

## GRATING - Safe Load Tables

These tables are based on a maximum fibre stress of 165 MPa (i.e.  $1.5 \frac{\text{Span}}{200}$ ). The panels are assumed to be simply supported. The loads not shown in blue have been reduced to satisfy a maximum deflection of 200 or 10 mm, whichever is the lower condition. The red zones are spans which do not meet the patch load requirement of 3 kN applied to a square with 0.1 m sides as per 12.5.5 in the South African Steel Construction Handbook.

The maximum spans indicated take into account the limiting condition between the patch load and a uniformly distributed load of 3 kPa.

Safe loads for spans not indicated in the tables are available on request.

**c** = concentrated line load mid-span in kg/m width

**u** = uniformly distributed load in kg/m<sup>2</sup>

- ◆ For RS80 Rectagrid multiply the safe loads for RS40 Rectagrid by 0.5.
- ◆ For D Type Gripweld multiply the safe loads of A Type Gripweld by 0.5.
- ◆ For E Type Gripweld multiply the safe loads for B Type Gripweld by 0.5.
- ◆ For 3CR12, the tables can be used as is.
- ◆ For 304 and 316 Stainless Steels the safe loads for yield should be multiplied by 0.8.
- ◆ For aluminium multiply the safe loads by 0.5.

	Maximum load due to yield criteria
	Maximum load due to deflection of span / 200
	Maximum load due to deflection of 10mm
	Spans which do not meet the 3kN patch load requirement as per SANS 10162-2:2010 and South African Steel Construction Handbook Section 12.5.5 Values shown ignore this condition.

### Load Tables - RS40 GRATING (40x40mm)

Nominal Bearer Bar Size (mm)		Span(m)								Max span (m)	
		0.5	0.75	1	1.25	1.5	1.75	2	2.25		
25x4.5	c	1577	1051	717	459	319	234	179	126	92	1.25
	u	6307	2718	1147	587	340	214	143	89	59	
30x3	c	1514	1009	757	528	367	270	206	145	106	1.00
	u	6055	2691	1321	676	391	247	165	103	68	
30x4.5	c	2271	1514	1135	793	550	404	310	217	159	1.86
	u	9083	4037	1982	1015	587	370	248	155	101	
40x3	c	2691	1794	1346	1076	870	639	489	344	251	2.13
	u	10765	4784	2691	1603	928	584	391	244	160	
40x4.5	c	4037	2691	2018	1615	1305	959	734	515	376	2.35
	u	16147	7176	4037	2405	1392	876	587	367	240	
50x4.5	c	6307	4205	3154	2523	2102	1802	1433	1007	734	2.79
	u	25229	11213	6307	4037	2718	1712	1147	716	470	
60x3	c	6055	4037	3028	2422	2018	1730	1651	1160	846	2.88
	u	24220	10765	6055	3875	2691	1972	1321	825	541	
60x4.5	c	9083	6055	4541	3633	3028	2595	2477	1740	1268	3.19
	u	36330	16147	9083	5813	4037	2958	1982	1237	812	

Load Tables - RS40 GRATING (44.5x40mm) and (44.5x50mm)

Nominal Bearer Bar Size (mm)		Span(m)									Max span (m)
		0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	
25x4.5	c	1417	945	644	412	286	210	161	113	82	1.00
	u	5670	2443	1031	528	305	192	129	80	53	
30x3	c	1361	907	680	475	330	242	186	130	95	0.75
	u	5443	2419	1188	608	352	222	148	93	61	
30x4.5	c	2041	1361	1021	713	495	364	278	195	143	1.75
	u	8164	3628	1781	912	528	332	223	139	91	
40x3	c	2419	1613	1209	968	782	574	440	309	225	2.07
	u	9676	4300	2419	1441	834	525	352	220	144	
40x4.5	c	3628	2419	1814	1451	1173	862	660	463	338	2.29
	u	14514	6451	3628	2162	1251	788	528	329	216	
40x5.5	c	4435	2957	2217	1774	1433	1053	806	566	413	2.41
	u	17739	7884	4435	2642	1529	963	645	403	264	
50x4.5	c	5670	3780	2835	2268	1890	1620	1289	905	660	2.71
	u	22678	10079	5670	3628	2443	1539	1031	644	422	
60x3	c	5443	3628	2721	2177	1814	1555	1484	1043	760	2.81
	u	21771	9676	5443	3483	2419	1773	1188	741	486	
60x4.5	c	8164	5443	4082	3266	2721	2333	2227	1564	1140	3.11
	u	32656	14514	8164	5225	3628	2659	1781	1112	730	
60x5.5	c	9978	6652	4989	3991	3326	2851	2721	1911	1393	3.27
	u	39913	17739	9978	6386	4435	3250	2177	1359	892	
80x4.5	c	14514	9676	7257	5806	4838	4147	5278	3707	2702	3.85
	u	58056	25803	14514	9289	6451	4739	4222	2636	1729	
80x5.5	c	17739	11826	8870	7096	5913	5068	6451	4530	3303	4.06
	u	70957	31537	17739	11353	7884	5792	5161	3222	2114	
100x5.5	c	27718	18478	13859	11087	9239	7919	12599	8849	6451	4.80
	u	110871	49276	27718	17739	12319	9051	10079	6292	4128	

Load Tables - A60 GRATING

Nominal Bearer Bar Size (mm)		Span(m)									Max span (m)
		0.5	0.75	1	1.25	1.5	1.75	2	2.25	2.5	
25x4.5	c	1911	1274	869	556	386	284	217	153	111	1.00
	u	7645	3296	1390	712	412	259	174	108	71	
30x3	c	1835	1223	917	641	445	327	250	176	128	0.75
	u	7339	3262	1601	820	474	299	200	125	82	
30x4.5	c	2752	1835	1376	961	667	490	375	264	192	1.50
	u	11009	4893	2402	1230	712	448	300	187	123	
40x3	c	3262	2175	1631	1305	1054	775	593	417	304	1.50
	u	13048	5799	3262	1943	1125	708	474	296	194	
40x4.5	c	4893	3262	2446	1957	1582	1162	890	625	455	2.00
	u	19572	8699	4893	2915	1687	1062	712	444	292	
40x5.5	c	5980	3967	2990	2392	1933	1420	1067	764	557	2.60
	u	23921	10632	5980	3563	2062	1298	870	543	356	
50x4.5	c	7645	5097	3823	3058	2548	2184	1738	1220	890	2.92
	u	30581	13592	7645	4893	3295	2075	1390	868	569	
50x5.5	c	9344	6229	4672	3738	3115	2670	2124	1492	1087	3.07
	u	37377	16612	9344	5980	4027	2536	1699	1061	696	
60x3	c	7339	4893	3670	2936	2446	2097	2002	1406	1025	3.02
	u	29358	13048	7339	4697	3262	2390	1601	1000	656	
60x4.5	c	11009	7339	5505	4404	3670	3145	3003	2109	1537	3.35
	u	44037	19572	11009	7046	4893	3585	2402	1500	984	
60x5.5	c	13456	8970	6726	5382	4485	3844	3670	2577	1879	3.52
	u	53823	23921	13456	8612	5980	4382	2936	1833	1202	
80x4.5	c	19572	13048	9786	7829	6524	5592	7117	4999	3644	4.15
	u	78287	34794	19572	12526	8699	6391	5694	3555	2332	
80x5.5	c	23921	15947	11961	9568	7974	6835	8699	6109	4454	4.37
	u	95685	42527	23921	15310	10632	7811	6959	4344	2850	
100x5.5	c	37377	24918	18688	14951	12459	10679	16989	11932	8699	5.17
	u	149507	66448	37377	23921	16612	12205	13592	8485	5567	