

## Handling of Ki (OIL#34 ~ 38)

WLTP-08-33e

### 1. Open Issues

OIT	descriptions (WLTP-DTP-LabPRocICE-268_1)	discussion points	possible solution	TF Proposal
#35	1: Technical Secretary request to define bench cycle and type 1 cycle equivalence criteria or to delete bench cycle. This text is carry over from ECE-R83.06. PSA and Iddo Riemersma also commented on the lack of an equivalence definition. Essential that opportunity to load the DPF on engine bench remains. Propose to delete engine test bench equivalent for all parts of regeneration testing except aftertreatment device loading. The equivalence discussion must be included in phase 1B.	Currently no specific procedure for equivalent bench cycle is defined. However, it'd be nice if alternative procedure is allowed to reduce loading duration.	option 1 : Upon request of the manufacturer and with approval of the responsible authority, manufacture develop the alternative procedure to demonstrate its equivalency (including loading quantity and loading distance). It can be done both on engine bench and chassis dynamometer. option 2 : any proposal is welcome.	<b>Accept alternative procedure with evidence of equivalency</b> (same as R83) <b>draft</b> : Upon request of the manufacturer and with approval of the responsible authority, manufacture develop the alternative procedure to demonstrate its equivalency (including <b>filter temperature</b> , loading quantity and distance). It can be done both on engine bench and chassis dynamometer.
#36	2. Technical Secretary request to calculate Ki for CO2 and fuel consumption over each phase. It should be discussed whether this would give a correct or misleading impact on the different phases and might need to be included at contracting party request. For phase 1B discussion also because calculations need to be revised to show the phase Ki approach is allowed for CO2 / FC as an option	Several CPs have needs to provide phase specific CO2 and fuel consumption value for customers. This automatically requires phase specific Ki and this description has already introduced into current gtr in section 3.2. (unfortunately, this is missing in section 3.1)	Add the following paragraph in section3.1. "The following calculation shall be done over one Type 1 operation cycle for exhaust emissions and over each individual phase for CO2 emission and fuel consumption"	<b>Need further discussion within TF</b>  Agreed to require phase specific Ki. Discussion points are which should be primary 1. apply whole cycle Ki to each phase Ki or 2. maesure each phase Ki (need to consider equipment practicability)
#34 #37	3. Ref para 2.2.5. Partly linked to item 2 above. As discussed during the last Labproc meeting some manufacturers generally have technical difficulties reading bags after a four phase test. If it is needed to run two WLTC (Type 1) test in a row there will be a substantial stop between the cycles where the vehicle has to run on idle and possible complete the regeneration event. On the other hand it is not right to turn off the engine because the regeneration may not automatically start. We have here an inconsistency in the procedure that needs action phase 1B. It could be possible to find a compromise solution – combining some bags eg L+M, H+(xH) – if xH used if this would be compatible with the solution for item 2 above.	pollutants : all pollutants Ki(s) are available for whole cycle. CO2 and fuel consumption : phase specific Ki is required.	Only possible solution is to allow "engine off" during equipment preparation as other test procedure (charge depleting test for OVC-HEV)	<b>Agreed that engine should not be switched off between two cycles</b> (to avoid an unrepresentative cooldown or loading of the filter between the two tests) In the case that more than one WLTC is required for regeneration, <b>phases and bags can be combined</b> (L+M+H, exH).
#38	4: Technical Secretary requests to include FC and CO2 in the decision whether or not the regeneration process is applicable – however, this has not been done owing to no acceptance criteria being specified. Emissions are compared to the emission limit values. CO2 and FC acceptance criteria are defined in ECE-R-101 – this must be discussed in phase 1B.	Ki(s) for pollutants is exempted if the conditions were met, however, exemption of CO2/fuel consumption Ki(s) is not allowed. This means that exemption for pollutants has no meaning.	Option1 : Instead of carrying out the test procedures defined in this appendix, a fixed Ki value of 1.05 may be used, if the technical service sees no reason that this value could be exceeded. (same as R101) Option2 : set new criteria	<b>Accept fixed Ki for CO2/FC</b> (same as R101) <b>draft</b> : Instead of carrying out the test procedures defined in this appendix, a fixed Ki value of 1.05 may be used for CO2 and fuel consumption.

### 2. Confirmation Items

OIT	Confirmation items	discussion points	possible solution	TF Proposal
new	1.4. At the option of the Contracting Party, the Extra High2 phase may be excluded for determining the regenerative factor for Class 2 vehicles. 1.5. At the option of the Contracting Party, the Extra High3 phase may be excluded for determining the regenerative factor for Class 3 vehicles.	Pollutants : L~H phase Ki(s) and Ex-H phase Ki(s) are derivate under L~Ex-H cycle, then are used for Ki(s) under L~Ex-H cycle or not CO2/FC : Each phase Ki(s) derivated under L~Ex-H cycle can be used for each phase Ki(s) under L~Ex-H cycle or not	Option1 : OK Option2 : NG Option3 : any proposal is welcome.	<b>Need further discussion within TF</b>  EU prefer harmonized procedure, on the other hands, Japan require that it should not create any unfareness.
editorial	2. Test Procedure The test vehicle shall be capable of inhibiting or permitting the regeneration process provided that this operation has no effect on original engine calibrations. Prevention of regeneration shall only be permitted during loading of the regeneration system and during the pre-conditioning cycles. It shall not be permitted during the measurement of emissions during the regeneration phase. The emission test shall be carried out with the unchanged original equipment manufacturer's (OEM) control unit	Suggestion: Make this more specific, e.g. emission control unit.  Confirmation : how to control the regeneration process with "the unchanged original equipment manufacturer's control unit" ?	Option1 : allow to use "engineering control unit" which has no affect on original engine calibrations.  Option 2 : any proposal is welcome.	<b>Allow usage the engineering control unit to manage regeneration operation</b> <b>draft</b> : At the request of the manufacturer and with approval of the authority an "engineering control unit" which has no effect on original engine calibrations can be used during ki determination.
	2.2.5.1. If more than one WLTC is required, subsequent Type 1 cycle(s)	editorial error	2.2.5.1. If more than one WLTC is required, subsequent WLTC cycle(s)	DONE