

FLOW RATES & SPEEDS OBTAINED BY GAUCKLER-STRICKLER FORMULA

(safety coefficient $K_S = 80 \text{ m}^{1/3} \text{ s}^{-1}$)

| Pipe filling = 50% | | i = 0,5% | | i = 1% | |
|--------------------|--------------|---------------|------------------------------|---------------|------------------------------|
| DN (mm) | DN int. (mm) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) |
| 125 | 107 | 0,506 | 0,002 | 0,715 | 0,003 |
| 160 | 136 | 0,593 | 0,004 | 0,839 | 0,006 |
| 200 | 174 | 0,699 | 0,008 | 0,989 | 0,012 |
| 250 | 214 | 0,803 | 0,014 | 1,135 | 0,020 |
| 315 | 273 | 0,944 | 0,028 | 1,335 | 0,039 |
| 400 | 343 | 1,100 | 0,051 | 1,555 | 0,072 |
| 500 | 427 | 1,272 | 0,091 | 1,799 | 0,129 |
| 630 | 533 | 1,475 | 0,164 | 2,086 | 0,233 |
| 800 | 673 | 1,723 | 0,306 | 2,437 | 0,433 |
| 1000 | 849 | 2,012 | 0,569 | 2,845 | 0,805 |
| 1200 | 1030 | 2,289 | 0,953 | 3,237 | 1,348 |

| Pipe filling = 70% | | i = 0,5% | | i = 1% | |
|--------------------|--------------|---------------|------------------------------|---------------|------------------------------|
| DN (mm) | DN int. (mm) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) |
| 125 | 107 | 0,566 | 0,004 | 0,801 | 0,005 |
| 160 | 136 | 0,665 | 0,007 | 0,940 | 0,010 |
| 200 | 174 | 0,783 | 0,014 | 1,108 | 0,020 |
| 250 | 214 | 0,899 | 0,024 | 1,271 | 0,034 |
| 315 | 273 | 1,057 | 0,046 | 1,496 | 0,065 |
| 400 | 343 | 1,231 | 0,085 | 1,741 | 0,120 |
| 500 | 427 | 1,425 | 0,152 | 2,015 | 0,216 |
| 630 | 533 | 1,652 | 0,275 | 2,336 | 0,390 |
| 800 | 673 | 1,930 | 0,513 | 2,729 | 0,726 |
| 1000 | 849 | 2,253 | 0,953 | 3,186 | 1,348 |
| 1200 | 1030 | 2,563 | 1,596 | 3,624 | 2,257 |

| Pipe filling = 95% | | i = 0,5% | | Riempimento = 50% | |
|--------------------|--------------|---------------|------------------------------|-------------------|------------------------------|
| DN (mm) | DN int. (mm) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) |
| 125 | 107 | 0,554 | 0,005 | 0,783 | 0,007 |
| 160 | 136 | 0,650 | 0,009 | 0,919 | 0,013 |
| 200 | 174 | 0,766 | 0,018 | 1,083 | 0,025 |
| 250 | 214 | 0,879 | 0,031 | 1,243 | 0,044 |
| 315 | 273 | 1,034 | 0,059 | 1,462 | 0,084 |
| 400 | 343 | 1,204 | 0,109 | 1,703 | 0,154 |
| 500 | 427 | 1,393 | 0,196 | 1,971 | 0,277 |
| 630 | 533 | 1,615 | 0,354 | 2,284 | 0,500 |
| 800 | 673 | 1,887 | 0,658 | 2,669 | 0,931 |
| 1000 | 849 | 2,203 | 1,223 | 3,116 | 1,730 |
| 1200 | 1030 | 2,506 | 2,048 | 3,544 | 2,897 |

| Pipe filling = 50% | | i = 2% | | i = 3% | | i = 5% | |
|--------------------|--------------|---------------|------------------------------|---------------|------------------------------|---------------|------------------------------|
| DN (mm) | DN int. (mm) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) |
| 125 | 107 | 1,012 | 0,005 | 1,239 | 0,006 | 1,599 | 0,007 |
| 160 | 136 | 1,17 | 0,009 | 1,454 | 0,011 | 1,877 | 0,014 |
| 200 | 174 | 1,399 | 0,017 | 1,713 | 0,020 | 2,212 | 0,026 |
| 250 | 214 | 1,606 | 0,029 | 1,967 | 0,035 | 2,539 | 0,046 |
| 315 | 273 | 1,889 | 0,055 | 2,313 | 0,068 | 2,986 | 0,087 |
| 400 | 343 | 2,199 | 0,102 | 2,693 | 0,124 | 3,477 | 0,161 |
| 500 | 427 | 2,545 | 0,182 | 3,117 | 0,223 | 4,024 | 0,288 |
| 630 | 533 | 2,950 | 0,329 | 3,613 | 0,403 | 4,665 | 0,520 |
| 800 | 673 | 3,447 | 0,613 | 4,221 | 0,750 | 5,450 | 0,969 |
| 1000 | 849 | 4,024 | 1,138 | 4,928 | 1,934 | 6,362 | 1,800 |
| 1200 | 1030 | 4,577 | 1,906 | 5,606 | 2,334 | 7,237 | 3,014 |

| Pipe filling = 70% | | i = 2% | | i = 3% | | i = 5% | |
|--------------------|--------------|---------------|------------------------------|---------------|------------------------------|---------------|------------------------------|
| DN (mm) | DN int. (mm) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) |
| 125 | 107 | 1,133 | 0,008 | 1,387 | 0,009 | 1,791 | 0,012 |
| 160 | 136 | 1,329 | 0,014 | 1,628 | 0,018 | 2,102 | 0,023 |
| 200 | 174 | 1,566 | 0,028 | 1,918 | 0,034 | 2,477 | 0,044 |
| 250 | 214 | 1,798 | 0,048 | 2,202 | 0,059 | 2,843 | 0,076 |
| 315 | 273 | 2,115 | 0,093 | 2,590 | 0,113 | 3,344 | 0,146 |
| 400 | 343 | 2,463 | 0,170 | 3,016 | 0,208 | 3,894 | 0,269 |
| 500 | 427 | 2,850 | 0,305 | 3,490 | 0,374 | 4,506 | 0,482 |
| 630 | 533 | 3,304 | 0,551 | 4,046 | 0,675 | 5,224 | 0,871 |
| 800 | 673 | 3,860 | 1,026 | 4,727 | 1,257 | 6,103 | 1,622 |
| 1000 | 849 | 4,506 | 1,907 | 5,519 | 2,335 | 7,125 | 3,014 |
| 1200 | 1030 | 5,126 | 3,192 | 6,278 | 3,909 | 8,105 | 5,047 |

| Pipe filling = 95% | | i = 2% | | i = 3% | | i = 5% | |
|--------------------|--------------|---------------|------------------------------|---------------|------------------------------|---------------|------------------------------|
| DN (mm) | DN int. (mm) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) | speed (m/sec) | f-rate (m ³ /sec) |
| 125 | 107 | 1,108 | 0,010 | 1,357 | 0,012 | 1,751 | 0,015 |
| 160 | 136 | 1,300 | 0,019 | 1,592 | 0,023 | 2,055 | 0,029 |
| 200 | 174 | 1,532 | 0,036 | 1,876 | 0,044 | 2,422 | 0,056 |
| 250 | 214 | 1,758 | 0,062 | 2,153 | 0,076 | 2,780 | 0,098 |
| 315 | 273 | 2,068 | 0,119 | 2,533 | 0,145 | 3,270 | 0,188 |
| 400 | 343 | 2,408 | 0,218 | 2,949 | 0,267 | 3,807 | 0,345 |
| 500 | 427 | 2,787 | 0,391 | 3,413 | 0,479 | 4,406 | 0,619 |
| 630 | 533 | 3,231 | 0,707 | 3,957 | 0,866 | 5,108 | 1,118 |
| 800 | 673 | 3,774 | 1,317 | 4,622 | 1,613 | 5,967 | 2,082 |
| 1000 | 849 | 4,406 | 2,447 | 5,397 | 2,997 | 6,967 | 3,869 |
| 1200 | 1030 | 5,012 | 4,096 | 6,139 | 5,017 | 7,925 | 6,477 |