Appendices to the UIC CODE 541 - 4

Latest update: 01.08.2015

Translation

Appendix M of the 4th edition of the leaflet (December 2010):

Brakes – Brakes with composite brake blocks – General conditions for certification of composite brake blocks

- **The following pages contain Appendix M – "*Brake blocks accepted in international traffic*" – to UIC Leaflet 541-4.**
- **Appendix M consists of 3 tables – one table per friction coefficient category.**
- **For K-blocks the "Design rules for composite brake blocks (K)" (9th edition, August 2013) are to be applied.**
- **For LL-blocks the "Usage guidelines for composite (LL) brake blocks" (10th edition, August 2013) are to be applied.**

International Union of Railways

APPENDIX M1 – K blocks

Products with provisional certification for service tests as per UIC Leaflet 541-4

Manufacturer	Type description and abbreviated designation (if different) (organic / sintered)	Nominal wheel diameter Ø [mm]	Min./ max. axle load [t]	Braking regime / speeds	Min./ max. force per block holder [kN]	Configuration	Certified as per leaflet edition no.	Remarks	Certification expires
CoFren	C810 (organic)	920	3,6 22,5	ss (up to 20 t)	5 38	1 x Bgu	4	-	31.01.2017
CoFren	C333 (sintered)	920	3,6 22,5	ss (up to 20 t)	5 38	1 x Bgu	4	-	30.06.2015
Cosid	704 (organic)	920	3,6 22,5	s and ss (up to 20 t)	2,5 19	2 x Bg	4		08.01.2016
Cosid	704 (organic)	920	3,6 22,5	s and ss (up to 20 t)	2,5 19	2 x Bgu	4		31.03.2016
Cosid	704 (organic)	920	3,6 22,5	ss (up to 20 t)	5 38	1 x Bgu	4		31.07.2017
Federal Mogul	Jurid 822	920	3,6 22,5	ss (up to 20 t)	5 38	1 x Bgu	4		30.06.2017

Fully certified products

Manufacturer	Type description and abbreviated designation (if different) (organic / sintered)	Nominal wheel diameter Ø [mm]	Min./ max. axle load [t]	Braking regime / speeds	Min./ max. force per block holder [kN]	Configuration	Certified as per leaflet edition no.	Remarks	Certification expires
Becorit	K40 (organic)	920	3,6 22,5	s	2,5 19	2 x Bg	4	# 14	31.01.2025
Becorit	K40 (organic)	920	3,6 22,5	ss (up to 20 t)	2,5 19	2 x Bg	4	# 14	02.07.2025
CoFren	C333 (sintered)	920	3,6 22,5	s	5 38	1 x Bgu	3	# 1	30.06.2021
CoFren	C333 (sintered)	920	3,6 22,5	Empty 120 km/h Loaded 100 km/h	2,5 19	2 x Bg	4	#13	30.06.2024
CoFren	C333 (sintered)	920	3,6 22,5	ss (up to 20 t)	5 38	2 x Bg	4	#13	02.07.2025
CoFren	C333 (gesintert)	840	4,5 20	Empty 120 km/h Loaded 100 km/h	6,0 25	1 x Bgu	4	# 10	01.07.2013 30.06.2023
CoFren	C333 (sintered)	760	4,5 18	Empty 120 km/h Loaded 100 km/h	6,0 25	1 x Bgu	4	# 10	30.06.2023
CoFren	C810 (organic)	920	3,6 22,5	s and ss (up to 20 t)	2,5 19	2 x Bg and 2 x Bgu	4	# 11	30.06.2023
CoFren	C810 (organic)	920	3,6 22,5	s	5 38	1 x Bgu	4	# 2	28.02.2021
CoFren	C810 (organic)	840	7,5 17,5	Empty 120 km/h Loaded 100 km/h	5,5 14,5	2 x Bg	4	# 3	31.07.2021
CoFren	C810 (organic)	840	7,5 18	Empty 120 km/h Loaded 100 km/h	8,7 12,2	2 x Bg	4	# 4	31.01.2022
CoFren	C810 (organic)	840	4,5 20	Empty 120 km/h Loaded 100 km/h	6,0 25	1 x Bgu	4	# 7	31.12.2022

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com

CoFren	C810 (organic)	760	4,5 18	Empty 120 km/h Loaded 100 km/h	6,0 25	1 x Bgu	4	# 7	31.12.2022
CoFren	C810 (organic)	760	9,25 16	Empty 120 km/h Loaded 100 km/h	10,1 10,1	2 x Bg	4	# 8	31.01.2023
CoFren	C810 (organic)	920	5,8 25	Empty 120 km/h Loaded 100 km/h	4,5 16,5	2xBgu	4	#15	05.05.2025
Frenoplast	FR513 (organic)	920	3,6 22,5	s	2,5 19	2 x Bg	3	# 5	30.06.2022
Frenoplast	FR513 (organic)	840 760 730	7,5 17,5	Empty 120 km/h Loaded 100 km/h	5,5 14,5	2 x Bg	4	# 9	30.04.2023
Frenoplast	FR513 (organic)	840	3,6 20	empty 120 km/h laden 100 km/h	2,5 18	2 x Bg	4	#16	31.10.2024
Frenoplast	FR513 (organic)	760	3,6 18	empty 120 km/h laden 100 km/h	2,5 17	2 x Bg	4	#16	31.10.2024
Federal Mogul	Jurid 816 M abbreviated: J816M (organic)	920	3,6 22,5	S and ss (up to 20 t)	2,5 19	2 x Bg and 2 x Bgu	3	# 17	15.04.2025
Federal Mogul	Jurid 816 M abbreviated: J816M (organic)	840 760 730	7,5 17,5	Empty 120 km/h Loaded 100 km/h	5,5 14,5	2 x Bg	4	# 6	30.06.2022
Federal Mogul	Jurid 816 M abbreviated: J816M (organic)	840 760	7,5 18	Empty 120 km/h Loaded 100 km/h	5,5 14,5	2 x Bg	4	# 12	30.04.2024

1 In accordance with Report FS – DT/IRTB.SF.05 of 06.04.2011

2 In accordance with Report B126 RP A7

3 In accordance with Report B126 RP N5

4 In accordance with Report B126 RP C4

5 In accordance with Report B126 RP D2
It is recommended to observe the development of wear to wheels and blocks following this block's initial fitting.

6 In accordance with Report B126 RP N5 & N6

7 In accordance with Report B126 RP C7

8 In accordance with Report B126 RP C9, vehicle without load-changeover device

#9 In accordance with Report B126 RP D3

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com

#10 In accordance with Report B 126 RP C13
#11 In accordance with report B 126 RP C8
#12 In accordance with report B 126 RP N10
#13 In accordance with report B 126 RP C3
#14 In accordance with report B 126 RP A6
#15 In accordance with report B126 RP C15
#16 In accordance with report B126 RP D4
#17 In accordance with report B126 RP N9

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com

Information on updates for K blocks

Date of update:	Body in charge:	Decision:
13.4.2011	B126.13	Inclusion of the list of certified products from the design rules for K blocks, 7th edition
13.4.2011	SET 7	Completion of the list by the product C810 in 1xBgu configuration in accordance with the decision made by SET 7 on 4.3.2011 (e-mail consultation)
1.7.2011	SET 7	Completion of the list by the product C333 in 1xBgu configuration in accordance with the decision made by SET 7 on 29.6.2011
1.7.2011	B126.13	Completion of the list of provisionally certified products by C333 in1xBgu (SS) and 2xBg (S/SS) configurations Decision by B126.13 on 16.6.2011
10.8.2011	SET 7	Completion of the list by the products C810 & J816M for nominal wheel diameters of 840 mm under the stated general conditions, in accordance with the decision made by B126.13 on 8.8.2011 (outcome of e-mail consultation initiated on basis of decision taken at meeting on 29.6.2011)
01.06.2012	SET 7	Completion of the list by the product C810 for wheels with diameter 840 mm. Results documented in Report B126/C4. Decision taken at meeting/by email consultation on 26.01.2012
01.06.2012	B126.13	Completion of the list of approved products by Becorit K40 under above mentioned boundary conditions, decision of B126.13, 76th meeting on 22nd & 23rd May 2012
01.08.2012	SET 7	Completion of the list by certification of Jurid 816M on wheels with diameter of 760 and 730 mm under above mentioned boundary conditions (certification for wheels with diameter 840 mm since 1st August 2011). Decision of SET 7 during 224th meeting on 28th & 29th June 2012
01.08.2012	SET 7	Completion of the list by certification of FR513 in configuration 2xBg under above mentioned boundary conditions, Decision of SET 7 during 224th meeting on 28th & 29th June 2012
02.02.2013	SET 7	List extended to include certification of the C810 for wheels with diameter 840 – 760 mm. Results of expert appraisal contained in B126/C7. Decision taken at meeting / by email on 15.11.2012
02.02.2013	SET 7	List extended to include certification of the C810 for wheels with diameter 840 – 760 mm. Results of expert appraisal contained in B126/C7. Decision taken at meeting / 225th meeting on 23./24.01.2013
30.04.2013	SE T 7	List extended to include certification of the FR513 for wheels with diameter 840 – 730 mm. Results of expert appraisal contained in B126/D3. Decision taken by email inquiry from 20.02.2013
05.07.2013	SET 7	List extended to include certification of the C333 for wheels with diameter 840 – 760 mm. Results of expert appraisal contained in B126/C13. Decision taken 226th meeting on 18/19.06.2013
05.07.2013	SET 7	List extended to renew certification of the C810. Results of expert appraisal contained in B126/C8. Decision taken at 226th meeting on 18/19.06.2013
09.01.2014	B 126.13	Completion of the list of provisionally certified products by Cosid 704 in 2xBg configuration in accordance with the decision of B 126.13 at its 83rd meeting on 13/14 November 2013
01.04.2014	B 126.13	Completion of the list of provisionally certified products by Cosid 704 in 2xBgu configuration in accordance with the decision of B 126.13 at its 85th meeting on 25/26 March 2014
01.04.2014	SET 7	List extended to extend the certification of the Jurid 816M. Results of expert appraisal contained in B126/N10. Decision taken by E-Mail survey from 14th April 2014
01.07.2014	SET 7	Completion of the list by certification of CoFren C333 in configuration 2xBg, Results of expert appraisal contained in B126/C3. Decision taken during 228th meeting on 24th & 25th June 2014
01.11.2014	SET 7	List completed to extend the certification of the Frenoplast FR513. Results of expert appraisal contained in B126/D4. Decision taken by E-Mail survey from 29th September 2014
01.02.2015	SET 7	Completion of the list by certification of Becorit K40 in configuration 2xBg, Results of expert appraisal contained in B126/A6. Decision taken during 228th meeting on 21st & 22nd January 2015
15.05.2015	SET 7	List completed to extend the certification of the Jurid 816M. Results of expert appraisal contained in B126/N9. Decision taken by E-Mail survey from 23rd March 2015

15.05.2015	SET 7	List completed to extend the certification of the CoFren C810. Results of expert appraisal contained in B126/C15. Decision taken by E-Mail survey from 20th April 2015
01.08.2015	SET 7	Completion of the list by certification of Becorit K40 in configuration 2xBg and SS.brake, Results of expert appraisal contained in B126/A6. Completion of the list by certification of CoFren C333 in configuration 2xBg and SS.brake, Results of expert appraisal contained in B126/C3.Decision taken during 230th meeting on 1st to 3rd July 2015

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com

Appendix M2: Composite brake blocks with medium friction coefficient (L)

Fully certified products

New 01.08.2012	Manufacturer	Type description	Permitted applications/ remarks	Certified in accordance with leaflet edition no..	Application for certification made by	End of certification
	ICER Brakes	ICER 903/62	Supplementary block brake for coaches up to 200 km/h	4	ICER Brakes	31.12.2019
	Federal-Mogul Friction Products	Ferodo 3325 F	Supplementary block brake for coaches up to 200 km/h	4	Federal-Mogu	31.12.2019
X	Wabtec	Becorit L249	Supplementary block brake for coaches up to 200 km/h	4	Becorit	30.06.2022

Information on updates for L blocks

Date of update:	Body in charge:	Decision:
01.08.2012	UIC SET 7	Completion of list by certification of Becorit L249 under above mentioned boundary conditions, decision of SET 7, 224th meeting on 28th & 29th June 2012

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com

Appendix M3: LL brake blocks

Products with provisional certification for service tests as per UIC Leaflet 541-4

Manufacturer	Type description and abbreviated designation (if different) (organic / sintered)	Nominal wheel diameter Ø [mm]	Min./ max. axle load [t]	Braking regime / speeds	Min./ max. force per block holder [kN]	Configuration	Certified as per leaflet edition no.	Remarks	Certification expires
Federal Mogul	J847	920	3,6 22,5	s and ss (bis 20 t)	6 50	2 x Bg and 2 x Bgu	4	#1 According B126 RP N11	30.11.2016

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com

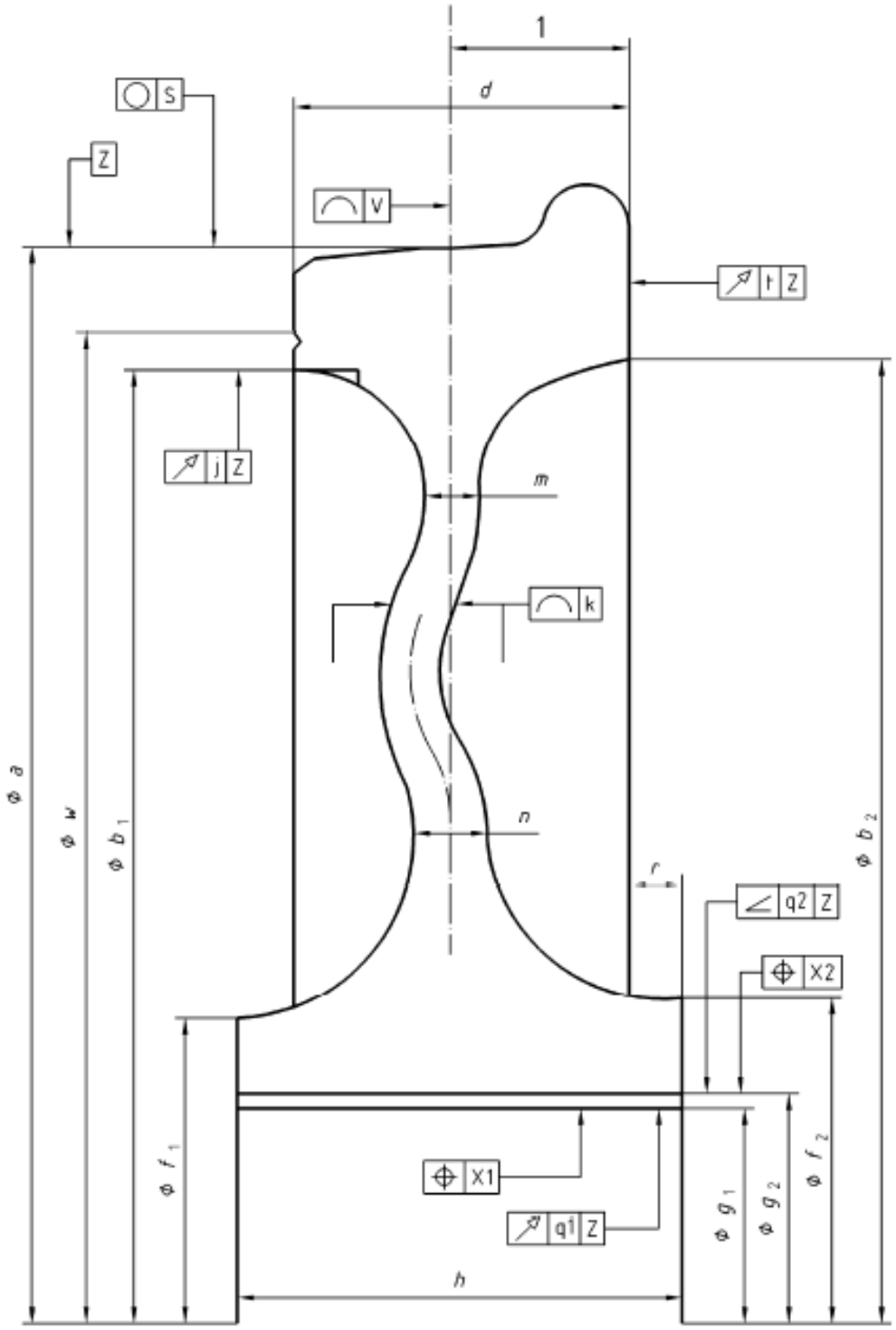
Products with full certification as per UIC Leaflet 541-4

Manufacturer	Type description and abbreviated designation (if different) (organic / sintered)	Nominal wheel diameter Ø [mm]	Min./ max. axle load [t]	Braking regime / speeds	Min./ max. force per block holder [kN]	Configuration	Certified as per leaflet edition no.	Remarks	Certification expires
CoFren	C952-1 (sintered)	920	3,6 22,5	s	6 50	2 x Bg	4	#1	30.04.2023
CoFren	C952-1 (sintered)	920	3,6 22,5	s and ss (up to 20 t)	6 50	2 x Bgu	4		30.04.2023
Icer Rail / Becorit	IB 116* (organic)	920	3,6 22,5	s	6 50	2 x Bg	4		30.04.2023
Icer Rail / Becorit	IB 116* (organic)	920	3,6 22,5	s and ss (up to 20 t)	6 50	2 x Bg and 2 x Bgu	4		30.04.2023
CoFren	C952-1 (sintered)	840	5 20	empty 120 km/h laden 100 km/h	12 45	2 x Bg	4	#1 #2 According B126 DT 444	31.01.2025
Icer Rail / Becorit	IB 116* (organic)	840	5 20	empty 120 km/h laden 100 km/h	12 45	2 x Bg	4	#1 #2 According B126 DT 444	31.01.2025
CoFren	C952-1 (sintered)	760	5 18	empty 120 km/h laden 100 km/h	12 40	2 x Bg	4	#1 #2 According B126 DT 444	31.01.2025
Icer Rail / Becorit	IB 116* (organic)	760	5 18	empty 120 km/h laden 100 km/h	12 40	2 x Bg	4	#1 #2 According B126 DT 444	31.01.2025

Nota #1 Until it is demonstrated that this block is interchangeable with cast iron determining the braking performance against UIC Leaflet 544-1 shall continue to be performed with this configuration prior to fitting vehicles with this block.

Nota #2 The thickness of the wheel rim is related to the diameter of the running surface (calculated from minimal wheel diameter $\varnothing a_{min}$ minus inner wheel diameter $\varnothing b_1$) and must not be below a minimum value of 30 mm (Reason: thermal limits of worn wheel).

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com


1
d
S
Z
V
t Z
j Z
m
k
n
r
q2 Z
X2
X1
q1 Z
h
Φ a
Φ w
Φ b 1
Φ f 1
Φ b 2
Φ g 1
Φ g 2
Φ f 2

Information on updates for LL blocks

Date of update:	Body:	Decision:
16.6.2011	B126.13	Inclusion of the list of provisionally certified products from the design rules for LL blocks, 7th edition
01.06.2012	B126.13	Extension of provisional approval of the existing products by two years in accordance with the decision taken by WG B126.13 at its 75th meeting on 8.3.2012
01.05.2013	SET 7	Full certification issued for the C952-1 and IB116*: decision of SET 7 at its 225th meeting on 24.01.2013
01.06.2013	SET 7	Consideration of the decision by E-Mail survey from 24th April 2013 concerning unlimited interchangeability with cast iron brake blocks on the basis of report B 126 DT 440.
04.12.2014	B126.13	Provisional approval issued on the basis of report B126/N11, decided by WG B126.13 at its 88th meeting on 04.12.2014
01.02.2015	SET 7	Consideration of the results of report B126 DT 444, approved at the 229th meeting SET 7 on 22.01.2015

Contact: DB Systemtechnik GmbH T.TVI 1, Mr Frank Minde, Pionierstraße 10, D-32423 Minden
Tel: +49 (0) 571 393 5100, E-mail: Frank.Minde@deutschebahn.com