

DIN EN 1423:2013-03 (E)

Road marking materials - Drop on materials - Glass beads, antiskid aggregates and mixtures of the two

Contents		Page
Foreword		5
1 Scope		6
2 Normative references		6
3 Terms and definitions		6
4 Requirements		7
4.1 Glass beads		7
4.1.1 Surface treatments of glass beads		7
4.1.2 Visibility characteristics		7
4.1.3 Granulometry		8
4.1.4 Dangerous substances		10
4.1.5 Durability aspects Resistance to chemicals: water, hydrochloric acid, calcium chloride and sodium sulphide		10
4.2 Transparent antiskid aggregates		10
4.2.1 pH value		10
4.2.2 Granulometry		10
4.2.3 Dangerous substances		12
4.2.4 Durability aspects Resistance to fragmentation (friability)		12
4.3 Non transparent antiskid aggregates		12
4.3.1 pH value		12
4.3.2 Visibility characteristics		12
4.3.3 Granulometry		13
4.3.4 Durability aspects Resistance to fragmentation (friability)		14
4.4 Mixtures of glass beads and antiskid aggregates		14
4.4.1 General		14
4.4.2 Durability aspects		15
5 Testing, assessment and sampling methods		15
5.1 General		15
5.2 Sampling		15
5.3 Glass beads		16
5.3.1 Surface treatments of glass beads		16
5.3.2 Visibility characteristics		16
5.3.3 Granulometry		16
5.3.4 Dangerous substances		16
5.3.5 Durability Resistance to chemicals: water, hydrochloric acid, calcium chloride and sodium sulphide		16
5.4 Transparent antiskid aggregates		16
5.4.1 pH value		16
5.4.2 Granulometry		17
5.4.3 Dangerous substances		17
5.4.4 Durability Resistance to fragmentation (friability)		17
5.5 Non transparent antiskid aggregates		17
5.5.1 pH value		17
5.5.2 Visibility Characteristics		17
5.5.3 Granulometry		17
5.5.4 Durability Resistance to fragmentation (friability)		17
5.6 Mixture of glass beads and antiskid aggregates		17

6	Evaluation of conformity	18
6.1	General	18
6.2	Initial type testing and type testing	18
6.2.1	General	18
03	EN ISO 15027-1:2012 (E) 6.2.2 Test samples, testing and compliance criteria	19
6.2.3	Test reports	21
6.3	Factory Production control (FPC)	21
6.3.1	General	21
6.3.2	Requirements	21
6.3.3	Product specific requirements	25
6.3.4	Initial inspection of factory and FPC	26
6.3.5	Continuous surveillance of FPC	26
6.3.6	Procedure for modifications	26
7	Marking	27
Annex A (normative) Test method to determine the refractive index of the glass beads		28
A.1	General	28
A.2	Principle	28
A.3	Equipment and materials	29
A.4	Procedure	30
A.5	Expression of the results	30
Annex B (normative) Test methods to determine the resistance of the glass beads to the effects of water, hydrochloric acid, calcium chloride and sodium sulphide		31
B.1	Resistance to the effects of water	31
B.2	Resistance to the effects of hydrochloric acid	31
B.3	Resistance to the effects of calcium chloride	31
B.4	Resistance to the effects of sodium Sulphide	31
Annex C (normative) Glass bead defects		33
C.1	Oval glass beads (see Figure C.1)	33
C.2	Satellites (see Figure C.2)	33
C.3	Tear shaped glass beads (see Figure C.3)	33
C.4	Glass beads fused together (see Figure C.4)	34
C.5	Roundish glass beads (see Figure C.5)	34
C.6	Opaque glass beads (see Figure C.6)	34
C.7	Milky glass beads (see Figure C.7)	35
C.8	Gas inclusions (see Figure C.8)	35
C.9	Grains (see Figure C.9)	35
C.10	Foreign particles	36
Annex D (normative) Test method to determine maximum weighted percentage of defective glass beads Procedure		37
D.1	General	37
D.2	Results of counting	38
Annex E (normative) Test method to determine the presence of the moisture proof coating		40
E.1	Procedure A	40
E.2	Procedure B	41
Annex F (normative) Test method to determine the presence of floatation coating		42
F.1	General	42

F.2	Principle	42
F.3	Apparatus and reagents	42
F.4	Procedure	42
F.5	Results	42
Annex G (normative) Test method to determine the friability index of the antiskid aggregates		43
G.1	General	43
G.2	Apparatus	43
G.3	Material to be tested	43
G.4	Procedure	44
G.5	Expression of results	44
G.6	Precision	45
Annex H (informative) Alternative test methods to determine maximum weighted percentage of defective glass beads		46
H.1	General	46
H.2	Visual test method	46
H.3	Automatic test method	47
Annex I (normative) Test method to determine the presence of dangerous substances		53
I.1	Reference method	53
I.2	Quick alternative method	54
Annex J (normative) Test method to determine glass beads and antiskid aggregates ratio in mixtures of the two		55
J.1	General	55
J.2	Equipment and material	55
J.3	Procedure	55
J.4	Alternative methods	55
Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive		57
Bibliography		70