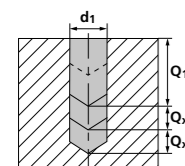
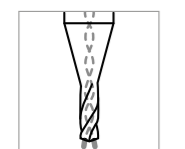


# CrazyDrill Cool 15 x d - uncoated

RECOMMENDATION FOR USE  
● Excellent | ● Good | ○ Acceptable | ☒ Not recommended



## DRILLING WITH INTERNAL COOLING | CUTTING DATA OVERVIEW



| Materials group                             | Material   | Mat. no.           | DIN                  | AISI/ASTM/UNS           | v <sub>c</sub> [m/min] |       | Q <sub>1</sub> | Q <sub>2</sub> | f [mm/rev] |        |         |        |        |        |        |        |        |        |  |
|---|--|--------------------|----------------------|-------------------------|------------------------|-------|----------------|----------------|------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--|
|   |  |                    |                      |                         | Mid                    | High  |                |                | Ød1        |        |         |        |        |        |        |        |        |        |  |
|   |  |                    |                      |                         |                        |       |                |                | 0.8 mm     | 1.0 mm | 1.25 mm | 1.5 mm | 2.0 mm | 2.5 mm | 3.0 mm | 4.0 mm | 5.0 mm | 6.0 mm |  |
|   |  |                    |                      |                         |                        | f     | f              | f              | f          | f      | f       | f      | f      | f      | f      |        |        |        |  |
| P   | Unalloyed carbon steel<br>Rm < 800 N/mm <sup>2</sup>   | 1.0301             | C10                  | AISI 1010               | 40                     | 60    | 6xd1           | 2xd1           | 0.050      | 0.060  | 0.070   | 0.080  | 0.100  | 0.120  | 0.140  | 0.180  | 0.210  | 0.240  |  |
|   |  | 1.0401             | C15                  | AISI 1015               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.1191             | C45E/CK45            | AISI 1045               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.0044             | S275JR               | AISI 1020               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.0715             | 11SMn30              | AISI 1215               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | Low alloyed steel<br>Rm > 900 N/mm <sup>2</sup>        | 1.5752             | 15NiCr13             | ASTM 3415 / AISI 3310   | 40                     | 60    | 6xd1           | 2xd1           | 0.040      | 0.050  | 0.060   | 0.070  | 0.090  | 0.110  | 0.120  | 0.150  | 0.170  | 0.180  |  |
|   |  | 1.7131             | 16MnCr5              | AISI 5115               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.3505             | 100Cr6               | AISI 52100              |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.7225             | 42CrMo4              | AISI 4140               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.2842             | 90MnCrV8             | AISI O2                 |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | High alloyed tool steel<br>Rm < 1200 N/mm <sup>2</sup> | 1.2379             | X153CrMoV12          | AISI D2                 | 20                     | 40    | 6xd1           | 2xd1           | 0.030      | 0.040  | 0.050   | 0.060  | 0.070  | 0.090  | 0.100  | 0.120  | 0.150  | 0.170  |  |
|   |  | 1.2436             | X210CrW12            | AISI D4/D6              |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| 1.3343                                      |  | HS6-5-2C           | AISI M2 / UNS T11302 |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| 1.3355                                      |  | HS18-0-1           | AISI T1 / UNS T12001 |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  |                    |                      |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| M   | Stainless steel ferritic                               | 1.4016             | X6Cr17               | AISI 430 / UNS S43000   |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.4105             | X6CrMoS17            | AISI 430F               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | Stainless steel martensitic                            | 1.4034             | X46Cr13              | AISI 420C               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.4112             | X90CrMoV18           | AISI 440B               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | Stainless steel martensitic – PH                       | 1.4542             | X5CrNiCuNb 16-4      | AISI 630 / ASTM 17-4 PH |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.4545             | X5CrNiCuNb 15-5      | ASTM 15-5 PH            |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | Stainless steel austenitic                             | 1.4301             | X5CrNi 18-10         | AISI 304                |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 1.4435             | X2CrNiMo 18-14-3     | AISI 316L               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| 1.4441                                      |  | X2CrNiMo 18-15-3   | AISI 316LM           |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| 1.4539                                      |  | X1NiCrMoCu 25-20-5 | AISI 904L            |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| K   | Cast iron  | 0.6020             | GG20                 | ASTM 30                 |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 0.6030             | GG30                 | ASTM 40B                |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 0.7040             | GGG40                | ASTM 60-40-18           |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 0.7060             | GGG60                | ASTM 80-60-03           |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| N   | Aluminium alloy wrought                                | 3.2315             | AlMgSi1              | ASTM 6351               | 100                    | 300   | 5xd1           | 1xd1           | 0.050      | 0.060  | 0.070   | 0.080  | 0.100  | 0.120  | 0.140  | 0.180  | 0.210  | 0.240  |  |
|   |  | 3.4365             | AlZnMgCu1.5          | ASTM 7075               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | Aluminium alloy cast                                   | 3.2163             | GD-AlSi9Cu3          | ASTM A380               | 100                    | 200   | 5xd1           | 1xd1           | 0.060      | 0.070  | 0.090   | 0.100  | 0.130  | 0.150  | 0.170  | 0.210  | 0.250  | 0.300  |  |
|   |  | 3.2381             | GD-AlSi10Mg          | UNS A03590              |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | Copper   | 2.004              | Cu-OF / CW008A       | UNS C10100              | 100                    | 200   | 1.5xd1         | 1xd1           | 0.055      | 0.065  | 0.080   | 0.090  | 0.100  | 0.110  | 0.130  | 0.140  | 0.170  | 0.200  |  |
|   |  | 2.0065             | Cu-ETP / CW004A      | UNS C11000              |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   | Brass lead free  | 2.0321             | CuZn37 CW508L        | UNS C27400              | 100                    | 140   | 1xd1           | 0.5xd1         | 0.055      | 0.065  | 0.080   | 0.090  | 0.100  | 0.110  | 0.130  | 0.140  | 0.170  | 0.200  |  |
|   |  | 2.036              | CuZn40 CW509L        | UNS C28000              |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| Brass, Bronze<br>Rm < 400 N/mm <sup>2</sup> | 2.0401   | CuZn39Pb3 / CW614N | UNS C38500           | 80                      | 120                    | 2xd1  | 1xd1           | 0.080          | 0.100      | 0.110  | 0.130   | 0.150  | 0.170  | 0.190  | 0.200  | 0.210  | 0.230  |        |  |
|   | 2.102  | CuSn6              | UNS C51900           |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| Bronze<br>Rm < 600 N/mm <sup>2</sup>        | 2.0966   | CuAl10Ni5Fe4       | UNS C63000           | 80                      | 120                    | 10xd1 | 5xd1           | 0.020          | 0.030      | 0.040  | 0.055   | 0.070  | 0.090  | 0.110  | 0.130  | 0.150  | 0.200  |        |  |
|   | 2.096  | CuAl9Mn2           | UNS C63200           |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| S <sub>1</sub>                              | Super alloys   | 2.4856             |                      | Inconel 625             |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 2.4668             |                      | Inconel 718             |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 2.4617             | NiMo28               | Hastelloy B-2           |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  | 2.4665             | NiCr22Fe18Mo         | Hastelloy X             |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| S <sub>2</sub>                              | Titanium pure  | 3.7035             | Gr.2                 | ASTM B348 / F67         | 20                     | 40    | 0.5xd1         | 0.25xd1        | 0.020      | 0.020  | 0.030   | 0.035  | 0.040  | 0.050  | 0.060  | 0.065  | 0.070  | 0.075  |  |
|   |  | 3.7065             | Gr.4                 | ASTM B348 / F68         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| S <sub>2</sub>                              | Titanium alloys  | 3.7165             | TiAl6V4              | ASTM B348 / F136        | 20                     | 40    | 0.5xd1         | 0.25xd1        | 0.020      | 0.020  | 0.030   | 0.035  | 0.040  | 0.050  | 0.060  | 0.065  | 0.070  | 0.075  |  |
|   |  | 9.9367             | TiAl6Nb7             | ASTM F1295              |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| S <sub>3</sub>                              | CrCo alloys  | 2.4964             | CoCr20W15Ni          | Haynes 25               |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  |                    | CrCoMo28             | ASTM F1537              |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| H <sub>1</sub>                              | Hardened steel<br>< 55 HRC                             | 1.2510             | 100MnCrMoW4          | AISI O1                 |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  |                    |                      |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
| H <sub>2</sub>                              | Hardened steel<br>≥ 55 HRC                             | 1.2379             | X153CrMoV12          | AISI D2                 |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |
|   |  |                    |                      |                         |                        |       |                |                |            |        |         |        |        |        |        |        |        |        |  |