# DIN EN 15050:2007-08 (E)

## Precast concrete products - Bridge elements

## Contents

Page


Introduction ..... 6

1 Scope ..... 7

2 Normative references ..... 7

3 Terms and definitions ..... 8

4 Requirements ..... 9
4.1 Material requirements ..... 9
4.2 Production requirements ..... 9
4.2.1 General ..... 9
4.2.3.2 Application of prestressing ..... 9
4.3 Finished product requirements ..... 10
4.3.1 Geometrical properties ..... 10
4.3.2 Surface characteristics ..... 12
4.3.3 Mechanical resistance ..... 12
4.3.4 Resistance and reaction to fire ..... 13
4.3.5 Acoustic properties ..... 13
4.3.6 Thermal properties ..... 13
4.3.7 Durability ..... 13
4.3.8 Other requirements ..... 14

5 Test methods ..... 14
5.1 Tests on concrete ..... 14
5.2 Measuring of dimensions and surface characteristics ..... 14
5.2.1 General ..... 14
5.2.2 Beams ..... 14
5.2.3 Other elements ..... 15
5.3 Weight of the products ..... 15

6 Evaluation of conformity ..... 15

7 Marking and labelling ..... 15

8 Technical documentation ..... 15

Annex A (informative) Typology ..... 16

A.1 Scope ..... 16
A.2 Decks with precast beams as main structural elements ..... 16
A.3 Solid slabs ..... 21
A.4 Segmental decks ..... 22
A.5 Precast arches or vaults ..... 22

Annex B (informative) Decks formed by beams and slabs ..... 23

B.1 Scope ..... 23
B.2 Dimensions in the bearing zone ..... 23
B.3 Transfer of prestressing ..... 23
B.4 Anchorage of the main reinforcement at supports ..... 23
B.5 Change of the restraint conditions after the application of loads ..... 26

B.6 Skewed ends ... 26
B.7 Deck layout ... 26

Annex C (informative) Use of plates in bridges ... 28

C.1 General ... 28
C.2 Connecting reinforcement ... 28
C.3 Connection to beams ... 28
C.4 Connection between adjacent floor plates ... 29

Annex D (informative) Continuity of bridge decks ... 31

D.1 Scope ... 31
D.2 Continuity of bridge decks ... 31
D.3 Hogging moments at supports ... 31
D.4 Long term sagging moments at supports ... 31

Annex E (informative) Infilled beams ... 37

E.1 General ... 37
E.2 Infilled beams with a thin topping ... 37
E.3 Infilled beams with a thick topping ... 37

Annex F (informative) Precast beams without topping ... 39

F.1 Scope ... 39
F.2 Transverse prestressing by post-tensioning ... 39
F.3 Reinforced joints ... 39

Annex G (informative) Precast segmental decks ... 41

G.1 General ... 41
G.1.1 Description ... 41
G.1.2 Joints ... 41
G.1.3 Keys ... 41
G.1.4 Post-tensioning ... 42
G.2 Design ... 42
G.2.1 Assembly stage ... 42
G.2.2 Final situation ... 42
G.2.3 Checking of joints ... 43
G.2.4 Local transverse bending ... 43
G.2.5 Discontinuity regions ... 43
G.3 Production ... 44
G.4 Building assembly ... 44
G.4.1 Segment positioning ... 44
G.4.2 Segment sealing ... 44
G.4.3 Post-tensioning ... 44
G.4.4 Closing segment ... 44

Annex H (informative) Ambient conditions for bridge elements ... 46

Annex J (normative) Finished product inspection ... 47

Annex Y (informative) Choice of CE marking method ... 48

Y.1 General ... 48
Y.2 Method 1 ... 48
Y.3 Method 2 ... 48
Y.4 Method 3 ... 48

Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive ... 49

**ZA.1 Scope and relevant characteristics ..... 49**

**ZA.2 Procedure for attestation of conformity of precast concrete bridge elements ..... 50**

**ZA.2.1 System of attestation of conformity ..... 50**

**ZA.2.2 EC Certificate and Declaration of conformity ..... 52**

**ZA.3 CE marking and labelling ..... 52**

**ZA.3.1 General ..... 52**

**ZA.3.2 Declaration of geometrical data and material properties ..... 54**

**ZA.3.3 Declaration of product properties ..... 56**

**ZA.3.4 Declaration of compliance with a given design specification ..... 58**

**Bibliography ..... 60**