

Test Report

No. TDB 0483 dated 12.06.99

for application of Annex VII Directive 71/320/EEC

1 IDENTIFICATION

1.1 Axle

Manufacturer: OTTO SAUER Achsenfabrik Keilberg
D-63854 Bessenbach

Make: SAF

Type: SNK 4218-11Z

Model: -

Technically permissible axle load P_e ¹⁾: 11000 daN

1.2 Brake

Manufacturer: See 1.1

Make: SAF

Type: SNK 420x180

Model: -

Technically permissible camshaft
input torque $C_{max,e}$: 2800 Nm
(for calculation: 2250 Nm at 6,5 bar)

Brake drum

- Internal diameter: 420 mm
- Mass: 49 kg
- Material: Cast iron (grey cast iron)

Brake lining

- Manufacturer: Federal-Mogul Friction Products GmbH
D-51709 Marienheide
- Make: FERODO BERAL
- Type: 1561
- Identification: Type indication at front
- Width: 180 mm
- Thickness: 13...20,2 mm (sickle-shaped)
- Surface area: 1322 cm²
- Method of attachment: Rivited

Brake geometry: See appendix 1 dated 11.11.98
See appendix 2 dated 11.11.98

1.3 Wheel (Twin)

Rim diameter D_e : See appendix 1 dated 11.11.98

Dimensions: See appendix 1 dated 11.11.98

¹⁾ See sheet 3/3



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Manufacturer : SAF
 Type of axle : SNK 4218-11Z

1.4 Tyres

Dynamic rolling radius R_e
 at reference load P_e :

See appendix 1 dated 11.11.98

1.5 Actuation

Brake actuator -Manufacturer: GRAU
 - Type: Diaphragm brake actuator
 - Model: 30 (120 361 101)
 Lever length l_e : 152 mm

2 RECORD OF TEST RESULTS ²⁾

(corrected to take account of rolling resistance $\hat{=} 0,01P_e$)

2.1 In the case of vehicles of categories O₂ and O₃ ³⁾

Test type:		0	I	
Annex VII, Appendix 1, point:		3.5.1.2	3.5.2.2/3	3.5.2.4
Test speed	km/h	40	40	40
Brake actuator pressure p_e	bar	5,6	-	5,6
Braking time	min	-	2,55	-
Brake force developed T_e	daN	7095	770	6448
Brake efficiency T_e/P_e	-	0,64	0,07	0,59
Actuator stroke s_e	mm	40	-	55
Camshaft input torque C_e	Nm	1588	-	1588
$C_{0,e}$	Nm	30	-	30

2.2 In the case of vehicles of category O₄ ⁴⁾

Test type:		0	III	
Annex VII, Appendix 1, point:		3.5.1.2	3.5.3.1.2	3.5.3.2
Test speed				
initial	km/h	60	60	60
final	km/h	0	30	0
Brake actuator pressure p_e	bar	6,4	-	6,4
Number of brake applications	-	-	20	-
Duration of braking cycle	s	-	60	-
Brake force developed T_e	daN	6914	3300	5624
Brake efficiency T_e/P_e	-	0,63	0,30	0,51
Actuator stroke s_e	mm	42	-	56
Camshaft input torque C_e	Nm	1847	-	1847
$C_{0,e}$	Nm	30	-	30

2) 3) 4) See sheet 3/3



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Date : 12.06.99

RWTÜV

Manufacturer : SAF
Type of axle : SNK 4218-11Z

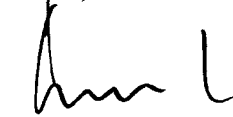
3 NAME OF TECHNICAL SERVICE CONDUCTING THE TEST

RWTÜV Fahrzeug GmbH
Technischer Dienst für Bremsanlagen
D-45307 Essen

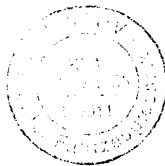
4 DATE OF TEST: 31.01.97 and 03.02.99

5 This test has been carried out and the result reported in accordance with Directive 71/320/EEC as last amended by Directive 98/12/EC and Annex VII, Appendix 1.

Essen, 12.06.99



Dipl.-Ing. Kaesler



LABORATORY FOR VEHICLE TECHNOLOGY
Testing Laboratory for Braking Systems
according to Directive 71/320/EEC in the
version of Directive 98/12/EC

6 APPROVAL AUTHORITY, if different from the technical service

Flensburg, 24 JUNI 1999

i. A. 



7 TEST DOCUMENTS

- / Appendix 1: Dimensions brake drum/wheel/tyre (2 sheet)
- / Appendix 2: Brake geometry

- 1) Calculation with $g = 10 \text{ m/s}^2$
- 2) $R_e = 546 \text{ mm}$
- 3) Rolling road dynamometer test
- 4) Inertia dynamometer test

RWTÜV Fahrzeug GmbH - Institute for Vehicle Technology, Adlerstr. 7, D - 45307 Essen
The Testing Laboratory is accredited by the Accreditation Body of the German Motor Vehicles Department (Kraftfahrt-Bundesamt) to conduct inspections according to EG-TypV, StVZO and FzTV (KBA-P 00009-95).

Allegato 1 al verbale di Omologazione Nr.:

Name: Roth

Freno:

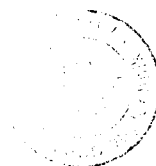
Modello di base:

Modello di base:

[illegible]

Annex 1 to brake test record:
Annexe 1 au procès verbal:
Allegato 1 al verbale di Omologazione Nr.:

Zeichn. Nr.: 6 077 9118 00	Blatt: 2
Datum: 11.11.1998	Name: Roth

[illegible]

Gemäß DIN 34 behalten wir uns für diese Unterlage alle Rechte vor!

Annex 2 to brake test record
Annexe 2 au procès verbal
Allegato 2 al verbale di Omologazione Nr.

Zeichn. Nr.: 6 077 9089 01		Blatt: 1
Datum: 11.11.1998	Name: Roth	

* F_e : wirksame Bremsfläche pro Bremse (cm^2)
Efficient braking area (cm^2)
Zone de freinage active (cm^2)
Zona di frenatura attiva (cm^2)

[illegible]