Round Tool Materials

2019 EN

s-line

programme

CERATIZIT is a high-tech engineering group specialised in tooling and hard material technologies.

TOOLMAKER SOLUTIONS BY CERATIZIT

Tooling the Future

www.ceratizit.com

Contents

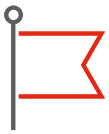
The CERATIZIT Group

For over **95 years**, CERATIZIT has been a **pioneer** developing exceptional hard material products for cutting tools and wear protection.

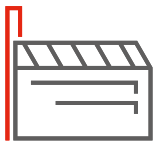
The privately owned company, based in Mamer, Luxembourg, develops and manufactures highly specialised carbide cutting tools, inserts and rods made of hard materials as well as wear parts.

The CERATIZIT Group is the **global market leader** in several wear part application areas, and successfully develops new types of carbide, cermet and ceramic grades which are used for instance in the wood, metal and stone working industries.

Facts & figures



1 headquarters
Mamer, Luxembourg



34
production sites

> 70
sales subsidiaries

> 9,000
employees

> 100,000
different products

> 1,000
patents and utility models

> 200
employees in R&D

> 10
innovation awards

30 %
of products developed in the last 5 years

Dear customers,

As the competence brand Toolmaker Solutions by CERATIZIT, the CERATIZIT Group develops and manufactures innovative solutions for tool manufacturers. Based on your requirements and the desired price category, when it comes to tool production you can avail yourself of three different product lines for carbide rods:

s-line
The **s-line** (solid line) is designed for the economic production of standard tools. The application of high-quality secondary raw materials from the in-house CERATIZIT recycling facilities makes the s-line not only attractive as far as the price is concerned but also contributes to the sustainable management of valuable resources. The s-line product range includes rods, both as sintered and ground, as well as ground cut-to-length products with chamfer. Also rods with helical coolant holes (as sintered) have been added.

Highly developed logistics processes
You can count on our high and flexible production capacity for stock products: an optimally stocked warehouse ensures that your order will always be dealt with swiftly and reliably. You can order stock products without any problem 24/7 online from our E-Techstore, and take advantage of the technical expertise of our sales and office staff. With over 50 company sites in Europe, America and Asia, we are available for you any time throughout the world.

Supreme availability

A majority of our standard products are available from stock. A well-organised warehouse means that we can respond quickly and reliably to your order, even for bulk quantities. Thanks to our advanced supply chain management, our production capacity is flexible and able to produce a maximum of quantities, even in a short time frame.

You can order stock products online around the clock at our E-Techstore.

e-techstore.com
Available 24/7 for you

Your benefits

- Live product availability check
- Detailed up-to-date technical information and graphic illustrations
- Fast delivery: orders up to 6.30 pm will leave our warehouse in Kempten, Germany, on the same day
- Reliable delivery: we work only with the best and most reliable service providers in the sector

Grade

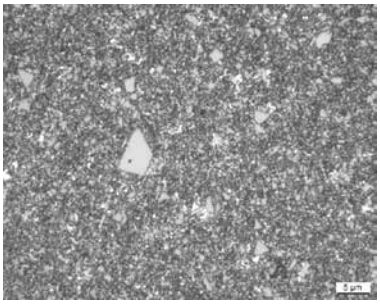
Composition and properties

Grade	Mixed carbides	Binder m %	ISO code	U.S. code	Grain size	Density g/cm³	Hardness HV10	Hardness HV30	Hardness HRA	Transverse rupture strength TRS MPa	Transverse rupture strength TRS P.S.I.	K_{ic}* Shetty MPa*m$^{1/2}$
TMG30	< 2 %	10	K30 – K40	C-2	submicron	14,40	1590	1570	91,7	3600	522.000	9,3

TMG30 TMG30 is a submicron grade for the ISO application range K30-K40. The proportion of secondary raw materials from the in-house CERATIZIT recycling facilities ensures that the s-line offers a solid price-performance ratio for all applications in the general cutting tools sector.

Classification of tungsten carbide grain size

Tungsten carbide grain size [µm]	Classification
< 0,2	nano
0,2 – 0,5	ultra-fine
0,5 – 0,8	submicron
0,8 – 2,5	fine/medium
2,5 – 6,0	coarse
> 6,0	extra-coarse

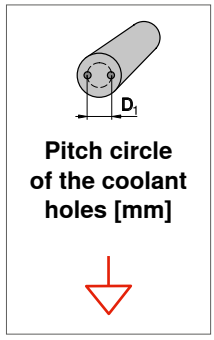


Comments:

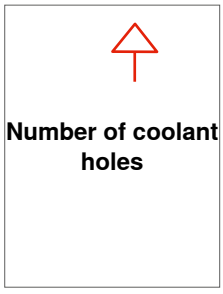
1. The data in this table are typical material parameters. We reserve the right to modify the data due to technical progress or further development within our company.
2. K_{IC}*: The measured critical tension intensity factors (K_{IC}) depend to a high degree on the sample geometry and sample preparation. A direct comparison with parameters which have been determined by means of a different method is therefore not admissible.

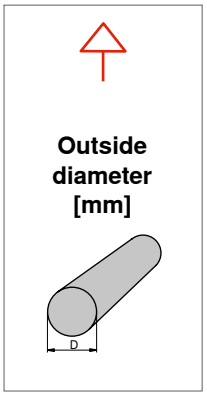
Designation system

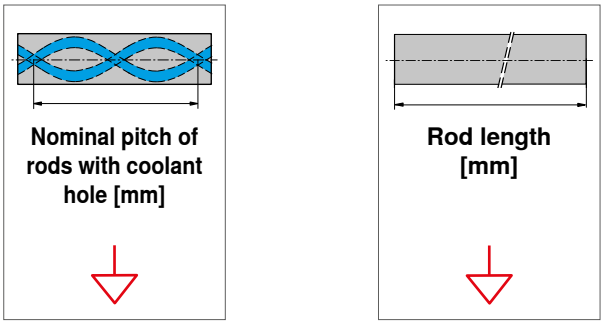
RR	Solid carbide rods, as sintered
RGM	Solid carbide rods, ground, metric
RGMC	Solid carbide rods, ground, metric, with chamfer
RGMCW	Solid carbide rods, ground, metric with weldon shank
30R2	Rods with 2 helical coolant holes, 30 - 40°



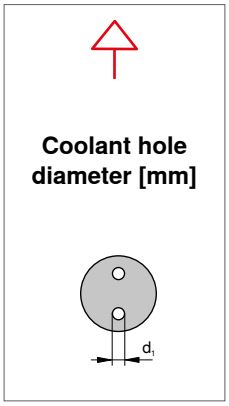
30 R2 / 1030 / 4,81 /

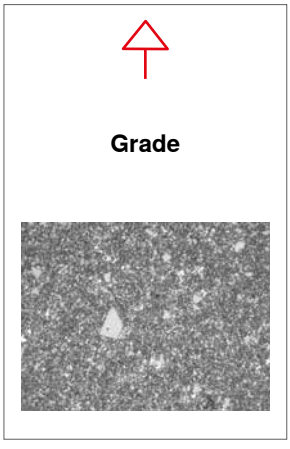






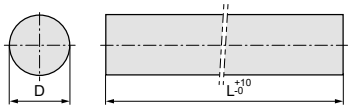
1,3 / 54,0 - 330 TMG30





Solid carbide rods, as sintered

Ø D 2.20 – 34.20 mm



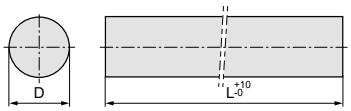
D [mm]	L	Type, description	Dia. tol. [mm]	TMG30
2.20	330	RR 0220-330	-0/+0.20	●
3.25	330	RR 0325-330	-0/+0.20	●
4.20	330	RR 0420-330	-0/+0.20	●
4.70	330	RR 0470-330	-0/+0.20	●
5.20	330	RR 0520-330	-0/+0.25	●
5.70	330	RR 0570-330	-0/+0.25	●
6.20	330	RR 0620-330	-0/+0.25	●
6.70	330	RR 0670-330	-0/+0.25	●
7.20	330	RR 0720-330	-0/+0.30	●
7.70	330	RR 0770-330	-0/+0.30	●
8.20	330	RR 0820-330	-0/+0.30	●
8.70	330	RR 0870-330	-0/+0.30	●
9.20	330	RR 0920-330	-0/+0.30	●
9.70	330	RR 0970-330	-0/+0.30	●
10.20	330	RR 1020-330	-0/+0.30	●
10.70	330	RR 1070-330	-0/+0.30	●
11.20	330	RR 1120-330	-0/+0.30	●
12.20	330	RR 1220-330	-0/+0.30	●
12.70	330	RR 1270-330	-0/+0.30	●
13.20	330	RR 1320-330	-0/+0.30	●
14.20	330	RR 1420-330	-0/+0.30	●
15.20	330	RR 1520-330	-0/+0.30	●
16.20	330	RR 1620-330	-0/+0.45	●

→

● **Stock item**

Solid carbide rods, as sintered

Ø D 2.20 – 34.20 mm

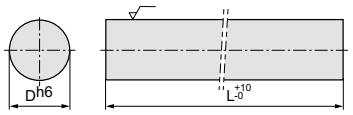


D [mm]	L	Type, description	Dia. tol. [mm]	TMG30
17.20	330	RR 1720-330	-0/+0.45	●
18.20	330	RR 1820-330	-0/+0.45	●
19.20	330	RR 1920-330	-0/+0.45	●
20.20	330	RR 2020-330	-0/+0.45	●
22.20	330	RR 2220-330	-0/+0.55	●
24.20	330	RR 2420-330	-0/+0.55	●
25.20	330	RR 2520-330	-0/+0.65	●
28.20	330	RR 2820-330	-0/+0.65	●
30.20	330	RR 3020-330	-0/+0.65	●
32.20	330	RR 3220-330	-0/+0.65	●
34.20	330	RR 3420-330	-0/+0.65	●

● **Stock item**

Solid carbide rods, ground, metric

Ø D 3.00 – 32.00 mm

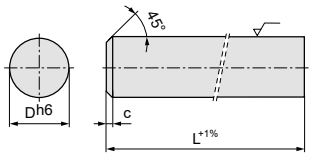


D [mm]	L [mm]	Type, description	Dia. tol. [mm]	TMG30
3.00	330	RGM 0300-330	+0/-0.006	●
4.00	330	RGM 0400-330	+0/-0.008	●
5.00	330	RGM 0500-330	+0/-0.008	●
6.00	330	RGM 0600-330	+0/-0.008	●
8.00	330	RGM 0800-330	+0/-0.009	●
10.00	330	RGM 1000-330	+0/-0.009	●
11.00	330	RGM 1100-330	+0/-0.011	●
12.00	330	RGM 1200-330	+0/-0.011	●
13.00	330	RGM 1300-330	+0/-0.011	●
14.00	330	RGM 1400-330	+0/-0.011	●
15.00	330	RGM 1500-330	+0/-0.011	●
16.00	330	RGM 1600-330	+0/-0.011	●
18.00	330	RGM 1800-330	+0/-0.011	●
20.00	330	RGM 2000-330	+0/-0.013	●
22.00	330	RGM 2200-330	+0/-0.013	●
25.00	330	RGM 2500-330	+0/-0.013	●
32.00	330	RGM 3200-330	+0/-0.016	●

● **Stock item**

End mill blanks

Ø D 6.00 – 25.00 mm

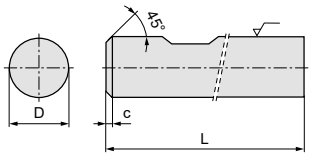


D [mm]	L [mm]	Type, description	Dia. tol. [mm]	c [mm]	DIN 6527	TMG30
6.00	51	RGMC 0600-051	+0/-0.008	0.50	x	●
6.00	55	RGMC 0600-055	+0/-0.008	0.50	x	●
6.00	58	RGMC 0600-058	+0/-0.008	0.50	x	●
8.00	59	RGMC 0800-059	+0/-0.009	0.70	x	●
8.00	64	RGMC 0800-064	+0/-0.009	0.70	x	●
10.00	67	RGMC 1000-067	+0/-0.009	0.90	x	●
10.00	73	RGMC 1000-073	+0/-0.009	0.90	x	●
10.00	75	RGMC 1000-075	+0/-0.009	0.90		●
10.00	80	RGMC 1000-080	+0/-0.009	0.90		●
10.00	100	RGMC 1000-100	+0/-0.009	0.90		●
12.00	74	RGMC 1200-074	+0/-0.011	0.90	x	●
12.00	84	RGMC 1200-084	+0/-0.011	0.90	x	●
12.00	100	RGMC 1200-100	+0/-0.011	0.90		●
14.00	84	RGMC 1400-084	+0/-0.011	0.90	x	●
16.00	83	RGMC 1600-083	+0/-0.011	0.90	x	●
16.00	93	RGMC 1600-093	+0/-0.011	0.90	x	●
16.00	110	RGMC 1600-110	+0/-0.011	0.90		●
16.00	120	RGMC 1600-120	+0/-0.011	0.90		●
20.00	93	RGMC 2000-093	+0/-0.013	1.10	x	●
20.00	105	RGMC 2000-105	+0/-0.013	1.10	x	●
20.00	125	RGMC 2000-125	+0/-0.013	1.10		●
25.00	125	RGMC 2500-125	+0/-0.013	1.10		●

● **Stock item**

Solid carbide rods, ground, metric with weldon shank

Ø D 6.00 – 20.00 mm

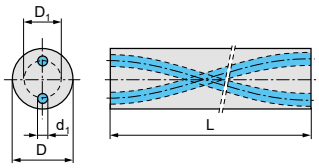


D [mm]	L [mm]	Type, description	Dia. tol. [mm]	ISO 286	c [mm]	TMG30
6.00	51	RGMCW 0600-051	+0/-0.011	h6	0.50	●
6.00	55	RGMCW 0600-055	+0/-0.008	h6	0.50	●
6.00	58	RGMCW 0600-058	+0/-0.008	h6	0.60	●
8.00	64	RGMCW 0800-064	+0/-0.009	h6	0.60	●
10.00	67	RGMCW 1000-067	+0/-0.009	h6	0.80	●
10.00	73	RGMCW 1000-073	+0/-0.009	h6	0.80	●
12.00	74	RGMCW 1200-074	+0/-0.011	h6	0.80	●
12.00	84	RGMCW 1200-084	+0/-0.011	h6	0.80	●
16.00	93	RGMCW 1600-093	+0/-0.011	h6	0.80	●
20.00	93	RGMCW 2000-093	+0/-0.013	h6	1.00	●
20.00	105	RGMCW 2000-105	+0/-0.013	h6	1.00	●

● **Stock item**

Rods with helical coolant holes

with two coolant holes (30° – 40°), as sintered
Ø D 6.30 – 25.30 mm



D [mm]	L [mm]	Type, description	D_1	d_1 [mm]	Nominal pitch [mm]	[°]	TMG30
6.30	330	40R2 0630/1,9/0,7/22,5-330	1.90	0.70	22.50	40.0	●
6.30	330	30R2 0630/2,7/0,8/32,7-330	2.70	0.80	32.70	30.0	●
8.30	330	40R2 0830/2,4/0,65/30,0-330	2.40	0.65	30.00	40.0	●
8.30	330	30R2 0830/3,3/1,0/43,5-330	3.30	1.00	43.50	30.0	●
10.30	330	40R2 1030/3,2/1,0/37,4-330	3.20	1.00	37.40	40.0	●
10.30	330	30R2 1030/4,8/1,3/54,0-330	4.80	1.30	54.00	30.2	●
12.30	330	40R2 1230/4,0/0,9/44,9-330	4.00	0.90	44.90	40.0	●
12.30	330	30R2 1230/6,3/1,7/65,3-330	6.30	1.70	65.30	30.0	●
14.30	330	40R2 1430/4,3/1,0/52,4-330	4.30	1.00	52.40	40.0	●
14.30	330	30R2 1430/6,7/1,75/76,2-330	6.70	1.75	76.20	30.0	●
16.30	330	40R2 1630/5,1/1,2/59,9-330	5.10	1.20	59.90	40.0	●
16.30	330	30R2 1630/7,9/1,75/87,1-330	7.90	1.75	87.10	30.0	●
18.30	330	40R2 1830/5,9/1,4/68,0-330	5.90	1.40	68.00	39.7	●
18.30	330	30R2 1830/9,15/2,0/98,0-330	9.15	2.00	98.00	30.0	●
20.30	330	40R2 2030/6,6/1,5/74,9-330	6.60	1.50	74.90	40.0	●
20.30	330	30R2 2030/10,0/2,5/108,8-330	10.00	2.50	108.80	30.0	●
25.30	330	40R2 2530/7,7/1,75/93,6-330	7.70	1.75	93.60	40.0	●
25.30	330	33R2 2530/12,0/3,2/119,0-330	12.00	3.20	119.00	33.4	●

● **Stock item**

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