

Grating Standards & Compliance



- ▶ For over 35 years Lionweld Kennedy have operated in the Oil and Gas industry.
- ▶ We supply fabricated gratings, stair treads, barrier rail systems, platforms and support structures in both steel and GRP.
- ▶ Many of our products are specified at design stage and we pride ourselves in supplying quality products globally.
- ▶ Our product range has developed over the years with our technical department having made significant improvements to the slip resistance of our gratings, structural integrity and additional health & safety qualities, which comply to current British and European standards (both steel and GRP).

Requirements of the British Standard Gratings - “Compliance”

BS4592-0:2006+A1:2012



The maximum openings within a working platform or walkway shall not permit the passage of a 35mm diameter sphere, except where the working platform or walkway is above a place where people are working, as opposed to passing occasionally, then the maximum openings shall not permit the passage of a 20mm diameter sphere.



Where metal treads or landings are used for fire escapes, the gratings shall not allow passage of a 20mm diameter ball.



Mandatory Legal Requirement

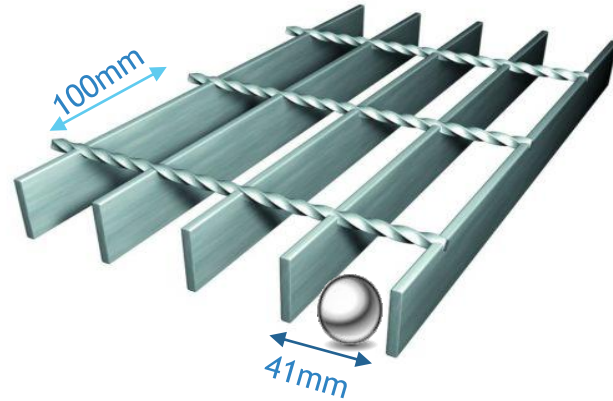
BS EN ISO 14122-2:2016, states at 4.2.4.5 - Permanent means of access to machinery

“- Floorings of working platforms or walkways shall only have such maximum openings that a ball with a diameter of 35mm cannot fall through.

Floorings above a place where people are working, as opposed to occasional passage, shall have such maximum openings that a ball with a diameter of 20mm cannot fall through.

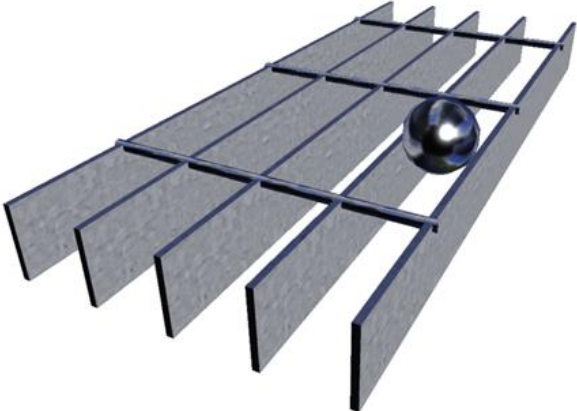


The most commonly used grating size is 41 / 100 - What has changed ?



- 41 / 100 is now non compliant “in many areas”
- The “OLD” 2006 standard met a 40mm Ball Proof Specification

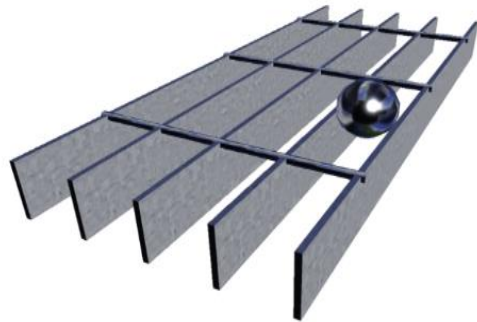
OLD Market



| | 35mm BP | 20mm BP | Non BP | |
|--------|---------|---------|--------|--|
| 41/100 | | | | Not 35mm or 20mm Ball Proof |
| 33/100 | | | | Over Compliant |
| 30/100 | | | | Unnecessary amount of steel in the product |
| 20/100 | | | | Over compliant |

Key Design Criteria Since 2012

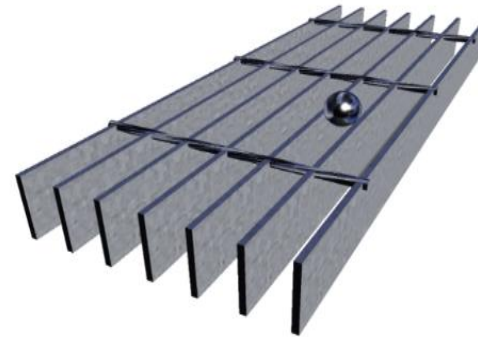
35mm Ball Proof



General Walkways where people may occasionally walk

| Bar thickness | Mesh Size |
|---------------|-----------|
| 3mm | 37/125 |
| 5mm | 38/125 |

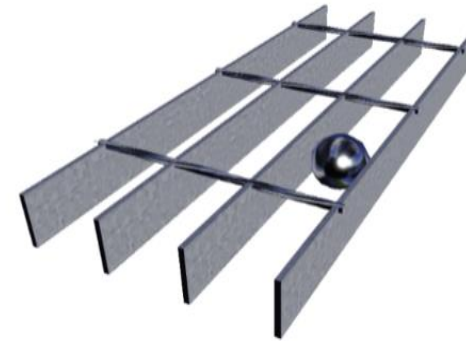
20mm Ball Proof



Where people may work below the walkway or where stairs are used as means of escape

| Bar thickness | Mesh Size |
|---------------|-----------|
| 3mm | 21/100 |
| 5mm | 23/100 |

Utility Grating (no ball proof Requirements)

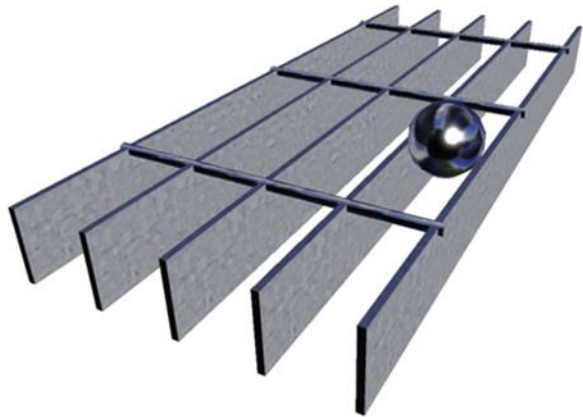


Utility Gratings where there is no risk of people passing below the walkway and is not used as 'Access to Machinery'


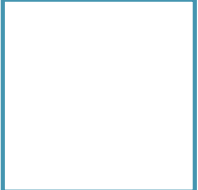

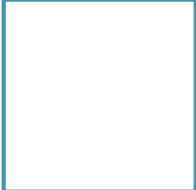





| Bar thickness | Mesh Size |
|---------------|-----------|
| 3mm | 47/125 |
| 5mm | 47/125 |



NEW Market



35mm BP 20mm BP Utility Grating

| | | | |
|--------|--|--|--|
| LK35BP |  |  |  |
| LK20BP |  |  |  |
| LKUG |  |  |  |

Thank you



If **YOU** specify, distribute, purchase, fabricate
or **install steel gratings,**
YOU have a responsibility to provide **compliant products**
to the **latest specification.**

20
Lionweld Kennedy 20mm Ball Proof Grating
Specification to: BS4592-0:2006+A1:2012

To be used where the working platform or walkway is above a place where people are working (as opposed to people passing under it occasionally).

The maximum openings shall not permit the passage of a 20mm diameter sphere.

Typically used on walkways above machinery and permanent working areas, where the risk to personnel from large objects, falling from above, is critical.

35
Lionweld Kennedy 35mm Ball Proof Grating
Specification to: BS4592-0:2006+A1:2012

To be used where the working platform or walkway is above a place where people pass through occasionally, the maximum openings shall not permit the passage of a 35mm diameter sphere.

Typically used on maintenance access, industrial plants, un-manned substation modules, data centres, where site access is limited and occasional.

U
Lionweld Kennedy Utility Grating
Specification to: BS4592-0:2006+A1:2012

To be used where there is no risk of personnel passing below the working platform or walkway.

Typically used on ground level shallow trenches, above water channels in treatment works or placed on solid floors to elevate walking areas from contaminants.

Contact the
Technical team on
01642 233297

| 3MM LK20BP (MESH SIZE 21/100) | | | | | | | |
|-------------------------------|----------------------|--------------------|-----------------|------------------------------|-----------------|--|--|
| Bearing Bar Dimensions (mm) | Loading Category | Max Clear Span 4mm | Deflection (mm) | Max Clear Span L/200 or 10mm | Deflection (mm) | Self Colour Weights Per Square Metre (kgs) | Binding Bar Weight Based on 2x1m (kgs) |
| 25 x 3 | 5kn/m ² | 1075 | 3.98 | 1300 | 6.16 | 30.49 | 1.18 |
| | 7.5kn/m ² | 1055 | 3.99 | 1155 | 5.73 | | |
| 30 x 3 | 5kn/m ² | 1305 | 4.00 | 1580 | 7.90 | 36.03 | 1.41 |
| | 7.5kn/m ² | 1210 | 3.98 | 1390 | 6.90 | | |
| 35 x 3 | 5kn/m ² | 1535 | 3.99 | 1840 | 9.17 | 41.56 | 1.65 |
| | 7.5kn/m ² | 1355 | 3.94 | 1620 | 8.05 | | |
| 40 x 3 | 5kn/m ² | 1655 | 4.00 | 2080 | 9.98 | 47.09 | 1.88 |
| | 7.5kn/m ² | 1505 | 4.00 | 1855 | 9.23 | | |

| 5MM LK20BP (MESH SIZE - 23/100) | | | | | | | |
|---------------------------------|----------------------|--------------------|-----------------|------------------------------|-----------------|--|--|
| Bearing Bar Dimensions (mm) | Loading Category | Max Clear Span 4mm | Deflection (mm) | Max Clear Span L/200 or 10mm | Deflection (mm) | Self Colour Weights Per Square Metre (kgs) | Binding Bar Weight Based on 2x1m (kgs) |
| 25 x 5 | 5kn/m ² | 1290 | 3.90 | 1525 | 7.62 | 45.01 | 1.96 |
| | 7.5kn/m ² | 1180 | 3.98 | 1340 | 6.63 | | |
| 30 x 5 | 5kn/m ² | 1485 | 3.98 | 1825 | 9.09 | 53.45 | 2.36 |
| | 7.5kn/m ² | 1350 | 3.95 | 1610 | 8.00 | | |
| 35 x 5 | 5kn/m ² | 1665 | 4.00 | 2090 | 9.91 | 61.89 | 2.75 |
| | 7.5kn/m ² | 1515 | 3.96 | 1880 | 9.39 | | |
| 40 x 5 | 5kn/m ² | 1830 | 3.94 | 2305 | 9.92 | 70.33 | 3.14 |
| | 7.5kn/m ² | 1675 | 3.98 | 2105 | 9.94 | | |
| 45 x 5 | 5kn/m ² | 2005 | 3.97 | 2525 | 9.99 | 78.77 | 3.53 |
| | 7.5kn/m ² | 1830 | 3.97 | 2305 | 9.99 | | |
| 50 x 5 | 5kn/m ² | 2160 | 4.00 | 2715 | 9.98 | 87.21 | 3.93 |
| | 7.5kn/m ² | 1975 | 3.99 | 2485 | 9.99 | | |
| 60 x 5 | 5kn/m ² | 2460 | 3.98 | 3095 | 9.98 | 104.09 | 4.71 |
| | 7.5kn/m ² | 2255 | 3.98 | 2835 | 9.95 | | |

| 3MM LK35BP (MESH SIZE - 37/125) | | | | | | | |
|---------------------------------|----------------------|--------------------|-----------------|------------------------------|-----------------|--|--|
| Bearing Bar Dimensions (mm) | Loading Category | Max Clear Span 4mm | Deflection (mm) | Max Clear Span L/200 or 10mm | Deflection (mm) | Self Colour Weights Per Square Metre (kgs) | Binding Bar Weight Based on 2x1m (kgs) |
| 25 x 3 | 5kn/m ² | 875 | 3.99 | 930 | 4.61 | 18.74 | 1.18 |
| | 7.5kn/m ² | 875 | 3.99 | 930 | 4.61 | | |
| 30 x 3 | 5kn/m ² | 1060 | 4.00 | 1170 | 5.05 | 22.03 | 1.41 |
| | 7.5kn/m ² | 1060 | 4.00 | 1170 | 5.82 | | |
| 35 x 3 | 5kn/m ² | 1240 | 3.96 | 1420 | 5.43 | 25.33 | 1.65 |
| | 7.5kn/m ² | 1195 | 3.97 | 1365 | 6.77 | | |
| 40 x 3 | 5kn/m ² | 1430 | 3.98 | 1700 | 7.35 | 28.63 | 1.88 |
| | 7.5kn/m ² | 1320 | 3.95 | 1565 | 7.79 | | |

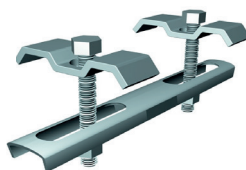
| 5MM LK35BP (MESH SIZE - 38/125) | | | | | | | |
|---------------------------------|----------------------|--------------------|-----------------|------------------------------|-----------------|--|--|
| Bearing Bar Dimensions (mm) | Loading Category | Max Clear Span 4mm | Deflection (mm) | Max Clear Span L/200 or 10mm | Deflection (mm) | Self Colour Weights Per Square Metre (kgs) | Binding Bar Weight Based on 2x1m (kgs) |
| 25 x 5 | 5kn/m ² | 1145 | 3.99 | 1310 | 6.51 | 28.74 | 1.96 |
| | 7.5kn/m ² | 1050 | 3.96 | 1150 | 5.70 | | |
| 30 x 5 | 5kn/m ² | 1330 | 4.00 | 1575 | 7.86 | 34.04 | 2.36 |
| | 7.5kn/m ² | 1205 | 3.96 | 1385 | 6.91 | | |
| 35 x 5 | 5kn/m ² | 1490 | 3.97 | 1835 | 9.13 | 39.34 | 2.75 |
| | 7.5kn/m ² | 1355 | 3.98 | 1615 | 8.03 | | |
| 40 x 5 | 5kn/m ² | 1645 | 3.97 | 2070 | 9.96 | 44.64 | 3.14 |
| | 7.5kn/m ² | 1495 | 3.95 | 1845 | 9.18 | | |
| 45 x 5 | 5kn/m ² | 1800 | 3.98 | 2265 | 9.98 | 49.94 | 3.53 |
| | 7.5kn/m ² | 1635 | 3.96 | 2060 | 9.98 | | |
| 50 x 5 | 5kn/m ² | 1940 | 3.98 | 2440 | 9.95 | 55.24 | 3.93 |
| | 7.5kn/m ² | 1765 | 3.96 | 2225 | 9.99 | | |
| 60 x 5 | 5kn/m ² | 2200 | 4.00 | 2790 | 9.98 | 65.84 | 4.71 |
| | 7.5kn/m ² | 2020 | 3.96 | 2545 | 9.98 | | |

| 3MM UTILITY GRATING (MESH SIZE - 47/125) | | | | | | | |
|--|----------------------|--------------------|-----------------|------------------------------|-----------------|--|--|
| Bearing Bar Dimensions (mm) | Loading Category | Max Clear Span 4mm | Deflection (mm) | Max Clear Span L/200 or 10mm | Deflection (mm) | Self Colour Weights Per Square Metre (kgs) | Binding Bar Weight Based on 2x1m (kgs) |
| 25 x 3 | 5kn/m ² | 775 | 3.69 | 775 | 3.69 | 15.20 | 1.18 |
| | 7.5kn/m ² | 775 | 3.69 | 775 | 3.69 | | |
| 30 x 3 | 5kn/m ² | 965 | 3.98 | 1035 | 4.70 | 17.79 | 1.41 |
| | 7.5kn/m ² | 965 | 3.98 | 1035 | 4.70 | | |
| 35 x 3 | 5kn/m ² | 1135 | 3.99 | 1255 | 5.05 | 20.38 | 1.65 |
| | 7.5kn/m ² | 1125 | 3.99 | 1255 | 6.17 | | |
| 40 x 3 | 5kn/m ² | 1305 | 3.98 | 1495 | 5.46 | 22.97 | 1.88 |
| | 7.5kn/m ² | 1245 | 3.98 | 1440 | 7.12 | | |

| 5MM UTILITY GRATING (MESH SIZE - 47/125) | | | | | | | |
|--|----------------------|--------------------|-----------------|------------------------------|-----------------|--|--|
| Bearing Bar Dimensions (mm) | Loading Category | Max Clear Span 4mm | Deflection (mm) | Max Clear Span L/200 or 10mm | Deflection (mm) | Self Colour Weights Per Square Metre (kgs) | Binding Bar Weight Based on 2x1m (kgs) |
| 25 x 5 | 5kn/m ² | 1050 | 3.98 | 1225 | 6.10 | 23.84 | 1.96 |
| | 7.5kn/m ² | 995 | 3.92 | 1075 | 5.34 | | |
| 30 x 5 | 5kn/m ² | 1265 | 4.00 | 1470 | 7.29 | 28.16 | 2.36 |
| | 7.5kn/m ² | 1145 | 3.96 | 1290 | 6.38 | | |
| 35 x 5 | 5kn/m ² | 1415 | 3.95 | 1715 | 8.52 | 32.47 | 2.75 |
| | 7.5kn/m ² | 1285 | 3.95 | 1510 | 7.53 | | |
| 40 x 5 | 5kn/m ² | 1565 | 3.97 | 1960 | 9.77 | 36.79 | 3.14 |
| | 7.5kn/m ² | 1420 | 3.95 | 1725 | 8.59 | | |
| 45 x 5 | 5kn/m ² | 1710 | 3.96 | 2155 | 9.98 | 41.11 | 3.53 |
| | 7.5kn/m ² | 1555 | 3.97 | 1955 | 9.91 | | |
| 50 x 5 | 5kn/m ² | 1850 | 3.99 | 2325 | 9.97 | 45.43 | 3.93 |
| | 7.5kn/m ² | 1680 | 3.97 | 2115 | 9.97 | | |
| 60 x 5 | 5kn/m ² | 2115 | 3.99 | 2660 | 9.98 | 54.06 | 4.71 |
| | 7.5kn/m ² | 1925 | 3.98 | 2420 | 9.95 | | |

Notes

1. Deflection in the table above is limited to span/200 or 10mm, whichever is the lesser.
2. It should be noted that the difference in level between a loaded and a neighbouring unloaded flooring shall not exceed 4mm. LK panel joint clips can be used to negate this issue. The tables have both options listed.
3. The tables are based upon BS4592-0:2006+A1:2012 & BS5950-1:2000
Table 2 Which is a 5kn/m² or 7.5kn/m² UDL OR a 1.5kn point load over a 200mmx200mm contact area, whichever is the more onerous.
4. The tables take into consideration MINIMUM bearing bar rolling tolerances as defined by LKFS-STD-98
5. Material is BS EN 10025 Grade S275JR



PANEL JOINING CLIPS ARE REQUIRED IF L/200 OR 10MM DEFLECTION IS USED



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