

Hartpapier

HP 2061

Hartpapier ist ein aus Papier und Phenolharz hergestellter duroplastischer Schichtstoff. Dieser Kunststoff zeichnet sich durch seine gute mechanische Festigkeit und elektrischen Eigenschaften im Niederspannungsbereich aus.

Anwendungsgebiet:

Schalttafelbau, Montageplatten, Stanzteile

HP 2061.5

gute elektrische und mechanische Eigenschaft
hochspannungsfest bis 40 KV

HP 2063

höchste Isolationswerte und Korrosionsfestigkeit auch
bei extremen Umweltbedingungen
gut stanzbar mit Vorwärmung bis 3,0 mm

HP 2062.9

mechanische und elektrische Eigenschaft wie HP 2063
kalt stanzbar
schwer entflammbar nach UL 94 Stufe V0

HP 2061.6

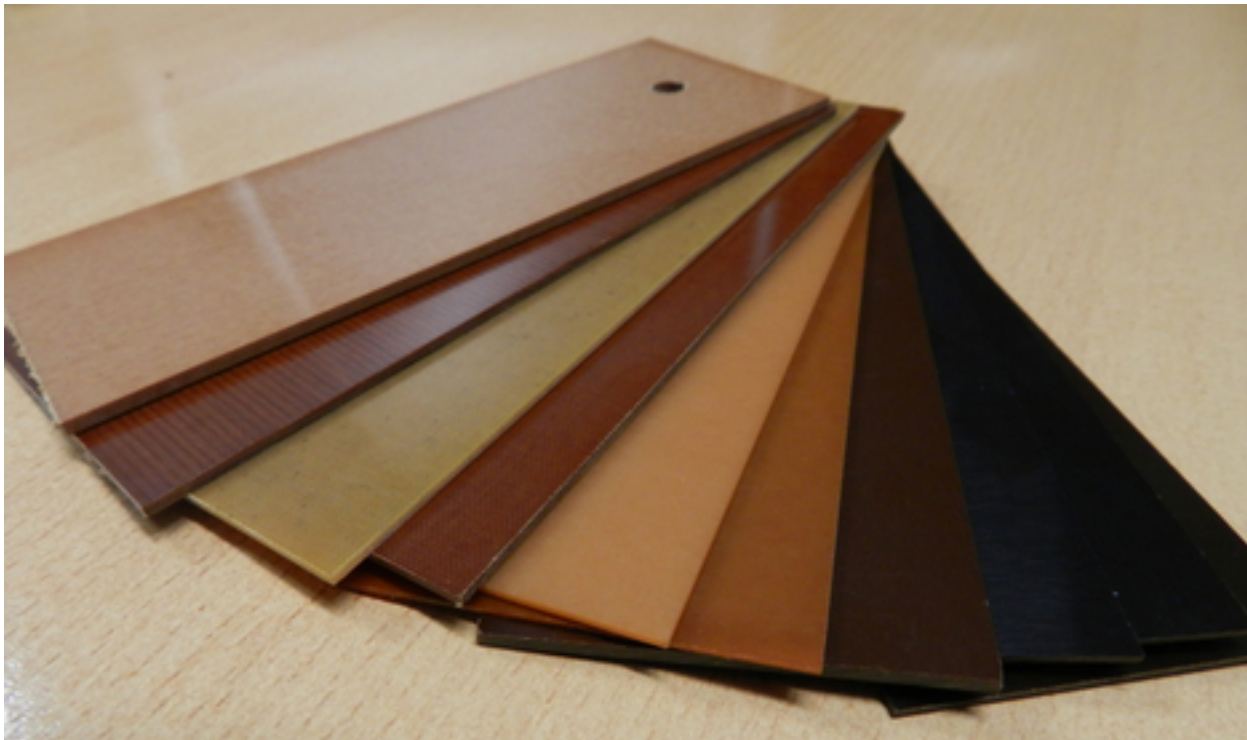
geringere Wasseraufnahme als bei HP 2061.5

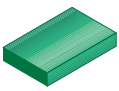
HP 2062.8

geringere Wasseraufnahme
geringere Rautiefe (Oberflächenrauheit)
gut stanzbar nach Vorwärmung

HP 2361.1

schwert entflammbar nach UL 94 Stufe V0
hervorragende elektrische und dieelektrische
Werte auch nach Langzeitbeanspruchung bei
hoher Luftfeuchte



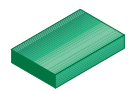


Platten

Farben

- gelbbraun
- hellbraun
- braun
- dunkelbraun
- schwarz abgedeckt
- schwarz durchgefärbt

| Stärke | Längen | Toleranzen Stärke mm | | HP 2061 | | | |
|--------|---------------|----------------------|------|------------------|------------------|------------------|------------------|
| | | | | Breite: 1.020 mm | Breite: 1.050 mm | Breite: 1.100 mm | Breite: 1.200 mm |
| | | | | kg/m | kg/m | kg/m | kg/m |
| 0,3 | 2.050 | -0,07 | 0,07 | | 0,439 ● | | |
| 0,4 | | | | | 0,585 ● | | |
| 0,5 | 1.075 | -0,08 | 0,08 | 0,707 ● | | | |
| | 2.050 | | | | 0,732 ●● | | |
| | 1.375 - 2.750 | | | | | | 0,829 ● |
| 0,6 | 2.050 | -0,09 | 0,09 | | 0,878 ●●●● | | |
| 0,8 | | -0,1 | 0,1 | | 1,170 ●●●● | | |
| 1 | 1.075 | -0,12 | 0,12 | 1,400 ● | | | |
| | 1.375 | | | | | | 1,660 ● |
| | 2.040 | | | | | 1,520 ●●●● | |
| | 2.050 | | | | 1,460 ●● | | |
| 1,2 | 2.040 | -0,14 | 0,14 | | | 1,860 ●●●● | |
| | 2.050 | | | | 1,760 ●●●● | | |
| 1,5 | 1.075 | -0,16 | 0,16 | 2,110 ● | | | |
| | 2.050 | | | | 2,200 ●● | | |
| | 1.375 - 2.750 | | | | | | 2,510 ● |
| 1,6 | 2.040 | | | | | 2,450 ●●●● | |
| | 2.050 | | | | 2,340 ●●●● | | |
| 1,7 | | | | | 2,490 ●● | | |
| 2 | 1.075 | -0,19 | 0,19 | 2,880 ● | | | |
| | 1.375 | | | | | | 3,310 ● |
| | 2.040 | | | | | 3,040 ●●●● | |
| | 2.050 | | | | 2,930 ●● | | |
| 2,5 | 2.040 | -0,22 | 0,22 | | | 3,820 ●●●● | |
| | 2.050 | | | | 3,660 ●●●● | | |
| 3 | 1.075 | -0,25 | 0,25 | 4,220 ● | | | |
| | 1.375 | | | | | | 5,020 ● |
| | 2.040 | | | | | 4,560 ●●●● | |
| | 2.050 | | | | 4,390 ●● | | |
| 4 | 1.075 | -0,3 | 0,3 | 5,670 ● | | | |
| | 1.375 | | | | | | 6,630 ● |
| | 2.040 | | | | | 6,370 ●●●● | |
| | 2.050 | | | | 5,850 ●● | | |
| 5 | 1.075 | -0,34 | 0,34 | 7,070 ● | | | |
| | 1.375 | | | | | | 8,290 ● |
| | 2.040 | | | | | 7,600 ●●●● | |
| | 2.050 | | | | 7,320 ●● | | |
| 6 | 1.075 | -0,37 | 0,37 | 9,530 ● | | | |
| | 1.375 | | | | | | 9,960 ● |
| | 2.040 | | | | | 9,120 ●●●● | |
| | 2.050 | | | | 8,730 ●● | | |
| 8 | 1.075 | -0,47 | 0,47 | 11,350 ● | | | |
| | 1.375 | | | | | | 13,310 ● |
| | 2.040 | | | | | 12,160 ●●●● | |
| | 2.050 | | | | 11,610 ●● | | |
| 10 | 1.075 | -0,55 | 0,55 | 14,190 ● | | | |
| | 1.375 | | | | | | 16,580 ● |
| | 2.040 | | | | | 15,200 ●●●● | |
| | 2.050 | | | | 14,490 ●● | | |
| 12 | 1.075 | -0,62 | 0,62 | 16,930 ● | | | |

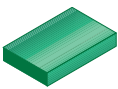


Platten

Farben

- gelbbraun
- hellbraun
- braun
- dunkelbraun
- schwarz abgedeckt
- schwarz durchfärbt

| Stärke | Längen | Toleranzen Stärke mm | | HP 2061 | | | |
|--------|---------------|----------------------|------|------------------|------------------|------------------|------------------|
| | | | | Breite: 1.020 mm | Breite: 1.050 mm | Breite: 1.100 mm | Breite: 1.200 mm |
| | | | | kg/m | kg/m | kg/m | kg/m |
| 12 | 1.375 | -0,62 | 0,62 | | | | 19,930 ● |
| | 2.040 | | | | | 18,240 ●●●● | |
| | 2.050 | | | | 17,410 ●● | | |
| 15 | 1.075 | | | 21,120 ● | | | |
| | 1.375 | | | | | | 24,870 ● |
| | 2.040 | | | | | 22,790 ●●●● | |
| | 2.050 | | | 21,760 ●● | | | |
| 18 | 2.040 | -0,8 | 0,8 | | | 28,730 ●●●● | |
| 20 | 1.075 | -0,86 | 0,86 | 28,190 ● | | | |
| | 1.375 | | | | | | 33,160 ● |
| | 2.050 | | | | 29,020 ●● | | |
| 25 | 1.075 | -1 | 1 | 35,260 ● | | | |
| | 1.375 | | | | | | 41,450 ● |
| | 2.050 | | | | 36,240 ●● | | |
| 30 | 1.075 | -1,15 | 1,15 | 42,230 ● | | | |
| | 1.375 | | | | | | 49,750 ● |
| | 2.050 | | | | 43,510 ●● | | |
| 35 | 1.075 | -1,25 | 1,25 | 49,300 ● | | | |
| | 2.050 | | | | 50,730 ●● | | |
| | 1.375 - 2.750 | | | | | | 57,960 ● |
| 40 | 1.075 | -1,35 | 1,35 | 56,370 ● | | | |
| | 2.050 | | | | 58,050 ●● | | |
| | 1.375 - 2.750 | | | | | | 66,250 ● |
| 45 | 1.075 | -1,45 | 1,45 | 63,350 ● | | | |
| | 2.050 | | | | 65,220 ●● | | |
| | 1.375 - 2.750 | | | | | | 74,550 ● |
| 50 | 1.075 | -1,55 | 1,55 | 79,440 ● | | | |
| | 2.050 | | | | 72,490 ●● | | |
| | 1.375 - 2.750 | | | | | | 82,840 ● |
| 60 | 1.075 | -1,9 | 1,9 | 84,470 ● | | | |
| | 2.050 | | | | 86,980 ●● | | |
| | 1.375 - 2.750 | | | | | | 99,420 ● |
| 70 | 1.075 | -2 | 2 | 106,790 ● | | | |
| | 2.050 | | | | 101,460 ●● | | |
| | 1.375 - 2.750 | | | | | | 116,000 ● |
| 80 | 2.050 | -2,2 | 2,2 | | 116,100 ●●●● | | |
| 90 | | -2,35 | 2,35 | | 130,440 ●●●● | | |

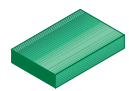


Platten

Farben

- gelbbraun
- hellbraun
- braun
- dunkelbraun
- schwarz abgedeckt
- schwarz durchfärbt

| Stärke | Längen | Toleranzen Stärke mm | | HP 2061 | | | HP 2061.5 |
|--------|--------|----------------------|------|------------------|------------------|------------------|------------------|
| | | | | Breite: 1.250 mm | Breite: 1.300 mm | Breite: 2.040 mm | Breite: 1.050 mm |
| mm | mm | min. | max. | kg/m | kg/m | kg/m | kg/m |
| 0,5 | 2.050 | -0,08 | 0,08 | | | | 0,732 ● |
| | | | | | | | 0,878 ● |
| | | | | | | | 1,170 ● |
| | | | | | | | 1,460 ● |
| 1 | 2.780 | | | 1,730 ●●●● | | | |
| | | | | | 1,800 ●●●● | | |
| | | | | | | 2,830 ●●●● | |
| | | | | | | | |
| 1,2 | 2.050 | -0,14 | 0,14 | | | | 1,760 ● |
| | | | | 2,090 ●●●● | | | |
| | | | | | 2,160 ●●●● | | |
| | | | | | | 3,390 ●●●● | |
| 1,5 | 2.050 | -0,16 | 0,16 | | | | 2,200 ● |
| | | | | | | | 2,340 ● |
| | | | | 2,770 ●●●● | | | |
| | | | | | 2,890 ●●●● | | |
| 1,6 | 2.780 | | | | | | |
| | | | | | | 4,520 ●●●● | |
| | | | | | | | |
| | | | | | | | |
| 1,7 | 2.050 | -0,19 | 0,19 | | | | 2,490 ● |
| | | | | | | | 2,930 ● |
| | | | | 3,450 ●●●● | | | |
| | | | | | 3,610 ●●●● | | |
| 2,5 | 2.050 | -0,22 | 0,22 | | | | 3,660 ● |
| | | | | 4,320 ●●●● | | | |
| | | | | | 4,490 ●●●● | | |
| | | | | | | 7,080 ●●●● | |
| 3 | 2.050 | -0,25 | 0,25 | | | | 4,390 ● |
| | | | | 5,180 ●●●● | | | |
| | | | | | 5,410 ●●●● | | |
| | | | | | | 8,460 ●●●● | |
| 4 | 2.050 | -0,3 | 0,3 | | | | 5,850 ● |
| | | | | 6,910 ●●●● | | | |
| | | | | | 7,210 ●●●● | | |
| | | | | | | 11,290 ●●●● | |
| 5 | 2.050 | -0,34 | 0,34 | | | | 7,320 ● |
| | | | | 8,630 ●●●● | | | |
| | | | | | 8,980 ●●●● | | |
| | | | | | | 14,090 ●●●● | |
| 6 | 2.050 | -0,37 | 0,37 | | | | 8,780 ● |
| | | | | 10,430 ●●●● | | | |
| | | | | | 10,790 ●●●● | | |
| | | | | | | 16,900 ●●●● | |
| 8 | 2.050 | -0,47 | 0,47 | | | | 11,710 ● |
| | | | | 13,850 ●●●● | | | |
| | | | | | 14,360 ●●●● | | |
| | | | | | | 22,580 ●●●● | |
| 10 | 2.050 | -0,55 | 0,55 | | | | 14,630 ● |
| | | | | 17,270 ●●●● | | | |
| | | | | | 18,030 ●●●● | | |
| | | | | | | 28,150 ●●●● | |
| 12 | 2.050 | -0,62 | 0,62 | | | | 17,560 ● |

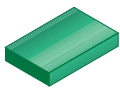


Platten

Farben

- gelbbraun
- hellbraun
- braun
- dunkelbraun
- schwarz abgedeckt
- schwarz durchfärbt

| Stärke | Längen | Toleranzen Stärke mm | | HP 2061 | | | HP 2061.5 |
|--------|--------|----------------------|------|------------------|------------------|------------------|------------------|
| | | | | Breite: 1.250 mm | Breite: 1.300 mm | Breite: 2.040 mm | Breite: 1.050 mm |
| mm | mm | min. | max. | kg/m | kg/m | kg/m | kg/m |
| 12 | 2.780 | -0,62 | 0,62 | 20,720 ●●●● | | | |
| | 3.050 | | | | 21,540 ●●●● | | |
| | 5.580 | | | | | 33,800 ●●●● | |
| 15 | 2.050 | | | | | | 21,900 ● |
| | 2.780 | | | 25,900 ●●●● | | | |
| | 3.050 | | | | 26,920 ●●●● | | |
| | 5.580 | | | | 42,240 ●●●● | | |
| 18 | | -0,8 | 0,8 | | | 50,720 ●●●● | |
| 20 | 2.050 | -0,86 | 0,86 | | | | 29,220 ● |
| | 2.780 | | | 34,530 ●●●● | | | |
| | 3.050 | | | | 35,900 ●●●● | | |
| 25 | 2.050 | -1 | 1 | | | | 36,490 ● |
| | 2.780 | | | 43,170 ●●●● | | | |
| | 3.050 | | | | 44,920 ●●●● | | |
| 30 | 2.050 | -1,15 | 1,15 | | | | 43,800 ● |
| | 2.780 | | | 51,800 ●●●● | | | |
| | 3.050 | | | | 53,840 ●●●● | | |
| 35 | 2.050 | -1,25 | 1,25 | | | | 51,120 ● |
| | 3.050 | | | | 62,950 ●●●● | | |
| 40 | 2.050 | -1,35 | 1,35 | | | | 58,390 ● |
| | 3.050 | | | | 71,800 ●●●● | | |
| 45 | 2.050 | -1,45 | 1,45 | | | | 65,710 ● |
| 50 | | -1,55 | 1,55 | | | | 72,980 ● |
| 60 | | -1,9 | 1,9 | | | | 87,610 ● |
| 70 | | -2 | 2 | | | | 102,200 ● |
| 80 | | -2,2 | 2,2 | | | | 116,780 ● |
| 90 | | -2,35 | 2,35 | | | | 131,370 ● |

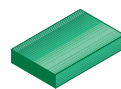


Platten

Farben

- gelbbraun
- hellbraun
- braun
- dunkelbraun
- schwarz abgedeckt
- schwarz durchfärbt

| Stärke | Längen | Toleranzen Stärke mm | | HP 2061.5 | HP 2061.6 | | HP 2063 |
|--------|--------|----------------------------|------|---------------------|---------------------|---------------------|---------------------|
| | | | | Breite: 1.250 mm | Breite: 1.050 mm | Breite: 1.250 mm | Breite: 1.050 mm |
| | | | | kg/m | kg/m | kg/m | kg/m |
| mm | mm | min. | max. | | | | |
| 0,3 | 2.050 | -0,07 | 0,07 | | | | 0,439 ● |
| 0,4 | | | | | | | 0,585 ● |
| 0,5 | | -0,08 | 0,08 | | 0,732 ● | | 0,732 ● |
| 0,6 | | | | | 0,868 ● | | 0,878 ● |
| 0,8 | | -0,1 | 0,1 | | 1,160 ● | | 1,160 ● |
| 1 | | | | | 1,460 ● | | 1,460 ● |
| 1,2 | | -0,12 | 0,12 | | 1,760 ● | | 1,760 ● |
| 1,5 | | | | | 2,180 ● | | 2,200 ● |
| 1,6 | | -0,14 | 0,14 | | 2,320 ● | | 2,340 ● |
| 2 | | | | | 2,930 ● | | 2,930 ● |
| 2,5 | | -0,19 | 0,19 | | 3,660 ● | | 3,660 ● |
| 3 | | | | | 4,390 ● | | 4,390 ● |
| 4 | | -0,22 | 0,22 | | 5,800 ● | | 5,800 ● |
| 5 | | | | | 7,270 ● | | 7,270 ● |
| 6 | | -0,25 | 0,25 | | 8,730 ● | | 8,730 ● |
| 8 | | | | 11,610 ● | | 11,610 ● | |
| 10 | -0,3 | 0,3 | | 14,490 ● | | 14,490 ● | |
| 12 | | | | 17,410 ● | | 17,410 ● | |
| 15 | -0,34 | 0,34 | | 21,760 ● | | 21,760 ● | |
| 20 | | | | 26,080 ● | 25,900 ● | | |
| 25 | 2.050 | -0,37 | 0,37 | | 29,020 ● | | 29,020 ● |
| 30 | | | | | 36,240 ● | | 36,240 ● |
| 35 | | -1 | 1 | | 43,510 ● | | 43,510 ● |
| 40 | | | | | 50,730 ● | | 50,730 ● |
| 45 | | -1,15 | 1,15 | | 58,000 ● | | 58,050 ● |
| 50 | | | | | 65,220 ● | | 65,220 ● |
| 60 | | -1,25 | 1,25 | | 72,490 ● | | 72,490 ● |
| 70 | | | | | 86,980 ● | | 86,980 ● |
| 80 | | -1,35 | 1,35 | | 101,460 ● | | 96,680 ● |
| 90 | | | | | 115,950 ● | | 115,950 ● |
| | | -1,45 | 1,45 | | 130,440 ● | | 130,440 ● |
| | | | | | | | |

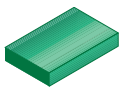


Platten

Farben

- gelbbraun
- hellbraun
- braun
- dunkelbraun
- schwarz abgedeckt
- schwarz durchfärbt

| Stärke | Längen | Toleranzen Stärke mm | | HP 2062.8 | HP 2062.9 V0 | HP 2361.1 |
|--------|--------|----------------------|------|------------------|------------------|------------------|
| | | | | Breite: 1.050 mm | Breite: 1.070 mm | Breite: 1.070 mm |
| mm | mm | min. | max. | kg/m | kg/m | kg/m |
| 0,2 | 1.170 | -0,06 | 0,06 | | 0,299 ● | 0,299 ● |
| | 2.050 | | | 0,439 ● | | |
| 0,3 | 1.170 | -0,07 | 0,07 | | 0,444 ● | 0,444 ● |
| | 2.050 | | | 0,585 ● | | |
| 0,4 | 1.170 | | | | 1,000 ● | 0,598 ● |
| | 2.050 | | | 0,732 ● | | |
| 0,5 | 1.170 | -0,08 | 0,08 | | 0,744 ● | 0,769 ● |
| | 2.050 | | | 0,878 ● | | |
| 0,6 | 1.170 | -0,09 | 0,09 | | 1,200 ● | 1,200 ● |
| | 2.050 | | | 1,170 ● | | |
| 0,8 | 1.170 | -0,1 | 0,1 | | 1,500 ● | 1,500 ● |
| | 2.050 | | | 1,460 ● | | |
| 1 | 1.170 | -0,12 | 0,12 | | 1,790 ● | 1,790 ● |
| | 2.050 | | | 1,760 ● | | |
| 1,2 | 1.170 | -0,14 | 0,14 | | 2,200 ● | |
| | 2.050 | | | 2,340 ● | | |
| 1,5 | 1.170 | -0,16 | 0,16 | | 2,390 ● | 2,390 ● |
| | 2.050 | | | 2,490 ● | | |
| 1,6 | 1.170 | | | | 2,990 ● | 2,990 ● |
| | 2.050 | | | 2,930 ● | | |
| 1,7 | 1.170 | -0,19 | 0,19 | | 3,760 ● | 3,720 ● |
| | 2.050 | | | 3,660 ● | | |
| 2 | 1.170 | -0,22 | 0,22 | | 4,530 ● | 4,530 ● |
| | 2.050 | | | 4,670 ● | | |
| 2,5 | 1.170 | -0,25 | 0,25 | | 5,980 ● | 5,980 ● |
| | 2.050 | | | 5,850 ● | | |
| 3 | 1.170 | -0,3 | 0,3 | | 7,440 ● | 7,440 ● |
| | 2.050 | | | 7,830 ● | | |
| 4 | 1.170 | -0,34 | 0,34 | | 8,970 ● | 8,970 ● |
| | 2.050 | | | 8,780 ● | | |
| 5 | 1.170 | -0,37 | 0,37 | | 11,970 ● | 11,970 ● |
| | 2.050 | | | 12,630 ● | | |
| 6 | 1.170 | -0,47 | 0,47 | | 14,870 ● | 14,870 ● |
| | 2.050 | | | 14,630 ● | | |
| 8 | 1.170 | -0,55 | 0,55 | | 17,950 ● | 17,860 ● |
| | 2.050 | | | 17,560 ● | | |
| 10 | 1.170 | -0,62 | 0,62 | | 22,310 ● | 22,310 ● |
| | 2.050 | | | 21,900 ● | | |
| 12 | 1.170 | | | | 29,740 ● | 29,740 ● |
| | 2.050 | | | 29,270 ● | | |
| 15 | 1.170 | -1 | 1 | | 37,180 ● | 37,180 ● |
| | 2.050 | | | 36,490 ● | | |
| 20 | 1.170 | -1,15 | 1,15 | | 44,620 ● | 44,620 ● |
| | 2.050 | | | 43,800 ● | | |
| 25 | 1.170 | -1,25 | 1,25 | | 52,140 ● | 52,140 ● |
| | 2.050 | | | 51,120 ● | | |
| 30 | 1.170 | -1,35 | 1,35 | | 59,570 ● | 59,570 ● |
| | 2.050 | | | 58,390 ● | | |
| 35 | 1.170 | -1,45 | 1,45 | | 67,010 ● | 66,930 ● |
| | 2.050 | | | 65,710 ● | | |



Platten

Farben

- gelbbraun
- hellbraun
- braun
- dunkelbraun
- schwarz abgedeckt
- schwarz durchfärbt

| Stärke | Längen | Toleranzen Stärke mm | | HP 2062.8 | HP 2062.9 V0 | HP 2361.1 |
|--------|--------|----------------------|------|------------------|------------------|------------------|
| | | | | Breite: 1.050 mm | Breite: 1.070 mm | Breite: 1.070 mm |
| mm | mm | min. | max. | kg/m | kg/m | kg/m |
| 50 | 1.170 | -1,55 | 1,55 | | 74,440 ● | 74,440 ● |
| | 2.050 | | | 72,980 ● | | |
| 60 | 1.170 | -1,9 | 1,9 | | 89,320 ● | 89,320 ● |
| | 2.050 | | | 87,610 ● | | |
| 70 | | -2 | 2 | 102,200 ● | | |
| 80 | | -2,2 | 2,2 | 116,780 ● | | |
| 90 | | -2,35 | 2,35 | 131,370 ● | | |