



Tile Cutting & Drilling

TECHNICAL SUPPORT DOCUMENT

Tile Cutting & Drilling

Due to their dense, vitrified clay body created through extended high-temperature firing cycles, Ludowici tiles can be more difficult to cut and drill than many conventional roofing materials. However, with the proper tools, blades, and drilling equipment, Ludowici tiles can be cut and drilled successfully and efficiently. Always utilize appropriate personal protective equipment (PPE) and follow proper safety precautions, including applicable OSHA safety requirements and manufacturer safety recommendations for all tools and equipment being used.

DRILLING CLAY TILE

Numerous manufacturers produce drill bits designed for stone, masonry, and tile applications. However, based on extensive testing and production experience at our facility, Ludowici has found that many of these products are unable to effectively drill through our tiles due to the thickness, hardness, and density of the vitrified clay body.

One manufacturer that has consistently demonstrated success in drilling Ludowici tiles is Millner-Haufen Tool Company. Their C-2 carbide drill bits are specifically engineered for demanding applications involving hard materials, including hardened steel, cast iron, concrete, brick, fiberglass, glass, granite, marble, porcelain, and ceramic. Based on our production experience, Ludowici personnel using Millner-Haufen C-2 carbide drill bits have successfully drilled approximately 100 to 200 holes through our tile before experiencing a noticeable reduction in drilling performance.



Millner-Haufen 13-Piece Multi-purpose Drill Bit Set

ADDITIONAL TIPS & CONSIDERATIONS

- 01 Consider using a hammer drill with the tile and drill bit kept wet during drilling. Apply light, steady pressure, as excessive force can significantly reduce bit life and drilling performance.
- 02 In some cases, it may be helpful to start with a smaller-diameter drill bit and then enlarge the hole using the final required bit size. This can improve drilling accuracy and reduce stress on the bit.
- 03 If the tile pieces have a Ludowici gloss glaze, the hard ceramic surface can make drilling more challenging. Consider using a small hand grinder to remove the glaze in the immediate area where the hole will be drilled. Alternatively, you may flip the tile over and begin drilling from the non-glazed side. If drilling from the back, reduce pressure and drilling speed as you approach the finished surface to minimize chipping or damage to the glaze.
- 04 As an alternative to drilled holes, use a grinder to create small, angled slots or notches that can function as nail holes. This method is illustrated in our installation manuals.

Millner-Haufen Tool Co. Multi-Purpose Drill Bits are unique in design and functionality. Turning the correct RPM is critical to keep the bits functioning properly and to maximize the life of the bit. Please follow the speed and technique instructions below.

Hardened Steel and Iron (Lubricant will extend the life of the bit)	2000-4000 RPM
Masonry/Concrete (Percussion will improve function)	2000-4000 RPM
Stainless Steel (Lubricant required)	1500-2500 RPM
Glass, Tile, Granite (Coolant improves cut and extends life of the bit)	300-600 RPM
Plastic and Laminate	300-600 RPM
Solid Surface Materials	300-600 RPM
Wood and Composite	500-1000 RPM

For drilling materials not mentioned above, please call or email us for appropriate RPM & drilling instruction.

Sharpen your bits on a 118 degree flat grind.

NOTE: Avoid drilling hardened steel, iron, masonry and concrete with a cordless drill, due to their insufficient RPM.

Millner-Haufen Tool Company
info@MillnerTools.com • MillnerTools.com • 888.365.3301
Nashville, Tennessee

CUTTING CLAY TILE

Cutting Ludowici tile is typically an easier process compared to drilling through the tile. This is due to the nature of creating a controlled separation via cutting versus having to excavate a volume of extremely hard material when drilling. The two primary tools used for cutting Ludowici tiles are wet saws and grinders.

WETSAWS

A high-powered industrial wet saw equipped with a premium diamond edged blade and rigid platform is the most effective tool for making smooth straight cuts in Ludowici's dense vitrified clay tile. The continuous water delivery allows the saw to efficiently cut through the tile's dense ceramic body while minimizing chipping and edge damage. It also helps flush abrasive clay particles away from the cutting surface, preventing the blade from becoming clogged and suppressing airborne dust, creating a cleaner and safer work environment. The wet tiles should be thoroughly cleaned and rinsed before installation.



EQUIPMENT EXAMPLE

Saw: Rubi DCX-250 Xpert 1550 Professional Tile Saw

Blade: Rubi Venom Premium Diamond Blade

GRINDERS

Dry cutting is most effectively performed using a handheld grinder equipped with a diamond-edge circular blade. The portability of a handheld grinder provides the flexibility to make small cuts, notches, and adjustments directly on the roof at the point of installation. However, achieving long, straight cuts can be more challenging with this method.

Any dust generated during dry cutting should be thoroughly removed from the tile before installation. If tile dust is exposed to moisture - such as rain, condensation, or morning dew—it can form a paste-like slurry on the tile surface. This residue not only detracts from the appearance of the roof but can also be difficult to clean and remove once it has adhered to the tile.

EQUIPMENT EXAMPLE

Manufacturers: Dewalt, Rigid, or Makita

Blades: Rigid 4" or 4.5" diamond blades for porcelain, stone, marble, masonry