Adair® Limestone Masonry and Dimension Stone

04 42 00 - Exterior Stone Cladding
04 43 00 - Adair® Masonry Units
04 43 50 - Dimension Stone

PRODUCT DESCRIPTION

BASIC USE A quarried stone used for both horizontal and vertical building and landscaping elements, such as wall cladding and veneer, caps, copings, column covers, pavers, stair treads, and retaining walls.

When polished, it is also appropriate for use as a flooring, interior wall cladding, washroom partitions and screens, table and counter tops etc.

For residential, commercial, institutional, and landscape applications.

Composition and Materials: Adair® Limestone is a dense, dolomitic limestone, quarried from the Amabel formation in the Bruce Peninsula near Wiarton, Ontario, Canada. It is a natural stone that has been selected, trimmed or cut to specified or indicated shapes or sizes, with or without one or more mechanically dressed faces.

Shapes and Sizes: In addition to the wide range of standard sizes and shapes described below, Adair® Limestone can easily be fabricated into custom shapes and sizes. Many custom designs and profiles can be fabricated up to the limit of a quarry block size. Quarry blocks are approximately 30" wide and 80" long, however, blocks larger than this can be quarried on an as-needed basis.

Some Adair® Limestone standard products however may only be available in specific colors or finishes. Contact your local Arriscraft representative or dealer for specific details.

Adair® Limestone Standard Hearth Slabs are 2-1/8" thick, and have one fine dressed face.

They come in eight standard widths, ranging from 6" to 20", in 2" increments. Standard lengths range from 48" to 84", in 12" increments.

Adair® Commercial Masonry Units
Adair® Commercial Masonry Units are available in a variety of metric standard sizes. To inquire about imperial sizes contact your local representative.

	Height	Length	Bed
ADA358	3-5/8"	11-5/8"	3-9/16"
ADA758	7-5/8"	23-5/8"	3-9/16"
ADA115	11-5/8"	23-5/8"	3-9/16"

* Up to 5% of skid will include half length units

Approximately 15% of units randomly distributed within the skids are expected to have an end suitable for exposure at openings or corners.

Adair® Masonry Units are vein cut with a fine dressed finish in both Blue-Grey and Sepia colors. Fleuri cut and alternate finishes are availalable on a special order basis.

Adair® Pedestal Units are a specialty product designed for use as a masonry starter in direct contact with finished grade. With its greater density and lower absorption, it is ideally suited to resist the effects of soluble salts associated with "at grade" installations.

Pedestal Units are available in sizes to match the Arriscraft Renaissance® Masonry Units. They are available with a 3-5/8" bed depth, a 23-5/8" length, and with face heights of 3-5/8", 7-5/8" or 11-5/8".

Residential Adair® Limestone Starter Course is similar to base course and is designed for use as a masonry starter in direct contact with finished grade for residential Building Stone projects. Starter Course is available with a 3-5/8" face height, 3-5/8" bed depth, and it comes in random lengths. Starter Course has a split face texture and can be provided in either sepia or blue-grey colors.

Adair® Limestone Stair Treads used for landscaping applications are available with a tread width of 16" and face rise of 6-1/4", in standard lengths as follows:
36", 48", 60", 72", and 84"

Adair® Tiles are available in standard sizes as follows:
- 3/8" thick;
  - 12" x 12"
  - 12" x 18"
  - 12" x 24"
- 1/2" thick;
  - 12" x 12"
  - 16" x 16"
  - 18" x 18"
  - 12" x 18"
  - 12" x 24"
- 3/4" thick;
  - 24" x 24"

Adair® Limestone is also available as full-bed ashlar units, typically 4" thick. Face heights and lengths are available in a variety of custom sizes.

Tolerances: Adair® Limestone is fabricated to a critical dimension tolerance of plus or minus 1/8" for the following:
- Unit Length;
- Unit Height;
- Deviation from square, with the measurement taken using the longest edge as the base; and

Larger tolerances will apply to dimensions created by split surfaces. Contact your Arriscraft representative for further information.

Adair® Limestone Tiles are fabricated to meet the tolerances described in the Institute of America's Dimension Stone Design Manual, Product Description section.

Units shall exhibit a texture approximately equal to the approved sample when viewed under diffused daylight illumination at a 20 foot distance. Minor chipping resulting from shipment and delivery shall not be grounds for rejection. Minor chips shall not be obvious under diffused daylight illumination from a 20 foot distance.

Chippage considerations do not apply when the desired surface texture and unit shape are intended to be uneven.

Finishes: Standard surface finishes available include sawn, split, rocked, medium-dressed, and fine-dressed. Custom finishes include bush-hammered and polished. Not all finishes are practical in all instances. Contact your local Arriscraft representative or dealer to discuss applicability.

Each standard and custom finish is described below:

- Sawn Finish: a stone texture left by the sawing process, typically in radiused pattern.
- Split Finish: a surface finish resulting from the mechanical splitting of the dolomitic limestone.
- Rocked Finish: a surface finish resulting from mechanical splitting and hand-chiselling of the dolomitic limestone to a set depth, to achieve a bold rustic appearance.
- Medium-Dressed Finish: a surface dressed with a mechanical honing head in a rubbing motion to remove the saw marks,
  producing an even, but not quite smooth, surface. Slightly visible honing marks are considered acceptable.
- Fine-Dressed Finish: a surface dressed with a mechanical honing head in a rubbing motion to remove the saw marks, producing a smooth and even surface, with little or no gloss. No honing marks are visible.
- Bush Hammered Finish: a surface dressed with a bush hammer (a hammer having a face that is sharply ridged or toothed with points in a square-set pattern) to have random spaced pits. Used both decoratively and to provide a roughened traction surface for treads, floors, and pavements.
- Polished Finish: a surface dressed first with a mechanical honing head to a fine-dressed surface, and then rubbed in a circular motion with a polishing stone to produce a high quality reflective surface.

Colors and Patterns: Adair® Limestone is available in two distinct colors:

- Blue-Grey
- Sepia

Both colors are available in two distinct patterns, resulting from limestone's natural tendency to form with a vein running along the horizontal axis. When cut into slabs, the direction of the cut will determine the surface pattern created by the veining.

These are typically referred to as fleuried and striated, as described below:

- Fleuried: a mottled effect obtained when the limestone quarry block is cut parallel to the natural bed of the stone.
- Striated: a linear veined effect obtained when the limestone quarry block is cut perpendicular to the natural bed of the stone.

Physical properties do not vary with cut direction.

As a naturally occurring material, Adair® Limestone is subject to variations in color and pattern. Arriscraft strongly recommends that Consultants review submitted samples prior to selecting an acceptable range of color and pattern.

Limitations: Adair® Limestone is an all-weathering, highly resistant material exhibiting "long life under hard use" characteristics.

Adair® Limestone 's use however under special conditions, such as where resistance to chemicals, acids, fossil fuels, blood and other bodily fluids, etc. become a consideration, should be verified with Arriscraft .

Polished finishes are not recommended for use in exterior applications, as environmental effects cause the polish to weather too quickly for practical maintenance considerations.

TECHNICAL DATA

APPLICABLE STANDARDS Adair® Limestone has been extensively tested and found to have the typical physical properties outlined in Table 04435.4.A

Typical Physical Properties
Table 04435.4.A

Property	Test Method	Imperial Result
Compressive Strength	ASTM C170	22,900 psi
Abrasion Resistance	ASTM C241	18.0
Absorption	ASTM C97	0.75 percent
Density	ASTM C97	167 lb/ft3
Modulus of Rupture	ASTM C99	2,250 psi
Flexural Strength	ASTM C880	1,600 psi
Coefficient of Thermal Expansion	ASTM C531	6.0X10-6F°-1

* Independent test reports available upon request

It exceeds the requirements of ASTM C568-03, Standard Specification for Limestone Dimension Stone; Class III – High Density.

INSTALLATION

DELIVERY - Adair® Limestone is delivered to the site in protective packaging.

Handling: Lift skids with proper and sufficiently long slings or forks with protection to prevent damage to units. Protect edges and corners.

Storage: Store Adair® Limestone in a manner designed to prevent damage and staining of units. Stack units on timbers or platforms at least 3" above grade. Place polyethylene or other plastic film between wood and other finished surfaces of units when stored for extended periods of time.

Cover stored units with protective enclosure if exposed to weather.

Preparatory Work: Ensure the substrate is structurally stable and sound.
Vertical substrates should be plumb, horizontal surfaces level and reasonably smooth without large protrusions that could restrict the application of the stone.

When constructing masonry in hot or cold weather refer to the ARRISCRAFT•TECH bulletins titled Hot Weather Masonry Construction and Cold Weather Masonry Construction.

Installation: Adair® Limestone must be properly installed using approved materials and techniques for each specific installation.
Adair® Limestone wall panels must be securely anchored to a structurally sound substrate, using a stone anchor system designed by the Consultant for each specific instance in accordance with ASTM C1242-03, Standard Guide for Selection, Design, and Installation of Exterior Dimension Stone Anchors and Anchoring Systems.

For further information, refer to ARRISCRAFT•NOTE – Dimension Stone Anchors for further information.

For mortared applications, the mortar should be a Type N Portland cement-lime mix, proportioned to a 1:1:6 ratio. This ratio refers to:

- 1 part Portland cement (ASTM C150, Type I)
- 1 part hydrated lime (ASTM C207, Type S); and
- 6 parts masonry sand (ASTM C144)

When properly combined with the appropriate quantity of water, it will produce a general-purpose mortar, exhibiting good workability and board life in its plastic state, and good durability and flexibility in its hardened state; and conforming to ASTM C270-03; Standard Specification for Mortar for Unit Masonry.

For Further information, refer to ARRISCRAFT•NOTE – Mortar for Masonry Veneer.

Adair® Limestone tiles must be securely installed over a structurally sound substrate in accordance with the Institute of America's Dimension Stone Design Manual and techniques for each specific installation.
Construct masonry veneer with an adequate number of elastic movement joints, properly located to accommodate differential movement. Refer to ARRISCRAFT•NOTE – Building Movement Joints for further information.
Construct masonry veneer in accordance with CSA A371; Masonry Construction for Buildings and any local requirements stipulated by the authorities having jurisdiction.

Mortar joints between units in any direction should be 3/8" thick. Mortar for unit masonry veneer should be a Type N Portland cement-lime mix, proportioned to a 1:1:6 ratio.
The ratio refers to:

- 1 part Portland cement (CSA A3001, Type GU)
- 1 part hydrated lime (ASTM C207, Type S); and
- 6 parts masonry sand (CSA A179).

When properly combined with the appropriate quantity of water, it will produce a general-purpose mortar, exhibiting good workability and board life in its plastic state, and good durability and flexibility in its hardened state, and conforming to ASTM C270; Standard Specification for Mortar for Unit Masonry. For further information, refer to ARRISCRAFT•NOTE – Mortar for Masonry Veneer.

Arriscraft recommends construction masonry veneer with proper drainage mechanisms, including clear draining air spaces, through wall flashing membranes and weep hold vents. The air spaces must be at least 1" wide, and kept clear of debris, protrusions, mortar fins and droppings. Weep hold vents should be installed at the same level as through wall flashing membranes and spaced not more than 24" on centre horizontally. Refer to ARRISCRAFT•NOTE – Moisture Management for further information.
Renaissance® Masonry Units must be connected to a structural substrate with an approved masonry connection system, designed by the consultant for each specific installation. Refer to ARRISCRAFT•NOTE – Connectors – Part I, Masonry Ties.

AVAILABILITY AND COST

AVAILABITY Adair® Limestone is available worldwide.

Delivery times for orders will vary based on the complexity of what is required. Most standard products are inventoried. For custom items and larger projects, contact your local Arriscraft representative or dealer for estimated delivery times.
Arriscraft cannot be responsible for delays due to fire, acts of God, or any other cause beyond its control or which could not be reasonably foreseen.

Contact Arriscraft for a list of dealers in your area.

COST Quoted on a project basis for job-specific manufacturing to project requirements.

WARRANTY

Arriscraft warrants its products against deterioration for the life of the building, provided the products have been erected and used according to accepted masonry standards, within the guidelines of local building codes and as recommended by the manufacturer.

Complete warranty information is outlined on the Arriscraft standard form of Product Warranty.

MAINTENANCE

The finish and use of Adair® Limestone will dictate the required cleaning schedule to maintain color and/or texture. Flooring material in high traffic areas may require daily cleaning while stone cladding on a building exterior may not require attention for many years.

Adair® Limestone should be maintained in accordance with the requirements of the Maintenance Commentary found in the Marble Institute of America's Dimension Stone Design Manual.

TECHNICAL SERVICES

Arriscraft offers consultation services to assist with the preparation of details, specifications and with pricing. Enquiries are addressed promptly and without obligation.

RELATED REFERENCES

Arriscraft distributes an integrated technical information system including:

- ARRISCRAFT•CADD: sample details which are available in .dwg, .dxf, and .pdf formats.
- ARRISCRAFT•DATA: product data sheets.
- ARRISCRAFT•NOTE: technical discussions with respect to building construction issues
- ARRISCRAFT•SPEC: master guide specification sections.

All of these technical resources are available to be downloaded from the Arriscraft web site at www.arriscraft.com.

Arriscraft also makes available samples for color and finish, coursing charts and copies of test reports upon request.