

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ADDENDUM 1 TO ISO RECOMMENDATION R 531-1966

CAST IRON SANITARY PIPE FITTINGS
FOR WASTE WATER AND VENTILATION

PART IV
FITTINGS

1st EDITION

June 1970

COPYRIGHT RESERVED

The copyright of ISO Recommendations and ISO Standards belongs to ISO Member Bodies. Reproduction of these documents, in any country, may be authorized therefore only by the national standards organization of that country, being a member of ISO.

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 531-1966, *Cast iron sanitary pipes and fittings for waste water and ventilation*, was drawn up by Technical Committee ISO/TC 5, *Pipes and fittings*, the Secretariat of which is held by the Association Suisse de Normalisation (SNV).

Work on this question led to the adoption of Draft ISO Recommendation No. 743, which was circulated to all the ISO Member Bodies for enquiry in November 1964. It was approved by 22 Member Bodies; five Member Bodies opposed the approval of the Draft (Germany, Netherlands, Norway, Switzerland and the U.S.A.).

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in December 1966, to accept it as an ISO RECOMMENDATION.

BRIEF HISTORY RELATING TO ADDENDUM 1

The work which led to the publication of ISO Recommendation R 531-1966 was continued and an addendum to that ISO Recommendation was drawn up in the form of a Draft ISO Recommendation. This Draft (No. 1670), after having been adopted by the Technical Committee, was circulated to all the ISO Member Bodies for enquiry in September 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Greece	Poland
Austria	Hungary	Spain
Belgium	India	Thailand
Canada	Israel	Turkey
Denmark	Italy	U.A.R.
France	Korea, Rep. of	

The following Member Bodies opposed the approval of the Draft :

Czechoslovakia	Sweden
Netherlands	Switzerland
Norway	United Kingdom

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as Addendum 1 to ISO Recommendation R 531-1966.

FOREWORD

ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*, consists of three parts as follows :

- I Technical specification
- II Spigot and socket dimensions for pipes and fittings
- III Pipes and short connecting pipes

This Addendum forms Part IV of ISO Recommendation R 531-1966, namely :

- IV Fittings.

STANDARDSISO.COM : Click to view the full PDF of ISO/R 531:1966/Add 1

STANDARDSISO.COM : Click to view the full PDF of ISO/R 531:1966/Add 1

CONTENTS

	Page
1. Scope	7
2. General characteristics of fittings	7
2.1 Bends and single branches	7
2.2 Double branches	7
2.3 S fitting	7
2.4 Thickness of fittings	7
2.5 Change of diameters	7
3. Dimensions, masses and symbols	8
3.1 45° bends	8
3.2 67° 30' bends	9
3.3 87° 30' bends	10
3.4 Single branches with equal 45° branch pipes (breeches pipes)	11
3.5 Single branches with unequal 45° branch pipes (branches)	12
3.6 Single branches with equal 67° 30' branch pipes (breeches pipes)	13
3.7 Single branches with unequal 67° 30' branch pipes (branches)	14
3.8 Double branches with equal 67° 30' branch pipes (breeches pipes)	15
3.9 Double branches with unequal 67° 30' branch pipes (branches)	16
3.10 Single branches with equal 87° 30' branch pipes (breeches pipes)	17
3.11 Single branches with unequal 87° 30' branch pipes (branches)	18
3.12 S fitting with a 75 spacing	19
3.13 S fitting with a 150 spacing	20
3.14 Tapers	21
3.15 Collars (double socket)	22
4. Tolerances	23
4.1 Tolerances on lengths	23
4.2 Tolerances on masses	23

STANDARDSISO.COM : Click to view the full PDF of ISO/R 531:1966/Add 1

CAST IRON SANITARY PIPE FITTINGS FOR WASTE WATER AND VENTILATION

PART IV FITTINGS

1. SCOPE

This addendum to ISO Recommendation R 531-1966, *Cast iron sanitary pipes and fittings for waste water and ventilation*, applies to cast iron fittings used in the building industry for the laying of waste water and ventilation pipes, and has the object of

- reducing the dimensions of the castings (lengths b and L) and thus facilitating casting;
- limiting the number of types in order to simplify the manufacture, supply and storage in factories, stores, and on site.

2. GENERAL CHARACTERISTICS OF FITTINGS

The considerations explained in section 1, together with the study of the provisions adopted by the various countries, have led to the adoption of the following rules which rationally connect the various fitting types.

2.1 Bends and single branches

The slope of oblique pipeline portions has been fixed at 45° , $67^\circ 30'$ and $87^\circ 30'$. The same values have been ascribed to the angle of the bends and to the inclination of the branch pipes.

2.2 Double branches

Double branches, which are used far less than single branches, are provided for exclusively with the most common branch inclination : $67^\circ 30'$.

2.3 S fitting

The spacing between the S branches has been fixed at 75 or 150 mm, the larger spacing being obtained through the combination of two bend pipes connected, if necessary, by a short pipe.

2.4 Thickness of fittings

The wall thicknesses provided for fittings are equal to those provided for pipes of the same nominal diameters.

As an exception to the above, fittings with orifices of different diameters have a uniform thickness, equal to the thickness corresponding to the nominal diameter of the largest orifice.

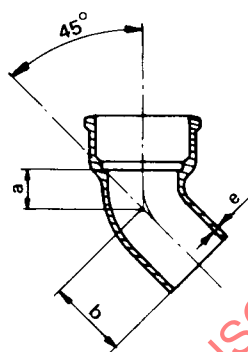
2.5 Change of diameters

A series of branch pipe fittings has been provided for in order to ensure the junction of the main and branch pipes.

3. DIMENSIONS, MASSES AND SYMBOLS

3.1 45° bends

Symbol :



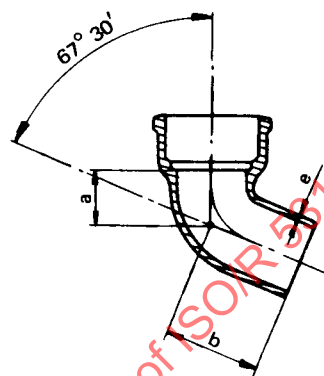
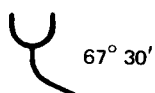
Dimensions in millimetres

Nominal diameter <i>DN</i>	<i>e</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
50	3.5	41	94	1.4
75	3.5	47	104	2.1
100	4	53	114	3.3
150	5	65	129	6.5

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.2 67° 30' bends

Symbol :



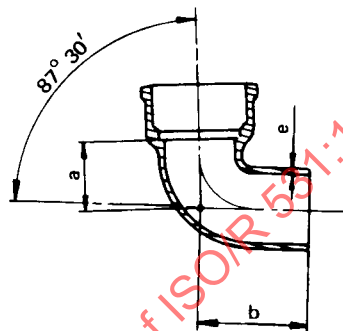
Dimensions in millimetres

Nominal diameter <i>DN</i>	<i>e</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
50	3.5	52	110	1.5
75	3.5	61	123	2.3
100	4	71	137	3.6
150	5	90	158	7.3

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.3 87° 30' bends

Symbol :



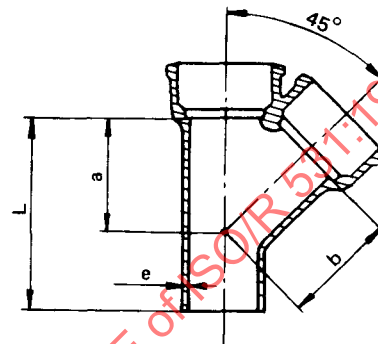
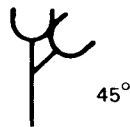
Dimensions in millimetres

Nominal diameter <i>DN</i>	<i>e</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
50	3.5	65	123	1.5
75	3.5	78	140	2.4
100	4	91	157	3.8
150	5	117	186	7.9

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.4 Single branches with equal 45° branch pipes (breeches pipes)

Symbol :



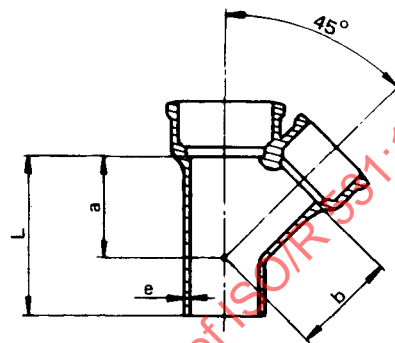
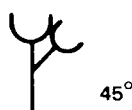
Dimensions in millimetres

Nominal diameter <i>DN</i>	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
50	3.5	192	88	88	2.5
75	3.5	233	119	119	4.1
100	4	276	152	152	6.6
150	5	355	216	216	14

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.5 Single branches with unequal 45° branch pipes (branches)

Symbol :

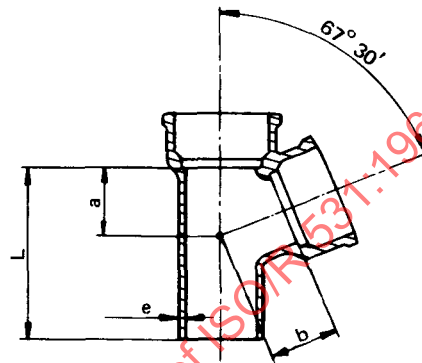
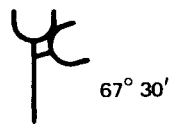


Nominal diameters		Dimensions in millimetres				
Body <i>DN</i>	Branch pipe <i>dn</i>	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
75	50	3.5	197	101	106	3.3
100	75	4	239	133	139	5.5
150	100	5	283	179	190	10.6

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.6 Single branches with equal $67^{\circ} 30'$ branch pipes (breeches pipes)

Symbol :



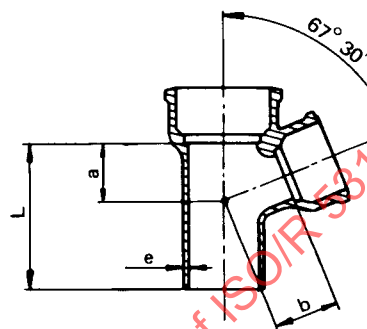
Dimensions in millimetres

Nominal diameter <i>DN</i>	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
50	3.5	168	53	53	2.3
75	3.5	200	72	72	3.7
100	4	233	91	91	5.8
150	5	293	130	130	12

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.7 Single branches with unequal $67^{\circ} 30'$ branch pipes (branches)

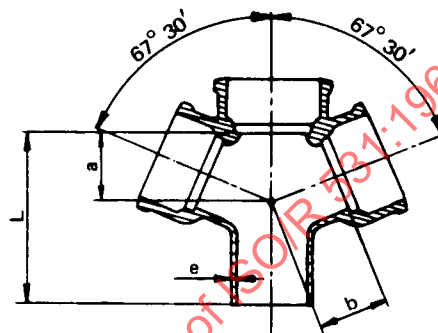
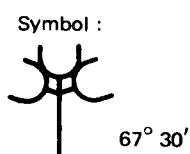
Symbol :



Nominal diameters		Dimensions in millimetres				
Body DN	Branch pipe dn	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
75	50	3.5	175	60	69	3.1
100	75	4	208	80	89	5
150	100	5	241	105	123	9.3

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.8 Double branches with equal $67^{\circ} 30'$ branch pipes (breeches pipes)



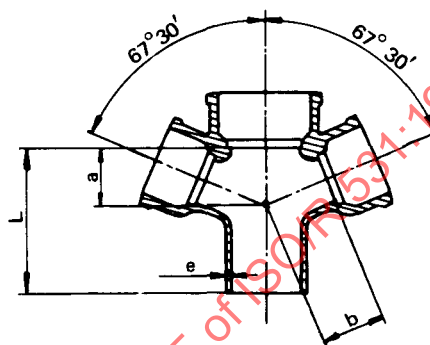
Dimensions in millimetres

Nominal diameter <i>DN</i>	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
50	3.5	168	53	53	3.2
75	3.5	200	72	72	4.9
100	4	233	91	91	7.7
150	5	293	130	130	15.4

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.9 Double branches with unequal $67^{\circ} 30'$ branch pipes (branches)

Symbol :

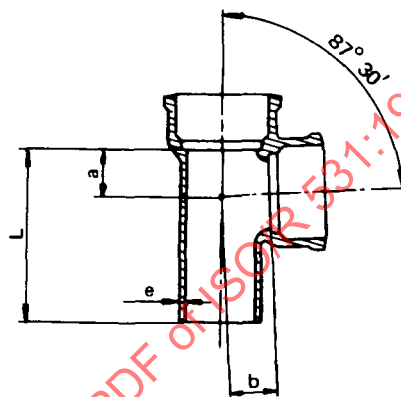
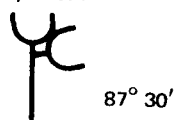


Nominal diameters		Dimensions in millimetres				
Body <i>DN</i>	Branch pipe <i>dn</i>	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
75	50	3.5	175	60	69	3.9
100	75	4	208	80	89	6.2
150	100	5	241	105	123	11.4

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.10 Single branches with equal $87^{\circ} 30'$ branch pipes (breeches pipes)

Symbol :

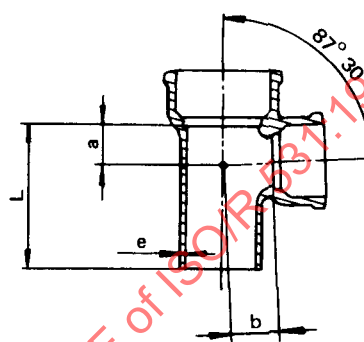
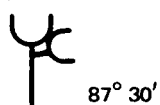


Nominal diameter <i>DN</i>	Dimensions in millimetres				
	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
50	3.5	176	38	38	2.3
75	3.5	207	52	52	3.6
100	4	238	66	66	5.7
150	5	294	93	93	11.4

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.11 Single branches with unequal $87^{\circ} 30'$ branch pipes (branches)

Symbol :

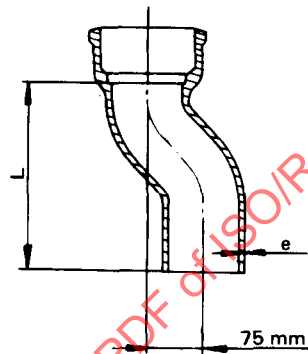
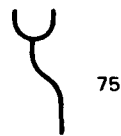


Nominal diameters		Dimensions in millimetres				
Body <i>DN</i>	Branch pipe <i>dn</i>	<i>e</i>	<i>L</i>	<i>a</i>	<i>b</i>	Mass (approx.) kg
75	50	3.5	181	39	51	3.1
100	75	4	211	52	65	4.9
150	100	5	242	67	92	9.1

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.

3.12 S fitting with a 75 spacing

Symbol :



Dimensions in millimetres

Nominal diameter <i>DN</i>	<i>e</i>	<i>L</i>	Mass (approx.) kg
50	3.5	200	1.8
75	3.5	225	2.7
100	4	250	4.3
150	5	275	8.4

NOTE. — For spigot and socket dimensions, see Table J 1 of ISO Recommendation R 531, *Cast iron sanitary pipes and fittings for waste water and ventilation*.