

Corrections for hardness readings
Taken on spherical Surfaces

Table H below will be found useful for converting
Rockwell C scale readings taken on ball surfaces to
equivalent values applicable to flat surfaces in the
nominal size range of 6mm to 25mm (1/4" – 1") diameter

Table H
Ball hardness corrections for curvatures (I)
metric sizes

Corrections to be added to Rockwell "C" reading obtained on spherical surfaces(II)

| RC | Ball diameters | | | | | | |
|----------|----------------|-----|------|------|------|------|------|
| Readings | 6mm | 8mm | 10mm | 12mm | 15mm | 20mm | 25mm |
| 20 | 12.8 | 9.3 | 7.6 | 6.6 | 5.2 | 4.0 | 3.2 |
| 25 | 11.7 | 8.4 | 6.9 | 5.9 | 4.6 | 3.5 | 2.8 |
| 30 | 10.5 | 7.5 | 6.1 | 5.2 | 4.1 | 3.1 | 2.4 |
| 35 | 9.4 | 6.6 | 5.4 | 4.6 | 3.6 | 2.7 | 2.1 |
| 40 | 8.0 | 5.7 | 4.5 | 3.8 | 3.0 | 2.2 | 1.8 |
| | | | | | | | |
| 45 | 6.7 | 4.9 | 3.8 | 3.2 | 2.5 | 1.8 | 1.4 |
| 50 | 5.5 | 4.0 | 3.0 | 2.6 | 2.0 | 1.4 | 1.1 |
| 55 | 4.3 | 3.1 | 2.3 | 1.9 | 1.5 | 1.0 | 0.8 |
| 60 | 3.0 | 2.2 | 1.7 | 1.2 | 1.0 | 0.6 | 0.4 |
| 65 | 1.9 | 1.3 | 0.9 | 0.6 | 0.4 | 0.2 | 0.1 |

- (I) This table is for chrome alloy steel and corrosion resisting hardened and unhardened steel balls and carbon steel balls
(II) Hardness readings of balls taken on spherical surfaces are affected by the curvature and hardness level of the ball. Because of these factors, corrections are necessarily added to the as-read hardness. For ball sizes and hardness values other than shown, interpolate between values above.

Table H
Ball hardness corrections for curvatures (I)
inch sizes

Corrections to be added to Rockwell "C" reading obtained on spherical surfaces(II)

| RC | Ball diameters | | | | | | |
|----------|----------------|-------|------|------|------|------|-----|
| Readings | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1" |
| 20 | 12.1 | 9.3 | 7.7 | 6.1 | 4.9 | 4.1 | 3.1 |
| 25 | 11.0 | 8.4 | 7.0 | 5.5 | 4.4 | 3.7 | 2.7 |
| 30 | 9.8 | 7.5 | 6.2 | 4.9 | 3.9 | 3.2 | 2.4 |
| 35 | 8.6 | 6.6 | 5.5 | 4.3 | 3.4 | 2.8 | 2.1 |
| 40 | 7.5 | 5.7 | 4.7 | 3.6 | 2.9 | 2.4 | 1.7 |
| | | | | | | | |
| 45 | 6.3 | 4.9 | 4.0 | 3.0 | 2.4 | 1.9 | 1.4 |
| 50 | 5.2 | 4.0 | 3.2 | 2.4 | 1.9 | 1.5 | 1.1 |
| 55 | 4.1 | 3.1 | 2.5 | 1.8 | 1.4 | 1.1 | 0.8 |
| 60 | 2.9 | 2.2 | 1.8 | 1.2 | 0.9 | =:/ | 0.4 |
| 65 | 1.8 | 1.3 | 1.0 | 0.5 | 0.3 | 0.2 | 0.1 |

- (I) This table is for chrome alloy steel and corrosion resisting hardened and unhardened steel balls and carbon steel balls
(III) Hardness readings of balls taken on spherical surfaces are affected by the curvature and hardness level of the ball. Because of these factors, corrections are necessarily added to the as-read hardness. For ball sizes and hardness values other than shown, interpolate between values above.