



NSAI
Standards

Standard Recommendation
S.R. 325:2013+A2:2018

Recommendations for the design of masonry structures in Ireland to Eurocode 6

S.R. 325:2013+A2:2018

Relationship with other documents and/or

Incorporating amendments/corrigenda issued since publication:

		Published	Withdrawn
Replaces	S.R. 325:2013+A1:2014	23/05/2014	31/07/2018

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document is based on:

S.R. 325:2013+A2:2018

This document was published under the authority of the NSAI and comes into effect on:
31 July, 2018

ICS number:
91.080.01

NSAI

1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:

T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

Contents

	Page
Foreword.....	5
1 Scope	6
2 Normative references	6
3 Terms and definitions.....	9
3.1 General terms.....	9
3.2 Joint type terms.....	11
3.3 Masonry joints type terms.....	11
3.4 Mortar bedding terms.....	11
3.5 Support types terms	12
3.6 Wall types terms	12
4 Materials and components.....	13
4.1 Materials and components - General.....	13
4.2 Masonry units	13
4.3 Mortars.....	13
4.4 Wall ties.....	13
4.5 Ancillary components	13
4.6 Reinforcement	18
4.7 Damp-proof courses.....	18
4.8 Sealants	18
4.9 Airbricks, gratings and flues.....	18
4.10 Sills.....	18
4.11 Lintels	19
4.12 Copings and cappings.....	19
4.13 Flashings and weatherings and insulation in cavity walls	20
4.13.1 Flashings and weatherings.....	20
4.13.2 Insulation in cavity walls	20
5 Design	21
5.1 General design considerations	21
5.1.1 Factors to be considered	21
5.1.2 Loading.....	22
5.1.3 Accidental loading.....	22
5.1.4 Foundations.....	22
5.1.5 Adhesion	22
5.1.6 Selection of masonry units and materials	23
5.2 Design for stability	23
5.2.1 Masonry in general	23
5.2.2 Walls subjected to concentrated loads	24
5.2.3 Walls subjected to imposed lateral load only	25
5.2.4 Internal walls or partitions not designed for imposed loading.....	25
5.3 Structural detailing for stability.....	28
5.3.1 General	28
5.3.2 Floors	28
5.3.3 Roofs.....	29

S.R. 325:2013+A2:2018

5.3.4	Support over openings.....	29
5.3.5	Anchorage, dowels and fixings.....	38
5.3.6	Wall ties.....	40
5.3.7	Provision for services and fittings.....	40
5.3.8	Chimneys.....	40
5.4	Movement in masonry.....	43
5.4.1	General.....	43
5.4.2	Movement and materials.....	43
5.4.3	Movement in joints.....	43
5.5	Exclusion of moisture.....	47
5.5.1	General.....	47
5.5.2	Classification of exposure to local wind-driven rain.....	48
5.5.3	Selection of external constructions to resist rain penetration.....	50
5.5.4	Damp-proof courses and cavity trays.....	57
5.5.5	Positioning of DPC's.....	58
5.5.6	Flashings and weatherings.....	69
5.5.7	Flashings and copings.....	69
5.5.8	External wall becoming an internal wall.....	69
5.5.9	Structural frames.....	70
5.6	Durability.....	70
5.6.1	General.....	70
5.6.2	Sulphate attack.....	72
5.6.3	Architectural features.....	72
5.6.4	Selection of masonry units and mortar for durability.....	73
5.6.5	Protection of components embedded in masonry from corrosion or degradation....	81
5.7	Mortars.....	81
5.7.1	Types of mortar.....	81
5.7.2	Mortar admixtures.....	82
5.7.3	Selection of mortar.....	82
5.7.4	Factory made masonry mortar.....	82
5.8	Fire resistance to walls.....	82
6	Workmanship.....	84
6.1	General.....	84
6.2	Storage of materials on site.....	84
6.2.1	General.....	84
6.2.2	Masonry units.....	84
6.2.3	Cement and hydrated lime.....	85
6.2.4	Fine aggregate.....	85
6.2.5	Ready-to-use mortars and ready-mixed lime.....	85
6.2.6	Flexible DPC's.....	85
6.3	Laying of masonry units.....	85
6.3.1	Setting out.....	85
6.3.2	Joint thickness.....	86
6.3.3	Achieving good adhesion.....	86
6.3.4	Appearance.....	87
6.3.5	Jointing.....	87
6.3.6	Pointing.....	87
6.3.7	Bricklaying.....	88
6.3.8	Block laying.....	88
6.3.9	Reinforced block lintels.....	88
6.3.10	DPC's, cavity trays and flashings.....	88
6.3.11	Cavity walls.....	89

6.3.12	Slips.....	90
6.4	Masonry bonds and other constructional details.....	91
6.4.1	Masonry bonds.....	91
6.4.2	Architectural features.....	92
6.4.3	Arches.....	93
6.4.4	Jointing and pointing.....	94
6.4.5	Corbelling.....	94
6.4.6	Provision for services and fittings.....	94
6.4.7	Chases and holes.....	94
6.4.8	Ducts across cavities cavity walls.....	95
6.4.9	Constructional details.....	95
6.5	Provision of services, including fixings and chases.....	99
6.6	Protection against damage during construction.....	99
6.6.1	General.....	99
6.6.2	Protection against rain.....	99
6.6.3	Work in cold conditions.....	99
6.7	Supervision.....	100
Annex A	(informative) Masonry bonds and joint finishes.....	101
A.1	Brick masonry bonds.....	101
A.1.1	English bond.....	101
A.1.2	Flemish bond.....	101
A.1.3	English garden-wall bond.....	101
A.1.4	Flemish garden-wall bond.....	101
A.1.5	Header bond.....	101
A.1.6	Quetta bond.....	101
A.1.7	Rat-trap bond.....	101
A.2	Block masonry bonds.....	101
A.2.1	Running or stretcher bonds.....	101
A.2.2	Thin stretcher bond.....	102
A.2.3	Off-centre running bond.....	102
A.3	Joint finishes.....	102
Annex B	(informative) Use of replacement wall ties.....	105
B.1	Use of replacement wall ties.....	105
B.2	Installation of replacement wall ties.....	105
B.3	Types of replacement wall tie.....	105
B.4	Advantages and disadvantages affixing methods.....	106
B.5	Choice of replacement wall tie.....	106
B.6	Characteristics of replacement wall ties.....	107
B.7	Accommodation of relative movement.....	107
B.8	Spacing of replacement ties.....	108
Annex C	A1 (informative) Masonry units I.S. EN 771-1 to 6.....	109
C.1	General.....	109
C.2	Dimensions.....	109
C.3	Dimensional tolerances.....	110
C.3.1	Aggregate concrete masonry units to I.S. EN 771-3.....	110
C.4	Compressive strength.....	110
C.5	Durability.....	111
C.6	Moisture movement.....	111
Annex D	A1 (informative) Ancillary components for masonry I.S. EN 845-1 to 3.....	112
D.1	Ties, tension straps, hangers and brackets to I.S. EN 845-1.....	112
D.1.1	General.....	112

S.R. 325:2013+A2:2018

D.1.2	Durability	112
D.1.3	Fire resistance	112
D.1.4	Mechanical strength (See I.S. EN 845-1)	112
D.2	Lintels to I.S. EN 845-2	113
D.2.1	Mechanical performance (See I.S. EN 845-2)	113
D.2.2	Durability	114
D.3	Bed joint reinforcement of steel meshwork to I.S. EN 845-3	114
D.3.1	Durability	114
Annex E	A₁ (informative) Specification for mortar for masonry I.S. EN 998-1 and 2	115
E.1	Rendering and plastering mortar (I.S. EN 998-1)	115
E.1.1	Exclusion of moisture	115
E.2	Masonry mortar (I.S. EN 998-2)	115
E.2.1	Compressive strength	115
E.2.2	Durability	115
Annex F	A₂ (informative) National guidance to I.S. EN 13914-1:2016	116
F.1	Scope (Clause 1.0 Footnote 1)	116
F.2	Mineral Binders (5.2.1 Table 3 [Footnote a])	116
F.3	Materials for reinforcement, carrier and beads (5.4 Table 4 [Footnote a])	116
F.4	Plugs and anchors (5.5.2 [Footnote 2])	116
F.5	Choice of render type, mix, number of coats and thickness (6.2.1 [Footnote 2])	116
F.6	Strength of background (6.3.2 [Footnote 3])	117
F.7	Exposure conditions (6.6 [Footnote 4])	117
F.8	Resistance to water rising from the ground without pressure (capillary water) (6.8 [Footnote 5])	117
F.9	Corrosion of metals (6.13 [Footnote 6])	117
F.10	Movement of the rendering (6.14.3 [Footnote 7])	117
F.11	Methods of minimizing the occurrence of cracks (6.14.5.1 [Footnote 8])	117
F.12	Site made prescribed mixes (6.17.2.2 [Footnotes 9 & 10])	117
F.12.1	General	117
F.12.2	Designation I mixes	117
F.12.3	Designations II, III and IV mixes	118
F.12.4	Designation V mixes	118
F.13	Recommended thicknesses for various types of multicoat systems	118
F.13.1	Factory made, semi-finished and established site mixed rendering mortars	118
F.14	Renovation render (R) (6.18.6.4 [Footnote 11])	120
F.15	Minimum applied coat thickness for one coat mineral renders (Table 8 [Footnote a])	120
F.16	Scaffolding (7.3 [Footnote 12])	121
F.17	Reinforcement (7.5.2.5 [Footnote 13])	121
F.18	Lathing over timber-framed construction (7.5.2.6 [Footnote 13])	121
F.19	Special rendering methods, using factory made renders, over thermal insulation or backgrounds that may move (7.5.2.7 [Footnote 13])	121
F.20	Volume batching (7.6.3 [Footnote 14])	121
F.21	Mixing on site (7.7 and 7.7.1 [Footnote 15])	121
F.22	Curing (7.9.2 [Footnote 15])	121
F.23	Thermal insulating renders (7.9.4 [Footnote 16])	121
F.24	Example on the selection of site mixed prescribed renders mixed in accordance with background type (Annex A (informative) [Footnote 17])	121
F.25	Restoration of renders on old and historic buildings (Annex B (informative) [Footnote 18])	121
F.26	Air lime based renders (B.4.6 [Footnote 19])	121

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-