



**ARISTOCRAT - THE AIR  
LEAKAGE CONTROL BLOCK**

# ARISTOCRAT PERFORMANCE

The Aristocrat Walling range of blocks are manufactured with tight dimensional tolerances and excellent arrises under an NSAI approved and certified Level 2+ factory production control system to I.S. EN 771-3. In addition the Aristocrat Walling range is also manufactured and supplied under a registered I.S. EN ISO 9001 quality system.

## 1. Air Leakage

Aristocrat blocks have been independently tested and certified by BSRIA and have achieved significantly better results than  $3\text{m}^3/\text{hr}/\text{m}^2$  at 50 Pascals as frequently specified for energy efficient buildings. See typical values below and comparison with fine textured blocks.

**Table 1 – Typical Air Leakage Results**

Block Type	Results
Aristocrat D1 100mm Solid on Edge	$<1.5 \text{ m}^3 / \text{h} / \text{m}^2 @ 50 \text{ Pascal's}$
Aristocrat F3 215mm Cavity Block	$<1.0 \text{ m}^3 / \text{h} / \text{m}^2 @ 50 \text{ Pascal's}$
Aristocrat D1 215mm Solid Wall*	$<1.0 \text{ m}^3 / \text{h} / \text{m}^2 @ 50 \text{ Pascal's}$
Standard 100mm Solid on Edge	$>10.0 \text{ m}^3 / \text{h} / \text{m}^2 @ 50 \text{ Pascal's}$
Standard 215mm Cavity Block	$>15.0 \text{ m}^3 / \text{h} / \text{m}^2 @ 50 \text{ Pascal's}$

*Walls are tested as built - no other finishes applied. For the most recent test results contact the Roadstone Technical Department. Air Leakage results for other block types are available on request. \* For aesthetic reasons collar jointed walls are the preferred option.*

## 2. Sound Insulation (dB Reduction)

When independently tested to ISO 140-3:1995 under laboratory conditions Aristocrat Walling achieved the following dB ratings. Results are based on fully bedded horizontal and vertical joints, tightly compacted and finished concave jointed, using the mortar class indicated.

**Table 2 – dB reduction**

Block Type	Results	Mortar Designation
Aristocrat F3 215mm Cavity Block	46dB	M 4 (Category III Mortar)
Aristocrat D1 100mm Solid Block	46dB	M 4 (Category III Mortar)
Aristocrat D1 215mm Solid Block*	51dB	M 6 (Category II Mortar)
Aristocrat F3 215mm Cavity block	51dB	M 6 (Category II Mortar)

*Note: Walls are tested as built - no other finishes applied. \*For aesthetic reasons collar jointed walls are the preferred option.*

### 3. Fire Resistance – Part 1-2 General rules structural fire design

Aristocrat Blocks are classified as having a Class A1 fire rating in accordance with clause 5.11 of I.S. EN 771-3 specification for Masonry Units –Part 3. Table 3.1 of I.S. EN1996-1-2 classifies the Aristocrat 100mm solid block in group 1 masonry units and the 215mm cavity block in group 2 masonry units.

Roadstone mortars comply with I.S. EN 998-2 specification for Mortar for Masonry-Part 2: Masonry Mortar, and can be classified as a general purpose mortar which has a Class A1 fire rating in accordance with Clause 5.6 of this standard.

When both products are designed and built in accordance with Eurocode 6-Design of masonry structures;

- ▶ **Part 1-1:** General rules for reinforced and unreinforced masonry structures
- ▶ **Part 1-2:** General rules Structural fire design
- ▶ **Part 2:** Design Considerations, Selection of Materials and Execution of Masonry. The tabulated values given in the general rules on structural fire design, tables N.B.3.1 to tables N.B.3.6 of I.S. EN1996-1-2: can be used to determine the minimum thickness of walls for fire resistance classification.

The classification for fire rating for 100mm thick and 215mm thick block walls shown below are extracted from the tables N.B.3.1 to tables N.B.3.6 of I.S. EN1996-1-2, however the fire ratings must be interpreted by an experienced design engineer as to how they are applied to specific wall design situations in order to conform to I.S.EN 1996 - 1-2:.

**Table 3A – Dense aggregate - non loadbearing separating walls - minimum thickness**

Aristocrat D1 100mm Solid Block	240 minutes fire rating
Aristocrat D1 215mm Solid Block	240 minutes fire rating (collar jointed)
Aristocrat F3 215mm Cavity Block	240 minutes fire rating

**Table 3B – Dense aggregate - Separating loadbearing single leaf walls – minimum thickness**

Aristocrat D1 100mm Solid Block	120 minutes fire rating
Aristocrat D1 215mm Solid Block	240 minutes fire rating (collar jointed)
Aristocrat F3 215mm Cavity Block	240 minutes fire rating



## 4. Strength

Aristocrat blocks are available in Category 1 dense aggregate masonry unit strength classes in accordance with I.S. EN 771-3 (and I.S. EN 772-1 cl 7.3.5)

**Table 4A – Aristocrat block strength**

Aristocrat D1 100mm Solid block	S7.5 & S13	(7.5N & S13)
Aristocrat F3 215mm Cavity Block	H5 & H13	(H5 & H13)

**Table 4B – Higher strengths can be manufactured to order:**

Aristocrat D1 100mm Solid Block	S24	(S24)
Aristocrat F3 215mm Cavity Block	H18	(H18)

*A slight tightening of the surface texture can be expected in higher strength blocks.*

## 5. Thermal Properties

**Table 5 – Thermal properties**

Thermal resistance “R” value of D1 100mm Solid Block	0.075 m <sup>2</sup> K/W
Thermal resistance “R” value of F3 215mm Cavity Block	0.210 m <sup>2</sup> K/W

## 6. Moisture Movement

Measured under IS EN 772 pt 14 moisture movement, Aristocrat Blocks has a shrinkage value < 0.6mm/m.

# SPECIFICATION

## 1. Aristocrat Walling

Where indicated on drawings, walls shall be constructed using Aristocrat Walling 450 range (or 400 range) masonry blocks as manufactured by Roadstone Ltd, complying to the requirements of IS- EN 771-3: for facing quality blocks. Solid units shall be designation S7.5 or S10. Cavity unit's designation H5 or H10 or as otherwise specified by engineer.

Aristocrat Walling shall be manufactured on a static block making machine using cement to I.S. EN 197 and aggregates to I.S. EN 12620. When independently tested for air leakage, Aristocrat Walling units D1 & F3 will achieve results less than  $1.5\text{m}^3/\text{hr}/\text{m}^2$  at 50 Pascals.

Aristocrat Walling shall be manufactured and supplied under an I.S. EN ISO 9001 Registered Quality System. See architects drawings and details for location of special Aristocrat units which will allow for ease of construction while minimising cutting and waste.

## 2. Mortar

Mortar shall conform to compressive strength class m4 - 1:1: 5 to 6 cement, lime, sand, or \*1:5 to 6 (previously designation III) or class M 6 - 1:½ :4 to 4½ or \*1:3 to 4. (previously designation II) in accordance with Table NA3 of I.S. EN 1996-1-1 or as indicated by engineer.

Horizontal and vertical joints must be fully filled and compacted with a finished concave joint. This is critical to achieving the specified requirements of the wall.

\* Including appropriate mortarsizer / air entrainer admixture



### 3. Delivery & Site Storage

Aristocrat blocks shall be carefully off-loaded preferably onto timber pallets if provided by the contractor and stored on a prepared clean level storage area. Aristocrat blocks must be protected from the elements and from site contamination.

Aristocrat blocks must be kept dry until ready to use to prevent saturation prior to laying. Store the Aristocrat blocks close to the place of work to keep re-handling to a minimum. Separate block types, strengths and specials for ease of identification. Where using mechanical scissors grabs, great care must be taken to avoid damaging the Aristocrat blocks and avoid multiple lifts of bales.

### 4. Manual Handling

Aristocrat Blocks shall be lifted cleanly (NOT DRAGGED) from the bale to avoid chipping damage to arrises and corners of the Aristocrat blocks. Dragging the blocks across the bale WILL cause chipping damage to arrises and corners.

### 5. Protect Work

Blockwork should be protected from inclement weather. Prevention of excessive moisture will reduce risk of efflorescence or lime bloom. Efflorescence is a naturally occurring phenomenon, which occurs to a varying extent on all cement/lime based products, for which Roadstone cannot be held responsible. Efflorescence is not a manufacturing fault and in no way affects the structural integrity of concrete products. All walls shall be supported by propping and bracing as required or as directed by the engineer. All work shall be carried out strictly in accordance with EN 1996-2: design, selection of materials and execution of masonry. Good site practices shall be maintained throughout the construction of the project, including the use of toe boards on scaffolding and polythene sheeting to plinths and cills if appropriate to prevent staining from mortar splashes.



## 6. Blending of Aristocrat Blocks

Block units must be blended from a minimum of three bales and between subsequent loads in order to distribute shade variation throughout the wall and minimise banding.

## 7. Sample Panel Wall

Build sample panel wall on site in accordance with Drg No..... (ref. Architect) to agree standard of workmanship and joint finish.

I.S. EN 771-3: Specification for masonry units – Part 3: 5.3.2.2 states “When required the surface of facing units may have compliance established on the basis of comparison with any approved samples. Comparison shall be made from a distance of 3m in normal daylight conditions. This compliance shall be established before the units are used.

## 8. Cutting Aristocrat On Site

The use of Aristocrat specials blocks will greatly reduce the amount of cutting required, however if blockwork must be cut on site use a bench mounted clipper saw with a diamond-tip blade and a fresh supply of clean water. The cutting slurry produced must be washed from face of the units immediately after cutting and the unit let dry before placing in the wall. Dry cutting is not recommended.

Useful hint: If you are required to cut a block to form a smaller unit try to cut the smaller unit from a damaged block ensuring that you only extract the smaller unit without having any defect on same. This will reduce your overall waste factor and insure that damaged blocks are utilised for smaller units and not built in to your walls.

## 9. Aesthetics

It is very important that the Aristocrat blocks are handled with care to avoid damaging the blocks as previously stated. It is important to note that Aristocrat Blocks are designed to be built on their edge to achieve an attractive visual appearance. Where building a 215mm thick wall it is recommended that the wall is built in a collar jointed construction method, thus from an aesthetic point of view you will see the 440x215mm face of the block on either side of the wall.

Please be aware that should you choose to build a 215mm block wall using the Aristocrat block on the flat then you will have only one well finished side (440x100mm) per block and that the alternative side to this will have a rougher texture as this is the side that sits on the production board during the manufacture of the block. To clarify this point each block has 5 good sides and one rough side.

## 10. Laying In Cold / Hot Weather

Masonry should not be laid when the temperature is at or below 3°C. Protect all work where temperature is above 3°C when mortar is laid, but likely to fall below freezing before the mortar has hardened, e.g. overnight or wind chill factor. Antifreeze admixtures, particularly calcium chloride should not be used as it can attack any embedded metal items within the mortar joints causing failure at a later stage. Blockwork damaged by frost must be taken down and re-built. Protect the mortar from drying out too quickly in hot sunny or windy weather before hydration has occurred.

## 11. Fixings

Where heavy wall fixings are to be located, solid or cavity blocks (filled with concrete) should be built-in, or other alternatives in accordance with engineers specification and details.

## 12. General Cleaning Down

Remove general dust, dirt and grime using a stiff bristle brush and / or mild detergent. For mortar stains use an approved substance strictly in accordance with manufacturer's instructions. Acid and cleaners containing acid should not be used. A test panel must be approved prior to commencement.

## 13. Painting

The following paint types are suitable for use on Aristocrat Walling when applied strictly in accordance with manufacturer's specifications and instructions, refer to finishing schedule; A sample area should be tested to ensure resulting finish is acceptable to the Architect. Emulsion, Vinal emulsion, Cement based paints, Oil based paints, Acrylic rubber based paints, Latex and synthetic resin paints. It may be more cost effective to seal the wall prior to painting.

## 14. Sealing

Where indicated, the surface of the wall shall be sealed to provide an invisible, dust-free finish by applying an approved sealer strictly in accordance with manufacturer's instructions. A sample area should be tested to ensure resulting finish is acceptable to the Architect, refer to finishing schedule.

## 15. Health & Safety

For safety information please refer to the Roadstone Ltd. materials safety data sheet which is available on request.



# STANDARDS

Roadstone concrete blocks are manufactured to ensure strength and durability and have a long and well established history of satisfactory use in the construction industry in Ireland. Our extensive range of blocks are manufactured using the highest quality aggregates that are free from any form of deleterious materials.

Aggregates used to manufacture Aristocrat block units come from our own locations that have been assessed by an independent professional geologist and declared to be suitable for use.

Declaration of Performance (DOP)/CE Marking for all Roadstone blocks and further technical guidance is available on [www.roadstone.ie](http://www.roadstone.ie)

## Product Standards

I.S. EN 771-3:2. Specification for masonry units – dense and lightweight aggregates

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

## Manufacturing Standards

I.S. EN 197-1 Cement – Part 1: Composition, specifications and conformity criteria for common cements

I.S. EN 12620 : Aggregates for Concrete

I.S. EN 480 –1: Admixtures for Concrete, Mortar & Grout

## Design & Workmanship Standards

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

I.S. EN 1996-1-2: General Rules – Structural Fire Design

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

I.S. EN 1996-3: Simplified calculation methods and simple rules for masonry structures.

NSAI S.R. 325 Recommendations for design of masonry structures in Ireland to Eurocode 6

## Quality

ISO 9001 -Quality Management System to which is independently monitored

## Environmental

ISO14001 Environmental Management System

I.S. EN ISO 50001 Energy Management System

Our production waste is 100% recycled

On site water and waste water is 100% recycled.

All Roadstone locations are Members of Repak.

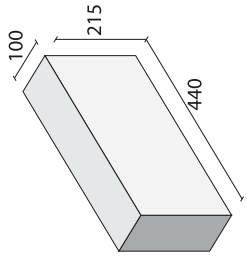
# 450 Range

## BLOCK STRENGTHS

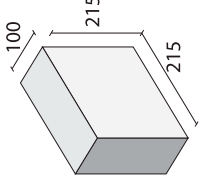
- 100mm Solid Block S7.5 - S13 & S24
- 140mm Cavity Block H5 & H13
- 215mm Cavity Block H5 - H13 & H18

100mm

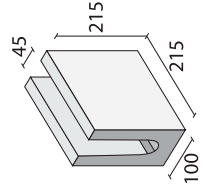
### SOLID HALF BLOCK LINTEL HALF QUOIN FULL QUOIN CAVITY CLOSER HALF CAVITY CLOSER



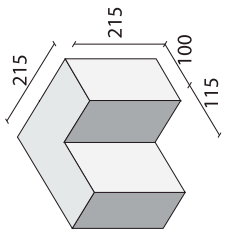
D1



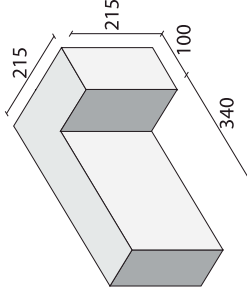
D12



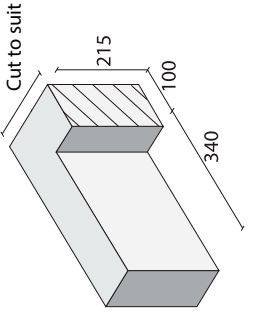
D14



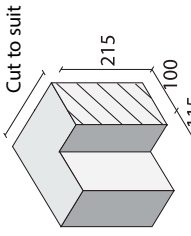
D15\*



D16\*



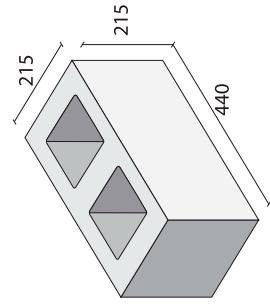
D17



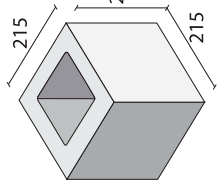
D18

215mm

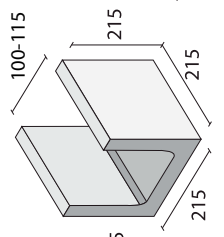
### CAVITY HALF BLOCK LINTEL FULL LINTEL BOND BEAM SOLID CAVITY



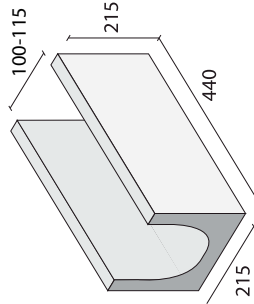
F3



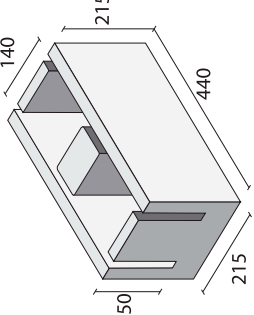
F10



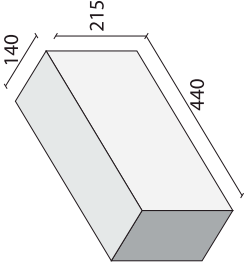
F14



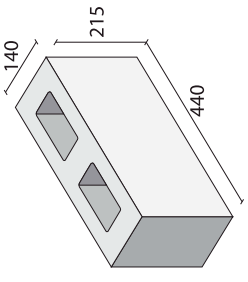
F28



F22



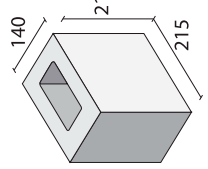
H1



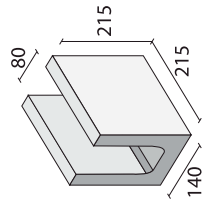
H3

140mm

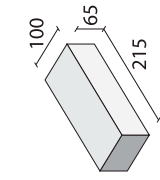
### HALF BLOCK LINTEL CAVITY SPECIALS CAVITY SOAP BAR SOAP BAR FILLER FILLER SQUINT BLOCK SQUINT BLOCK



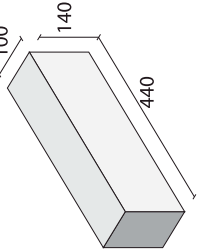
H13



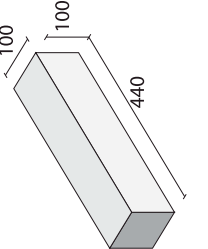
H14



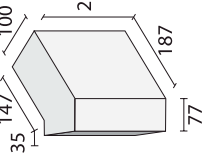
65mm



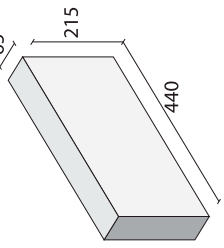
140mm



100mm



45° Squint

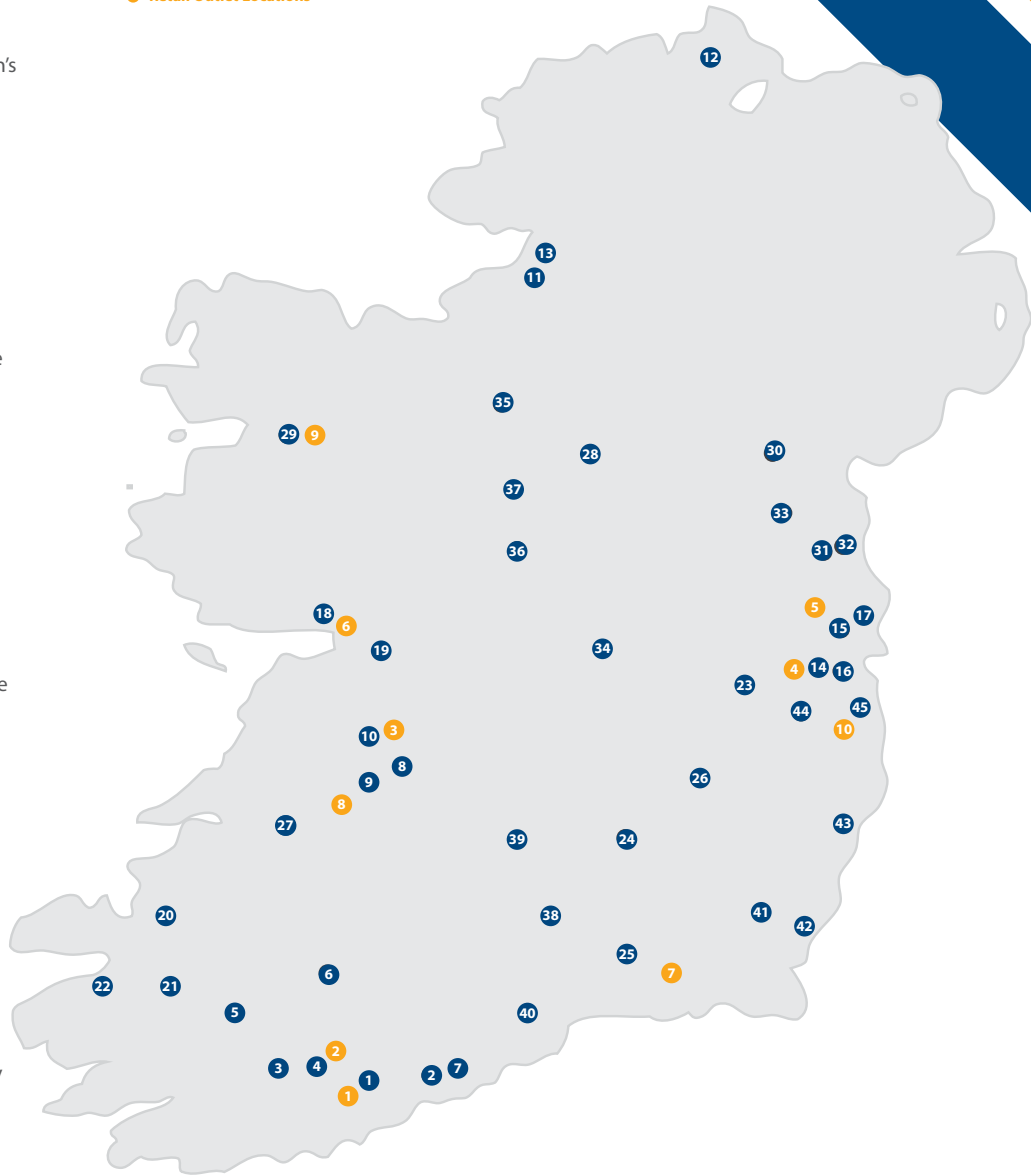


65mm SOLID

## QUARRY LOCATIONS

- |  |  |
|--|--|
| <p><b>Cork</b></p> <ol style="list-style-type: none"> <li>Ballygarvan</li> <li>Carrigtwohill</li> <li>Castlemore</li> <li>Classis</li> <li>Keim</li> <li>Mallow</li> <li>Midleton</li> </ol> <p><b>Clare</b></p> <ol style="list-style-type: none"> <li>Ballyquinn</li> <li>Bunratty</li> <li>Ryan's of Ennis</li> </ol> <p><b>Donegal</b></p> <ol style="list-style-type: none"> <li>Ballintra</li> <li>Carndonagh</li> <li>Laghey</li> </ol> <p><b>Dublin</b></p> <ol style="list-style-type: none"> <li>Belgard Central<br/>Dispatch / Belgard<br/>Weighbridge</li> <li>Huntstown Finglas</li> <li>Head Office,<br/>Tallaght</li> <li>Swords, Feltrim</li> </ol> <p><b>Galway</b></p> <ol style="list-style-type: none"> <li>Two-Mile-Ditch</li> <li>Kilchreest</li> </ol> <p><b>Kerry</b></p> <ol style="list-style-type: none"> <li>Ballyegan</li> <li>Killarney</li> <li>Killorglin</li> </ol> <p><b>Kildare</b></p> <ol style="list-style-type: none"> <li>Allen, Naas</li> </ol> <p><b>Kilkenny</b></p> <ol style="list-style-type: none"> <li>Bennettsbridge</li> <li>Kilmacow</li> </ol> | <p><b>Laois</b></p> <ol style="list-style-type: none"> <li>Ballyadams</li> </ol> <p><b>Limerick</b></p> <ol style="list-style-type: none"> <li>Joseph Hogan's</li> </ol> <p><b>Longford</b></p> <ol style="list-style-type: none"> <li>Moyne</li> </ol> <p><b>Mayo</b></p> <ol style="list-style-type: none"> <li>Castlebar</li> </ol> <p><b>Meath</b></p> <ol style="list-style-type: none"> <li>Barley Hill</li> <li>Duleek</li> <li>Mullaghcrone</li> <li>Slane</li> </ol> <p><b>Offaly</b></p> <ol style="list-style-type: none"> <li>Tullamore</li> </ol> <p><b>Roscommon</b></p> <ol style="list-style-type: none"> <li>Boyle</li> <li>Cam</li> <li>Castlemine</li> </ol> <p><b>Tipperary</b></p> <ol style="list-style-type: none"> <li>Ballyknockane</li> <li>Killlough</li> </ol> <p><b>Waterford</b></p> <ol style="list-style-type: none"> <li>Cappagh</li> </ol> <p><b>Wexford</b></p> <ol style="list-style-type: none"> <li>Brownswood,<br/>Enniscorthy.</li> <li>Kilmuckridge</li> </ol> <p><b>Wicklow</b></p> <ol style="list-style-type: none"> <li>Arklow</li> <li>Dorans Pit</li> <li>Fassaroe, Bray</li> </ol> |
|--|--|

- Quarry Locations
- Retail Outlet Locations



## RETAIL OUTLET LOCATIONS

- |   |  |
|---|--|
| <p><b>Cork</b></p> <ol style="list-style-type: none"> <li>Ballygarvan</li> <li>Classis</li> </ol> <p><b>Clare</b></p> <ol style="list-style-type: none"> <li>Ryan's of Ennis</li> </ol> <p><b>Dublin</b></p> <ol style="list-style-type: none"> <li>Belgard</li> <li>Feltrim, Swords</li> </ol> <p><b>Galway</b></p> <ol style="list-style-type: none"> <li>Two-Mile-Ditch</li> </ol> | <p><b>Kilkenny</b></p> <ol style="list-style-type: none"> <li>Kilmacow</li> </ol> <p><b>Limerick</b></p> <ol style="list-style-type: none"> <li>Gooig</li> </ol> <p><b>Mayo</b></p> <ol style="list-style-type: none"> <li>Castlebar</li> </ol> <p><b>Wicklow</b></p> <ol style="list-style-type: none"> <li>Fassaroe, Bray</li> </ol> |
|---|--|



**[www.roadstone.ie](http://www.roadstone.ie)**

**Phone:** 01 4041200

**Email:** [info@roadstone.ie](mailto:info@roadstone.ie)

