

# DIN EN 10217-6:2019-08 (E)

## Welded steel tubes for pressure purposes - Technical delivery conditions - Part 6: Submerged arc welded non-alloy steel tubes with specified low temperature properties

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
<b>1</b>	<b>Scope .....</b>	<b>5</b>
<b>2</b>	<b>Normative references .....</b>	<b>5</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>6</b>
<b>4</b>	<b>Symbols .....</b>	<b>7</b>
<b>5</b>	<b>Classification and designation .....</b>	<b>7</b>
<b>5.1</b>	<b>Classification .....</b>	<b>7</b>
<b>5.2</b>	<b>Designation .....</b>	<b>7</b>
<b>6</b>	<b>Information to be supplied by the purchaser .....</b>	<b>7</b>
<b>6.1</b>	<b>Mandatory information .....</b>	<b>7</b>
<b>6.2</b>	<b>Options .....</b>	<b>8</b>
<b>6.3</b>	<b>Example of an order .....</b>	<b>8</b>
<b>7</b>	<b>Manufacturing process .....</b>	<b>8</b>
<b>7.1</b>	<b>Steelmaking process .....</b>	<b>8</b>
<b>7.2</b>	<b>Tube manufacture and delivery conditions .....</b>	<b>9</b>
<b>7.3</b>	<b>Non Destructive Testing Personnel Requirements .....</b>	<b>10</b>
<b>8</b>	<b>Requirements .....</b>	<b>10</b>
<b>8.1</b>	<b>General .....</b>	<b>10</b>
<b>8.2</b>	<b>Chemical composition .....</b>	<b>11</b>
<b>8.2.1</b>	<b>Cast analysis .....</b>	<b>11</b>
<b>8.2.2</b>	<b>Product analysis .....</b>	<b>11</b>
<b>8.3</b>	<b>Mechanical properties .....</b>	<b>12</b>
<b>8.4</b>	<b>Appearance and internal soundness .....</b>	<b>13</b>
<b>8.4.1</b>	<b>Weld seam .....</b>	<b>13</b>
<b>8.4.2</b>	<b>Tube surface .....</b>	<b>13</b>
<b>8.4.3</b>	<b>Internal soundness .....</b>	<b>14</b>
<b>8.5</b>	<b>Straightness .....</b>	<b>14</b>
<b>8.6</b>	<b>Preparation of ends .....</b>	<b>14</b>
<b>8.7</b>	<b>Dimensions, masses and tolerances .....</b>	<b>15</b>
<b>8.7.1</b>	<b>Diameter and wall thickness .....</b>	<b>15</b>
<b>8.7.2</b>	<b>Mass .....</b>	<b>15</b>
<b>8.7.3</b>	<b>Lengths .....</b>	<b>15</b>
<b>8.7.4</b>	<b>Tolerances .....</b>	<b>15</b>
<b>9</b>	<b>Inspection .....</b>	<b>19</b>
<b>9.1</b>	<b>Type of inspection .....</b>	<b>19</b>
<b>9.2</b>	<b>Inspection documents .....</b>	<b>19</b>
<b>9.2.1</b>	<b>Types of inspection documents .....</b>	<b>19</b>
<b>9.2.2</b>	<b>Content of inspection documents .....</b>	<b>19</b>
<b>9.3</b>	<b>Summary of inspection and verification testing .....</b>	<b>20</b>

<b>10</b>	<b>Sampling .....</b>	<b>22</b>
<b>10.1</b>	<b>Frequency of tests .....</b>	<b>22</b>
<b>10.1.1</b>	<b>Test unit .....</b>	<b>22</b>
<b>10.1.2</b>	<b>Number of sample tubes per test unit .....</b>	<b>22</b>
<b>10.2</b>	<b>Preparation of samples and test pieces .....</b>	<b>22</b>
<b>10.2.1</b>	<b>Selection and preparation of samples for product analysis .....</b>	<b>22</b>
<b>10.2.2</b>	<b>Location, orientation and preparation of samples and test pieces for mechanical tests ....</b>	<b>22</b>
<b>11</b>	<b>Verification of test methods .....</b>	<b>24</b>
<b>11.1</b>	<b>Chemical analysis .....</b>	<b>24</b>
<b>11.2</b>	<b>Tensile test on the tube body .....</b>	<b>24</b>
<b>11.3</b>	<b>Transverse tensile test on the weld .....</b>	<b>24</b>
<b>11.4</b>	<b>Weld bend test .....</b>	<b>24</b>
<b>11.5</b>	<b>Impact test .....</b>	<b>24</b>
<b>11.6</b>	<b>Hydrostatic leak tightness test .....</b>	<b>25</b>
<b>11.7</b>	<b>Dimensional inspection .....</b>	<b>25</b>
<b>11.8</b>	<b>Visual examination .....</b>	<b>26</b>
<b>11.9</b>	<b>Non-Destructive Testing .....</b>	<b>26</b>
<b>11.9.1</b>	<b>Non-Destructive Testing of the weld seam .....</b>	<b>26</b>
<b>11.9.2</b>	<b>Non-Destructive Testing for the detection of laminations for tubes of test category 2 .....</b>	<b>26</b>
<b>11.9.3</b>	<b>Supply of strip end welds in SAWH tubes .....</b>	<b>27</b>
<b>11.10</b>	<b>Retests, sorting and reprocessing .....</b>	<b>27</b>
<b>12</b>	<b>Marking .....</b>	<b>27</b>
<b>12.1</b>	<b>Marking to be applied .....</b>	<b>27</b>
<b>12.2</b>	<b>Additional marking .....</b>	<b>27</b>
<b>13</b>	<b>Protection .....</b>	<b>27</b>
<b>Annex A (normative) Qualification of welding procedure .....</b>		<b>28</b>
<b>A.1</b>	<b>General .....</b>	<b>28</b>
<b>A.2</b>	<b>Welding procedure specification .....</b>	<b>28</b>
<b>A.3</b>	<b>Preparation of sample tube and sample assessment .....</b>	<b>30</b>
<b>A.4</b>	<b>Inspection and testing of the weld .....</b>	<b>30</b>
<b>A.5</b>	<b>Weld test pieces .....</b>	<b>31</b>
<b>A.6</b>	<b>Test methods .....</b>	<b>31</b>
<b>A.7</b>	<b>Test acceptance levels .....</b>	<b>32</b>
<b>A.8</b>	<b>Range of use of qualified procedures .....</b>	<b>34</b>
<b>A.9</b>	<b>Qualification record .....</b>	<b>34</b>
<b>Annex B (informative) Technical changes from the previous edition .....</b>		<b>35</b>
<b>B.1</b>	<b>Introduction .....</b>	<b>35</b>
<b>B.2</b>	<b>Technical changes .....</b>	<b>35</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of 2014/68/EU .....</b>		<b>37</b>
<b>Bibliography .....</b>		<b>38</b>