



## INTEROPERABILITY UNIT

### LIST OF FULLY UIC APPROVED COMPOSITE BRAKE BLOCKS FOR INTERNATIONAL TRANSPORT

REFERRED TO IN

ANNEXES P AND JJ OF COMMISSION DECISION 2006/861/EC (WAG TSI 2006)

AND

APPENDIX G OF COMMISSION REGULATION 321/2013 (WAG TSI 2013)

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## AMENDMENT RECORD

Version	Date	Section number	Modification/description
1.0	04/06/2009		Preparation of version 1.0
2.0	04/06/2009	3 and 4	Version 2.0
3.0	30/06/2009	3 and 4	Version 3.0
4.0	18/05/2011	4	Version 4.0
5.0	09/08/2011	4	Version 5.0
6.0	15/06/2012	4	List of fully approved K composite brake blocks aligned with Appendix M (from 01/06/2012) of the UIC leaflet 541-4:2010: Pos. 6 added Pos. 3: "organic" replaced by "sintered" Pos. 4: 31/01/2015 (approval period end) replaced by 30/06/2015. Pos. 5 and 7: The footnote "2)" (restriction to S-braked wagon type LAAERS) removed.
7.0	10/09/2012	4	Pos. 7 range of nominal wheel diameter extended Pos. 8 added
8.0	25/03/2013	4	Pos. 9 added
9.0	02/04/2013	4	Pos. 9 moved to Pos. 10 New Pos. 9 added
10.0	31/05/2013	all	Revision of all sections (section 4 with the list is now section 2). Introduction of link with Commission Regulation (EU) 321/2013 (WAG TSI 2013). Amendments of table 2.1 (list of fully UIC approved K-blocks): <ul style="list-style-type: none"> <li>• Introduction of a new numbering scheme in table 2.1 (one number for each approved configuration).</li> <li>• Pos. 13 added.</li> <li>• Footnote "1)" and corresponding references in pos. 2, 4, 7, 8, 9, 11, 12 and 13 amended.</li> <li>• Values concerning the "approved configuration", which were missing in previous versions of the table, added.</li> </ul> List of fully UIC approved LL-blocks (table 2.2) with pos. 1 to 4 added.
11.0	18/07/2013	Table 2.1	Pos. 14 added.
12.0	14/08/2013	Table 2.1	Pos. 1 and 2: Approval period extended.
13.0	22/07/2014	Table 2.1	Pos. 15 and 16 added.
14.0	20/01/2015	Table 2.1	Pos. 17 and 18 added. Editorial amendments.
15.0	23/07/2015	Table 2.1	Lists of fully approved K and LL composite brake blocks aligned with Appendix M (from 15/05/2015) of the UIC leaflet 541-4:2010.



Version	Date	Section number	Modification/description
			<p>For K-blocks: Honeywell renamed on Federal Mogul Pos. 5 and 6: Approval period extended Pos. 9: Approval period corrected Pos. 11, 12 and 14: Entries updated Pos. 19, 20, 21 and 22 added Introduction of footnote <sup>2)</sup></p> <p>For LL-blocks: Pos. 5, 6, 7 and 8 added Amendment to footnote <sup>2)</sup> Introduction of footnotes <sup>3) 4) 5)</sup></p> <p>Additional amendments on p. 5, 6 and 10</p>



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## 1. Introduction

The present document is referred to in the following two Technical Specifications for Interoperability (TSI):

- Commission Decision 2006/861/EC of 28 July 2006 concerning the technical specification of interoperability relating to the subsystem 'rolling stock — freight wagons' of the trans-European conventional rail system (hereafter "WAG TSI 2006") amended by Commission Decision 2009/107/EC of 23 January 2009 (hereafter "amendment 2009").
- Commission Regulation (EU) No 321/2013 of 13 March 2013 concerning the technical specification for interoperability relating to the subsystem 'rolling stock — freight wagons' of the rail system in the European Union and repealing Decision 2006/861/EC (hereafter "WAG TSI 2013").

### 1.1 Relationship with WAG TSI 2006

Originally the design and product assessment of the composite brake blocks (CBBs) formed two open points in the WAG TSI 2006 as defined in its Annex P, sections 1.10 and 2.10. Both open points were closed by the amendment 2009 for subsystems complying with the provisions defined in the newly introduced section 7.6.4.

In accordance with Article 1.(a).(2) of the amendment 2009, the closure of these open points foresees the publication of an ERA Technical Document with the list of "fully UIC approved composite brake blocks for international transport" based on approval certifications submitted by UIC (Union Internationale des Chemins de Fer).

The present document provides this list of fully UIC approved brake blocks for international transport referred to in Annexes P and JJ of the WAG TSI 2006.

### 1.2 Relationship with WAG TSI 2013

The conformity assessment of composite brake blocks by notified bodies was defined as an open point in the WAG TSI 2013 until 30<sup>th</sup> June 2015.

The present document provides the list of fully UIC approved composite brake blocks for international transport referred to in Appendix G of the WAG TSI 2013.



## 2. Fully UIC approved composite brake blocks

The fully UIC approved composite brake blocks (K) for international transport are listed in table 2.1, the fully approved composite brake blocks (LL) for international transport are listed in table 2.2. The listed products fulfil all UIC requirements which comprises in particular the requirements on:

- severe winter conditions,
- unusual thermal stresses on the wheel (e.g. locked brake),
- the static coefficient of friction,
- mechanical properties and for
- compatibility with track circuits.

For further information e.g. about the limits and conditions of use it is referred to the following two UIC documents:

- For K-blocks: 9<sup>th</sup> edition of the UIC “Design rules for composite brake blocks (K)”:2013.
- For LL-blocks: 10<sup>th</sup> edition of the UIC “Usage guidelines for composite (LL) brake blocks”:2013.

Both documents are available under <http://www.uic.org/spip.php?rubrique1492> on the UIC web page.



**Table 2.1: List of fully UIC approved composite brake blocks (K) for international transport**

Position N°	Producer	Type	Approved configurations								Approval period	
			Arrangement	Nom. wheel diameter	Max. speed empty	Max. speed laden	Min. dyn. appl. Force	Max. dyn. appl. Force	Min. axle load	Max. axle load	from	to
				[mm]	[km/h]	[kN]	[t]	dd/mm/yy				
1	CoFren	C810 (organic)	2xBg <sup>2</sup>	920	120	120	2,5	19,0	3,6	22,5	15/10/03	30/06/23
2	CoFren	C810 (organic)	2xBgu <sup>2</sup>	920	120	120	2,5	19,0	3,6	22,5	15/10/03	30/06/23
3	CoFren	C810 (organic)	1xBgu <sup>1</sup>	920	120	120	5,0	38,0	3,6	22,5	01/03/11	28/02/21
4	CoFren	C333 (sintered)	1xBgu <sup>1</sup>	920	120	120	5,0	38,0	3,6	22,5	01/07/11	30/06/21
5	Federal Mogul	J816M (organic)	2xBg <sup>2</sup>	920	120	120	2,5	19,0	3,6	22,5	01/07/05	15/04/25
6	Federal Mogul	J816M (organic)	2xBgu <sup>2</sup>	920	120	120	2,5	19,0	3,6	22,5	01/07/05	15/04/25
7	CoFren	C810 (organic)	2xBg	840	120	100	5,5	14,5	7,5	17,5	01/08/11	31/07/21
8	CoFren	C810 (organic)	2xBg	840	120	100	8,7	12,2	7,5	18,0	01/02/12	31/01/22
9	Federal Mogul	J816M (organic)	2xBg	840-730	120	100	5,5	14,5	7,5	17,5	01/07/12	30/06/22
10	Frenoplast	FR 513 (organic)	2xBg <sup>1</sup>	920	120	120	2,5	19,0	3,6	22,5	01/07/12	30/06/22
11	CoFren	C810 (organic)	1xBgu	840	120	100	6,0	25,0	4,5	20,0	01/01/13	31/12/22
12	CoFren	C810 (organic)	2xBg	760	120	100	10,1	10,1	9,25	16,0	01/02/13	31/01/23
13	Frenoplast	FR 513 (organic)	2xBg	840-730	120	100	5,5	14,5	7,5	17,5	01/05/13	30/04/23
14	CoFren	C333 (sintered)	1xBgu	840	120	100	6,0	25,0	4,5	20,0	01/07/13	30/06/23
15	Federal Mogul	J816M (organic)	2xBg	840-760	120	100	5,5	14,5	7,5	18,0	01/05/14	30/04/24
16	CoFren	C333 (sintered)	2xBg	920	120	100	2,5	19,0	3,6	22,5	01/07/14	30/06/24
17	Frenoplast	FR 513 (organic)	2xBg	840	120	100	2,5	18,0	3,6	20,0	01/11/14	31/10/24



Continuation of Table 2.1

Position N°	Producer	Type	Approved configurations								Approval period	
			Arrangement	Nom. wheel diameter	Max. speed empty	Max. speed laden	Min. dyn. appl. Force	Max. dyn. appl. Force	Min. axle load	Max. axle load	from	to
				[mm]	[km/h]	[kN]	[t]	dd/mm/yy				
18	Frenoplast	FR 513 (organic)	2xBg	760	120	100	2,5	17,0	3,6	18,0	01/11/14	31/10/24
19	CoFren	C810 (organic)	1xBgu	760	120	100	6,0	25,0	4,5	18,0	01/01/13	31/12/22
20	CoFren	C333 (sintered)	1xBgu	760	120	100	6,0	25,0	4,5	18,0	01/07/13	30/06/23
21	Becorit	K40 (organic)	2xBg <sup>1)</sup>	920	120	120	2,5	19,0	3,6	22,5	06/02/15	31/01/25
22	CoFren	C810 (organic)	2xBgu	920	120	100	4,5	16,5	5,8	25,0	29/05/15	05/05/25

<sup>1)</sup> Not approved for ss-braked wagons

<sup>2)</sup> For ss-braked wagons maximum axle load 20 t





**Table 2.2: List of fully UIC approved composite brake blocks (LL) for international transport**

Position N°	Producer	Type	Approved configurations								Approval period	
			Arrangement	Norm. wheel diameter	Max. speed empty	Max. speed laden	Min. dyn. appl. force	Max. dyn. appl. force	Min. axle load	Max. axle load	from	to
				[mm]	[km/h]	[kN]	[t]	dd/mm/yy				
1	IcerRail / Becorit	IB116* (organic)	2xBg <sup>1) 2)</sup>	920	120	120	6,0	50,0	3,6	22,5	01/05/13	30/04/23
2	IcerRail / Becorit	IB116* (organic)	2xBgu <sup>2) 3)</sup>	920	120	120	6,0	50,0	3,6	22,5	01/05/13	30/04/23
3	CoFren	C952-1 (sintered)	2xBg <sup>1)</sup>	920	120	120	6,0	50,0	3,6	22,5	01/05/13	30/04/23
4	CoFren	C952-1 (sintered)	2xBgu <sup>2) 3)</sup>	920	120	120	6,0	50,0	3,6	22,5	01/05/13	30/04/23
5	CoFren	C952-1 (sintered)	2xBg <sup>4)</sup>	840	120	100	12,0	45,0	5,0	20,0	-	31/01/25
6	IcerRail / Becorit	IB116* (organic)	2xBg <sup>4)</sup>	840	120	100	12,0	45,0	5,0	20,0	-	31/01/25
7	CoFren	C952-1 (sintered)	2xBg <sup>5)</sup>	760	120	100	12,0	40,0	5,0	18,0	-	31/01/25
8	IcerRail / Becorit	IB116* (organic)	2xBg <sup>5)</sup>	760	120	100	12,0	40,0	5,0	18,0	-	31/01/25

1) Not approved for ss-braked wagons

2) The product is exchangeable with cast iron P10 brake blocks without any restriction if the following two conditions are fulfilled:

- The dynamic application force per brake block holder (calculated in accordance with UIC Leaflet 544-1:2013) remains within the following ranges: 6 kN to 30 kN (for arrangement 2xBg) and 6 kN to 50 kN (for arrangement 2xBgu) and
- the approved configuration is identical to the configuration of the equipped wagon or the braking power of the wagon is determined in accordance with section 2.2 of UIC Leaflet 544-1:2013 for cast-iron P10 blocks.

Otherwise tests in accordance with UIC leaflet 544-1:2013 shall be carried out in order to determine the braking power of the wagon.

3) For ss-braked wagons maximum axle load 20 t

4) Internal wheel rim diameter ≤ 730 mm

5) Internal wheel rim diameter ≤ 650 mm



### **3. Updating**

The version 15.0 of this Technical Document represents the last update made by ERA to the list of fully approved composite brake blocks for international transport. The reason for that is the application since 1<sup>st</sup> July 2015 of Commission Regulation (EU) 2015/924 specifying an interoperability constituent 'friction element for wheel tread brakes'. Since 1<sup>st</sup> July 2015 friction elements for wheel tread brakes (including composite brake blocks) must be covered by EC declaration of conformity if used within the scope of TSI.

As an exception, composite brake blocks listed in Tables 2.1 and 2.2 of this Technical Document are deemed TSI compliant and do not need to be covered by EC declaration of conformity if used within the scope of TSI until the expiry of their current approval period (column Approval period to).