9	0,0E+00	332,1	22,1	-

### 6.10.3 Statistical folders

Table 6-44. SAIC Motor Corporation Limited, statistical folder status and test results ISC family1 (5-LSJ-3)

		ISC family1 (5-LSJ-3), M1, ICE, Petrol, Direct Injection												SAMPLE DECISION
		Vehicle1 60825km				Vehicle2 19413km				Vehicle3 65400km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

Table 6-45. SAIC Motor Corporation Limited, statistical folder status and test results ISC family2 (5-LSJ-2)

		ISC family2 (5-LSJ-2), M1, ICE, Petrol, Indirect Injection												SAMPLE DECISION
		Vehicle1 57797km				Vehicle2 67600km				Vehicle3 63735km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	CO	x				x				x				PASS
	THC	x				x				x				PASS
	NMHC	x				x				x				PASS
	NOX	x				x				x				PASS
	THC+NOX	-				-				-				-
	PM	-				-				-				-
	PN	-				-				-				-
Type1A	NOX	x				x				x				PASS
RDE	PN	-				-				-				-

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



## 6.11 Volkswagen AG

### 6.11.1 Tested IP-families/Emission Type Approval number

Table 6-46. Volkswagen AG, ISC-families from risk assessment and IP families/ETA on tested vehicles

		ISC family1 5-VWx-715W_D54		ISC family2	
No. of vehicles tested Type1 and Type1A(RDE)		3		0	
IP families/ ETA number	1	IP-J73X_2022_00007-WV4-0 e5*715/2007*2018/1832AR*02189*01	Type1 2024-07-23	-	Type1
			Type1A(RDE) 2024-07-23		Type1A(RDE)
	2	IP-J73X_2022_00007-WV4-0 e5*715/2007*2018/1832AR*02189*01	Type1 2024-07-18	-	Type1
			Type1A(RDE) 2024-07-19		Type1A(RDE)
	3	IP-J73X_2022_00007-WV4-0 e5*715/2007*2018/1832AR*02189*01	Type1 2024-08-13	-	Type1
			Type1A(RDE) 2024-08-14		Type1A(RDE)

### 6.11.2 Test results

Table 6-47. Type1 test results for Volkswagen AG

Test	ISC family	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	NOx (mg/km)	THC+NOx (mg/km)	PM (mg/km)	PN (#/km)
Vehicle1	5-VWx-715W_D54	99,4	-	-	19,3	35,5	0,50	6,7E+08
Vehicle2	5-VWx-715W_D54	122,8	-	-	29,1	63,8	0,56	2,5E+11
Vehicle3	5-VWx-715W_D54	93,7	-	-	27,5	43,2	0,43	8,5E+08

Table 6-48. Type1A (RDE) test results for Volkswagen AG

Test	ISC family	CO Total trip (mg/km)	NOx Total trip (mg/km)	PN Total trip (#/km)	CO Urban (mg/km)	NOx Urban (mg/km)	PN Urban (#/km)
Vehicle1	5-VWx-715W_D54	15,5	9,7	1,4E+09	15,5	10,2	6,1E+08
Vehicle2	5-VWx-715W_D54	33,6	7,2	1,6E+09	63,9	14,4	1,8E+09
Vehicle3	5-VWx-715W_D54	72,6	15,4	3,3E+09	127,0	28,7	4,1E+09

### 6.11.3 Statistical folder

Table 6-49. Volkswagen AG, Statistical folder status and test results ISC family1 (5-VWx-715W\_D54)

		ISC family1 (5-VWx-715W_D54), N1G, ICE, Diesel, Direct Injection												SAMPLE DECISION
		Vehicle1 23950km				Vehicle2 15600km				Vehicle3 23375km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1	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



		ISC family1 (5-VWx-715W_D54), N1G, ICE, Diesel, Direct Injection												SAMPLE DECISION
		Vehicle1 23950km				Vehicle2 15600km				Vehicle3 23375km				
		p	f	i.o.	e.o.	p	f	i.o.	e.o.	p	f	i.o.	e.o.	
Type1A	NOX	x				x				x				PASS
RDE	PN	x				x				x				PASS

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

## 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)

Not applicable

### G. Report of other invalid tests

Not applicable

