

# DIN EN ISO 20023:2019-04 (E)

## Solid biofuels - Safety of solid biofuel pellets - Safe handling and storage of wood pellets in residential and other small-scale applications (ISO 20023:2018)

---

<b>Contents</b>		<b>Page</b>
European foreword.....		4
Foreword .....		5
Introduction .....		6
<b>1</b>	<b>Scope .....</b>	<b>7</b>
<b>2</b>	<b>Normative references .....</b>	<b>7</b>
<b>3</b>	<b>Terms and definitions.....</b>	<b>7</b>
<b>3.1</b>	<b>General terms.....</b>	<b>7</b>
<b>3.2</b>	<b>Terms related to transportation and delivery.....</b>	<b>8</b>
<b>3.3</b>	<b>Terms related to storage.....</b>	<b>9</b>
<b>4</b>	<b>General .....</b>	<b>9</b>
<b>4.1</b>	<b>Product requirements .....</b>	<b>9</b>
<b>4.2</b>	<b>Hazards associated with amounts of pellets <math>\leq 100</math> t.....</b>	<b>9</b>
<b>4.3</b>	<b>General requirements for storage and handling of pellets .....</b>	<b>10</b>
<b>5</b>	<b>Requirements for safe transport and delivery of pellets .....</b>	<b>10</b>
<b>5.1</b>	<b>General .....</b>	<b>10</b>
<b>5.2</b>	<b>Requirements for bulk delivery by blower trucks .....</b>	<b>11</b>
<b>5.2.1</b>	<b>Transport vehicles and their operation .....</b>	<b>11</b>
<b>5.2.2</b>	<b>Filling end-user storage systems .....</b>	<b>12</b>
<b>5.3</b>	<b>Pellets delivered in bulk tipped into troughs or bunkers .....</b>	<b>14</b>
<b>5.4</b>	<b>Pellets delivered in big bags.....</b>	<b>14</b>
<b>5.5</b>	<b>Pellets delivered in small bags on pallets.....</b>	<b>14</b>
<b>6</b>	<b>Requirements for bulk storage systems.....</b>	<b>14</b>
<b>6.1</b>	<b>General requirements.....</b>	<b>14</b>
<b>6.1.1</b>	<b>Location of pellet store .....</b>	<b>14</b>
<b>6.1.2</b>	<b>Quality control of installation .....</b>	<b>15</b>
<b>6.1.3</b>	<b>Construction requirements.....</b>	<b>15</b>
<b>6.1.4</b>	<b>Measures to reduce the accumulation of fines.....</b>	<b>15</b>
<b>6.1.5</b>	<b>Protection against moisture and water.....</b>	<b>15</b>
<b>6.1.6</b>	<b>Prevention of dust movement.....</b>	<b>15</b>
<b>6.1.7</b>	<b>Noise protection.....</b>	<b>15</b>
<b>6.1.8</b>	<b>Installation.....</b>	<b>16</b>
<b>6.1.9</b>	<b>Fire protection.....</b>	<b>16</b>
<b>6.1.10</b>	<b>Explosion prevention .....</b>	<b>16</b>
<b>6.1.11</b>	<b>Protection and measures against burn-back and back gassing.....</b>	<b>16</b>
<b>6.1.12</b>	<b>Extraction systems .....</b>	<b>17</b>
<b>6.1.13</b>	<b>Fill connectors and piping .....</b>	<b>17</b>
<b>6.1.14</b>	<b>Electrical outlet for suction fan .....</b>	<b>18</b>
<b>6.1.15</b>	<b>Ventilation.....</b>	<b>18</b>
<b>6.1.16</b>	<b>Safety instructions.....</b>	<b>21</b>
<b>6.1.17</b>	<b>Access to storage.....</b>	<b>21</b>
<b>6.2</b>	<b>Individual custom-made pellet stores .....</b>	<b>21</b>
<b>6.2.1</b>	<b>Construction requirements.....</b>	<b>21</b>
<b>6.2.2</b>	<b>Fill connectors .....</b>	<b>23</b>
<b>6.2.3</b>	<b>Impact protection mat .....</b>	<b>24</b>
<b>6.2.4</b>	<b>Sloping floor .....</b>	<b>24</b>

6.2.5	Access hatch/door to pellet store.....	24
6.3	Pre-fabricated storage systems .....	25
6.3.1	General.....	25
6.3.2	Requirements regarding the site, indoor systems.....	26
6.3.3	Requirements regarding the siting of outdoor installations.....	26
6.3.4	Ground connection (earth).....	26
6.3.5	Filling instructions.....	26
6.3.6	Fabric store.....	26
6.3.7	Underground store .....	27
7	Health protection aspects .....	27
7.1	Entering a pellet store .....	27
7.1.1	General.....	27
7.1.2	Requirements for small pellet stores up to 15 t.....	28
7.1.3	Requirements for pellet stores >15 t and/or underground stores.....	28
7.2	Stationary CO monitors.....	29
7.3	Equipment used in stores.....	29
Annex A	(informative) Hazards associated with pellets.....	30
Annex B	(informative) Model calculation for different cases of store ventilation.....	36
Annex C	(informative) Examples for store designs .....	40
Annex D	(normative) Minimum requirements of a hand-over document.....	48
Annex E	(informative) Example of a checklist for filling of store.....	52
Bibliography	.....	54