

10 March 2017

Cody C

fyi-request-5360-844ddbb6@requests.fyi.org.nz

Dear Cody

Request made under the Official Information Act 1982

Thank you for your request of 10 February 2017 seeking, under the Official Information Act 1982, information relating to software for producing "Statement of Compliance with the New Zealand Heavy Vehicle Brake Code". You refined your request on 28 February 2017, seeking the following information:

Please advise how one would obtain a copy of the "Transport Agency's Heavy Vehicle Brake Calculator".

The Heavy Vehicle Brake Calculator software is made available to Heavy Vehicle Specialist Certifiers who undertake certification work for the NZ Transport Agency. To become a Certifier, candidates must sit and pass a transport law examination and a brake design examination. Candidates are also interviewed by the Transport Agency before appointment is confirmed. Certifiers are also provided with ongoing training through courses which are organised by the Transport Agency.

If you are interested in learning more about how to become a Certifier, please follow this link to the vehicle inspection page and select the option for heavy vehicle specialist applications:

<http://vehicleinspection.nzta.govt.nz/applications>

Please also find attached for your reference screenshots of the calculator software and sample certification printouts which are kept by Certifiers for proving compliance.

If you would like to discuss this reply with the NZ Transport Agency, please contact the Official Correspondence Unit by email at official.correspondence@nzta.govt.nz.

Yours sincerely

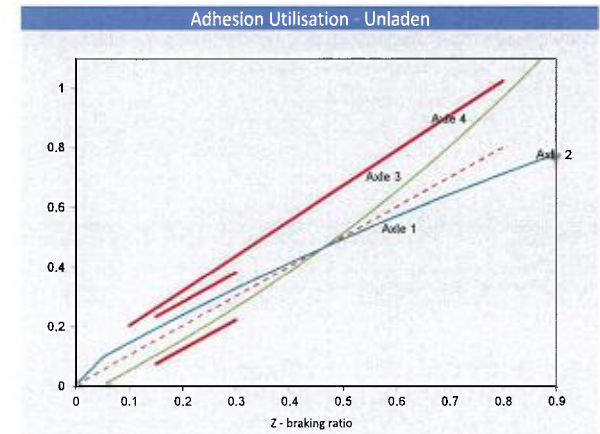
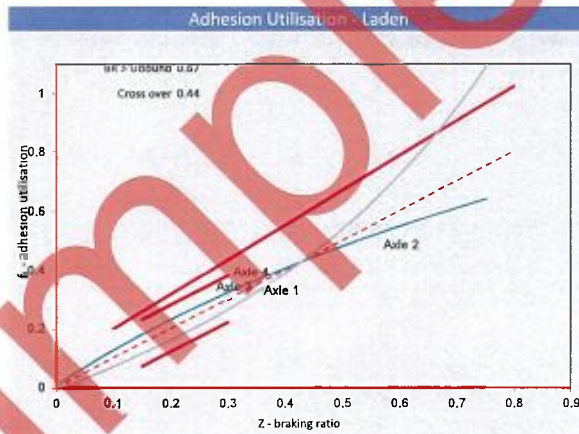
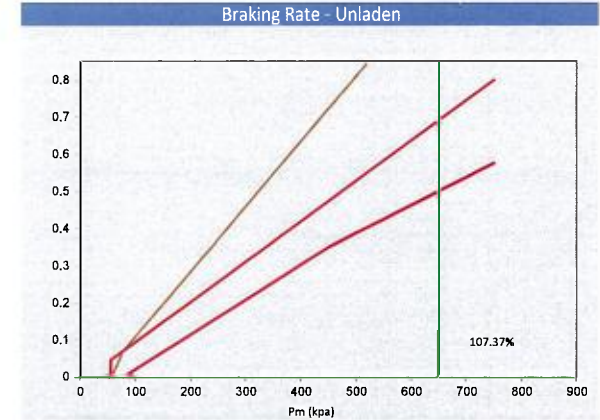
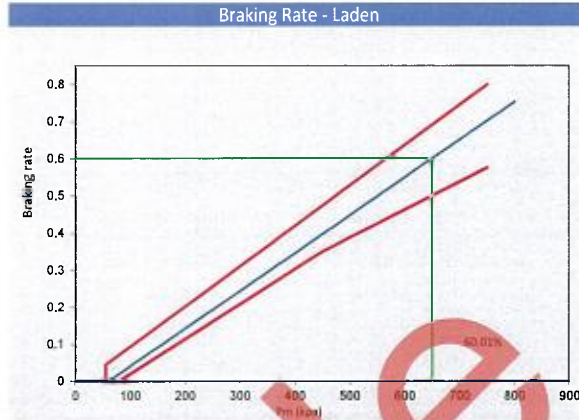


Mark Rounthwaite
Manager, Technical Services

Rigid Vehicle/Drawbar Trailer - v 2.21

Geometry		Job/Vehicle ID			
Wheelbase (m)	4.77	Job No:			
Tare centre of gravity (m)	0.748	VIN No:			
Payload centre of gravity (m)	1.84	Registration No: NA			
		Vehicle Type: Rigid truck			
	Front	Rear			
Number of axles	2	2			
Masses					
Axle number	1	2	3	4	
Unladen axle loads (kg)	1700	1700	1500	1500	
Laden axle loads (kg)	7250	7250	7250	7250	
Tyre size					
	265/70 R 19.5	265/70 R 19.5	265/70 R 19.5	265/70 R 19.5	
Static radius	401	401	401	401	
Dynamic radius	421	421	421	421	
Foundation brake					
	ROR B	ROR B	ROR B	ROR B	
Type	Drum	Drum	Drum	Drum	
Brake factor	9.25	9.25	9.25	9.25	
Threshold moment (Nm)	27	27	27	27	
Source	RDW19140554	RDW19140554	RDW19140554	RDW19140554	
Brake chambers/slack adjusters					
Spring brakes installed	no	no	yes	yes	
Brake chamber	MGM T30	MGM T30	MGM TR2430	MGM TR2430	
Slack adjuster length (mm)	120	120	127	127	
Braking system					
Treadle valve bias (kPa)	0				
In-line relay					
Load sensing valve	Wabco 475-714-50	Wabco 475-714-50	Wabco 475-714-50	Wabco 475-714-50	
Relay	Wabco ABS-3M-24	Wabco ABS-3M-24	Wabco ABS-VCSII	Wabco ABS-VCSII	
LSV settings					
Laden	0.9	0.9	0.65	0.65	
Unladen	1.5	1.5	1.5	1.5	
LSV out laden	577.5	577.5	433.75	433.75	
LSV out unladen	232.5	232.5	232.5	232.5	
Pch laden	577	577	413	413	
Pch unladen	221	221	212	212	
Parking Brake					
	Upward	Downward	Required spring force (N) at 10% slope		
Maximum slope (%)	26.0%	26.0%	Axle 1		
Adhesion coefficient (-)	0.8	0.8	Axle 2		
Axle 1 brake force (N)	0.0	0.0	Axle 3	4511.5	
Axle 1 load (kg)	5757.0	8255.8	Axle 4	4511.5	
Axle 2 brake force (N)	0.0	0.0			
Axle 2 load (kg)	5757.0	8255.8			
Axle 3 brake force (N)	35788.8	35788.8	Adhesion coefficient: 0.8		
Axle 3 load (kg)	8255.8	5757.0	Combined COG		
Axle 4 brake force	35788.8	35788.8	1.60		
Axle 4 load (kg)	8255.8	5757.0			

User data					
Foundation brake description:	test brake	test brake	test brake	test brake	test brake
Type	Drum	Drum	Drum	Drum	Drum
Brake factor	9	9	9	9	9
Threshold moment/force	30	30	30	30	30
Slack adjuster length (mm)	153	153	127	127	127



Brake force distribution laden	Axle 1	Axle 2	Axle 3	Axle 4
at 6.5 bar	32.0%	32.0%	18.0%	18.0%
at 2.0 bar	33.1%	33.1%	16.9%	16.9%
Braking start pressure (kPa)	58	58	73	73
Braking rate laden	Vehicle			
at 2.0 bar	14.2%			
with LSD failure front	35.2%			
with LSD failure rear	48.5%			

Brake force distribution unladen	Axle 1	Axle 2	Axle 3	Axle 4
at 6.5 bar	28.9%	28.9%	21.1%	21.1%
at 2.0 bar	31.7%	31.7%	18.3%	18.3%
Braking rate unladen	Vehicle			
at 2.0 bar	28.4%			

Job No: 0
VIN No: 0
Registration No: NA
Vehicle Type: Rigid truck

Geometry

Wheelbase (m) 4.77
 Tare centre of gravity (m) 0.748
 Payload centre of gravity (m) 1.84

	Front	Rear
Number of axles	2	2

Masses

Axle number	1	2	3	4	Total
Unladen axle loads (kg)	1700	1700	1500	1500	6400
Laden axle loads (kg)	7250	7250	7250	7250	29000

Tyre size

	265/70 R 19.5	265/70 R 19.5	265/70 R 19.5	265/70 R 19.5
Static radius	401	401	401	401
Dynamic radius	421	421	421	421

Foundation brake

	ROR B	ROR B	ROR B	ROR B
Type	Drum	Drum	Drum	Drum
Brake factor	9.254293893	9.254293893	9.254293893	9.254293893
Threshold moment (Nm)	27	27	27	27

Brake chambers/slack adjusters

Spring brakes installed	no	no	yes	yes
Brake chamber	MGM T30	MGM T30	MGM TR2430	MGM TR2430
Chamber force coefficients	1881p - 254	1881p - 254	1459p - 320	1459p - 320
Slack adjuster length (mm)	120	120	127	127

Braking system

Treadle valve bias (kPa)	0			
In-line relay	-			
Load sensing valve	Wabco 475-714-500	Wabco 475-714-500	Wabco 475-714-500	Wabco 475-714-500
Relay	Wabco ABS-3M-24 volt	Wabco ABS-3M-24 volt	Wabco ABS-VCSII	Wabco ABS-VCSII
	Crack: 17.5kpa	Crack: 17.5kpa	Crack: 21kpa	Crack: 21kpa
	1-1: 600kpa	1-1: 600kpa	1-1: 800kpa	1-1: 800kpa

LSV settings

Laden	0.9	0.9	0.65	0.65
Unladen	1.5	1.5	1.5	1.5
LSV out laden	577.5	577.5	433.75	433.75
LSV out unladen	232.5	232.5	232.5	232.5
Pch laden	577	577	413	413
Pch unladen	221	221	212	212

Brake chamber force @ 650 kpa (N)	11972.5	11972.5	9163.5	9163.5
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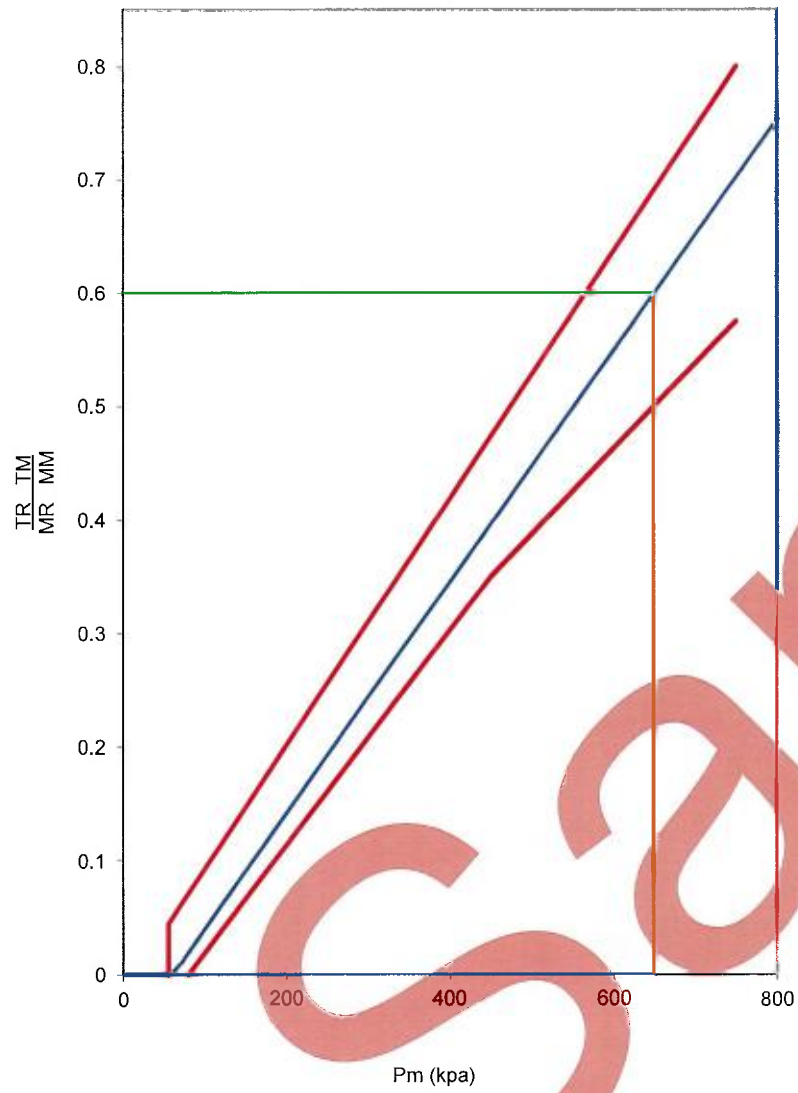
Parking brake (laden vehicle)

	Upward	Downward
Maximum slope (%)	26.0%	26.0%
(max spring force = 6318 N at 32 mm stroke)		
Required spring force (N) at 18% slope		
Axle 1	-	-
Axle 2	-	-
Axle 3	4511	-
Axle 4	4511	-

Braking rate

at 650 kpa - laden	60.0%
at 650 kpa - unladen	107.4%
with LSD failure front	35.2%
with LSD failure rear	48.5%

Braking rate - Laden



Braking rate - Unladen

