



ELASTOMERIC BEARINGS

## ELASTOMERIC BEARINGS

Arsan Kauçuk is a leading manufacturer in Structural/Seismic Bearings, Structural/Seismic Expansion Joints and Pipe/Segment Gaskets Sectors, and it continues to grow via its policy focused on continuous improvement since 1957.

Arsan Kauçuk is located in İstanbul Dudullu Industrial Zone, running in 10.000 m<sup>2</sup> closed area. 200 employees are working for Arsan Kauçuk.

60% of total production is exported and 85% of this turnover is generated from Europe. In addition to these European countries, Arsan exports to 30 other countries as well.

Arsan Kauçuk is able to develop products according to the drawings and specifications of clients, as well as international standards, thanks to its experienced R&D team. Thus, Arsan Kauçuk is a reliable solution partner of the outperforming construction companies with these capabilities.

Various production methods are used at Arsan Kauçuk, such as extrusion, compression and injection. Moulds needed for different products are designed and manufactured in our factory by the talented engineers. Moreover, our laboratory is equipped with testing devices of up to date technology and products are controlled at every stage of production.

*Aisan Kauçuk*





## **ARSAN ELASTOMERIC BEARINGS IN TURKEY AND ALL AROUND THE WORLD**

Today, elastomeric bearings used in the industry of construction are the developed products consisting of sensitive materials. Elastomeric bearings are designed in layers and manufactured in strong pressing machines. They are composed of CR (chloroprene rubber) or NR (natural rubber) according to the required standard and steel plates between these rubber layers.

According to the requirements of projects or the inquiries of our clients we can produce elastomeric bearings in shapes of cylinder, square or rectangular. We design our elastomeric bearings with the latest insights and technical developments in bearing engineering.

Steel components exposed to external conditions are corrosion protected. This protection can also be adjusted to suit customer requirements. Standard corrosion protection consists of sandblasting SA2½, SA3 and zinc metal spray galvanizing and two top coatings with 2-part micaceous iron ore paint. By the way the quality and the density of steel plates are determined according to the requirements of related standards.

All the components are placed into moulds and they are vulcanized as one piece. With this process the adhesion between the metal and the rubber is ensured by pressure and heat.

In projects with sliding bearings. PTFE (EN 1337-3) and stainless steel plates (EN 10088-2 / 1.4401 or 1.4311 material) which fulfill every requirement of the bridge bearing standard are used. The thickness varies in accordance with the bearing size, however the minimum thickness is 1mm. The sliding surfaces are provided with lubrication pockets for lubricant storage. Quality-controlled silicone oil is used as a lubricant; it maintains its consistency for a very long time and remains effective even at -35C. As a suitable sliding partner to PTFE stainless steel plates with minimum 15 mm thickness are used and according to the project requirements they are vulcanized to 1 and/or 2 faces of the elastomeric bearing.

From technical aspect, the benefits of using the bearings are quite a lot in the construction. It is highly possible to get the disturbing vibrations under control with properly designed bearings.

Furthermore, researches show that by the help of these elastomeric bearings, buildings and bridges become much more convenient and stronger against unbalanced load combinations.

After superior functioning performance they have shown in the bridges these elastomeric bearings began to be used in buildings, railways and nuclear reactor plants. The operating performance of the bearings depends on the quality of elastomeric and steel plates as well as the correct installation on site.

Production and storage conditions are other important factors which are effective on the performance of the elastomeric bearings. Always, qualified and experienced employees must apply the installation of the bearings.  
Arsan bridge bearings are controlled according to the requirements of European Standard quality control procedures.

The high-quality elastomeric bearings which are manufactured by Arsan Kaucuk A.S. are conveniently used in Turkey and all around the world in more than 20 countries. We are able to manufacture the elastomeric bearings in accordance with the standards AASHTO M251, EN 1337-3, BS 5400, DIN 4141 and TS-ISO 6446, AS5100-4, EN-15129 to meet the requirements of our clients.



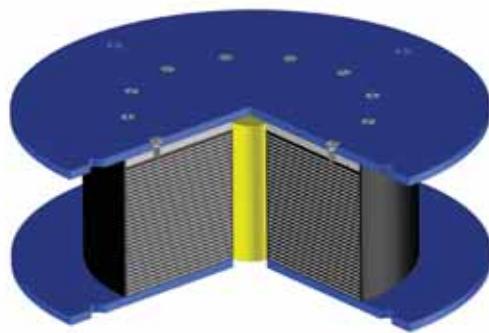
## STANDARDS OF ELASTOMERIC BEARINGS

- BS 5400
- DIN 4141
- TS-ISO 6446
- AASHTO-M251
- EN-1337-3
- AS 5100-4
- EN-15129

## TESTING COMPOUND / BEARING

- Tensile Strength and elongation
- Hardness
- Tear Strength
- Low Temperature Resistance
- Rheometer Test
- Ageing In Liquids
- Abrasion Resistance
- Ash Content
- Bonding Test
- Stress Relaxation
- Moisture Measurement
- Compressive Stiffness Test
- Shear Stiffness Test
- Ageing



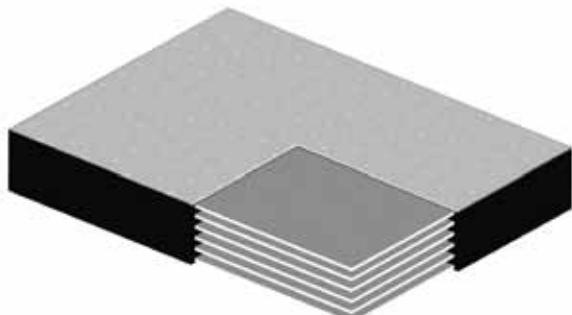


#### LRB (Lead Rubber Bearing)

The most important part of the LRB is to give the first reaction at the center under the horizontal load. The load is met, first from the lead core, the bed covering the core answers to the reactions right after the maximum damping capacity.

This kind of bearings with higher damping capacity have an active role in analyzing base points of both today's and tomorrow's structures. The purity rate of the lead core in LRB Isolators is 99.9%. If the rate stays under this value, the isolator can not make the desired damping and also it will not give the same reaction to continuous transactions.

In structures, bridges and buildings with using seismic bearings the movements and effects are 50 % less than normal bearings. This situation really supports that the LRB Isolators are acting correctly for the right purpose.

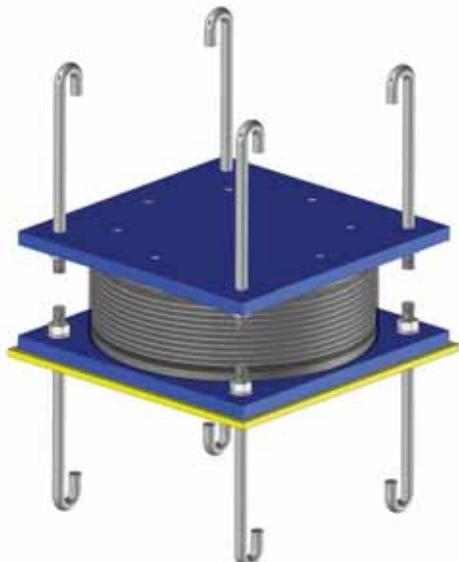


#### Sliding Bearing

Sliding Bearings are playing a big and active role in structures. Sliding Bearings with PTFE plates are used in structures where less vertical but more horizontal load is required.

For all the sliding bearings with PTFE plates; steel plates must be used that will not harm the sliding. Generally, you may see this kind of bearings in buildings, shopping malls and bridges.

The horizontal load never impacts these type of bearings. The horizontal load is directly transferred into the oil rooms that takes place on PTFE materials with silicone oil, that can protect its own integrity and also decrease the friction with stainless plate.



#### HDRB (High Damping Rubber Bearing)

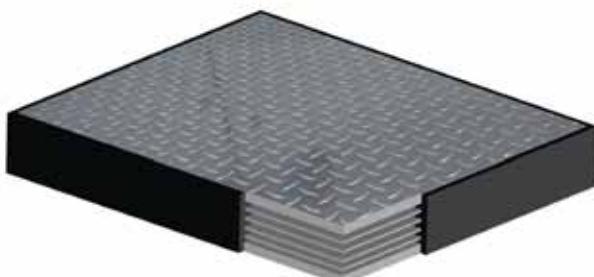
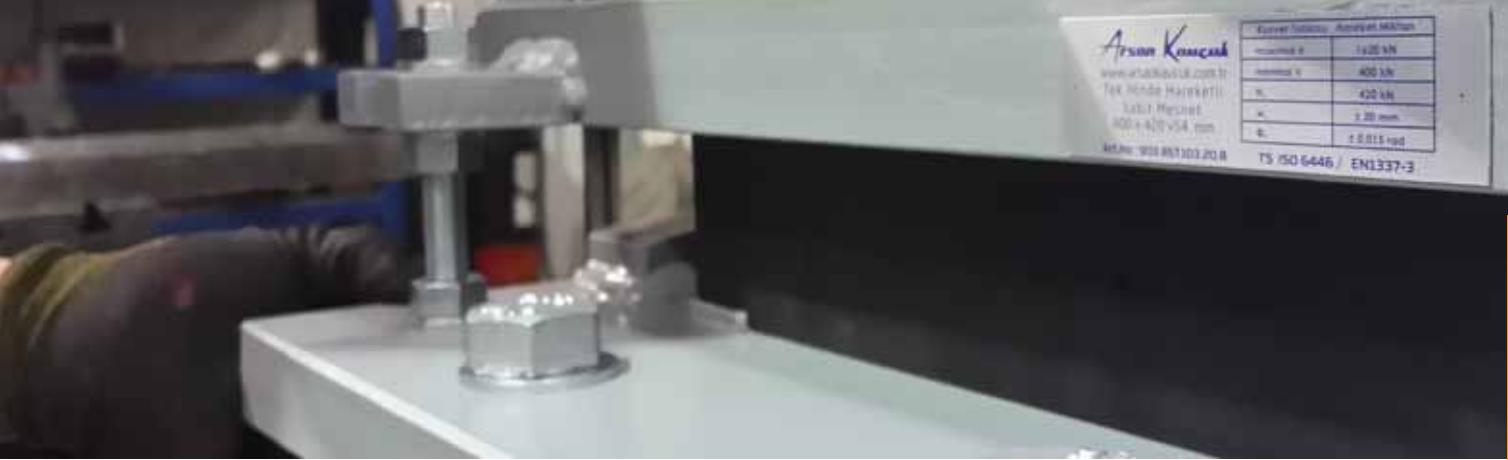
There are two main important characteristics that separates HDRB bearings from other bearings:

- 1.Giving low rigid values when high natural lasting period is desired.
- 2.Having the ability of movement during earthquakes more than other kind of bearings.

HDRB with its rubber contents ad ingredients; has the ability to damp, much higher vertical load on greater surface. These are quite flexible and have the ability for higher damping.

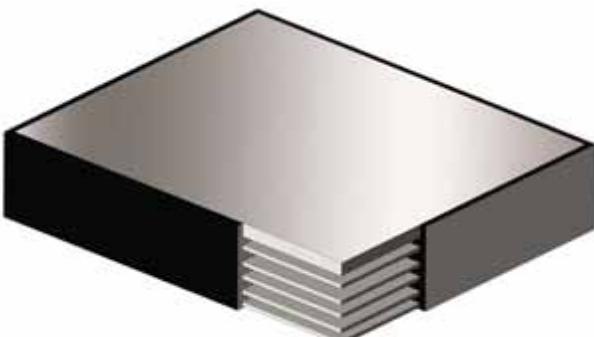
As a result of the special compound used in HDRB, values like damping are much higher than the other bearings.

Konstantalar / Aksiyonlar / Maksimum
İncelenen E: 1x20 kN
İncelenen N: 400 kN
N <sub>c</sub> : 420 kN
E: 1.20 mm.
E: ± 0.015 rad



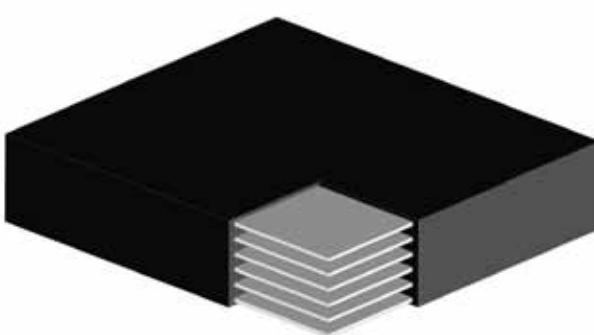
### Type 5 (Type CR)

Similar to Type 2, but top and bottom surfaces with checkered plates



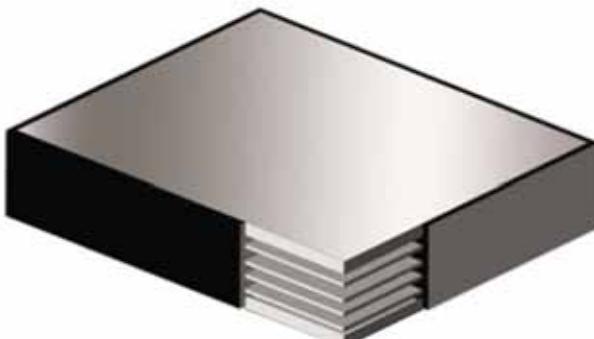
### Type 1/2 (Type B-C)

Similar to Type 2, with vulcanized steel plate on one surface



### Type 1 (Type B)

Steel reinforced elastomeric bearing, with no anchorage



### Type 2 (Type C)

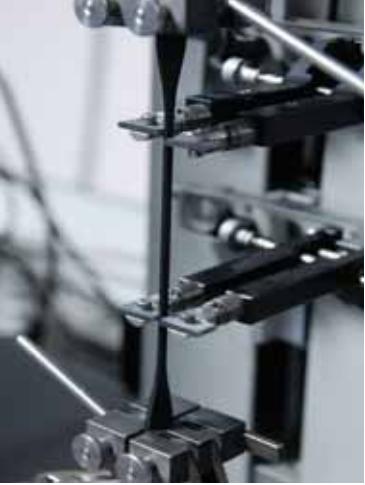
Similar to Type 1, additionally top and bottom surfaces with anchorage plates

\*Rectangular or circular sectioned, sliding, teflon coated and anchored bearings for all above mentioned types can be manufactured according to our client's requirements.



## PHYSICAL PROPERTIES ACCORDING TO THE STANDARDS

PHYSICAL PROPERTIES	AASHTO-M251						BS5400		
RUBBER TYPE	NR			CR			NR		
<b>HARDNESS</b>	50±5 ShrA	60±5 ShrA	70±5 ShrA	50±5 ShrA	60±5 ShrA	70±5 ShrA	50±5 ShrA	60±5 ShrA	70±5 ShrA
<b>TENSILE STRENGTH</b>	≥15,5 Mpa	≥15,5 Mpa	≥15,5 Mpa	≥15,5 Mpa	≥15,5 Mpa	≥15,5 Mpa	≥15,5 N/mm <sup>2</sup>	≥15,5 Mpa	≥15,5 Mpa
<b>ELONGATION AT BREAK</b>	≥450%	≥400%	≥300%	≥400%	≥350%	≥300%	≥450%	≥400%	≥300%
<b>RUBBER-METAL BOND STRENGTH</b>	≥6,9 kN/mm	≥6,9 kN/mm	≥6,9 kN/mm	≥6,9 kN/mm	≥6,9 kN/mm	≥6,9 kN/mm	≥7 N/mm	≥7 N/mm	≥7 N/mm
<b>TEAR STRENGTH</b>	-	-	-	-	-	-	-	-	-
<b>COMPRESSION SET</b>	70°C 22 hour			100°C 22 hour			70°C 22 hour		
	≤25%	≤25%	≤25%	≤35%	≤35%	≤35%	≤30%	≤30%	≤30%
<b>AGEING</b>	70°C 168 hour			100°C 70 hour			70°C 7 days		
<b>INCREASE IN HARDNESS</b>	+10	+10	+10	+15	+15	+15	+10	+10	+10
<b>CHANGE IN TENSILE STRENGTH</b>	≤-25%	≤-25%	≤-25%	≤-15%	≤-15%	≤15%	≤15%	≤15%	≤15%
<b>CHANGE IN ELONGATION</b>	≤-25%	≤-25%	≤-25%	≤-40%	≤-40%	≤20%	≤20%	≤20%	≤20%
<b>OZONE RESISTANCE</b>	37,7°C, %20 elongation, 25 pphm, 48 hour			37,7°C, %20 elongation, 100 pphm, 100 hour			30°C, %20 elongation, 25 pphm, 96 hour		
	No Crack	No Crack	No Crack	No Crack	No Crack	No CrackYok	No Crack	No Crack	No Crack

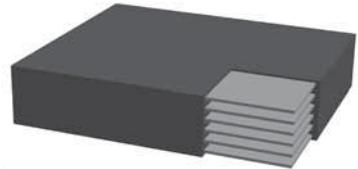


BS5400			DIN 4141		EN 1337-3					
CR			CR On Plate	CR On Product	NR			CR		
50±5 IRHD	60±5 IRHD	70±5 IRHD	60±5 ShrA	60±5 ShrA	50±5 IRHD	60±5 IRHD	70±5 IRHD	50±5 IRHD	60±5 IRHD	70±5 IRHD
≥15,5 N/mm <sup>2</sup>	≥15,5 N/mm <sup>2</sup>	≥15,5 N/mm <sup>2</sup>	≥19 N/mm <sup>2</sup>	≥13 N/mm <sup>2</sup>	≥16 Mpa	≥16 Mpa	≥16 Mpa	≥16 Mpa	≥16 Mpa	≥16 Mpa
≥400%	≥350%	≥300%	≥450%	≥300%	≥450%	≥425%	≥450%	≥450%	≥425%	≥300%
≥7 N/mm	≥7 N/mm	≥7 N/mm	-	-	-	-	-	-	-	-
-	-	-	≥10 kN/mm	≥10 kN/mm	≥5 kN/mm	≥8 kN/mm	≥5 kN/mm	≥7 kN/mm	≥10 kN/mm	≥12 kN/mm
100°C 22 hour			70°C 24 hour		70°C 24 hour			70°C 24 hour		
≤35%	≤35%	≤35%	≤15%	≤20%	≤30%	≤30%	≤30%	≤15%	≤15%	≤15%
100°C 3 days			70°C 7 days		70°C 7 days			100°C 3 days		
+15	+15	+15	+5	+5	-5+10	-5+10	-5+10	±5	±5	±5
≤15%	≤15%	≤15%	≤15%	≤15%	±15	±15	±15	±15	±15	±15
≤40%	≤40%	≤40%	≤25%	≤25%	±25	±25	±25	±25	±25	±25
30°C, %20 elongation, 25 pphm, 96 hour			40°C, %30 elongation, 200 pphm, 96 hour		40°C, %30 elongation 25 pphm, 96 hour			40°C, %30 elongation 100 pphm, 96 hour		
No Crack	No Crack	No Crack	No Crack	No Crack	No Crack	No Crack	No Crack	No Crack	No Crack	No Crack



## Type B

**a:** Width og bearing  
**b:** Length of bearing  
**h:** Height of bearing  
**d:** Diameter  
**H<sub>e</sub>:** Total thickness of elastomer layers  
**K<sub>z</sub>:** Vertical compressive deflection  
**K<sub>xy</sub>:** Horizontal compressive deflection  
**N<sub>d</sub>:** Vertical force  
**N<sub>dmin</sub>:** Vertical force with concrete connection  
**N<sub>dmax</sub>:** Vertical force with steel connection  
**V<sub>xyd</sub>:** Horizontal displacement  
**V<sub>xy,max</sub>:** Maximum horizontal displacement  
**α<sub>ab</sub>:** Rotation



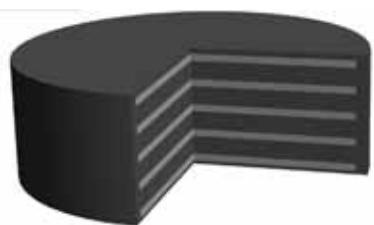
Bearing Dimensions / Parameters							Condition 1: $v_{xyd} = 20\% \cdot v_{xy,max}$				Condition 2: $v_{xyd} = 50\% \cdot v_{xy,max}$				Condition 3: $v_{xyd} = 100\% \cdot v_{xy,max}$			
a	b	h	H <sub>e</sub>	Weight	K <sub>z</sub>	K <sub>xy</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	α <sub>ab</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	α <sub>ab</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	α <sub>ab</sub>
(mm)	(mm)	(mm)	(mm)	(kg)	(kN/mm)	(kN/mm)	(kN)	(kN)	(mm) (%)	(kN)	(mm)	(kN)	(mm) (%)	(kN)	(mm)	(kN)	(mm)	(%)
100	150	30	21	1.4	33.2	0.64	114	(38/38)	4.2	3.1	106	(35/35)	10.5	2.7	92	(34/68)	21.0	2.1
100	150	41	29	1.8	24.0	0.47	81	(37/37)	5.8	6.1	73	(34/34)	14.5	5.4	59	(34/68)	29.0	4.4
100	200	30	21	1.8	55.3	0.86	172	(51/51)	4.2	2.0	159	(47/48)	10.5	1.7	139	(45/90)	21.0	1.3
100	200	41	29	2.5	40.1	0.62	122	(50/50)	5.8	4.4	110	(45/45)	14.5	4.0	89	(45/90)	29.0	3.3
150	200	30	21	2.8	143.7	1.29	547	(80/80)	4.2	0.0	502	(76/76)	10.5	0.0	426	(70/135)	21.0	0.0
150	200	41	29	3.8	104.0	0.93	391	(79/79)	5.8	1.8	366	(74/74)	14.5	1.6	325	(68/135)	29.0	1.0
150	200	52	37	4.8	81.5	0.73	303	(78/78)	7.4	3.8	278	(72/72)	18.5	3.4	236	(68/135)	37.0	2.7
150	250	30	21	3.5	215.2	1.61	756	(101/101)	4.2	0.0	694	(96/96)	10.5	0.0	589	(88/169)	21.0	0.0
150	250	41	29	4.8	155.8	1.16	541	(99/99)	5.8	1.3	507	(93/93)	14.5	1.0	449	(85/169)	29.0	0.7
150	250	52	37	6.0	122.2	0.91	419	(98/98)	7.4	2.7	384	(90/90)	18.5	2.4	327	(85/169)	37.0	2.0
150	300	30	21	4.2	293.3	1.93	974	(121/121)	4.2	0.0	894	(116/116)	10.5	0.0	759	(106/203)	21.0	0.0
150	300	41	29	5.7	212.4	1.40	697	(120/120)	5.8	1.0	653	(112/112)	14.5	0.7	578	(102/203)	29.0	0.6
150	300	52	37	7.2	166.5	1.09	540	(118/118)	7.4	2.0	495	(109/109)	18.5	1.8	421	(102/203)	37.0	1.4
200	250	41	29	6.4	293.3	1.55	1197	(136/136)	5.8	0.0	1'120	(129/129)	14.5	0.0	950	(119/225)	29.0	0.0
200	250	52	37	8.0	229.9	1.22	930	(135/135)	7.4	1.1	874	(126/126)	18.5	1.0	781	(113/225)	37.0	0.6
200	250	63	45	9.7	189.0	1.00	758	(133/133)	9.0	2.4	702	(124/124)	22.5	2.1	609	(113/225)	45.0	1.6
200	250	74	53	11.3	160.5	0.85	638	(132/132)	10.6	3.5	582	(121/121)	26.5	3.3	489	(113/225)	53.0	2.7
200	300	41	29	7.7	407.9	1.86	1'563	(164/164)	5.8	0.0	1'463	(156/156)	14.5	0.0	1'240	(143/270)	29.0	0.0
200	300	52	37	9.7	319.7	1.46	1'212	(162/162)	7.4	0.8	1'141	(152/152)	18.5	0.7	1'020	(136/270)	37.0	0.4
200	300	63	45	11.7	262.9	1.20	990	(161/161)	9.0	1.8	917	(149/149)	22.5	1.6	795	(135/270)	45.0	1.3
200	300	74	53	13.6	223.2	1.02	833	(159/159)	10.6	2.8	760	(145/145)	26.5	2.5	638	(135/270)	53.0	2.1
200	350	41	29	9.0	531.2	2.17	1'944	(192/192)	5.8	0.0	1'819	(183/183)	14.5	0.0	1'542	(168/315)	29.0	0.0
200	350	52	37	11.3	416.4	1.70	1'510	(190/190)	7.4	0.7	1'419	(179/179)	18.5	0.6	1'268	(160/315)	37.0	0.3
200	350	63	45	13.6	342.4	1.40	1'231	(188/188)	9.0	1.4	1'140	(174/174)	22.5	1.3	989	(158/315)	45.0	1.0
200	350	74	53	16.0	290.7	1.19	1'036	(187/187)	10.6	2.3	945	(170/170)	26.5	2.0	794	(158/315)	53.0	1.6
200	400	41	29	10.3	661.2	2.48	2'335	(219/219)	5.8	0.0	2'185	(209/209)	14.5	0.0	1'852	(192/360)	29.0	0.0
200	400	52	37	13.0	518.2	1.95	1'814	(218/218)	7.4	0.6	1'705	(205/205)	18.5	0.4	1'523	(183/360)	37.0	0.3
200	400	63	45	15.6	426.1	1.60	1'479	(216/216)	9.0	1.1	1'370	(200/200)	22.5	1.0	1'188	(180/360)	45.0	0.7
200	400	74	53	18.3	361.8	1.36	1'244	(214/214)	10.6	1.7	1'135	(195/195)	26.5	1.6	953	(180/360)	53.0	1.3
250	300	41	29	9.7	650.0	2.33	2'327	(207/207)	5.8	0.0	2'142	(200/200)	14.5	0.0	1'851	(187/338)	29.0	0.0
250	300	52	37	12.2	509.5	1.82	2'223	(206/206)	7.4	0.0	2'105	(196/196)	18.5	0.0	1'782	(180/338)	37.0	0.0
250	300	63	45	14.6	418.9	1.50	1'815	(205/205)	9.0	0.8	1'710	(193/193)	22.5	0.7	1'535	(173/338)	45.0	0.3
250	300	74	53	17.1	355.7	1.27	1'530	(203/203)	10.6	1.7	1'425	(189/189)	26.5	1.4	1'250	(169/338)	53.0	1.0
250	300	85	61	19.6	3090	1.11	1'321	(202/202)	12.2	2.4	1'215	(186/186)	30.5	2.1	1'040	(169/338)	61.0	1.7
250	400	41	29	12.9	1'075.7	3.10	3'138	(278/278)	5.8	0.1	3'022	(268/268)	14.5	0.0	2'810	(251/450)	29.0	0.0
250	400	52	37	16.3	843.1	2.43	3'117	(276/276)	7.4	0.1	2'596	(263/263)	18.5	0.1	2'705	(242/450)	37.0	0.0
250	400	63	45	19.6	693.2	2.00	2'756	(275/275)	9.0	0.6	2'969	(259/259)	22.5	0.4	2'330	(232/450)	45.0	0.1
250	400	74	53	22.9	5886	1.70	2'323	(273/273)	10.6	1.1	2'164	(254/254)	26.5	1.0	1'898	(225/450)	53.0	0.7
250	400	85	61	26.3	511.4	1.48	2'005	(271/271)	12.2	1.7	1'845	(249/249)	30.5	1.4	1'579	(225/450)	61.0	1.1
300	400	57	41	21.1	550.6	2.63	3'164	(334/334)	8.2	0.0	2'894	(320/320)	20.5	0.0	2'469	(296/540)	41.0	0.0
300	400	73	53	26.7	425.9	2.04	2'542	(331/331)	10.6	0.8	2'398	(313/313)	26.5	0.6	2'159	(282/540)	53.0	0.3
300	400	89	65	32.3	347.3	1.66	2'055	(329/329)	13.0	1.8	1'911	(306/306)	32.5	1.7	1'672	(270/540)	65.0	1.3
300	400	105	77	37.8	293.2	1.40	1'720	(326/326)	15.4	3.0	1'576	(299/299)	38.5	2.7	1'337	(270/540)	77.0	2.3
300	500	57	41	26.5	812.6	3.29	4'206	(419/419)	8.2	0.0	3'977	(401/401)	20.5	0.0	3'394	(371/675)	41.0	0.0

\*Our company is able to design and produce the bearings on customer demand based to given project loads and technical values.

Bearing Dimensions / Parameters						Condition 1: $v_{xyd} = 20\% \cdot v_{xy,max}$			Condition 2: $v_{xyd} = 50\% \cdot v_{xy,max}$			Condition 3: $v_{xyd} = 100\% \cdot v_{xy,max}$						
a	b	h	H <sub>e</sub>	Weight	K <sub>z</sub>	K <sub>xy</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	a <sub>ab</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	a <sub>ab</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	a <sub>ab</sub>
(mm)	(mm)	(mm)	(mm)	(kg)	(kN/mm)	(kN/mm)	(kN)	(kN)	(mm)	(%)	(kN)	(kN)	(mm)	(%)	(kN)	(kN)	(mm)	(%)
300	500	73	53	33,5	628,6	2,55	3'494	(416 / 416)	10,6	0,6	3'296	(392 / 392)	26,5	0,4	2'967	(353 / 675)	53,0	0,1
300	500	89	65	40,4	512,6	2,08	2'824	(412 / 412)	13,0	1,4	2'627	(384 / 384)	32,5	1,1	2'298	(338 / 675)	65,0	0,8
300	500	105	77	47,4	432,7	1,75	2'364	(409 / 409)	15,4	2,1	2'166	(375 / 375)	38,5	2,0	1'837	(338 / 675)	77,0	1,6
300	600	57	41	31,8	1'095,9	3,95	5'061	(505 / 505)	8,2	0,1	4'842	(483 / 483)	20,5	0,0	4'358	(446 / 810)	41,0	0,0
300	600	73	53	40,2	847,7	3,06	4'486	(500 / 500)	10,6	0,4	4'233	(472 / 472)	26,5	0,3	3'810	(425 / 810)	53,0	0,1
300	600	89	65	48,6	691,2	2,49	3'627	(496 / 496)	13,0	1,0	3'373	(461 / 461)	32,5	0,8	2'951	(405 / 810)	65,0	0,7
300	600	105	77	49,8	497,9	1,84	3'090	(434 / 434)	15,4	1,8	2'872	(403 / 403)	38,5	1,6	2'507	(355 / 709)	77,0	1,1
350	450	57	41	27,8	935,0	3,46	4'445	(443 / 443)	8,2	0,1	4'281	(427 / 427)	20,5	0,0	3'847	(400 / 709)	41,0	0,0
350	450	73	53	35,2	723,3	2,67	4'413	(440 / 440)	10,6	0,3	4'201	(419 / 419)	26,5	0,0	3'694	(384 / 709)	53,0	0,0
350	450	89	65	42,5	589,8	2,18	3'688	(437 / 437)	13,0	1,0	3'469	(411 / 411)	32,5	0,7	3'105	(368 / 709)	65,0	0,4
350	450	105	77	49,8	497,9	1,84	3'090	(434 / 434)	15,4	1,8	2'872	(403 / 403)	38,5	1,6	2'507	(355 / 709)	77,0	1,1
350	450	121	89	57,2	430,8	1,59	2'654	(430 / 430)	17,8	2,7	2'435	(395 / 395)	44,5	2,4	2'071	(355 / 709)	89,0	1,8
400	500	73	53	44,8	1'141,0	3,40	5'653	(563 / 563)	10,6	0,4	5'417	(540 / 540)	26,5	0,3	5'025	(501 / 900)	53,0	0,1
400	500	89	65	54,1	930,4	2,77	5'617	(560 / 560)	13,0	0,6	5'328	(531 / 531)	32,5	0,4	4'847	(483 / 900)	65,0	0,1
400	500	105	77	63,5	785,4	2,34	5'144	(556 / 556)	15,4	1,0	4'829	(522 / 522)	38,5	0,8	4'303	(465 / 900)	77,0	0,4
400	500	121	89	72,8	679,5	2,02	4'422	(553 / 553)	17,8	1,7	4'107	(513 / 513)	44,5	1,4	3'581	(450 / 900)	89,0	1,1
400	500	137	101	82,1	598,8	1,78	3'872	(549 / 549)	20,2	2,4	3'556	(505 / 505)	50,5	2,1	3'030	(450 / 900)	101,0	1,7
400	600	73	53	53,8	1'563,0	4,08	6'802	(678 / 678)	10,6	0,4	6'519	(650 / 650)	26,5	0,4	6'046	(603 / 1'080)	53,0	0,3
400	600	89	65	65,0	1'274,5	3,32	6'759	(674 / 674)	13,0	0,6	6'412	(639 / 639)	32,5	0,4	5'832	(581 / 1'080)	65,0	0,3
400	600	105	77	76,3	1'075,8	2,81	6'691	(669 / 669)	15,4	0,7	6'281	(628 / 628)	38,5	0,6	5'597	(560 / 1'080)	77,0	0,4
400	600	121	89	87,5	930,8	2,43	5'752	(665 / 665)	17,8	1,3	5'342	(618 / 618)	44,5	1,1	4'658	(540 / 1'080)	89,0	0,8
400	600	137	101	98,7	820,2	2,14	5'036	(661 / 661)	20,2	1,8	4'626	(607 / 607)	50,5	1,6	3'942	(540 / 1'080)	101,0	1,3
450	600	73	53	60,6	1'975,8	4,58	7'694	(767 / 767)	10,6	0,6	7'410	(738 / 738)	26,5	0,4	6'938	(691 / 1'215)	53,0	0,3
450	600	89	65	73,3	1'611,0	3,74	7'651	(762 / 762)	13,0	0,7	7'303	(728 / 728)	32,5	0,6	6'724	(670 / 1'215)	65,0	0,4
450	600	105	77	85,9	1'360,0	3,16	7'608	(758 / 758)	15,4	0,8	7'196	(717 / 717)	38,5	0,7	6'510	(649 / 1'215)	77,0	0,4
450	600	121	89	98,5	1'176,6	2,73	7'565	(754 / 754)	17,8	1,0	7'089	(706 / 706)	44,5	0,8	6'296	(627 / 1'215)	89,0	0,6
450	600	137	101	111,2	1'036,8	2,41	6'913	(750 / 750)	20,2	1,4	6'416	(696 / 696)	50,5	1,1	5'589	(608 / 1'215)	101,0	0,8
450	600	153	113	123,8	926,7	2,15	6'144	(745 / 745)	22,6	1,8	5'647	(685 / 685)	56,5	1,7	4'819	(608 / 1'215)	113,0	1,3
500	600	73	53	67,4	2'417,8	5,09	8'586	(855 / 855)	10,6	0,6	8'302	(827 / 827)	26,5	0,4	7'829	(780 / 1'350)	53,0	0,3
500	600	89	65	81,5	1'971,5	4,15	8'543	(851 / 851)	13,0	0,7	8'195	(817 / 817)	32,5	0,6	7'615	(759 / 1'350)	65,0	0,4
500	600	105	77	95,5	1'664,2	3,51	8'500	(847 / 847)	15,4	0,8	8'088	(806 / 806)	38,5	0,7	7'401	(738 / 1'350)	77,0	0,6
500	600	121	89	109,6	1'439,8	3,03	8'457	(843 / 843)	17,8	1,0	7'981	(795 / 795)	44,5	0,8	7'187	(716 / 1'350)	89,0	0,7
500	600	137	101	123,6	1'268,8	2,67	8'414	(838 / 838)	20,2	1,3	7'874	(785 / 785)	50,5	1,0	6'973	(695 / 1'350)	101,0	0,7
500	600	153	113	137,7	1'134,0	2,39	8'127	(834 / 834)	22,6	1,4	7'540	(774 / 774)	56,5	1,3	6'562	(675 / 1'350)	113,0	1,0
500	600	169	125	151,7	1'025,2	2,16	7'309	(830 / 830)	25,0	1,8	6'722	(763 / 763)	62,5	1,7	5'744	(675 / 1'350)	125,0	1,4
600	600	94	69	102,6	1'639,9	4,70	9'668	(1'027 / 1'027)	13,8	0,7	9'322	(991 / 991)	34,5	0,6	8'745	(929 / 1'620)	69,0	0,3
600	600	115	85	124,2	1'331,2	3,81	9'614	(1'022 / 1'022)	17,0	0,8	9'188	(976 / 976)	42,5	0,7	8'477	(901 / 1'620)	85,0	0,4
600	600	136	101	145,8	1'120,4	3,21	9'561	(1'016 / 1'016)	20,2	1,0	9'054	(962 / 962)	50,5	0,8	8'210	(873 / 1'620)	101,0	0,4
600	600	157	117	167,4	967,1	2,77	9'452	(1'010 / 1'010)	23,4	1,1	8'869	(948 / 948)	58,5	1,0	7'896	(844 / 1'620)	117,0	0,6
600	600	178	133	189,0	850,8	2,44	8'268	(1'005 / 1'005)	26,6	1,8	7'685	(934 / 934)	66,5	1,6	6'712	(816 / 1'620)	133,0	1,3
600	600	199	149	210,6	759,4	2,17	7'339	(999 / 999)	29,8	2,5	6'755	(920 / 920)	74,5	2,3	5'783	(810 / 1'620)	149,0	1,8
600	700	94	69	119,9	2'170,5	5,48	11'301	(1'201 / 1'201)	13,8	0,7	10'896	(1'158 / 1'158)	34,5	0,6	10'222	(1'086 / 1'890)	69,0	0,4
600	700	115	85	145,1	1'761,9	4,45	11'238	(1'194 / 1'194)	17,0	0,8	10'740	(1'141 / 1'141)	42,5	0,7	9'909	(1'053 / 1'890)	85,0	0,4
600	700	136	101	170,3	1'482,8	3,74	11'176	(1'188 / 1'188)	20,2	1,0	10'583	(1'125 / 1'125)	50,5	0,8	9'596	(1'020 / 1'890)	101,0	0,6
600	700	157	117	195,5	1'280,0	3,23	11'113	(1'181 / 1'181)	23,4	1,1	10'427	(1'108 / 1'108)	58,5	1,0	9'284	(987 / 1'890)	117,0	0,7
600	700	178	133	220,8	1'126,0	2,84	10'418	(1'174 / 1'174)	26,6	1,6	9'683	(1'091 / 1'091)	66,5	1,4	8'457	(953 / 1'890)	133,0	1,0
700	700	94	69	257,8	1'499,7	3,32	13'005	(1'382 / 1'382)	26,6	1,4	12'225	(1'299 / 1'299)	66,5	1,3	10'926	(1'161 / 2'205)	133,0	1,0
700	700	199	149	287,3	1'338,7	2,96	12'943	(1'375 / 1'375)	29,8	1,6	12'069	(1'282 / 1'282)	74,5	1,4	10'513	(1'128 / 2'205)	149,0	1,0
700	700	220	165	316,7	1'208,9	2,67	12'407	(1'369 / 1'369)	33,0	1,8	11'475	(1'266 / 1'266)	82,5	1,7	9'922	(1'103 / 2'205)	165,0	1,3
700	800	94	69	160,1	3'663,1	7,30	15'171	(1'612 / 1'612)	13,8	0,7	14'708	(1'563 / 1'563)	34,5	0,6	13'936	(1'481 / 2'520)	69,0	0,4
700	800	115	85	193,8	2'973,6	5,93	15'099	(1'604 / 1'604)	17,0	0,8	14'529	(1'544 / 1'544)	42,5	0,7	13'578	(1'443 / 2'520)	85,0	0,6
700	800	136	101	227,5	2'502,5	4,99	15'028	(1'597 / 1'597)	20,2	1,0	14'350	(1'525 / 1'525)	50,5	0,8	13'220	(1'405 / 2'520)	101,0	0,7
700	800	157	117	261,2	2'160,3	4,31	14'956	(1'589 / 1'589)	23,4									



**a:** Width og bearing  
**b:** Length of bearing  
**h:** Height of bearing  
**d:** Diameter  
**H<sub>e</sub>:** Total thickness of elastomer layers  
**K<sub>z</sub>:** Vertical compressive deflection  
**K<sub>xy</sub>:** Horizontal compressive deflection  
**N<sub>d</sub>:** Vertical force  
**N<sub>dmin</sub>:** Vertical force with concrete connection  
**N<sub>dmax</sub>:** Vertical force with steel connection  
**V<sub>xyd</sub>:** Horizontal displacement  
**V<sub>xy,max</sub>:** Maximum horizontal displacement  
**α<sub>ab</sub>:** Rotation



## Type B Round

Bearing Dimensions / Parameters						Condition 1: $v_{xyd} = 20\% \cdot v_{xy,max}$				Condition 2: $v_{xyd} = 50\% \cdot v_{xy,max}$				Condition 3: $v_{xyd} = 100\% \cdot v_{xy,max}$			
d	h	H <sub>e</sub>	Weight	K <sub>z</sub>	K <sub>xy</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	α <sub>ab</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	α <sub>ab</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	α <sub>ab</sub>
(mm)	(mm)	(mm)	(kg)	(kN/mm)	(kN/mm)	(kN)	(kN)	(mm)	(%)	(kN)	(kN)	(mm)	(%)	(kN)	(kN)	(mm)	(%)
200	30	21	3.0	206.6	1.35	693	(85 / 85)	4.2	0.0	640	(83 / 83)	10.5	0.0	556	(78 / 142)	21.0	0.0
200	41	29	4.0	149.6	0.97	669	(85 / 85)	5.8	0.0	626	(81 / 81)	14.5	0.0	530	(74 / 142)	29.0	0.0
200	52	37	5.0	117.3	0.76	520	(84 / 84)	7.4	1.6	488	(79 / 79)	18.5	1.3	436	(71 / 142)	37.0	0.7
250	30	21	4.7	499.4	2.10	1'394	(136 / 136)	4.2	0.0	1'297	(133 / 133)	10.5	0.0	1'143	(127 / 221)	21.0	0.0
250	41	29	6.3	361.7	1.52	1'385	(135 / 135)	5.8	0.0	1'275	(130 / 130)	14.5	0.0	1'102	(122 / 221)	29.0	0.0
250	52	37	7.9	283.5	1.19	1'323	(134 / 134)	7.4	0.1	1'252	(128 / 128)	18.5	0.0	1'060	(117 / 221)	37.0	0.0
300	41	29	9.1	728.7	2.19	2'224	(197 / 197)	5.8	0.1	2'157	(191 / 191)	14.5	0.0	1'981	(181 / 319)	29.0	0.0
300	52	37	11.5	571.2	1.72	2'212	(196 / 196)	7.4	0.1	2'125	(189 / 189)	18.5	0.0	1'921	(176 / 319)	37.0	0.0
300	63	45	13.8	469.6	1.41	2'199	(195 / 195)	9.0	0.3	2'094	(186 / 186)	22.5	0.1	1'860	(170 / 319)	45.0	0.0
300	74	53	16.2	398.7	1.20	1'946	(194 / 194)	10.6	0.7	1'836	(183 / 183)	26.5	0.6	1'653	(165 / 319)	53.0	0.3
350	41	29	12.5	1'295.3	2.99	3'060	(271 / 271)	5.8	0.3	2'981	(264 / 264)	14.5	0.3	2'849	(253 / 433)	29.0	0.1
350	52	37	15.7	1'015.2	2.34	3'046	(270 / 270)	7.4	0.4	2'945	(261 / 261)	18.5	0.3	2'776	(246 / 433)	37.0	0.1
350	63	45	18.9	834.8	1.92	3'031	(269 / 269)	9.0	0.6	2'908	(258 / 258)	22.5	0.4	2'703	(240 / 433)	45.0	0.1
350	74	53	22.2	708.8	1.63	3'017	(268 / 268)	10.6	0.7	2'872	(255 / 255)	26.5	0.6	2'631	(233 / 433)	53.0	0.3
350	85	61	25.4	615.8	1.42	3'002	(266 / 266)	12.2	0.7	2'835	(252 / 252)	30.5	0.6	2'558	(227 / 433)	61.0	0.3
400	57	41	22.2	768.2	2.76	3'560	(355 / 355)	8.2	0.1	3'445	(344 / 344)	20.5	0.0	3'177	(325 / 566)	41.0	0.0
400	73	53	28.1	594.3	2.13	3'537	(353 / 353)	10.6	0.3	3'390	(338 / 338)	26.5	0.1	3'068	(314 / 566)	53.0	0.0
400	89	65	33.9	484.5	1.74	3'448	(351 / 351)	13.0	0.4	3'270	(333 / 333)	32.5	0.3	2'959	(303 / 566)	65.0	0.0
400	105	77	39.8	409.0	1.47	2'892	(348 / 348)	15.4	1.3	2'714	(327 / 327)	38.5	1.0	2'419	(291 / 566)	77.0	0.7
450	57	41	28.2	1'199.2	3.49	4'537	(452 / 452)	8.2	0.3	4'408	(439 / 439)	20.5	0.3	4'194	(418 / 716)	41.0	0.1
450	73	53	35.6	927.7	2.70	4'511	(450 / 450)	10.6	0.4	4'345	(433 / 433)	26.5	0.4	4'068	(406 / 716)	53.0	0.1
450	89	65	43.0	756.4	2.20	4'486	(447 / 447)	13.0	0.6	4'282	(427 / 427)	32.5	0.4	3'942	(393 / 716)	65.0	0.3
450	105	77	50.5	638.5	1.86	4'461	(445 / 445)	15.4	0.7	4'220	(421 / 421)	38.5	0.6	3'817	(381 / 716)	77.0	0.3
500	57	41	34.9	1'773.1	4.31	5'632	(561 / 561)	8.2	0.4	5'489	(547 / 547)	20.5	0.3	5'250	(523 / 884)	41.0	0.1
500	73	53	44.1	1'371.7	3.33	5'604	(559 / 559)	10.6	0.6	5'419	(540 / 540)	26.5	0.4	5'110	(509 / 884)	53.0	0.3
500	89	65	53.2	1'118.4	2.72	5'576	(556 / 556)	13.0	0.7	5'349	(533 / 533)	32.5	0.6	4'194	(495 / 884)	65.0	0.4
500	105	77	62.4	944.1	2.29	5'548	(553 / 553)	15.4	0.8	5'279	(526 / 526)	38.5	0.7	4'194	(482 / 884)	77.0	0.4
500	121	89	71.6	816.8	1.99	5'520	(550 / 550)	17.8	1.0	5'209	(519 / 519)	44.5	0.8	4'194	(468 / 884)	89.0	0.6
550	73	53	53.4	1'940.9	4.03	6'815	(679 / 679)	10.6	0.6	6'611	(659 / 659)	26.5	0.6	6'271	(625 / 1'070)	53.0	0.4

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Bearing Dimensions / Parameters					Condition 1: $v_{xyd} = 20\% \cdot v_{xy,max}$				Condition 2: $v_{xyd} = 50\% \cdot v_{xy,max}$				Condition 3: $v_{xyd} = 100\% \cdot v_{xy,max}$				
d	h	H <sub>e</sub>	Weight	K <sub>z</sub>	K <sub>xy</sub>	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	cab	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	cab	N <sub>d</sub>	N <sub>dmin</sub> (Concrete / Steel)	V <sub>xyd</sub>	cab
(mm)	(mm)	(mm)	(kg)	(kN/mm)	(kN)	(kN)	(kN)	(mm)	(%)	(kN)	(kN)	(mm)	(%)	(kN)	(kN)	(mm)	(%)
550	89	65	64,5	1'582,6	3,29	6'784	(676 / 676)	13,0	0,7	6'534	(651 / 651)	32,5	0,7	6'117	(610 / 1'070)	65,0	0,4
550	105	77	75,7	1'336,0	2,78	6'753	(673 / 673)	15,4	0,8	6'457	(643 / 643)	38,5	0,8	5'963	(594 / 1'070)	77,0	0,6
550	121	89	86,8	1'155,8	2,40	6'722	(670 / 670)	17,8	1,1	6'380	(636 / 636)	44,5	1,0	5'809	(579 / 1'070)	89,0	0,7
550	137	101	97,9	1'018,5	2,12	6'692	(667 / 667)	20,2	1,3	6'303	(628 / 628)	50,5	1,1	5'655	(564 / 1'070)	101,0	0,8
600	73	53	63,6	2'648,5	4,80	8'144	(811 / 811)	10,6	0,6	7'921	(789 / 789)	26,5	0,6	7'550	(752 / 1'273)	53,0	0,4
600	89	65	76,9	2'159,5	3,91	8'110	(808 / 808)	13,0	0,7	7'837	(781 / 781)	32,5	0,7	7'382	(736 / 1'273)	65,0	0,4
600	105	77	90,2	1'823,0	3,30	8'077	(805 / 805)	15,4	0,8	7'753	(773 / 773)	38,5	0,8	7'214	(719 / 1'273)	77,0	0,6
600	121	89	103,4	1'577,2	2,86	8'043	(801 / 801)	17,8	1,0	7'669	(764 / 764)	44,5	1,0	7'046	(702 / 1'273)	89,0	0,7
600	137	101	116,7	1'389,8	2,52	8'009	(798 / 798)	20,2	1,1	7'585	(756 / 756)	50,5	1,1	6'878	(685 / 1'273)	101,0	0,8
600	153	113	130,0	1'242,2	2,25	7'976	(795 / 795)	22,6	1,4	7'501	(747 / 747)	56,5	1,1	6'709	(669 / 1'273)	113,0	1,0
650	73	53	74,8	3'505,7	5,63	9'591	(956 / 956)	10,6	0,6	9'350	(932 / 932)	26,5	0,4	8'947	(891 / 1'494)	53,0	0,4
650	89	65	90,4	2'858,5	4,59	9'555	(952 / 952)	13,0	0,7	9'259	(922 / 922)	32,5	0,6	8'765	(873 / 1'494)	65,0	0,4
650	105	77	106,0	2'413,0	3,88	9'518	(948 / 948)	15,4	0,8	9'168	(913 / 913)	38,5	0,7	8'583	(855 / 1'494)	77,0	0,6
650	121	89	121,5	2'087,7	3,36	9'482	(945 / 945)	17,8	1,0	9'076	(904 / 904)	44,5	0,8	8'400	(837 / 1'494)	89,0	0,7
650	137	101	137,1	1'839,7	2,96	9'446	(941 / 941)	20,2	1,1	8'985	(895 / 895)	50,5	1,0	8'218	(819 / 1'494)	101,0	0,8
650	153	113	152,7	1'644,3	2,64	9'409	(937 / 937)	22,6	1,3	8'894	(886 / 886)	56,5	1,1	8'036	(801 / 1'494)	113,0	1,0
650	169	125	168,3	1'486,4	2,39	9'373	(934 / 934)	25,0	1,4	8'803	(877 / 877)	62,5	1,3	7'853	(783 / 1'494)	125,0	1,0
700	94	69	110,0	2'270,4	5,02	10'411	(1'106 / 1'106)	13,8	0,7	10'093	(1'073 / 1'073)	34,5	0,6	9'563	(1'016 / 1'732)	69,0	0,4
700	115	85	133,1	1'843,0	4,07	10'362	(1'101 / 1'101)	17,0	0,8	9'970	(1'060 / 1'060)	42,5	0,7	9'318	(990 / 1'732)	85,0	0,6
700	136	101	156,2	1'551,1	3,43	10'312	(1'096 / 1'096)	20,2	1,0	9'847	(1'046 / 1'046)	50,5	0,8	9'072	(964 / 1'732)	101,0	0,7
700	157	117	179,4	1'338,9	2,96	10'263	(1'091 / 1'091)	23,4	1,3	9'724	(1'033 / 1'033)	58,5	1,1	8'826	(938 / 1'732)	117,0	0,8
700	178	133	202,5	1'177,9	2,60	10'214	(1'085 / 1'085)	26,6	1,4	9'602	(1'020 / 1'020)	66,5	1,3	8'581	(912 / 1'732)	133,0	1,0
700	199	149	225,6	1'051,4	2,32	10'165	(1'080 / 1'080)	29,8	1,6	9'479	(1'007 / 1'007)	74,5	1,4	8'335	(886 / 1'732)	149,0	1,0
750	94	69	126,3	2'910,4	5,76	11'986	(1'274 / 1'274)	13,8	0,7	11'645	(1'237 / 1'237)	34,5	0,6	11'077	(1'177 / 1'989)	69,0	0,4
750	115	85	152,9	2'362,6	4,68	11'933	(1'268 / 1'268)	17,0	0,8	11'513	(1'223 / 1'223)	42,5	0,7	10'814	(1'149 / 1'989)	85,0	0,6
750	136	101	179,5	1'988,3	3,94	11'881	(1'262 / 1'262)	20,2	1,0	11'382	(1'209 / 1'209)	50,5	0,8	10'551	(1'121 / 1'989)	101,0	0,7
750	157	117	206,1	1'716,4	3,40	11'828	(1'257 / 1'257)	23,4	1,1	11'250	(1'195 / 1'195)	58,5	1,0	10'287	(1'093 / 1'989)	117,0	0,8
750	178	133	232,6	1'509,9	2,99	11'775	(1'251 / 1'251)	26,6	1,4	11'118	(1'181 / 1'181)	66,5	1,3	10'024	(1'065 / 1'989)	133,0	1,0
750	199	149	259,2	1'347,8	2,67	11'723	(1'246 / 1'246)	29,8	1,6	10'987	(1'167 / 1'167)	74,5	1,4	9'760	(1'037 / 1'989)	149,0	1,1
800	94	69	143,8	3'659,4	6,56	13'672	(1'453 / 1'453)	13,8	0,6	13'308	(1'414 / 1'414)	34,5	0,6	12'702	(1'350 / 2'262)	69,0	0,4
800	115	85	174,1	2'970,6	5,32	13'616	(1'447 / 1'447)	17,0	0,8	13'168	(1'399 / 1'399)	42,5	0,7	12'421	(1'320 / 2'262)	85,0	0,6
800	136	101	204,4	2'500,0	4,48	13'560	(1'441 / 1'441)	20,2	1,0	13'027	(1'384 / 1'384)	50,5	0,8	12'140	(1'290 / 2'262)	101,0	0,7
800	157	117	234,6	2'158,1	3,87	13'503	(1'435 / 1'435)	23,4	1,1	12'887	(1'369 / 1'369)	58,5	1,0	11'859	(1'260 / 2'262)	117,0	0,8
800	178	133	264,9	1'898,5	3,40	13'447	(1'429 / 1'429)	26,6	1,3	12'746	(1'354 / 1'354)	66,5	1,1	11'578	(1'230 / 2'262)	133,0	1,0
800	199	149	295,2	1'694,6	3,04	13'391	(1'423 / 1'423)	29,8	1,6	12'606	(1'339 / 1'339)	74,5	1,3	11'297	(1'200 / 2'262)	149,0	1,1
800	220	165	325,4	1'530,3	2,74	13'335	(1'417 / 1'417)	33,0	1,7	12'465	(1'325 / 1'325)	82,5	1,6	11'016	(1'171 / 2'262)	165,0	1,1
850	94	69	162,5	4'523,8	7,40	15'469	(1'644 / 1'644)	13,8	0,6	15'083	(1'603 / 1'603)	34,5	0,6	14'438	(1'534 / 2'554)	69,0	0,4
850	115	85	196,7	3'672,2	6,01	15'409	(1'637 / 1'637)	17,0	0,7	14'933	(1'587 / 1'587)	42,5	0,7	14'139	(1'502 / 2'554)	85,0	0,6
850	136	101	230,9	3'090,5	5,06	15'350	(1'631 / 1'631)	20,2	0,8	14'784	(1'571 / 1'571)	50,5	0,8	13'840	(1'471 / 2'554)	101,0	0,7
850	157	117	265,0	2'667,9	4,37	15'290	(1'625 / 1'625)	23,4	1,1	14'634	(1'555 / 1'555)	58,5	1,0	13'542	(1'439 / 2'554)	117,0	0,8
850	178	133	299,2	2'346,9	3,84	15'230	(1'618 / 1'618)	26,6	1,3	14'485	(1'539 / 1'539)	66,5	1,1	13'243	(1'407 / 2'554)	133,0	1,0
850	199	149	333,4	2'094,9	3,43	15'170	(1'612 / 1'612)	29,8	1,4	14'335	(1'523 / 1'523)	74,5	1,3	12'944	(1'375 / 2'554)	149,0	1,0
850	220	165	367,6	1'891,8	3,10	15'111	(1'605 / 1'605)	33,0	1,6	14'186	(1'507 / 1'507)	82,5	1,4	12'645	(1'344 / 2'554)	165,0	1,1
900	110	85	196,0	3'214,0	6,74	13'851	(1'840 / 1'840)	17,0	0,8	13'447	(1'786 / 1'786)	42,5	0,8	12'775	(1'697 / 2'863)	85,0	0,7
900	135	105	237,8	2'601,8	5,45	13'788	(1'831 / 1'831)	21,0	1,1	13'289	(1'765 / 1'765)	52,5	1,0	12'458	(1'655 / 2'863)	105,0	0,8
900	160	125	279,6	2'185,5	4,58	13'724	(1'823 / 1'823)	25,0	1,4	13'131	(1'744 / 1'744)	62,5	1,3	12'141	(1'613 / 2'863)	125,0	1,0
900	185	145	321,4	1'884,1	3,95	13'661	(1'814 / 1'814)	29,0	1,7	12'972	(1'723 / 1'723)	72,5	1,4	11'825	(1'570 / 2'863)	145,0	1,3
900	210	165	363,1	1'655,7	3,47	13'598	(1'806 / 1'806)	33,0	1,8	12'814	(1'702 / 1'702)	82,5	1,7	11'508	(1'528 / 2'863)	165,0	1,4
900	235	185	404,9	1'476,7	3,09	13'534	(1'797 / 1'797)	37,0	2,1	12'656	(1'681 / 1'681)	92,5	2,0	11'192	(1'486 / 2'863)	185,0	1,6
900	260	205	446,7	1'332,6	2,79	13'471	(1'789 / 1'789)	41,0	2,4	12'498	(1'660 / 1'660)	102,5	2,1	10'875	(1'444 / 2'863)	205,0	1,8



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