NZ TRANSPORT AGENCY
WAKA KOTAHI

Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's Name *(PRINT IN CAPS)*

LANCE CAWTE

ID

LPC

Vehicle Registration*
SIDF2

VIN / Chassis Number
7A8 H 9 0 0 0 2 9 7 7 5 4 3 7 4

Component being certified:

☐ Chassis Modification	☐ Load Anchorage	☐ Log Bolsters
☐ Towing Connection	**X** Brakes	☐ SRT

Certification Category
HVEK

Description of Work

CERTIFY TO HEAVY VEHICLE BRAKE RULE 32015/2.

Code/Standard Certified to
SCHEDULE 5

Component Load Rating(s)
N/A

General Drawing Number(s)
N/A

Supporting Documents

BRAKE CODE CERTIFICATE LC100903
PREV EXEMPTION REF **HVB10/242**

*Special Conditions

WARNING LAMP MUST ILLUMINATE WHEN IGNITION IS SWITCHED ON & THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE SPEED EXCEEDS 7 KPH

Certification Expiry Date *(if applicable)*
N/A

or Hubodometer Reading (whichever comes first)

Declaration

I the undersigned, declare that I am the Heavy Vehicle Specialist Inspector identified above and I hold a current valid appointment. I certify that the above mentioned vehicle component's design, manufacture and installation, and this certification complies in all respects with the Land Transport Rule Vehicle Standards Compliance 2002 and my Deed of Appointment. To the best of my knowledge the information contained in this Certificate is true and correct.

Designer's ID *(if certified by a manufacturer)*

Inspector's / Delegate's Signature

*Delegate's Name *(PRINT IN CAPS)*

Date
3-Sep-10

Number
349081

COF Vehicle Inspector ID:

COF Vehicle Inspector Signature:

Date

All fields excluding those marked with * must be completed before this certificate can be accepted.

New Zealand Government | Form ID **LT400** | Version No. 01/09

Document: 810 5692
Exemption HVB 0/242

EXEMPTION FROM SPECIFIED REQUIREMENTS OF LAND TRANSPORT RULE:
Heavy-vehicle Brakes 2006, Rule 32015

Pursuant to Section 166(1) of the Land Transport Act 1998, and pursuant to the powers delegated to me, I Eugene Girardin, Vehicles Unit Engineer, hereby exempt the motor vehicle specified in Schedule 1 hereto from the section of Land Transport Rule: Heavy-vehicle Brakes 2006 (the Rule) listed in Schedule 2, subject to the conditions specified in Schedule 3

SCHEDULE 1:

Make/Model   Domet Truck & Trailer 4 Axle Full Trailer
VIN/Chassis   7A8H9000297754374

SCHEDULE 2: - Exempted Requirement

Section 2.3(9); The parking brake of a vehicle, whether or not it is being operated as a combination vehicle, must be able to be applied by the driver from the normal driving position using one control only.

SCHEDULE 3: - Conditions of this exemption:

1) The vehicle must be fitted with a Wabco park-release emergency valve (PREV), Part Number 971 002 900 0.

2) The vehicle must be fitted with the Wabco PREV name plate, Part Number 971 002 103 4, adjacent to the PREV.

3) The vehicle must still be fitted with a parking brake that complies with all parking brake requirements in the Rule other than the requirement in Clause 2.3(9) of the Rule.

4) The installation of the PREV must be approved in writing by Transport Specialties Limited (Transpecs). Transpecs must keep a written record of their approval.

5) Transpecs must provide full operator training in the use of the PREV and furnish the operator with full written operating instructions for the PREV.

6) The vehicle must not be modified in any way while operating under this exemption.

7) This original exemption must be kept by Transport Specialties LTD

8) A copy of this exemption (printed on a silver WABCO Sticker) must be affixed to the exempted vehicle as close to the WABCO PREV as possible.

9) The sticker in 8) must be legible and include all printed area's of this original exemption letter.

10) This exemption can be revoked at any time in writing by the NZ Transport Agency.

Signed at Wellington this 7 day of July 2010

Eugene Girardin
Engineer
Vehicles Unit

NOTICE TO VEHICLE OPERATOR

THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015: SCHEDULE 5.
IF THIS VEHICLE IS OPERATED IN CONJUNCTION WITH NON-CODED VEHICLES, THERE MAY BE OPERATIONAL FACTORS WHICH NEED TO BE TAKEN INTO CONSIDERATION.

PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.

EXCERPT FROM NZ HEAVY VEHICLE BRAKE RULE 32015

10.1 **Responsibilities of operators**
A person who operates a vehicle must ensure that the vehicle complies with this Rule

10.4 **Responsibilities of repairers**
A person who repairs or adjusts a brake must ensure that the repair or adjustment:

(c) does not prevent the vehicle from complying with the rule : and
(d) complies with Land Transport Rule: Vehicle Repair 1998.

10.5 **Responsibilities of modifiers**
A person who modifies a vehicle so as to affect the braking performance of the vehicle must:

(c) ensure that the modification does not prevent the vehicle from complying with this rule: and
(d) notify the operator that the vehicle must be inspected and. If necessary. Certified by a person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.

10.6 **Responsibilities of manufactures and retailers**
A person may manufacture, stock, or offer for sale a brake or its components. Intended for fitting to a vehicle to be used on New Zealand roads, only if that brake or component:

(c) complies with this Rule: and
(d) does not prevent a repair to a vehicle, its structure, systems, components and equipment from complying with this Rule.

IF YOU ARE UNSURE ABOUT YOUR RESPONSIBILITIES, PLEASE CONTACT THE VEHICLE MANUFACTURER, OR MYSELF.

COMPLAINTS. Complaints and Warranty issues which relate to Brake Certification will be acknowledged within 7 working days and a resolution proposed within 25 working days. Resolution of complaints and Warranty issues is subject to Transpecs Warranty policy. Customers have the right to appeal to the NZ Transport Agency if dissatisfied with a Compliance issue. (refer NZTA Deed Of Appointment Para 47.4)
NZ Transport Agency Helpdesk 0800 699 000

L.P.CAWTE
(LPC HVEK)

NOTICE TO VEHICLE OPERATOR

This trailer is equipped with an **Electronic Brake System.**

To comply with the New Zealand Heavy Vehicle Brake Rule, it must be used only in conjunction with a truck/tractor equipped with a 5 or 7 pin ABS/EBS power supply socket.
Failure to connect to such supply invalidates Brake Rule compliance.

The trailer ABS/EBS warning light on the towing vehicle dashboard must illuminate when the ignition is switched on and extinguish when the vehicle is in motion.
If the light does not illuminate when ignition is switched on, the system must be checked. If the light remains illuminated when the vehicle is in motion, Brake Rule compliance is compromised. Repairs must be made as soon as possible.

NB;

If this vehicle is fitted with mechanical (spring) suspension, the load sense valving has been adjusted to suit exactly the performance of the original springs. In event of replacement being required, original equipment springs **must** be fitted to ensure correct ongoing operation. Fitment of non genuine springs can affect operation and therefore, compliance.

If you are unsure of your responsibilities and/or obligations. please contact either the vehicle manufacturer or myself.

L P CAWTE
(LPC   HVEK)
(09 980 7300)

trailer (full, semi-, centre-axle) with air brake system acc. to
71/320/EEC, last amended by 98/12/EC and 2006/96/EC or UN/ECE-R.13.10

distribution: DOMETT
               CHASSIS 6195B1
               LC100903
               LT400, 349081

vehicle manufacturer: DOMETT

trailer model   :   D101 TANKER

trailer type   :   4-axle-full-trailer

remarks   :   air / hydraulic / VA suspension
                           WABCO TRAILER - EBS
                           TRISTOP 3+4: T.14/24
                           265/70 R 19,5

axle 1 + 2 + 3 + 4 : SAF,   PAN 19-1,   TDB 0749 ECE,

			unladen	laden
total mass	P in kg		5200	28000
axle 1	P1 in kg		1400	7000
axle 2	P2 in kg		1400	7000
axle 3	P3 in kg		1200	7000
axle 4	P4 in kg		1200	7000
wheel base	E in mm		4800 - 4800	
centre of gravity height	h in mm		1170	1755

			axle 1	axle 2	axle 3	axle 4
no. of combined axles			1	1	1	1
no. of brake chambers per axle line	KDZ		2	2	2	2
The power output corresponds to			BZ 122.1	BZ 122.1	BZ 119.6	BZ 119.6
brake chamber manufacturer			Meritor	Meritor	Meritor	Meritor
chamber size			14.	14.	T.14/24	T.14/24
lever length	lBh in mm		69	69	69	69
brake factor	[-]		23.03	23.03	23.03	23.03
dyn. rolling radius	rdyn min in mm		421	421	421	421
dyn. rolling radius	rdyn max in mm		421	421	421	421
threshold torque	Co	Nm	6.0	6.0	6.0	6.0

calculation:

			axle 1	axle 2	axle 3	axle 4
chamber pressure(rdyn min)pH at z=22,5%bar			2.4	2.4	2.1	2.1
chamber pressure(rdyn max)pH at z=22,5%bar			2.4	2.4	2.1	2.1
chamber press.(servo)pcha at pm6,5bar	bar		5.8	5.8	4.6	4.6
piston force ThA at pm6,5bar	N		5588	5588	4385	4385
brake force(rdyn min)T lad. at pm6,5bar	N		42260	42260	33173	33173
brake force(rdyn max)T lad. at pm6,5bar	N		42260	42260	33173	33173
brake force within 1 % rolling friction						
proportion	%		25.0	25.0	25.0	25.0

braking rate   z laden   0.549   for rdyn min
z = sum (TR)/PRmax   0.549   for rdyn max

Trailer may only be operated in combination with trucks/tractors with
ISO 7638 supply (5 or 7 polar).

brake diagram :

maximum pressure: 8.5 bar

axle 1:
    valve 1: 971 002 ... 0   WABCO
              EBS emergency valve

    valve 2: 480 102 ... 0   WABCO
              EBS trailer modulator

axle 2:
    valve 1: 971 002 ... 0   WABCO
              EBS emergency valve

    valve 2: 480 102 ... 0   WABCO
              EBS trailer modulator

axle 3:
    valve 1: 971 002 ... 0   WABCO
              EBS emergency valve

    valve 2: 480 207 0.. 0   WABCO
              EBS relay valve

axle 4:
  valve 1: 971 002 ... 0   WABCO
       EBS emergency valve

  valve 2: 480 207 0.. 0   WABCO
       EBS relay valve


```
test type III  (zIII = 0.30)  for rdyn min : axle1 axle2 axle3 axle4
at pm  3.9 bar  =>            pcha  in bar :   3.2    3.2    2.7    2.7
test type III  (zIII = 0.06)  for rdyn min : axle1 axle2 axle3 axle4
at pm  1.3 bar  =>            pcha  in bar :   0.8    0.8    0.8    0.8
```

brake chamber pressure laden

pcyl in bar

axle 1
axle 2
axle 3   ±
axle 4

pm in bar

brake chamber pressure   unladen

pcyl in bar

axle 1
axle 2
axle 3   ±
axle 4

pm in bar

compatibility band   laden

TR/PR

pm = 1   4   6,5 bar
:m = 0.1f 0.21 0.55

rdyn

pm in bar
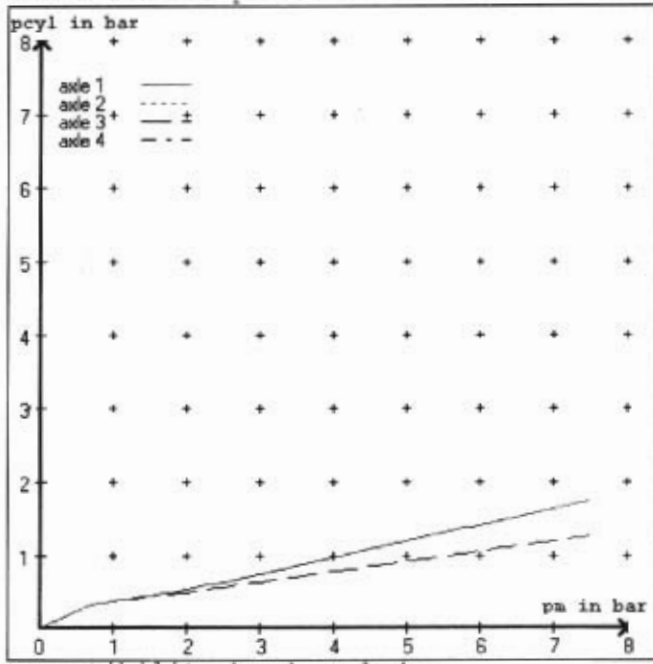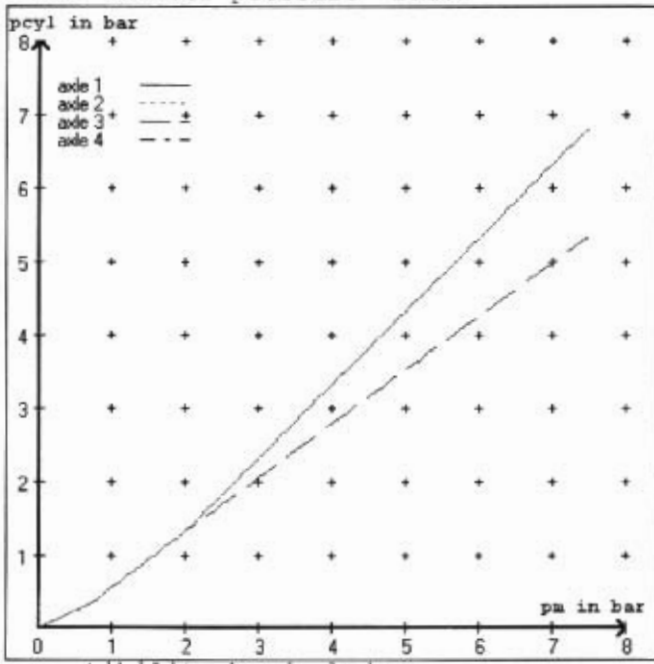
compatibility band   unladen

TR/PR

in case of guaranteed operation
no prescription

pm = 1   4   6,5 bar
:m = 0.1f 0.22 0.68

rdyn

pm in bar

curves of friction   laden

k

wheel base :
E min : 4000 mm E max : 4000
group of axle 1 : rdyn 421 mm
group of axle 2 : rdyn 421 mm

in case of guaranteed operation
no prescription

z
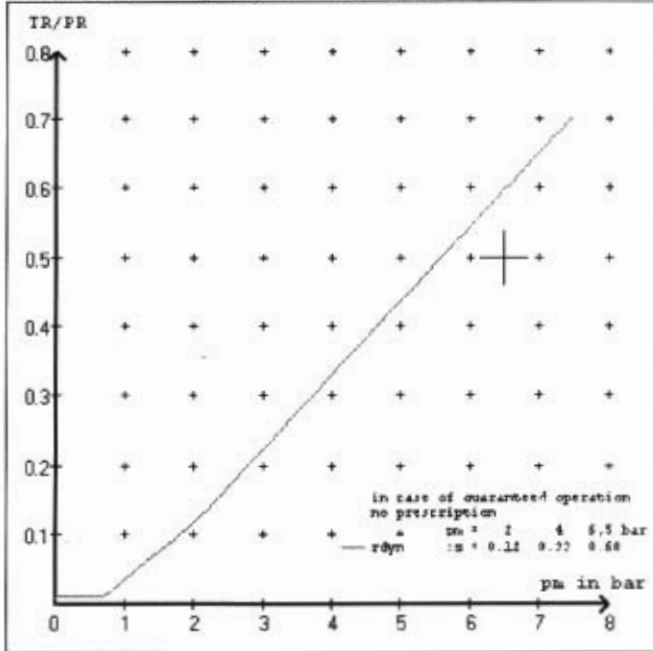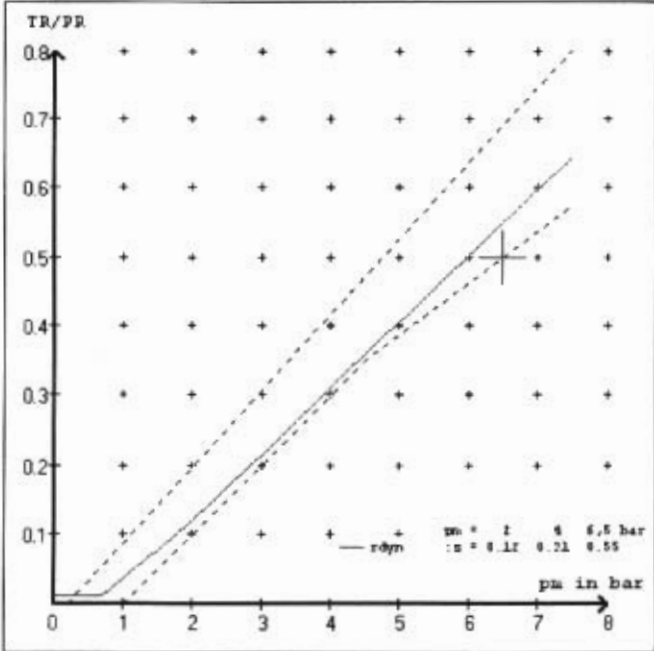
curves of friction   unladen
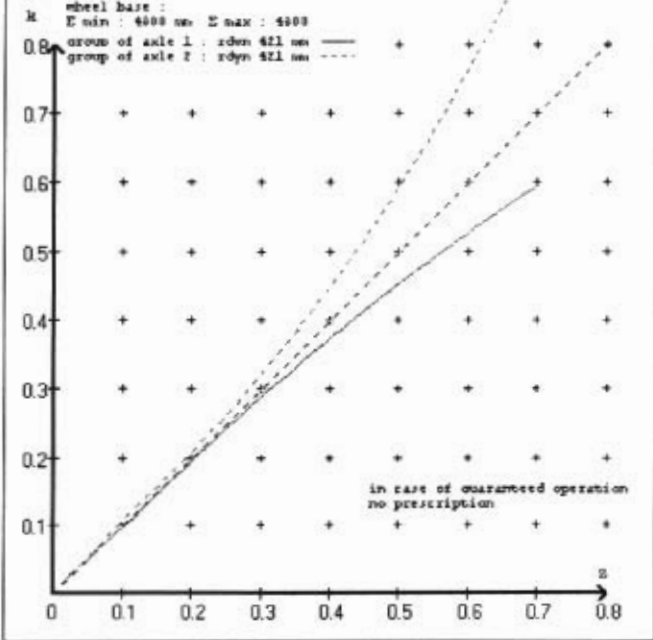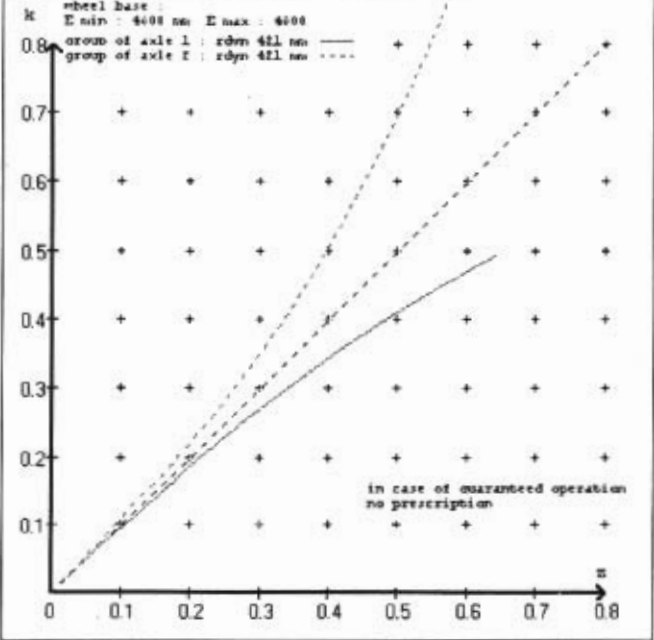
k

wheel base :
E min : 4000 mm E max : 4000
group of axle 1 : rdyn 421 mm
group of axle 2 : rdyn 421 mm

in case of guaranteed operation
no prescription

z

vehicle manufacturer: DOMETT
trailer model   :   D101 TANKER
trailer type   :   4-axle-full-trailer

brake chamber and lever length :
axle 1 :   2 x type/diameter   14. (Meritor)   lever length 69 mm
axle 2 :   2 x type/diameter   14. (Meritor)   lever length 69 mm
axle 3 :   2 x type/diameter   T.14/24 (Meritor)   lever length 69 mm
axle 4 :   2 x type/diameter   T.14/24 (Meritor)   lever length 69 mm

brake diagram :

valve :
971 002 ... 0   WABCO EBS emergency valve
480 102 ... 0   WABCO EBS trailer modulator
480 207 0.. 0   WABCO EBS relay valve

EBS input data
===============
vehicle manufacturer: DOMETT
trailer model   : D101 TANKER
trailer type   : 4-axle-full-trailer
brake calculation no.   : TP 77A

tire circumference main axle   : 2650 for rdyn max
tire circumference auxiliary axle   : 2650 for rdyn max

assignment pm / deceleration z: pm 0.7 bar z = 0.000
(laden condition)   2.0 bar z = 0.123
                                   6.5 bar z = 0.550

| | | control pressure pm | 6,5 | | control pressure pm | 0.7 | 2.0 | 6.5 |
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden		
1	1400	to be	1.5	7000	to be	0.3	1.3	5.8
2	1400	entered by	1.5	7000	entered by	0.3	1.3	5.8
3	1200	the vehicle	1.1	7000	the vehicle	0.3	1.3	4.6
4	1200	manufact.	1.1	7000	manufact.	0.3	1.3	4.6
5	0		0,0	0		0,0	0,0	0,0

The unladen values indicated in the above table are values for the
basic parameter set. Higher unladen axle loads and liftaxles are
automatically recognized and do not require separate adjustment.
The above unladen axle loads must not be fallen below.
==

| axle 1 | | axle 2 | | axle 3 | | axle 4 | |
axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1400	1.5	1400	1.5	1200	1.1	1200	1.1
1900	1.9	1900	1.9	1700	1.4	1700	1.4
2400	2.3	2400	2.3	2200	1.7	2200	1.7
2900	2.7	2900	2.7	2700	2.0	2700	2.0
3400	3.0	3400	3.0	3200	2.3	3200	2.3
3900	3.4	3900	3.4	3700	2.6	3700	2.6
4400	3.8	4400	3.8	4200	2.9	4200	2.9
4900	4.2	4900	4.2	4700	3.2	4700	3.2
7000	5.8	7000	5.8	7000	4.6	7000	4.6

data sheet to EC/ECE vehicle type-approval certificate concerning braking
equipment: according to 98/12/EC annex IX 2.7.4 / ECE R13 annex 11

axle 1 : reference axle: SAF   SBW 1937-... brake lining: Jurid 539
         test report   :   TDB 0749 ECE date   : 13.10.2008
axle 2 : reference axle: SAF   SBW 1937-... brake lining: Jurid 539
         test report   :   TDB 0749 ECE date   : 13.10.2008
axle 3 : reference axle: SAF   SBW 1937-... brake lining: Jurid 539
         test report   :   TDB 0749 ECE date   : 13.10.2008
axle 4 : reference axle: SAF   SBW 1937-... brake lining: Jurid 539
         test report   :   TDB 0749 ECE date   : 13.10.2008

calc. verif. of residual (hot) braking force type III
(item 4.2 of appendix I to annex VII)
axle 1   (rdyn 421 mm) $T = 22.5$ % Pe
axle 2   (rdyn 421 mm) $T = 22.5$ % Pe
axle 3   (rdyn 421 mm) $T = 18.7$ % Pe
axle 4   (rdyn 421 mm) $T = 18.7$ % Pe

calculated actuator stroke in mm
(item 4.3.1.1 of appendix I to annex VII)
axle 1 $(sp = 57$ mm) $s = 39$ mm
axle 2 $(sp = 57$ mm) $s = 39$ mm
axle 3 $(sp = 56$ mm) $s = 39$ mm
axle 4 $(sp = 56$ mm) $s = 39$ mm

average thrust output in N at pm = 6,5 bar (however max. pcha = 7,0 bar)
axle1   ThA = 5588 N
axle2   ThA = 5588 N
axle3   ThA = 4385 N
axle4   ThA = 4385 N

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix I to annex VII)
axle 1   (rdyn 421 mm) $T = 33284$ N
axle 2   (rdyn 421 mm) $T = 33284$ N
axle 3   (rdyn 421 mm) $T = 26161$ N
axle 4   (rdyn 421 mm) $T = 26161$ N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.55	0.43
required braking rate (items 1.3.3 and 1.6.2 to annex II)		$>= 0,4$ and $>= 0,6*z$ (0.33)

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix I to annex VII)
axle 1   (rdyn 421 mm) $T = 33284$ N
axle 2   (rdyn 421 mm) $T = 33284$ N
axle 3   (rdyn 421 mm) $T = 26161$ N
axle 4   (rdyn 421 mm) $T = 26161$ N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.55	0.43
required braking rate (items 1.3.3 and 1.6.2 to annex II)		$>= 0,4$ and $>= 0,6*z$ (0.33)

spring parking brake

		axle 3	axle 4
no of TRISTOP-actuators per axle line KDZ		2	2
TRISTOP-actuator type		T.14/24	T.14/24
lever length	lBh in mm	69	69
stat. tyre radius	rstat max in mm	401	401
at a stroke of	s in mm	30	30
min. force of spring brake TFZ in N		7605	7605
sp.brake chamber no Meritor.....		4	4
release pressure pLs in bar			
		4.8	4.8

calculation:

	axle 3	axle 4
ratio until road	3.9674	3.9674
iFb = lBh*Eta*C*rBt/(rBn*rstat)		
for rstat in mm	401	401
brake force of spring br. Tf in N	59654	59654
Tf = (TFZ*KDZ-2*Co/lBh)*iFb		
braking rate zf laden	0.444	
zf = sum (Tf)/P + 0,01		

Test of the frictional connection required by the parking brake

minimum wheelbase/minimum supporting width min Ef necessary
to fulfil the regulations

min Ef = E * (1 - PR/P + zferf * h/E) / (1 - zferf / (fzul * nf/ng))

min Ef =   3504 mm   for E =   4800 mm
=====================
min Ef =   3504 mm   for E =   4800 mm
=====================

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min Ef =            minimum distance between front axle(s) (trailer) or support (semitraile
and the rear axle(s) (resultant of the bogie)
E      =            wheel base
fzul   =     0.80   maximum permissible frictional connection required
zferf  =     0.18   maximum required braking ratio of the parking brake
h      =   1755 mm  height of center of gravity - laden
PR     =  14000 kg  maximum bogie mass - laden
P      =  28000 kg  maximum total mass - laden
nf     =     2      no. of axle(s) with TRISTOP spring brake actuators
ng     =     2      no. of bogie axle(s)
```