



STONE VENEER ADVANCED INSTALLATION TECHNIQUES





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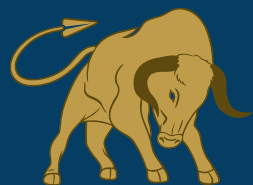
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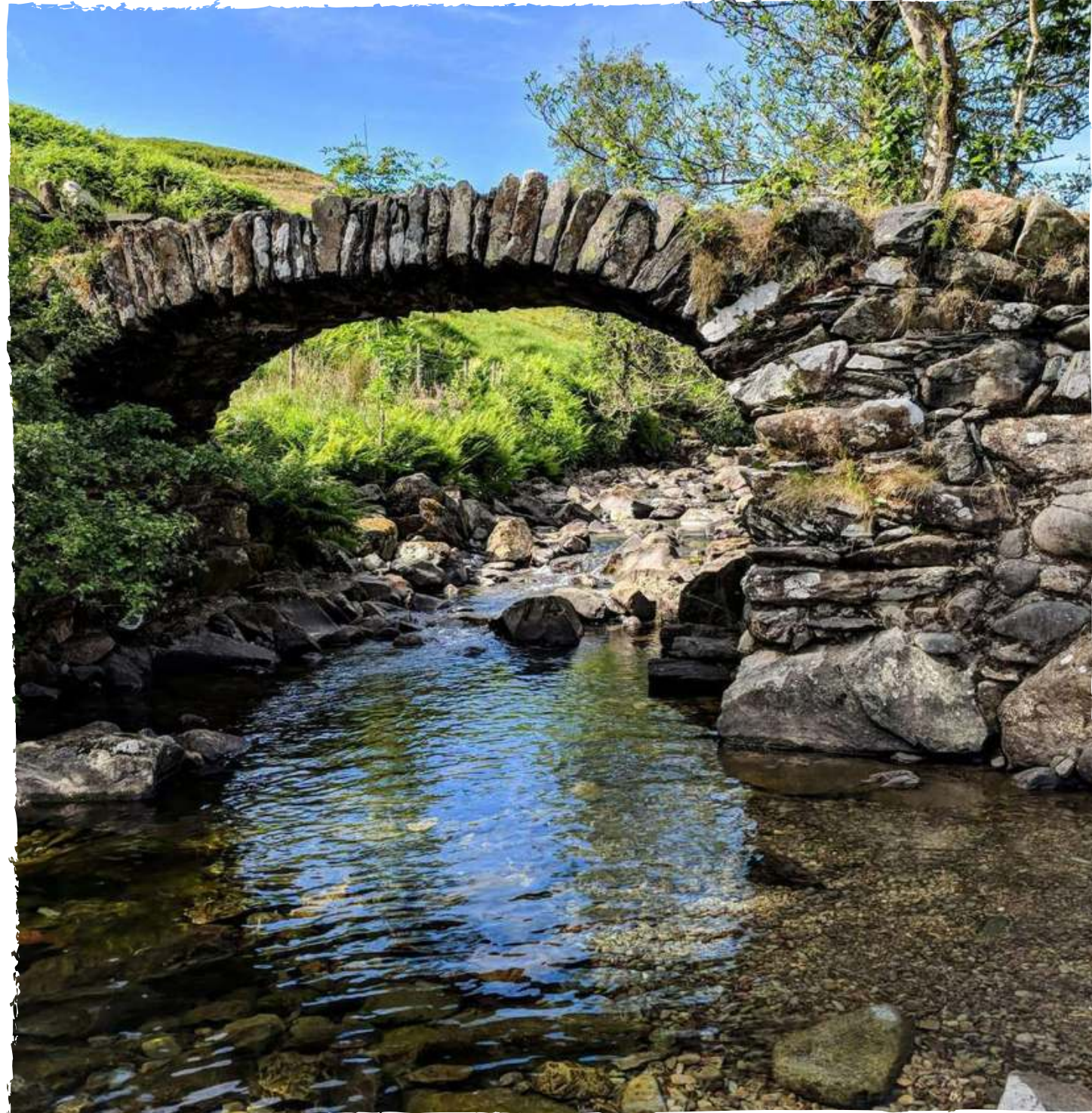
 RECAP OF KEY STONE MASONRY PRINCIPLES AND TECHNIQUES

 ENCOURAGEMENT FOR APPLYING KNOWLEDGE IN PRACTICE



OVERVIEW OF STONE MASONRY

Stone masonry, one of humanity's oldest and most enduring trades, involves the intricate crafting of everything from sculptures to buildings using stone as the primary material. This craft requires adherence to specific rules to ensure the resulting structures' longevity and aesthetic appeal. From the strategic placement of the stones to the meticulous attention to detail, every aspect contributes to the durability and visual impact of masonry projects.



EXPLORING THE BASIC 10 PRINCIPLES OF STONE MASONRY

IMPORTANCE OF PROPER STONE PLACEMENT

There was a time when stone wasn't primarily an aesthetic element to the structure but rather an essential factor of the enduring strength of each building wall. During this time, stone masons created a set of 10 principles to ensure that each structure utilizing stone would be structurally sound.

Although modern stone veneers serve as more aesthetic enhancements than an integral element of the building's stability, the charm lies in its illusion of structural integrity. Stone walls built following these principles are typically able to harness this charm. Let's dive into the 10 basic principles of stone masonry and how important it is to treat every stone as a pivotal piece in the architectural tapestry, ensuring that the beauty of the past continues its enduring legacy into the future.



PRINCIPLE 1

Sedimentary stones should always be laid horizontally on their natural bedding planes.

PRINCIPLE 2

Except for cornerstones, no stone should be taller than it is long.

PRINCIPLE 3

Avoid block or running joints. There should only be one stone on at least one side of a vertical joint.

PRINCIPLE 4

Avoid placing more than three stones against a riser.

PRINCIPLE 5

Like-sized stones should be spaced out. Risers should be evenly distributed throughout the wall.

PRINCIPLE 6

Stones of similar size should not be stacked on one another.

PRINCIPLE 7

Unless it is to achieve a specific aesthetic, avoid lining up vertical joints in alternating courses, as this will give it too much regularity and will take away from the natural stone appearance. Offsetting all of the vertical joints will achieve a more natural appearance.

PRINCIPLE 8

Typically, risers shouldn't touch each other except in corners and openings (jambs).

PRINCIPLE 9

Horizontal joints should never run for more than four or five feet. Whenever possible, space out horizontals between windows and doors.

PRINCIPLE 10

Try to ensure that there are substantial bonding laps. Ideally, you want a third, with a minimum of a quarter, of the length of the stone being set to cross the joint between the stones underneath it.

ADVANCED TOOLS AND TECHNIQUES

INTRODUCTION TO SPECIAL TOOLS FOR STONE MASONRY

In stone masonry, the most essential tool in your arsenal is a 4-inch grinder. A grinder is the best tool you could have around for cutting stone to fit the project at hand. This tool alone can increase efficiency and accuracy and, in turn, improve the finished product. When cutting into anything, regardless of the tool, you must ensure you have the proper attachment for the material you are working on.

There are two factors to pay attention to when selecting a blade for your grinder:

THE CORRECT TYPE OF BLADE

For cutting everything from manufactured stone veneer to natural stone (granite, marble), you'll want to opt for a diamond saw blade. These blades typically possess rectangular teeth infused with diamond crystals to grind, rather than cut, through very dense materials.

BLADE APPLICATION:

Ensure your selected blade is made for your specific material. There are particular diamond saw blades for granite and concrete, marble, ceramics, etc.



IMPORTANT CONSIDERATIONS

SAFETY PRECAUTIONS

Always use PPE, goggles, dust mask or respirator, ear protection, and gloves when working with a grinder.

PREVENT FUTURE ACCIDENTS:

Be sure to clean up any stone dust from your work area to avoid possible inhalation by you or the clients.



USING A 4-INCH GRINDER TO SCORE AND SNAP STONES

PREPARATION

Draw a line where you want to score the stone using a measuring tape and a marking tool.

SECURE THE STONE

If possible, use clamps to secure the stone to a stable work surface to prevent it from moving while you score it.

EQUIP THE GRINDER

Attach the diamond blade to your grinder. Be sure to fasten it in place securely.

SCORING THE STONE

- 1. POSITION THE GRINDER** | Use both hands for stability and line up your grinder to cut.
- 2. BEGIN SCORING** | Keep the blade aligned with the marked line as you push the grinder forward slowly and steadily.
- 3. DEPTH OF SCORE** | To provide a sufficient groove to allow the stone to snap along the line, the score should be approximately $\frac{1}{8}$ to $\frac{1}{4}$ inch deep.

SNAPPING THE STONE

Once you have sufficiently scored the stone, remove any clamps and reposition the stone so the scored line hangs slightly over your work surface.

Apply firm, steady pressure downward on the overhanging piece. The stone should snap cleanly along the scored line.

QUICK TIP

THERE ARE WET AND DRY BLADES FOR CUTTING STONE. CUTTING A STONE WHILE WET CAN CUT DOWN ON DUST, REDUCE FRICTION, AND EXTEND THE BLADE'S LIFE. DRY BLADES WILL GET THE JOB DONE BUT ARE PRONE TO WEARING OUT FASTER AND CREATING MORE DUST, SO THEY ARE MORE SUITABLE FOR QUICK, SMALL JOBS.

INSTALLATION STRATEGIES

BOTTOM-UP VS. TOP-DOWN INSTALLATION METHODS

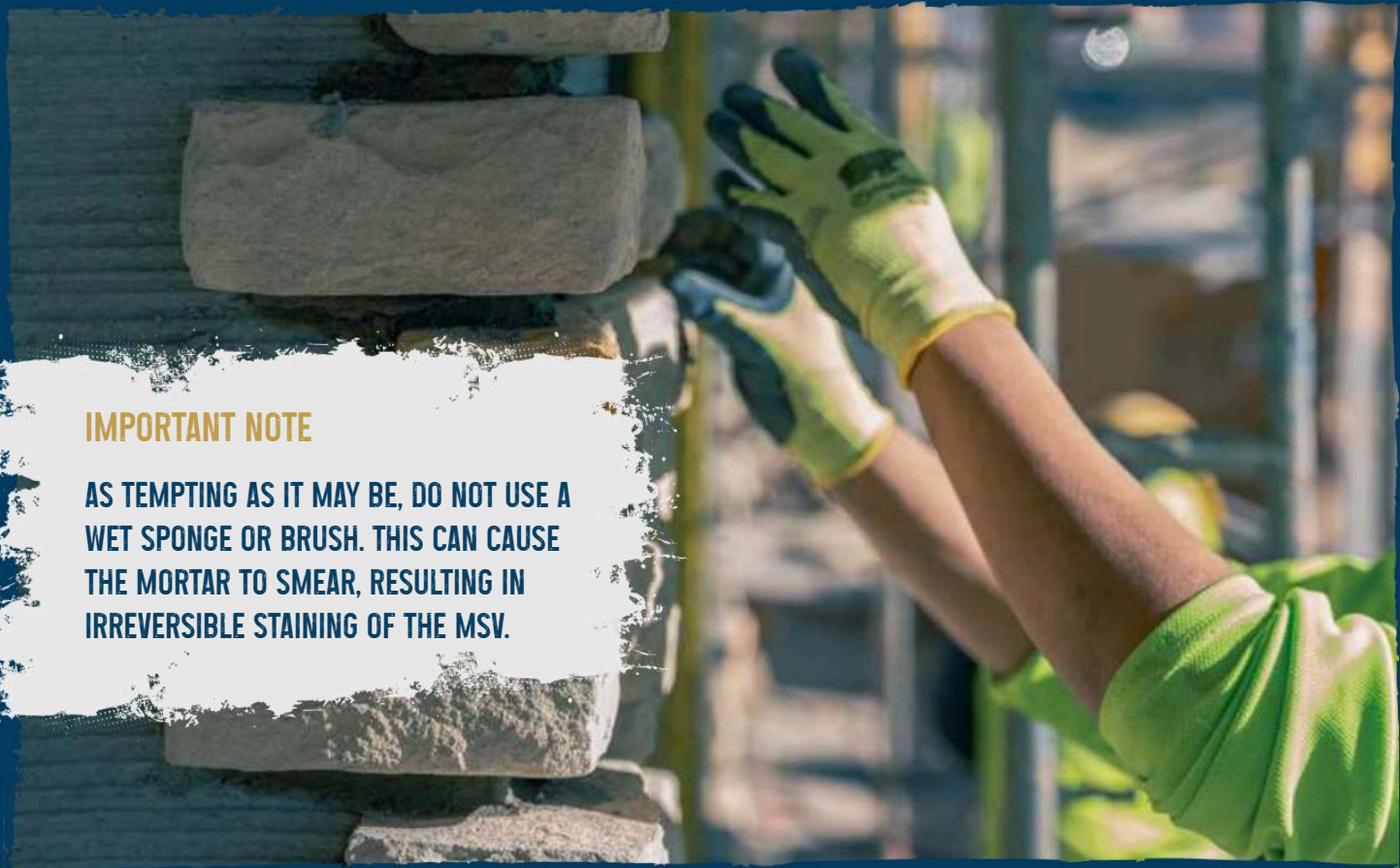
The first installation method we will go over is the top-down. It may seem a little upside down if you're new to it, but start from the top and work your way down. This method allows all of your waste and excess mortar to fall to the ground rather than clinging to the face of the stone that you just took a lot of care to install.

Alternatively, there is the bottom-up method. This method is more challenging since you run the risk of getting mortar and waste on the stones that have already been placed, so it is typically utilized by pros who have a good handle on what they need to do.

PRO TIPS FOR CLEAN BOTTOM-UP INSTALLATIONS

If you have opted for the bottom-up method, it is essential to understand that if the mortar does fall on the face of a previously placed tile, do not try to wipe it off immediately.

You should brush or broom fresh mortar to remove extra mortar, dirt, and debris. Doing this several times a day as the mortar reaches the thumbprint hard will prevent it from setting up, resulting in difficult removal or staining.



IMPORTANT NOTE

AS TEMPTING AS IT MAY BE, DO NOT USE A WET SPONGE OR BRUSH. THIS CAN CAUSE THE MORTAR TO SMEAR, RESULTING IN IRREVERSIBLE STAINING OF THE MSV.



CONCEALING TECHNIQUES

IMPORTANCE OF CONCEALING CUTS IN STONE MASONRY

When making MSV or natural stone veneers look natural, it is crucial to hide cuts and joins to enhance the natural appearance. There are a couple of ways to do this.

CREATING NATURAL ROUGH EDGES

A clean-cut edge is an easy way to break the illusion of a stone wall, but sometimes a cut is necessary. The stone may be too large or have an odd shape that needs to be adjusted. Either way, an easy way to accomplish this is to start with the score and snap method mentioned above. Once done, using a brick or veneer hammer, work along the edge to give it the roughed-up appearance that stones naturally have.

STRATEGIC PLACEMENT: HIDING CUTS IN TOPS OR CORNERS

It is also possible to strategically arrange stones to hide these clean cuts in less visible areas or areas where the structure would naturally conceal the edge.

FINAL TOUCHES

ENHANCING THE NATURAL LOOK WITH WELL-EXECUTED GROUT JOINTS

When building out a stone structure, attention to detail makes all the difference in elevating the overall aesthetic. Crafting well-executed grout joints and properly cleaning off stones are essential steps in achieving a clean, polished end product that shows your dedication to making every step intentional.

PROPERLY CLEANING MORTAR OFF STONES

When removing mortar from stone, be it natural or MSV, it is essential not to allow it to dry completely. All mortar needs to be removed once it becomes thumbprint-hard. If it is allowed to dry or removed prematurely, you risk permanently staining the stone.



CONCLUSION

RECAP OF KEY STONE MASONRY PRINCIPLES AND TECHNIQUES

Throughout this guide, we've explored the foundational principles and advanced techniques that are the core of any stone masonry job. From the importance of stone placement to the meticulous application of grout, each principle has been developed over hundreds of years to ensure stone structures' longevity, stability, and aesthetic appeal.

ENCOURAGEMENT FOR APPLYING KNOWLEDGE IN PRACTICE

Embarking on mastering stone masonry can be challenging but ultimately rewarding. We encourage you to apply the techniques detailed within this guide with patience, passion, and persistence. Remember, the mastery of stone masonry comes not from a single project but from a continual process of learning, experimenting, and refining your skills.

IF YOU HAVE QUESTIONS OR NEED GUIDANCE, TORO STONE IS HERE TO HELP SUPPORT YOUR STONE MASONRY JOURNEY.

[CONTACT A CUSTOMER REPRESENTATIVE]



