

Inspection report regarding the tyre/road noise emission of a tyre in accordance with the Council Directive, Annex V to Directive 92/23/EEC, as last amended by Directive 2005/11/EC and ECE Regulation no. 117.

Part1-Report

1. Type approval authority or Technical Service : RDW
2. Name and address of applicant : Hankook Tire Co., Ltd.
#647-15, Yoksam-dong, Kangnam-ku
Seoul, 135-723, Korea
3. Test report No. : K055-A0-0408-0584
4. Manufacturer and Brand Name or Trade description : HANKOOK RA23, AURORA RA23
5. Tyre Class (C1, C2 or C3) : C2
6. Category of use : snow
7. Sound level according to paras. 4.4. and 4.5. of Annex 3 of : 69 dB(A) / 80 km/h
ECE R 117 and paras. 4.4. and 4.5. of Annex V appendix1
of the Directive 92/23 EC at reference speed of 70 or
80km/h
8. Tyre/Road Noise level according to paras. 6.1.1. through : Limit value expressed in dB(A) according to
paras 6.1.3. of ECE R 117 and paras.4.2.1 through 4.2.3 of Regulation & Directive :
Annex V of the Directive 92/23 EC at reference speed of **C1 category ;**
70 or 80km/h (strike out what does not apply) **** 145 and lower 72 dB(A), over 145 up to 165 73 dB(A),
over 165 up to 185 74 dB(A), over 185 up
to 215 75 dB(A), over 215 76 dB(A) * C1a 71(72) dB(A),
C1b 72(73) dB(A), C1c 73(74) dB(A),
C1d 75 dB(A), C1e 76 dB(A)
XL/+ 1 dB(A) & Special/+ 2dB(A)
* () means for 92/23/EEC ** () means for ECE R117**
C2 category ;
Normal 75 dB(A), Snow 77 dB(A), Special 78 dB(A)
C3 category ;
Normal 76 dB(A), Snow 78 dB(A), Special 79 dB(A)
9. Comments (if any) : The actual test of the tyre was not required and results
of the previous tests are still valid.
10. Date of test report : June 16, 2008
11. Signature :



Part2-Test data

- 1. Date of test: : April 28, 2008
- 2. Test vehicle (Make, model, year, modifications, etc.) : KIA GRAND CARNIVAL
VIN: KNHMB76136S012652/2006
- 2.1. Test vehicle wheelbase : 3020 mm
- 3. Location of test track : GTRACK
#433 Myungam-ri, Jewon-Myun, Geumsan-gun, Chungnam, 312-824, Korea
- 3.1 Date of track certification to ISO 10844:1994 : April 13, 2007
- 3.2. Issued by : RDW TCL/DB/2003-1, K038-A1-0306-0208
- 3.3. Method of certification : Residual void content, Sound absorption coefficient, Texture depth
- 4. Tyre test details
- 4.1. Tyre size designation/DOT Number : 225/65R16C / 4407
- 4.2. Tyre service description : Standard / ~~Reinforced~~
- Load Index : 109/107
- Speed Category : T
- 4.3. Reference inflation pressure : 370 kPa
- 4.4. Test data

	Front left	Front right	Rear left	Rear right
Test mass (kg)	696	696	780	780
Tyre load index (%)	67.5	67.5	75.7	75.7
Inflation pressure (cold)(kPa)	240	240	280	280

- 4.5. Test rim width code : 7.0J x 16
- 4.6. Temperature measurement sensor type : Digital Thermometer(KESTREL K2000)

5. Valid test results

Run No.	Speed km/h	Direction of run	Sound level left 2/ measured dB(A)	Sound level right 2/ measured dB(A)	Air temp. C	Track temp. C	Sound level left 2/ temp.corrected dB(A)	Sound level right 2/ temp.corrected dB(A)	Comments
1	72.9	North-South	67.92	69.27	23.5	41	68.6	69.9	-
2	74.9	North-South	68.53	69.42	22.5	41	69.2	70.1	-
3	76.7	North-South	68.57	69.55	24	41	69.2	70.2	-
4	77.9	North-South	69.57	70.18	24.4	41	70.2	70.8	-
5	82.4	North-South	70.5	69.78	22.7	41	71.1	70.4	-
6	84.4	North-South	70.32	71.43	22.3	41	71.0	72.1	-
7	86.6	North-South	71.62	71.79	24.2	42	72.3	72.5	-
8	88.0	North-South	71.67	72.13	23.7	41	72.3	72.8	-

5.1. Regression line slope : a = - 40.38

5.2. Sound level after temperature correction-according to para.4.3 of Annex 3 of ECE R117 and para. 4.3 of Annex V appendix 1 of the Directive 92/23 : 70.67 dB(A)

5.3. The final result of sound level according to para.4.4. of annex 3 of ECE R117 and para. 4.4 of Annex V appendix 1 of the Directive 92/23 : 69 dB(A)

List of modifications

Correction of : - --

Modification of : - --

Addition of : - --

Deletion of : - --



RDW

THE NETHERLANDS
(N E D E R L A N D)



COMMUNICATION

Concerning ⁽¹⁾:

- approval granted
- ~~approval extended~~
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~

of a type of tyre with regard to rolling sound emission level pursuant to Regulation number 117.

Approval number: E4-117R-000344

Extension number: 00

Approval mark:



000344 S

- | | | |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1. | Manufacturer's name and address(es) | : Hankook Tire Co., Ltd.
#647-15, Yoksam-dong, Kangnam-ku
Seoul, 135-723, Korea |
| 2. | If applicable, name and address of manufacturer's representative | : not applicable |
| 3. | "Tyre class" and "category of use" of the type of tyre | : C2 / snow |
| 4. | Brand(s) name(s) and/or Trade description(s) of the type of tyre | : HANKOOK RA23, AURORA RA23 |
| 5. | Technical service and, where appropriate, test laboratory approved for purposes of approval or of verification of conformity tests | : TÜV NORD Mobilität GmbH & Co. KG
Institut für Fahrzeugtechnik und Mobilität
Adlerstrasse 7, D-45307 Essen |
| 6. | Sound level of the representative tyre size, see Paragraph 2.5. of Regulation number 117, as per item 7. of the test report: 69 dB(A) at reference speed of 70/80 km/h ⁽¹⁾ . | |
| 7. | Number of report issued by that service | : K055-A0-0408-0584 |
| 8. | Date of report issued by that service | : June 16, 2008 |
| 9. | Reason(s) of extension (if applicable) | : not applicable |
| 10. | Any remarks | : |

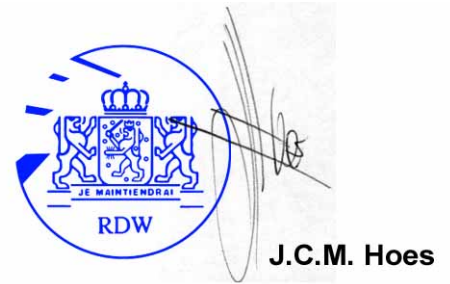


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The Netherlands

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Vehicle Approval and Information

11. Place : Zoetermeer
12. Date : 24-JUN-2008
13. Signature :



14. Annexed to this communication are: Information folder no; P2008-A05-14
- 14.1. A list of documents in the approval file deposited at the Administration services having delivered the approval and which can be obtained upon request.
- 14.2. A list of tread-pattern designations: Specify for each trademark or brand name and trade description the list of tyre size designations adding, in the case of Class C1 tyres, the mark "Reinforced" or "Extra Load", if applicable.

⁽¹⁾ Strike out what does not apply.



HANKOOK TIRE CO., LTD.

647-15 Yeoksam-dong, Gangnam-gu, Seoul 135-723 Korea
Phone : 82-2-2222-1000 Facsimile : 82-2-2222-1100

Date: May . 21, 2008

INFORMATION DOCUMENT No. P2008-A05-14 RELATING TO EC TYPE APPROVAL FOR A TYPE
OF TYRE RELATING TO TYRE/ROAD NOISE EMISSION
(Annex V to Directive 2005/11/EC& Regulation. 117)

1. GENERAL

- 1.1 Manufacturer's name : HANKOOK TIRE CO., LTD.
- 1.2 Name and address of applicant : HANKOOK TIRE
#647-15 Yoksam-dong, Kangnam-ku
Seoul, 135-723, Korea
- 1.3 Address(es) of manufacturing plant(s) : Plant 1
#100 Moksang-dong, Teaduck-Gu,
Deajeon, 306-120, Korea
Plant 2
#433 Myungam-ri, Jewon-Myun, Geumsan-gun,
Chungnam, 312-824, Korea
- 1.4 Brand name(s), Trade description(s) or Trade mark(s) : HANKOOK, AURORA,

2. TYRES

- 2.1 Tyre classification (class C1, C2 or C3) : Class C2
- 2.2 Category of use (normal, snow or specail) : snow
- 2.3 Details of the major features, with respect t the effects : RA23 – see Drawing No. 200804-PBN- RA23
on tyre/road noise emission, of the tread pattern(s) to
be used on the disignated range of tyre sizes. This
may be by drawing, photograph or description but must
be sufficient to allow the type approval authority or
technical service to determine whether any subsequent
changes to the major features will adversely affect the
tyre/road noise emission
- 2.3 Tyre structure (Bias, Bias-belted or Radial) : Radial
- 2.5 List of tread-pattern designations : see the attached tyre type list



K. T. Kim

K. T. Kim (G. Manager)
Quality Assurnce Team

Pattern of Tires

RA23

SIZE	Limit (dB)
225/65R16C 6P 109/107T	77

Test Size : 225/65R16C 6P 109/107T

Reason of choice : Widest
Lowest aspect ratio
Biggest rim size



Drawing No.: 200804-PBN-RA23

Date : 2008-04-21

Drawing of the tread pattern (Measured tire)

Manufacture's name	HANKOOK TIRE CO., LTD.
Pattern name	RA23
Tire size	225/65R16C 109/107T
Pitch number	67
Pitch ratio (Max./Min.)	1.53
Groove area ratio (%)	
Width : main grooves (mm)	7
Depth : center grooves (mm)	8.9
Depth : shoulder grooves (mm)	-
Pattern	