



MASONRY AND WALLING



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KELTSTONE WALLING



Keltstone Walling gives a distinctive natural cut stone appearance to all domestic and commercial buildings without the natural cut stone cost.

Roadstone Keltstone Walling is available in 2 colours and in a variety of sizes and with accessories such as quoin stones in 90 and 45 degrees.

Within each bale there will be 15 different size Keltstones to allow easy flexible building.

Keltstone Walling in general should be built with Mortar, colouring pigment can be added to the mortar if required.

Keltstone Walling is suitable as an external leaf for domestic and commercial buildings and for boundary walls, piers, entrances and garden features.





Sandstone



Limestone



Limestone



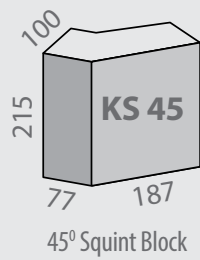
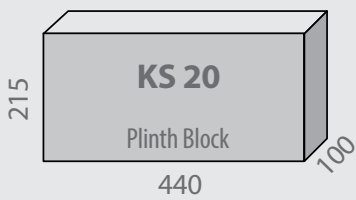
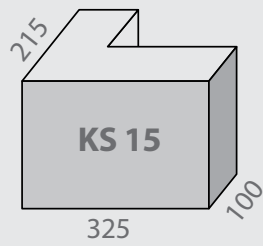
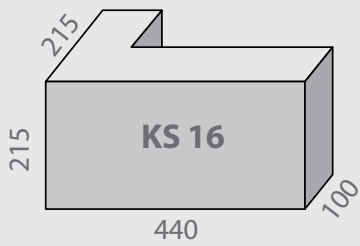
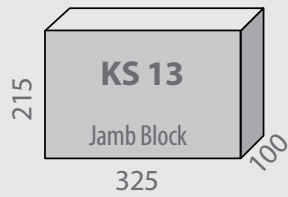
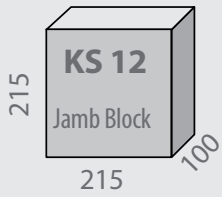
Limestone



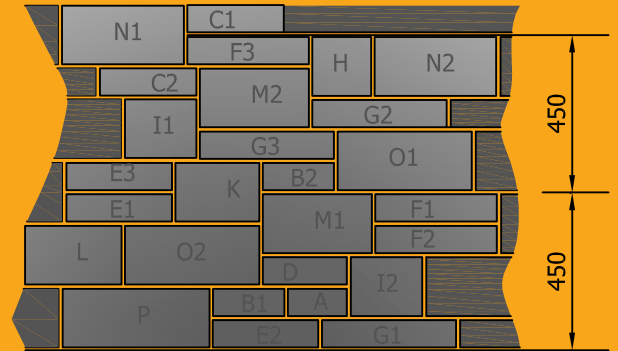
Sandstone

KELSTONE WALLING

KELSTONE SPECIALS



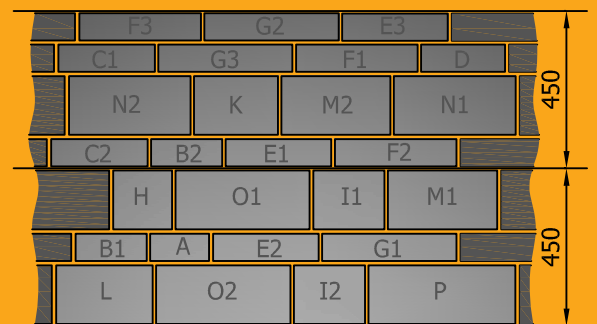
LAYING PATTERNS



Random Bond



Random Bond brought to course



Coursed Bond

KELTSTONE WALLING TECHNICAL DATA

Standard Specification I.S. EN 771-3 Specification for masonry units – Part 3: Aggregate concrete masonry units (Dense and lightweight aggregates)

Sizes & Weight	Type Per Layer	Length	Width	Height	Kgs
A	1	168	90	78	2.5
B	2	204	90	78	3.0
C	2	276	90	78	4.1
D	1	240	90	78	3.5
E	3	312	90	78	4.5
F	3	348	90	78	5.1
G	3	384	90	78	5.7
H	1	168	90	168	5.3
I	2	204	90	168	6.5
K	1	240	90	168	7.6
L	1	276	90	168	8.8
M	2	312	90	168	9.9
N	2	348	90	168	11.0
O	2	384	90	168	12.2
P	1	420	90	168	13.3
	27	Pieces per layer			

Pack size
 One layer = 1.09 M²
 0.5(Half Pack) 4 layers = 4.38 M²
 Full Pack 8 layers = 8.76 M²
 Weight of full Pack = 1.52 Tonne
 Dimension of full pack = 1.06M Length x 0.9M Wide x .78M High

Weight per M² 200 kg built with mortar

Compressive Strength 20 N/mm²

Moisture Movement I.S.EN 772-14 <0.6mm/m

Movement Joints Panel shape will determine the spacing of joints which should not normally exceed 7 Meter centres. The ratio of length to height of the panels should generally not exceed 3:1 i.e. panels above and below windows. Detailed information on the allowance for movement in masonry refer to Eurocode 7 I.S. EN 1996-1-1 General rules for reinforced and unreinforced masonry structures, S.R. 325:2018 Clause 5.4.3.4 Recommendations for the design of Masonry structures in Ireland to Eurocode 6.

Durability Suitable for use in all normal building applications Refer to S.R. 325:2018 Table 14

Blending Blending from at least 3 bales is recommended. Where appropriate Keltstone Walling should be retained for blending with subsequent deliveries. Keltstone Walling is made with natural occurring aggregates which have inherent colour variation therefore blending is essential to avoid banding

Mortar General use M4 or M6 Mortar (1:1:6 Cement Lime Sand Designation III or 1:½:4 to 4½ Cement Lime Sand Designation II Table NA 3 I.S. EN 1996-1-2 refer to Table 14 of S.R. 325:2018 table 14 Durability of masonry in finished construction and select the relevant Masonry condition or situation) With colouring pigment if required. Roadstone TRM (Trowel Ready Mortar) and Flomix Silo Mortar information and source locations available on www.roadstone.ie Refer to S.R. 325:2018 for durability requirements. When site batching it is essential to use a clean uncontaminated materials. I.S. EN 13139 Aggregates for Mortar.

Joint Finish The selection and finish of mortar joints in masonry affect the appearance of the finished work, consistent finishing and colour of the joints is essential to guarantee a uniform finish (Recessed joints increase the risk of water penetration. S.R. 325:2018 Refer to Clause 5.5.3.2.4.)

Trial Panel A trial panel as per I.S. EN 771-5 should be built and retained until completion of works.

Packaging Bales covered in Plastic Hoods

Storing and Handling See Good site practice on page 21-23

Protection See Good site practice on page 21-23

Corners No specials are needed as all Keltstone blocks have textured ends which match the face, this makes it easy to build corners easy to build 90 degree corners.

Certification DOP/CE Certification available to download from www.roadstone.ie

Colour and Efflorescence Roadstone are not responsible for the naturally occurring phenomenon of efflorescence nor the normal variation in colour or texture inherent in concrete products.

HUNTSTOWN BRICK



Roadstone Huntstown Brick offers a unique range of colours and textures, providing stylish, durable and innovative building solutions to designers, contractors and house builders alike.

The Huntstown brick range comes in three distinct styles that can be combined or used separately.

- ▶ Smooth with hard arrises giving clean defined lines.
- ▶ Split face giving a textured finish.
- ▶ Antique Rumbled giving a softer hand made appearance.

Huntstown Brick in general should be built with Mortar, colouring pigment can be added to the mortar if required.

Huntstown Brick is suitable as an external leaf for domestic and commercial buildings and for boundary walls, piers, entrances and garden features.

Smooth Terracotta and smooth straw

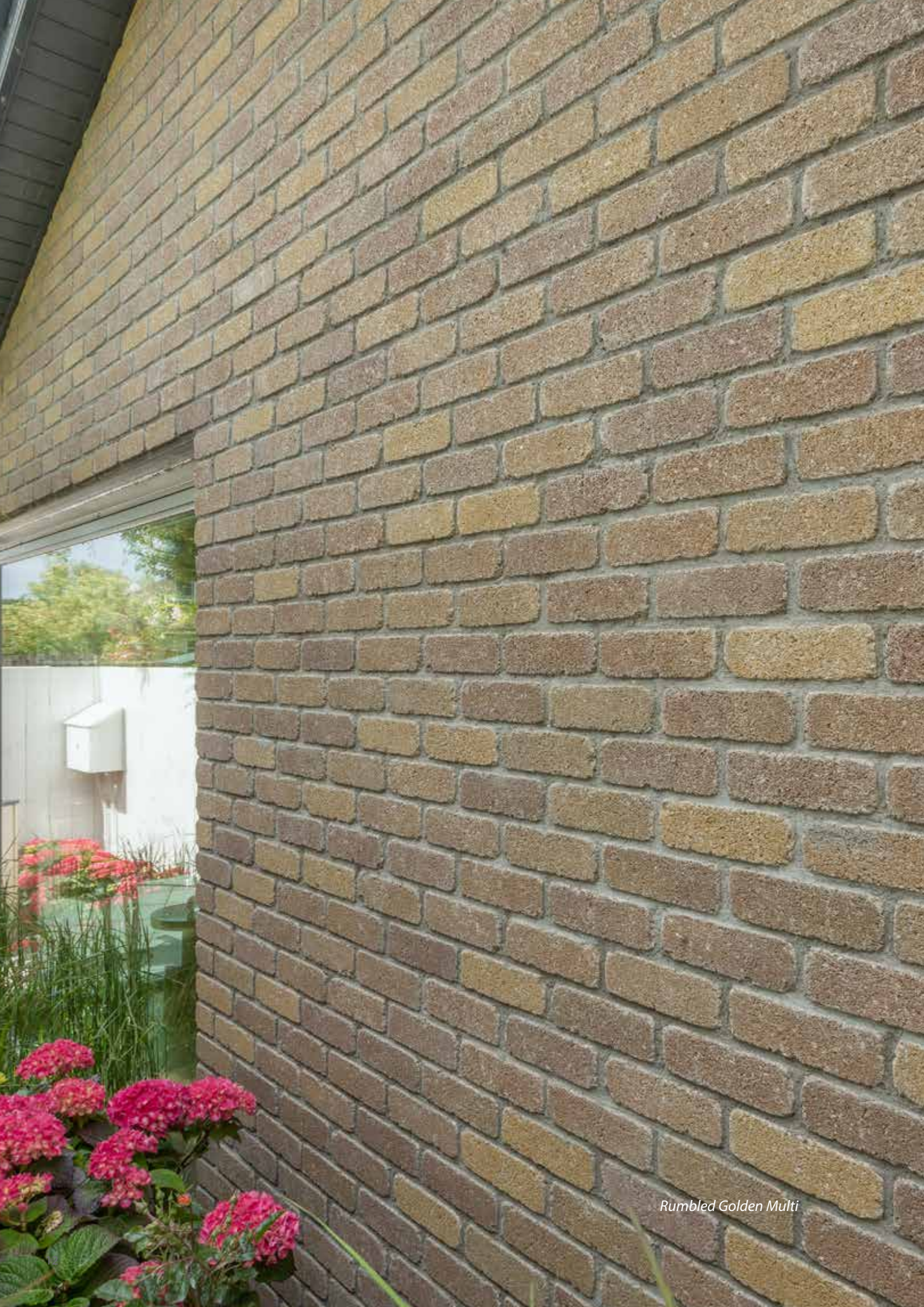




Rumbled Golden Multi



Rumbled Charcoal



Rumbled Golden Multi



HUNTSTOWN BRICK

TECHNICAL DATA

Standard Specification	I.S. EN 771-3 Specification for masonry units – Part 3: Aggregate concrete masonry units (Dense and lightweight aggregates).
Size Smooth & Rumbled Ranges	LxWxH 215mm x 100mm x 65mm
Co-ordinating Size Smooth & Rumbled Ranges	LxWxH 225mm x 100mm x 75mm
Size Split Range	LxWxH 215mm x 107.5mm x 65mm
Co-ordinating Size Split Range	LxWxH 225mm x 107.5mm x 75mm
No per m ²	60 Bricks per m ²
Pack Size Smooth Range	576 Bricks per Bale
Pack Size Split Range	530 Bricks per Bale
Pack Size Rumbled Range	588 Bricks per Bale
Unit Weight	2.9kg
Weight per m ²	200 kg
Compressive Strength	24 N/mm ²
Moisture Movement	I.S.EN 772-14 < 0.6mm/m
Movement Joints	Panel shape will determine the spacing of joints which should not normally exceed 6 Meter centres. Detailed information on the allowance for movement in masonry refer to Eurocode 6 I.S. EN 1996-1-1 General rules for reinforced and unreinforced masonry structures, S.R. 325 : 2018 Clause 5.4.3.4 Recommendations for the design of Masonry structures in Ireland to Eurocode 6.

Note

Where split faced returns are required, recommend ½ bricks. These can be cut with a brick chopper or bolster chisel. DOP/CE Certification available to download from www.Roadstone.ie
Roadstone are not responsible for the naturally occurring phenomenon of efflorescence nor the normal variation in colour or texture inherent in concrete products.



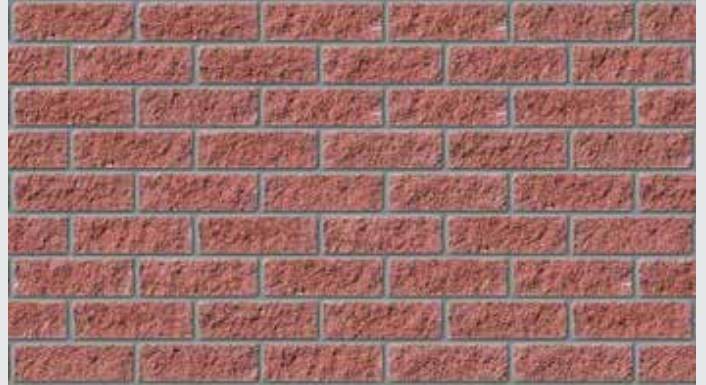
Durability	Suitable for use in all normal building applications Refer to S.R. 325 : 2018 Table 14
Blending	Blending from at least 3 bales is recommended. Where appropriate bricks should be retained for blending with subsequent deliveries. Concrete bricks are made with natural occurring aggregates which have inherent colour variation therefore blending is essential to avoid banding
Mortar	General use M4 or M6 Mortar (1:1:6 Cement Lime Sand Designation III or 1:½:4 to 4½ Cement Lime Sand Designation II Table NA 3 I.S. EN 1996:1:2 refer to Table 14 of SR 325 : 2018 table 14 Durability of masonry in finished construction and select the relevant Masonry condition or situation) With colouring pigment if required. Roadstone TRM (Trowel Ready Mortar) and Flomix Silo Mortar information and source locations available on www.roadstone.ie Refer to S.R. 325:2018 for durability requirements. When site batching it is essential to use a clean uncontaminated materials. I.S. EN 13139 Aggregates for Mortar.
Joint Finish	The selection and finish of mortar joints in masonry affect the appearance of the finished work, consistent finishing and colour of the joints is essential to guarantee a uniform finish (Recessed joints increase the risk of water penetration. S.R. 325:2018 Refer to Clause 5.5.3.2.4.)
Trial Panel	A trial panel as per I.S. EN 771-5 should be built and retained until completion of works.
Packaging	Bales covered in Plastic Hoods
Storing and Handling	See Good site practice on page 21-23
Protection	See Good site practice on page 21-23

HUNTSTOWN BRICK

Rumbled & Split Ranges



Red Multi



Huntstown Terracotta



Golden Multi



Straw



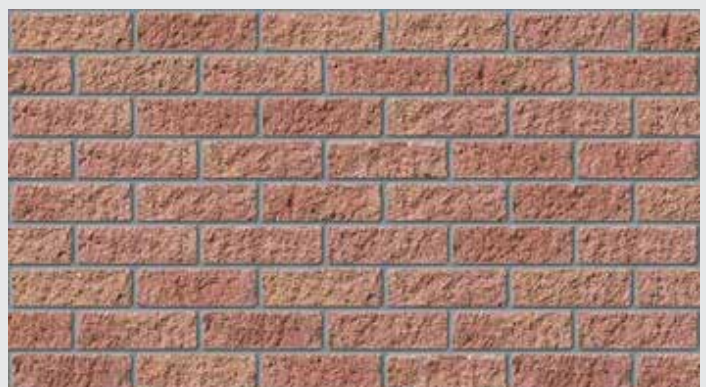
Georgian Blend



Autumn Blend



Harvest Blend



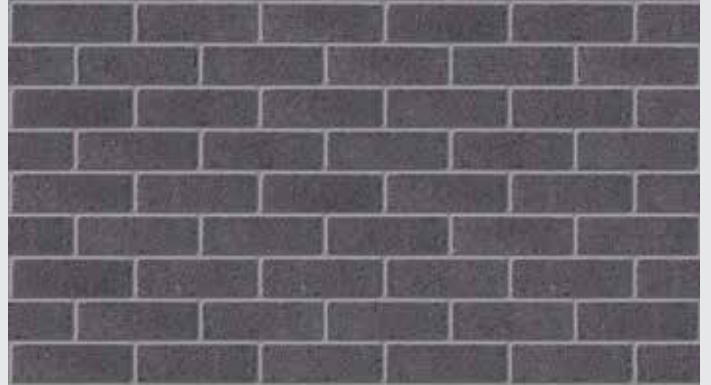
Russet Blend

HUNTSTOWN BRICK

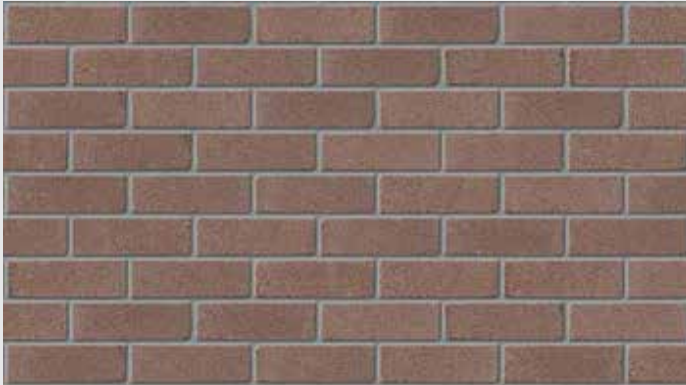
Smooth Ranges



Natural



Charcoal Grey



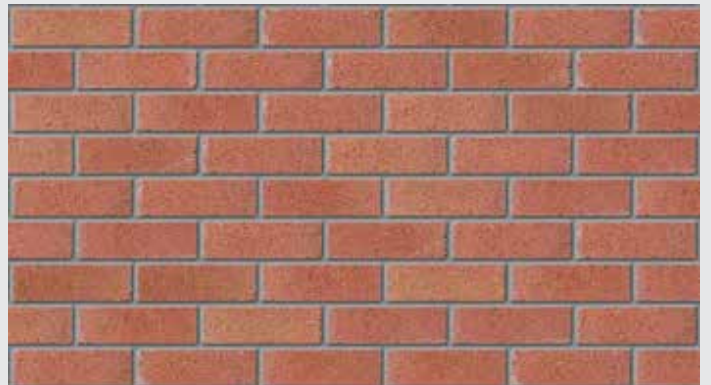
Turf Brown



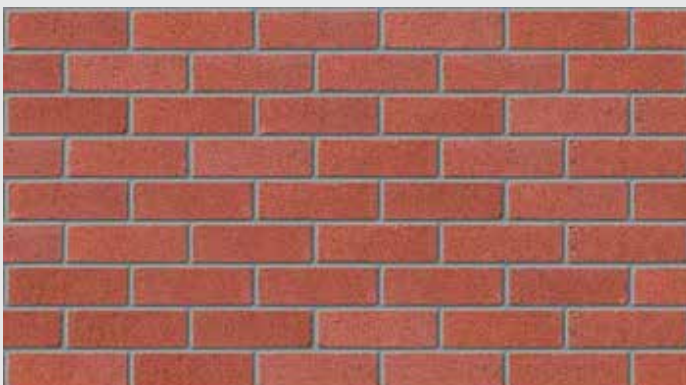
Straw



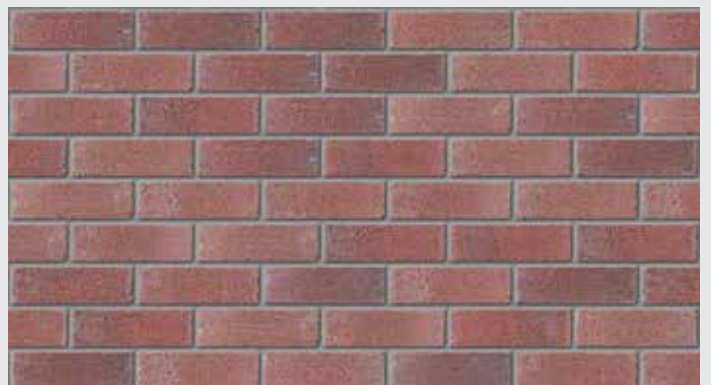
Umber



Russett Blend



Huntstown Teracotta



Georgian Blend

HALLMARK WALLING



Roadstone Hallmark Walling gives a rugged natural stone appearance to all domestic and commercial buildings and blends perfectly with old and new materials in a wide range of applications.

Hallmark Walling is available in a variety of sizes and colours and can be built in a random bond, a coursed bond or a random brought to course bond.

Hallmark Walling in general should be built with Mortar, colouring pigment can be added to the mortar if required.

Hallmark Walling is suitable as an external leaf for domestic and commercial buildings and for boundary walls, piers, entrances and garden features.

Hallmark Walling colours available are Pewter Blend, Nickel Blend, Old Graphite and Nickel.



Nickel blend



Pewter blend



HALLMARK WALLING

Table 1
Pack Size

Type	Approx. No. per M ²	No. per Pack	M ² per Pack
HM 1	59	320	5.4
HM 2	45	240	5.4
HM 7	30	160	5.4
HM 8	23	120	5.4
HM 9	18	98	5.5
HM 10	20	100	5.0
HM 11	10	50	5.0

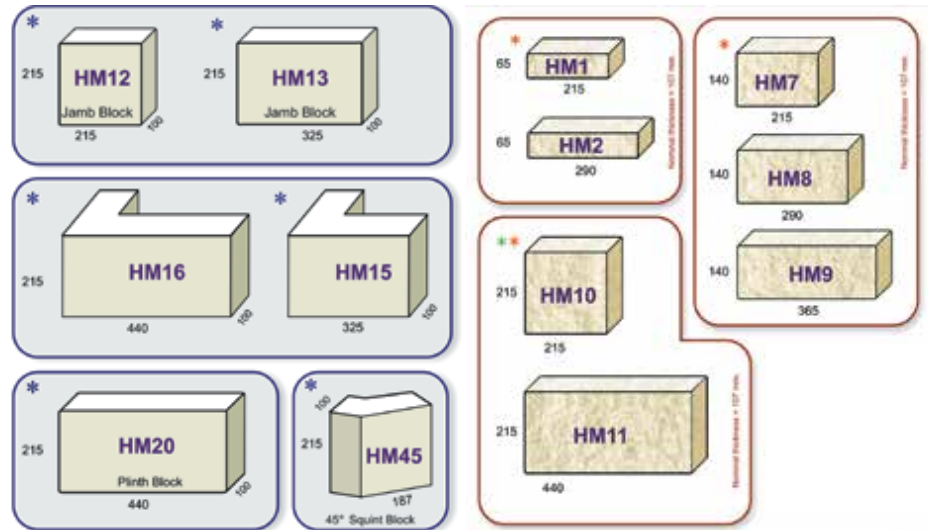
Table 2
Random Bond 1m²

Type	No.	No. per M ²
HM 1	13	0.22
HM 2	10	0.22
HM 7	6	0.20
HM 8	5	0.22
HM 9	2	0.11
HM 10	1	0.05

Table 3
Recommended Quantity for Hallmark Orders

Approx. M ²	Please order*	Approx. M ²	Please order*
25	24.1	65	64.5
30	29.6	70	69.9
35	35.0	75	75.3
40	40.4	80	80.7
45	45.8	85	86.1
50	51.2	90	91.5
55	56.6	100	102.4
60	62.0	110	113.2

Unit Sizes All measurements in mm.

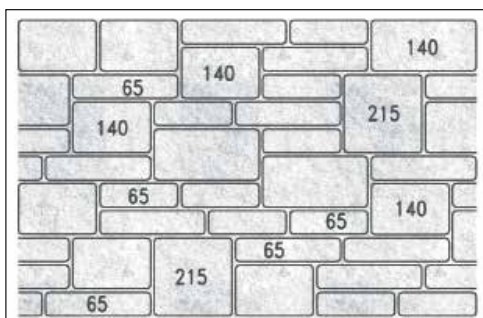


* These Hallmark blocks are available with textured return ends which can be used on corners or on window / door jambs.
* HM10 can be supplied with textured end if required.

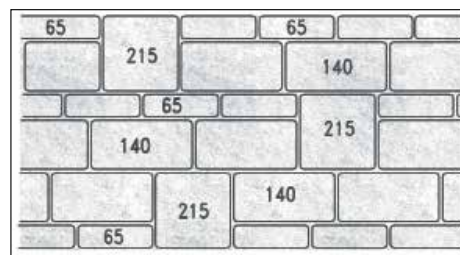
* Specials: These blocks are available in either smooth or hammered finishes and contrast with the broken stone finish of the regular Hallmark blocks.



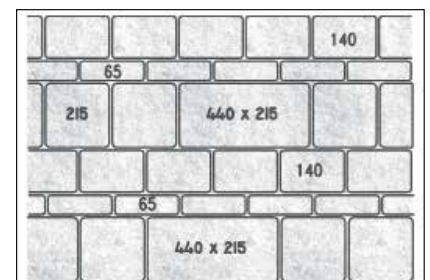
Random Bond



Random brought to course



Coursed Bond



Because of the range of sizes, Hallmark Walling can be laid to suit local traditional building styles, using a 'Random', 'Coursed' or 'Random brought to Course' bond.

HALLMARK WALLING TECHNICAL DATA

Standard Specification	I.S. EN 771-3 Specification for masonry units –Part 3: Aggregate concrete masonry units (Dense and lightweight aggregates)
Weight per m ²	200 kg
Compressive Strength	13 N/mm ²
Moisture Movement	I.S.EN 772-14 <0.6mm/m
Movement Joints	Panel shape will determine the spacing of joints which should not normally exceed 7 Meter centres. The ratio of length to height of the panels should generally not exceed 3:1 i.e. panels above and below windows. Detailed information on the allowance for movement in masonry refer to Eurocode 7 I.S. EN 1996-1-1 General rules for reinforced and unreinforced masonry structures, S.R. 325:2018 Clause 5.4.3.4 Recommendations for the design of Masonry structures in Ireland to Eurocode 6.
Durability	Panel shape will determine the spacing of joints which should not normally exceed 6 Meter centres. Detailed information on the allowance for movement in masonry refer to Eurocode 6 I.S. EN 1996-1-1 General rules for reinforced and unreinforced masonry structures, S.R. 325:2018 Clause 5.4.3.4 Recommendations for the design of Masonry structures in Ireland to Eurocode 6.
Blending	Blending from at least 3 bales is recommended. Where appropriate Hallmark walling units should be retained for blending with subsequent deliveries. Hallmark Walling units are made with natural occurring aggregates which have inherent colour variation therefore blending is essential to avoid banding
Mortar	General use M4 or M6 Mortar (1:1:6 Cement Lime Sand Designation III or 1:½:4 to 4½ Cement Lime Sand Designation II Table NA 3 I.S. EN 1996:1:2 refer to Table 14 of SR 325 2018 table 14 Durability of masonry in finished construction and select the relevant Masonry condition or situation) With colouring pigment if required. Roadstone TRM (Trowel Ready Mortar) and Flomix Silo Mortar information and source locations available on www.roadstone.ie Refer to SR 325 for durability requirements. When site batching it is essential to use a clean uncontaminated materials. I.S. EN 13139 Aggregates for Mortar.
Joint Finish	The selection and finish of mortar joints in masonry affect the appearance of the finished work, consistent finishing and colour of the joints is essential to guarantee a uniform finish (Recessed joints increase the risk of water penetration. S.R. 325:2018 Refer to Clause 5.5.3.2.4.)
Trial Panel	A trial panel as per I.S. EN 771-5 should be built and retained until completion of works.
Packaging	Bales covered in Plastic Hoods
Storing and Handling	See Good site practice on page 21-23
Protection	See Good site practice on page 21-23

GOOD SITE PRACTICE FOR MASONRY PRODUCTS

Introduction

The importance of good site practice cannot be over emphasised. Attention should also be given to design detailing which prevents common problems. The following checklist provide guidance on preventing problems which occur but can easily be avoided.

Preparation for storage of masonry products

Masonry Products

Allocate and prepare areas for the storage of masonry products as in the following examples: Provide a clean firm level surface to avoid the soiling of masonry on site.

Sands

Provide a suitable means of keeping different types of sand separate and uncontaminated by other building materials, mud or oil.

Bags of cement and lime

Store off the ground on pallets, protected from rain and positioned so that stocks are used in rotation to avoid deterioration.

Ready-mixed sand and lime

Protect it from contamination by other materials and from deterioration by inclement weather.

Trowel Ready Mortar (TRM) where available is delivered from Roadstone in strength grades M4, M6 and M12. Check our website or contact your local office to see if TRM is available in your area.

Flomix Silo Mortar – for larger projects Flomix silo mortar is available in strength Grades M4, M6 and M12.

Checking deliveries of masonry products

Immediately on receipt of a consignment of masonry products check delivery dockets against specifications or orders and in particular that:

- ▶ the delivery is of the correct masonry type, quantity and quality.
- ▶ any colour variation is within acceptable limits.
- ▶ the masonry products are within the specified limits of size.
- ▶ any minor blemishes, such as chips and surface cracks are within acceptable limits.
- ▶ If in doubt about any of the above inform the supplier immediately.

Handling, storage and protection of masonry products

- ▶ Unload masonry products to a level hard standing surface leaving branding and packaging in place to avoid damage such as chipping, soiling or breakage.
- ▶ Protect masonry products from rain, splashing by vehicles and mortar mixing.
- ▶ At the end of each working day and in periods of rainfall, ensure that opened packs and stacks of masonry products around the site are protected to avoid saturation.
- ▶ Ensure that provision is made for the protection of newly built masonry from saturation or frost during winter.

Preparation and building of reference panels

Prepare a solid base for the building of a reference panel where it can be viewed from 3m. in an area with adequate light and can remain undamaged for the duration of the contract.

Build a reference panel from masonry product reasonably representative of the average quality of the whole order to be delivered, either chosen by the supplier or randomly sampled.

At least six packs shall be selected at random from the consignment. The packaging shall be removed and an equal number of units shall be sampled at random from within each of the opened packs in order to give the required number of units without any consideration being given to the quality of those selected except that units damaged in transit shall not be selected.

A reference panel should consist of at least 1.7 square metres.

Build the reference panel to the desired standard expected throughout the contract to incorporate the relevant bond, mortar colour and joint profile.

Reference panels should be protected from saturation.

Note: In finished brickwork the mortar joint accounts for approximately 17% of the surface area, hence the importance of mortar colour selection. Consistent mortar supply is of utmost importance. The finish of the joints by rubbing up or raking out of the joint should be executed in a consistent manner. Judgement of mortar should only be made when the panel has dried out sufficiently to represent the final colour.

Cleanliness and protection of masonry

Keep masonry clean and free from mortar or other stains.

Ensure good cavity cleaning.

Protect from concrete poured above.

Protect vulnerable corners and openings from mechanical damage.

Workmanship generally

It is essential to ensure that there are full bed mortar joints both horizontally and vertically. Maintain constant mortar joint thickness. It is essential to ensure that there are full bed mortar joints both horizontally and vertically. Maintain constant mortar joint thickness. Protect masonry if frost is likely to occur before the mortar sets. If the mortar becomes damaged by frost, take the masonry down and rebuild. Protect newly built masonry from rain, but ensure that air space is maintained between the masonry face and any waterproof covering to avoid risk of staining.

To ensure a good appearance blend, mix masonry from at least 3 packs and mix packs from different deliveries. Preferably the packs should be broken down vertically rather than horizontally. Masonry units may have to be selected for size for short runs or string courses. Mortar accounts for approx. 10 to 17% of the visible surface area of masonry this can be a significant influence in the visual appearance of the finished wall and cause an optical illusion making the masonry appear different colours, it is essential that mortar is batched finished and cured consistently to avoid colour variations.

Reworded to put the use of full fill boards back on the designer and insulation supplier

Insulation

The use of a vented cavity is preferred when using all masonry products as wind driven rain will penetrate the mortar joints. Mortar joints can account for 10% to 17% of the wall surface.

Therefore, the use of full fill blown or full fill rigid boards is dependent on the micro and macro site exposure to wind driven rain, for guidance on their suitability refer to the insulation Manufactured/Installers NSAI Agrément Certification for guidance on their use. A site survey should be carried out by a competent person noting the sites exposure and the buildings compliance with Irish Building Regulations and SR 325 in the provision of movement joints and Part C Resistance to Moisture & D Materials and Workmanship of the Irish Technical Guidance document's.

Standards

I.S. EN 771-3 Specification for masonry units - Part 3.

The current Irish design code for masonry is Eurocode 6.

I.S. EN 1996-1-1 General rules for reinforced and unreinforced masonry structures.

I.S. EN 1996-1-2 General rules. Structural fire design.

I.S. EN 1996-2: Design considerations, selection of materials and execution of masonry.

S.R. 325:2018: Recommendations for the design of Masonry structures in Ireland to Eurocode 6 provides recommendations for detailing and exposure/durability tables.

I.S. EN 998-2 Specification for mortar for masonry — Part 2: Masonry mortar.

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