

# DIN EN 14227-3:2013-08 (E)

## Hydraulically bound mixtures - Specifications - Part 3: Fly ash bound granular mixtures

---

| <b>Contents</b> |  | <b>Page</b> |
|-----------------|--|-------------|
| Foreword .....  |  | 4           |
| <b>1</b>        | <b>Scope .....</b>   | <b>6</b>    |
| <b>2</b>        | <b>Normative references .....</b>                                | <b>6</b>    |
| <b>3</b>        | <b>Terms and definitions .....</b>                               | <b>7</b>    |
| <b>4</b>        | <b>Symbols and abbreviated terms .....</b>                       | <b>7</b>    |
| <b>5</b>        | <b>Constituents .....</b>  | <b>8</b>    |
| 5.1             | Aggregates .....   | 8           |
| 5.2             | Fly ash .....  | 8           |
| 5.3             | Lime .....   | 8           |
| 5.4             | Cement .....   | 8           |
| 5.5             | Gypsum .....   | 8           |
| 5.6             | Granulated blast furnace slag .....                              | 8           |
| 5.7             | Other constituents .....   | 8           |
| 5.8             | Water .....  | 9           |
| <b>6</b>        | <b>Fly ash bound granular mixtures .....</b>                     | <b>9</b>    |
| 6.1             | Types .....  | 9           |
| 6.1.1           | Fly ash bound granular mixture 1 .....                           | 9           |
| 6.1.2           | Fly ash bound granular mixture 2 .....                           | 9           |
| 6.1.3           | Fly ash bound granular mixture 3 .....                           | 9           |
| 6.1.4           | Fly ash bound granular mixture 4 .....                           | 10          |
| 6.1.5           | Fly ash bound granular mixture 5 .....                           | 10          |
| 6.1.6           | Fly ash bound granular mixture 6 .....                           | 10          |
| 6.1.7           | Examples of fly ash bound granular mixtures .....                | 10          |
| 6.2             | Water content of mixtures .....                                  | 10          |
| 6.3             | Proportioning of the constituents, grading and dry density ..... | 11          |
| 6.4             | Other requirements for the fresh mixture .....                   | 11          |
| 6.4.1           | Compacity .....  | 11          |
| 6.4.2           | Immediate bearing index of the mixture .....                     | 11          |
| 6.4.3           | Workability period .....   | 11          |
| <b>7</b>        | <b>Laboratory mechanical performance classification .....</b>    | <b>12</b>   |
| 7.1             | General .....  | 12          |
| 7.2             | Classification by compressive strength .....                     | 12          |
| 7.3             | Classification by Rt, E .....                                    | 13          |
| 7.3.1           | General .....  | 13          |
| 7.3.2           | Method by direct tensile testing .....                           | 14          |
| 7.3.3           | Method by indirect tensile testing .....                         | 14          |
| 7.3.4           | Method by indirect tensile and compression testing .....         | 14          |
| <b>8</b>        | <b>Other requirements for the mixture .....</b>                  | <b>15</b>   |
| 8.1             | Strength after immersion in water .....                          | 15          |
| 8.2             | Other characteristics .....                                      | 15          |
| <b>9</b>        | <b>Production control .....</b>                                  | <b>15</b>   |

|   |  |           |
|---|--|-----------|
| <b>10</b>   | <b>Designation and description .....</b>   | <b>15</b> |
| <b>10.1</b>   | <b>Designation .....</b>   | <b>15</b> |
| <b>10.2</b>   | <b>Description .....</b>   | <b>16</b> |
| <b>11</b>   | <b>Marking and labelling .....</b>   | <b>16</b> |
| <b>12</b>   | <b>Figures .....</b>   | <b>17</b> |
| <b>Annex A (normative) Compacity of a fly ash bound granular mixture 2 .....</b>                        |  | <b>26</b> |
| <b>Annex B (informative) Examples of fly ash bound granular mixtures using siliceous fly ash .....</b>  |  | <b>27</b> |
| <b>Annex C (informative) Examples of fly ash bound granular mixtures using calcareous fly ash .....</b> |  | <b>28</b> |
| <b>Annex D (informative) Production control for fly ash bound granular mixtures .....</b>               |  | <b>29</b> |
| <b>D.1</b>  | <b>General .....</b>   | <b>29</b> |
| <b>D.2</b>  | <b>Quality manual .....</b>  | <b>29</b> |
| <b>D.3</b>  | <b>Organisation .....</b>  | <b>29</b> |
| <b>D.3.1</b>  | <b>Responsibility and authority .....</b>  | <b>29</b> |
| <b>D.3.2</b>  | <b>Management representative .....</b>   | <b>29</b> |
| <b>D.3.3</b>  | <b>Internal audits .....</b>   | <b>29</b> |
| <b>D.3.4</b>  | <b>Management review .....</b>   | <b>30</b> |
| <b>D.3.5</b>  | <b>Sub-contract services .....</b>   | <b>30</b> |
| <b>D.3.6</b>  | <b>Records .....</b>   | <b>30</b> |
| <b>D.3.7</b>  | <b>Training .....</b>  | <b>30</b> |
| <b>D.4</b>  | <b>Control procedures .....</b>  | <b>30</b> |
| <b>D.4.1</b>  | <b>Production management .....</b>   | <b>30</b> |
| <b>D.4.2</b>  | <b>Composition of the mixture .....</b>  | <b>31</b> |
| <b>D.4.3</b>  | <b>Constituents .....</b>  | <b>31</b> |
| <b>D.4.4</b>  | <b>Process control .....</b>   | <b>31</b> |
| <b>D.4.5</b>  | <b>Inspection, calibration and control of process equipment .....</b>              | <b>31</b> |
| <b>D.4.6</b>  | <b>Handling and delivery .....</b>   | <b>32</b> |
| <b>D.5</b>  | <b>Inspection and testing of constituents and mixtures during production .....</b> | <b>32</b> |
| <b>D.5.1</b>  | <b>General .....</b>   | <b>32</b> |
| <b>D.5.2</b>  | <b>Characteristics that require control during production .....</b>                | <b>32</b> |
| <b>D.5.3</b>  | <b>Frequency of sampling the mixture .....</b>                                     | <b>32</b> |
| <b>D.6</b>  | <b>Inspection and testing equipment .....</b>                                      | <b>33</b> |
| <b>D.6.1</b>  | <b>General .....</b>   | <b>33</b> |
| <b>D.6.2</b>  | <b>Measuring and testing equipment .....</b>                                       | <b>33</b> |
| <b>D.6.3</b>  | <b>Measuring and testing equipment in the process .....</b>                        | <b>33</b> |
| <b>D.6.4</b>  | <b>Measuring and testing equipment in laboratory .....</b>                         | <b>33</b> |
| <b>D.7</b>  | <b>Non-conformity .....</b>  | <b>34</b> |
| <b>D.7.1</b>  | <b>General .....</b>   | <b>34</b> |
| <b>D.7.2</b>  | <b>Non-conformity of constituents .....</b>  | <b>34</b> |
| <b>D.7.3</b>  | <b>Non-conformity of the mixture .....</b>   | <b>34</b> |
| <b>Bibliography .....</b>   |  | <b>35</b> |