



SLOVENSKI STANDARD
SIST EN ISO 6506-4:2006
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Metalski materiali - Brinellova trdnostna preizkušnja - Del 4: Tabela vrednosti trdnosti (ISO 6506-4:2005)

Metallische Werkstoffe - Härteprüfung nach Brinell - Teil 4: Tabelle zur Bestimmung der Härte (ISO 6506-4:2005)

Matériaux métalliques - Essai de dureté Brinell - Partie 4: Tableaux des valeurs de dureté (ISO 6506-4:2005)

Ta slovenski standard je istoveten z: EN ISO 6506-4:2005

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English Version

Metallic materials - Brinell hardness test - Part 4: Table of
hardness values (ISO 6506-4:2005)

Matériaux métalliques - Essai de dureté Brinell - Partie 4:
Tableaux des valeurs de dureté (ISO 6506-4:2005)

Metallische Werkstoffe - Härteprüfung nach Brinell - Teil 4:
Tabelle zur Bestimmung der Härte (ISO 6506-4:2005)

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Foreword

This document (EN ISO 6506-4:2005) has been prepared by Technical Committee ISO/TC 164 "Mechanical testing of metals" in collaboration with Technical Committee ECISS/TC 1 "Steel - Mechanical testing", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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The text of ISO 6506-4:2005 has been approved by CEN as EN ISO 6506-4:2005 without any modifications.

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**Metallic materials — Brinell hardness
test —**

**Part 4:
Table of hardness values**

*Matériaux métalliques — Essai de dureté Brinell —
Partie 4: Tableaux pour les essais de dureté*
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 6506-4 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 3, *Hardness testing*.

This first edition of ISO 6506-4 cancels and replaces Annex C of ISO 6506-1:1999.

ISO 6506 consists of the following parts, under the general title *Metallic materials — Brinell hardness test*:

- *Part 1: Test method* [SIST EN ISO 6506-4:2006](https://standards.iteh.ai/catalog/standards/sist/01ddfb97-cb79-45f4-a068-3ce637caad1d/sist-en-iso-6506-4-2006)
- *Part 2: Verification and calibration of testing machines*
- *Part 3: Calibration of reference blocks*
- *Part 4: Table of hardness values*

Introduction

Attention is drawn to the fact that in this part of ISO 6506, only the use of the hardmetal ball indenter is specified.

The designation of the Brinell hardness is HBW and should not be confused with the former designation HB, or HBS when a steel ball indenter was used.

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Metallic materials — Brinell hardness test —

Part 4: Table of hardness values

1 Scope

This part of ISO 6506 gives a table of the Brinell hardness values for use in tests on flat surfaces.

2 Determination of the Brinell hardness for testing on flat surfaces

See Table 1.

Table 1

Ball indenter, D mm				Force-diameter ratio, $0,102 \times F/D^2$					
				30	15	10	5	2,5	1
				Test force, F					
				29,42 kN	14,71 kN	9,807 kN	4,903 kN	2,452 kN	980,7 N
10				7,355 kN	—	2,452 kN	1,226 kN	612,9 N	245,2 N
	5			1,839 kN	—	612,9 N	306,5 N	153,2 N	61,29 N
		2,5		294,2 N	—	98,07 N	49,03 N	24,52 N	9,807 N
			1						
Mean diameter of the indentation, d mm				Brinell hardness, HBW					
2,40	1,200	0,600 0	0,240	653	327	218	109	54,5	21,8
2,41	1,205	0,602 4	0,241	648	324	216	108	54,0	21,6
2,42	1,210	0,605 0	0,242	643	321	214	107	53,5	21,4
2,43	1,215	0,607 5	0,243	637	319	212	106	53,1	21,2
2,44	1,220	0,610 0	0,244	632	316	211	105	52,7	21,1
2,45	1,225	0,612 5	0,245	627	313	209	104	52,2	20,9
2,46	1,230	0,615 0	0,246	621	311	207	104	51,8	20,7
2,47	1,235	0,617 5	0,247	616	308	205	103	51,4	20,5
2,48	1,240	0,620 0	0,248	611	306	204	102	50,9	20,4
2,49	1,245	0,622 5	0,249	606	303	202	101	50,5	20,2
2,50	1,250	0,625 0	0,250	601	301	200	100	50,1	20,0
2,51	1,255	0,627 5	0,251	597	298	199	99,4	49,7	19,9

Table 1 (continued)

Ball indenter, <i>D</i> mm				Force-diameter ratio, $0,102 \times F/D^2$					
10	5	2,5	1	30	15	10	5	2,5	1
Mean diameter of the indentation, <i>d</i> mm				Brinell hardness, HBW					
2,52	1,260	0,630 0	0,252	592	296	197	98,6	49,3	19,7
2,53	1,265	0,632 5	0,253	587	294	196	97,8	48,9	19,6
2,54	1,270	0,635 0	0,254	582	291	194	97,1	48,5	19,4
2,55	1,275	0,637 5	0,255	578	289	193	96,3	48,1	19,3
2,56	1,280	0,640 0	0,256	573	287	191	95,5	47,8	19,1
2,57	1,285	0,642 5	0,257	569	284	190	94,8	47,4	19,0
2,58	1,290	0,645 0	0,258	564	282	188	94,0	47,0	18,8
2,59	1,295	0,647 5	0,259	560	280	187	93,3	46,6	18,7
2,60	1,300	0,650 0	0,260	555	278	185	92,6	46,3	18,5
2,61	1,305	0,652 5	0,261	551	276	184	91,8	45,9	18,4
2,62	1,310	0,655 0	0,262	547	273	182	91,1	45,6	18,2
2,63	1,315	0,657 5	0,263	543	271	181	90,4	45,2	18,1
2,64	1,320	0,660 0	0,264	538	269	179	89,7	44,9	17,9
2,65	1,325	0,662 5	0,265	534	267	178	89,0	44,5	17,8
2,66	1,330	0,665 0	0,266	530	265	177	88,4	44,2	17,7
2,67	1,335	0,667 5	0,267	526	263	175	87,7	43,8	17,5
2,68	1,340	0,670 0	0,268	522	261	174	87,0	43,5	17,4
2,69	1,345	0,672 5	0,269	518	259	173	86,4	43,2	17,3
2,70	1,350	0,675 0	0,270	514	257	171	85,7	42,9	17,1
2,71	1,355	0,677 5	0,271	510	255	170	85,1	42,5	17,0
2,72	1,360	0,680 0	0,272	507	253	169	84,4	42,2	16,9
2,73	1,365	0,682 5	0,273	503	251	168	83,8	41,9	16,8
2,74	1,370	0,685 0	0,274	499	250	166	83,2	41,6	16,6
2,75	1,375	0,687 5	0,275	495	248	165	82,6	41,3	16,5
2,76	1,380	0,690 0	0,276	492	246	164	81,9	41,0	16,4
2,77	1,385	0,692 5	0,277	488	244	163	81,3	40,7	16,3
2,78	1,390	0,695 0	0,278	485	242	162	80,8	40,4	16,2
2,79	1,395	0,697 5	0,279	481	240	160	80,2	40,1	16,0
2,80	1,400	0,700 0	0,280	477	239	159	79,6	39,8	15,9
2,81	1,405	0,702 5	0,281	474	237	158	79,0	39,5	15,8
2,82	1,410	0,705 0	0,282	471	235	157	78,4	39,2	15,7
2,83	1,415	0,707 5	0,283	467	234	156	77,9	38,9	15,6
2,84	1,420	0,710 0	0,284	464	232	155	77,3	38,7	15,5
2,85	1,425	0,712 5	0,285	461	230	154	76,8	38,4	15,4

Table 1 (continued)

Ball indenter, D mm				Force-diameter ratio, $0,102 \times F/D^2$					
10	5	2,5	1	30	15	10	5	2,5	1
Mean diameter of the indentation, d mm				Brinell hardness, HBW					
2,86	1,430	0,715 0	0,286	457	229	152	76,2	38,1	15,2
2,87	1,435	0,717 5	0,287	454	227	151	75,7	37,8	15,1
2,88	1,440	0,720 0	0,288	451	225	150	75,1	37,6	15,0
2,89	1,445	0,722 5	0,289	448	224	149	74,6	37,3	14,9
2,90	1,450	0,725 0	0,290	444	222	148	74,1	37,0	14,8
2,91	1,455	0,727 5	0,291	441	221	147	73,6	36,8	14,7
2,92	1,460	0,730 0	0,292	438	219	146	73,0	36,5	14,6
2,93	1,465	0,732 5	0,293	435	218	145	72,5	36,3	14,5
2,94	1,470	0,735 0	0,294	432	216	144	72,0	36,0	14,4
2,95	1,475	0,737 5	0,295	429	215	143	71,5	35,8	14,3
2,96	1,480	0,740 0	0,296	426	213	142	71,0	35,5	14,2
2,97	1,485	0,742 5	0,297	423	212	141	70,5	35,3	14,1
2,98	1,490	0,745 0	0,298	420	210	140	70,1	35,0	14,0
2,99	1,495	0,747 5	0,299	417	209	139	69,6	34,8	13,9
3,00	1,500	0,750 0	0,300	415	207	138	69,1	34,6	13,8
3,01	1,505	0,752 5	0,301	412	206	137	68,6	34,3	13,7
3,02	1,510	0,755 0	0,302	409	205	136	68,2	34,1	13,6
3,03	1,515	0,757 5	0,303	406	203	135	67,7	33,9	13,5
3,04	1,520	0,760 0	0,304	404	202	135	67,3	33,6	13,5
3,05	1,525	0,762 5	0,305	401	200	134	66,8	33,4	13,4
3,06	1,530	0,765 0	0,306	398	199	133	66,4	33,2	13,3
3,07	1,535	0,767 5	0,307	395	198	132	65,9	33,0	13,2
3,08	1,540	0,770 0	0,308	393	196	131	65,5	32,7	13,1
3,09	1,545	0,772 5	0,309	390	195	130	65,0	32,5	13,0
3,10	1,550	0,775 0	0,310	388	194	129	64,6	32,3	12,9
3,11	1,555	0,777 5	0,311	385	193	128	64,2	32,1	12,8
3,12	1,560	0,780 0	0,312	383	191	128	63,8	31,9	12,8
3,13	1,565	0,782 5	0,313	380	190	127	63,3	31,7	12,7
3,14	1,570	0,787 0	0,314	378	189	126	62,9	31,5	12,6
3,15	1,575	0,787 5	0,315	375	188	125	62,5	31,3	12,5
3,16	1,580	0,790 0	0,316	373	186	124	62,1	31,1	12,4
3,17	1,585	0,792 5	0,317	370	185	123	61,7	30,9	12,3
3,18	1,590	0,795 0	0,318	368	184	123	61,3	30,7	12,3
3,19	1,595	0,797 5	0,319	366	183	122	60,9	30,5	12,2