

# DIN EN 16079:2024-03 (E)

## Founding - Compacted (vermicular) graphite cast irons

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
Introduction .....		5
1	Scope .....	7
2	Normative references .....	7
3	Terms and definitions .....	7
4	Designation .....	8
5	Order information .....	9
6	Manufacture .....	9
7	Requirements .....	9
7.1	General .....	9
7.2	Test pieces machined from separately cast samples .....	10
7.3	Test pieces machined from side-by-side cast and cast-on samples .....	10
7.4	Test pieces machined from samples cut from a casting .....	11
7.5	Hardness .....	11
7.6	Graphite structure .....	11
8	Sampling .....	12
8.1	General .....	12
8.2	Cast samples .....	12
8.3	Samples cut from a casting .....	14
9	Test methods .....	17
9.1	Tensile test .....	17
9.2	Hardness test .....	19
9.3	Graphite structure examination .....	20
10	Retests .....	20
10.1	Need for retests .....	20
10.2	Test validity .....	20
10.3	Nonconforming test results .....	20
10.4	Heat treatment of samples and castings .....	21
11	Inspection documentation .....	21
Annex A (informative) Additional information on properties and typical applications of compacted (vermicular) graphite cast irons .....		22
Annex B (informative) Compacted (vermicular) graphite cast iron nodularity evaluation.26 B.1 Nodularity definition .....		26
B.2	Factors influencing nodularity .....	26
B.3	Basic method for nodularity evaluation .....	26
B.4	Microscope settings for sound nodularity evaluation (see also ISO/TR 945-2) .....	26
B.5	Roundness of graphite nodules .....	26

<b>B.6</b>	<b>Classification of rounded graphite particles by a shape factor .....</b>	<b>27</b>
<b>B.7</b>	<b>Intermediate graphite particles, understanding sterical effects .....</b>	<b>27</b>
<b>B.8</b>	<b>Calculation of percentage nodularity .....</b>	<b>28</b>
<b>B.9</b>	<b>Location of testing .....</b>	<b>28</b>
<b>B.10</b>	<b>Rating chart - Typical reference images for the determination of nodularity in compacted (vermicular) graphite cast irons .....</b>	<b>28</b>
<b>B.11</b>	<b>Rating chart - Typical reference images for the determination of the roundness of graphite particles, assigning shape factors .....</b>	<b>30</b>
<b>Annex C (informative)</b>	<b>Guidance values for tensile properties determined from samples cut from a casting .....</b>	<b>31</b>
<b>Annex D (normative)</b>	<b>Sectioning procedure for cast samples .....</b>	<b>32</b>
<b>Annex E (informative)</b>	<b>Comparison of compacted (vermicular) graphite cast iron material designations according to EN 1560 [2] and ISO/TR 15931 [6] .....</b>	<b>33</b>
<b>Annex F (informative)</b>	<b>Changes since the last version .....</b>	<b>34</b>
<b>Bibliography</b>	<b>.....</b>	<b>35</b>