

**表 1 非奥氏体钢的近似硬度换算值 (洛氏 HRC 硬度范围) <sup>A, B</sup>**

| 洛氏C<br>硬度值<br>150 kgf<br>(HRC) | 维氏<br>硬度值<br>(HV) | 布氏硬度值 <sup>C</sup>               |                                 | 努氏<br>硬度值<br>大于等于<br>500 gf<br>(HK) | 洛氏硬度值                           |                                  |                               | 表面洛氏硬度值                       |                               |      | 肖氏<br>硬度值<br>(HS) <sup>D</sup> | 洛氏C<br>硬度值<br>150 kgf<br>(HRC) |
|--------------------------------|-------------------|----------------------------------|---------------------------------|-------------------------------------|---------------------------------|----------------------------------|-------------------------------|-------------------------------|-------------------------------|------|--------------------------------|--------------------------------|
|                                |                   | 10mm<br>标准球<br>3000 kgf<br>(HBS) | 10mm<br>硬球<br>3000 kgf<br>(HBW) |                                     | A标尺<br>60 kgf<br>金刚石压头<br>(HRA) | D标尺<br>100 kgf<br>金刚石压头<br>(HRD) | 15-N标尺<br>15 kgf<br>(HR 15-N) | 30-N标尺<br>30 kgf<br>(HR 30-N) | 45-N标尺<br>45 kgf<br>(HR 45-N) |      |                                |                                |
| 68                             | 940               | ...                              | ...                             | 920                                 | 85.6                            | 76.9                             | 93.2                          | 84.4                          | 75.4                          | 97.3 | 68                             |                                |
| 67                             | 900               | ...                              | ...                             | 895                                 | 85.0                            | 76.1                             | 92.9                          | 83.6                          | 74.2                          | 95.0 | 67                             |                                |
| 66                             | 865               | ...                              | ...                             | 870                                 | 84.5                            | 75.4                             | 92.5                          | 82.8                          | 73.3                          | 92.7 | 66                             |                                |
| 65                             | 832               | ...                              | (739)                           | 846                                 | 83.9                            | 74.5                             | 92.2                          | 81.9                          | 72.0                          | 90.6 | 65                             |                                |
| 64                             | 800               | ...                              | (722)                           | 822                                 | 83.4                            | 73.8                             | 91.8                          | 81.1                          | 71.0                          | 88.5 | 64                             |                                |
| 63                             | 772               | ...                              | (705)                           | 799                                 | 82.8                            | 73.0                             | 91.4                          | 80.1                          | 69.9                          | 86.5 | 63                             |                                |
| 62                             | 746               | ...                              | (688)                           | 776                                 | 82.3                            | 72.2                             | 91.1                          | 79.3                          | 68.8                          | 84.5 | 62                             |                                |
| 61                             | 720               | ...                              | (670)                           | 754                                 | 81.8                            | 71.5                             | 90.7                          | 78.4                          | 67.7                          | 82.6 | 61                             |                                |
| 60                             | 697               | ...                              | (654)                           | 732                                 | 81.2                            | 70.7                             | 90.2                          | 77.5                          | 66.6                          | 80.8 | 60                             |                                |
| 59                             | 674               | ...                              | 634                             | 710                                 | 80.7                            | 69.9                             | 89.8                          | 76.6                          | 65.5                          | 79.0 | 59                             |                                |
| 58                             | 653               | ...                              | 615                             | 690                                 | 80.1                            | 69.2                             | 89.3                          | 75.7                          | 64.3                          | 77.3 | 58                             |                                |
| 57                             | 633               | ...                              | 595                             | 670                                 | 79.6                            | 68.5                             | 88.9                          | 74.8                          | 63.2                          | 75.6 | 57                             |                                |
| 56                             | 613               | ...                              | 577                             | 650                                 | 79.0                            | 67.7                             | 88.3                          | 73.9                          | 62.0                          | 74.0 | 56                             |                                |
| 55                             | 595               | ...                              | 560                             | 630                                 | 78.5                            | 66.9                             | 87.9                          | 73.0                          | 60.9                          | 72.4 | 55                             |                                |
| 54                             | 577               | ...                              | 543                             | 612                                 | 78.0                            | 66.1                             | 87.4                          | 72.0                          | 59.8                          | 70.9 | 54                             |                                |
| 53                             | 560               | ...                              | 525                             | 594                                 | 77.4                            | 65.4                             | 86.9                          | 71.2                          | 58.6                          | 69.4 | 53                             |                                |
| 52                             | 544               | (500)                            | 512                             | 576                                 | 76.8                            | 64.8                             | 86.4                          | 70.2                          | 57.4                          | 67.9 | 52                             |                                |
| 51                             | 528               | (487)                            | 496                             | 558                                 | 76.2                            | 64.2                             | 85.9                          | 69.4                          | 56.1                          | 66.5 | 51                             |                                |
| 50                             | 513               | (475)                            | 481                             | 542                                 | 75.6                            | 63.6                             | 85.5                          | 68.5                          | 55.0                          | 65.1 | 50                             |                                |
| 49                             | 498               | (464)                            | 469                             | 526                                 | 75.0                            | 62.9                             | 85.0                          | 67.6                          | 53.8                          | 63.7 | 49                             |                                |
| 48                             | 484               | 451                              | 458                             | 510                                 | 74.4                            | 62.4                             | 84.5                          | 66.7                          | 52.5                          | 62.4 | 48                             |                                |
| 47                             | 471               | 442                              | 443                             | 495                                 | 73.8                            | 61.8                             | 84.0                          | 65.8                          | 51.4                          | 61.1 | 47                             |                                |
| 46                             | 458               | 432                              | 432                             | 480                                 | 73.2                            | 61.2                             | 83.5                          | 64.8                          | 50.3                          | 59.8 | 46                             |                                |
| 45                             | 446               | 421                              | 421                             | 466                                 | 73.1                            | 59.2                             | 83.0                          | 64.0                          | 49.0                          | 58.5 | 45                             |                                |
| 44                             | 434               | 409                              | 409                             | 452                                 | 72.5                            | 58.5                             | 82.5                          | 63.1                          | 47.8                          | 57.3 | 44                             |                                |
| 43                             | 423               | 400                              | 400                             | 438                                 | 72.0                            | 57.7                             | 82.0                          | 62.2                          | 46.7                          | 56.1 | 43                             |                                |
| 42                             | 412               | 390                              | 390                             | 426                                 | 71.5                            | 56.9                             | 81.5                          | 61.3                          | 45.5                          | 54.9 | 42                             |                                |
| 41                             | 402               | 381                              | 381                             | 414                                 | 70.9                            | 56.2                             | 80.9                          | 60.4                          | 44.3                          | 53.7 | 41                             |                                |
| 40                             | 392               | 373                              | 371                             | 402                                 | 70.4                            | 55.4                             | 80.4                          | 59.5                          | 43.1                          | 52.6 | 40                             |                                |
| 39                             | 382               | 362                              | 362                             | 390                                 | 69.9                            | 54.6                             | 79.9                          | 58.6                          | 41.9                          | 51.5 | 39                             |                                |
| 38                             | 372               | 353                              | 353                             | 380                                 | 69.4                            | 53.8                             | 79.4                          | 57.7                          | 40.8                          | 50.4 | 38                             |                                |
| 37                             | 363               | 344                              | 344                             | 370                                 | 68.9                            | 53.1                             | 78.8                          | 56.8                          | 39.6                          | 49.3 | 37                             |                                |
| 36                             | 354               | 336                              | 336                             | 360                                 | 68.4                            | 52.3                             | 78.3                          | 55.9                          | 38.4                          | 48.2 | 36                             |                                |
| 35                             | 345               | 327                              | 327                             | 351                                 | 67.9                            | 51.5                             | 77.7                          | 55.0                          | 37.2                          | 47.1 | 35                             |                                |
| 34                             | 336               | 318                              | 319                             | 342                                 | 67.4                            | 50.8                             | 77.2                          | 54.2                          | 36.1                          | 46.1 | 34                             |                                |
| 33                             | 327               | 311                              | 311                             | 334                                 | 66.8                            | 50.0                             | 76.6                          | 53.3                          | 34.9                          | 45.1 | 33                             |                                |
| 32                             | 318               | 301                              | 301                             | 326                                 | 66.3                            | 49.2                             | 76.1                          | 52.1                          | 33.7                          | 44.1 | 32                             |                                |
| 31                             | 310               | 294                              | 294                             | 318                                 | 65.8                            | 48.4                             | 75.6                          | 51.3                          | 32.5                          | 43.1 | 31                             |                                |
| 30                             | 302               | 286                              | 286                             | 311                                 | 65.3                            | 47.7                             | 75.0                          | 50.4                          | 31.3                          | 42.2 | 30                             |                                |
| 29                             | 294               | 279                              | 279                             | 304                                 | 64.8                            | 47.0                             | 74.5                          | 49.5                          | 30.1                          | 41.3 | 29                             |                                |
| 28                             | 286               | 271                              | 271                             | 297                                 | 64.3                            | 46.1                             | 73.9                          | 48.6                          | 28.9                          | 40.4 | 28                             |                                |
| 27                             | 279               | 264                              | 264                             | 290                                 | 63.8                            | 45.2                             | 73.3                          | 47.7                          | 27.8                          | 39.5 | 27                             |                                |
| 26                             | 272               | 258                              | 258                             | 284                                 | 63.3                            | 44.6                             | 72.8                          | 46.8                          | 26.7                          | 38.7 | 26                             |                                |
| 25                             | 266               | 253                              | 253                             | 278                                 | 62.8                            | 43.8                             | 72.2                          | 45.9                          | 25.5                          | 37.8 | 25                             |                                |
| 24                             | 260               | 247                              | 247                             | 272                                 | 62.4                            | 43.1                             | 71.6                          | 45.0                          | 24.3                          | 37.0 | 24                             |                                |
| 23                             | 254               | 243                              | 243                             | 266                                 | 62.0                            | 42.1                             | 71.0                          | 44.0                          | 23.1                          | 36.3 | 23                             |                                |
| 22                             | 248               | 237                              | 237                             | 261                                 | 61.5                            | 41.6                             | 70.5                          | 43.2                          | 22.0                          | 35.5 | 22                             |                                |
| 21                             | 243               | 231                              | 231                             | 256                                 | 61.0                            | 40.9                             | 69.9                          | 42.3                          | 20.7                          | 34.8 | 21                             |                                |
| 20                             | 238               | 226                              | 226                             | 251                                 | 60.5                            | 40.1                             | 69.4                          | 41.5                          | 19.6                          | 34.2 | 20                             |                                |

<sup>A</sup> 在表格标题中，力指总试验力。

<sup>B</sup> 补充部分 A1 包含了将非奥氏体钢实测硬度单位的值换算成洛氏 HRC 硬度值的公式。使用换算公式前请参见 1.12。

<sup>C</sup> 括号中的布氏硬度值超出了试验方法 E10 中 8.1 推荐的布氏硬度测试范围。

<sup>D</sup> 肖氏硬度的换算基于国家标准局为 13 个制钢比对方块提供的维氏硬度值，和邵氏仪器制造有限公司、轧辊制造协会及该协会会员在这些块上得到的肖氏硬度值所建立的维氏-肖氏硬度关系；同时基于美国金属学会和轧辊制造商协会之前发表的硬度换算。


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