Matrix Paving Mould Instructions

Don’ts

1. **Do not throw or drop the paving mould (It may break).**
2. **Do not stand or hammer hard onto the mould (***mould will break***).**
3. **Wash the mould properly before long rest pauses during paving, preventing cement mixture hardening in the cavity corners.**
4. **Do not push the mould back on wet cement cobble stones. If the cement, forming the cobble stones is too wet or sloppy; then make the mixture stiffer and start again.**
5. **Do not store paving moulds outside in the sunlight.**

Weather Conditions

If weather conditions are such that the performance of the paving may be jeopardised (rainy weather), installation should be discontinued (and any open work face covered). In adverse weather conditions, units should not be laid on saturated laying course material. The filling of joints is not possible in damp conditions, and should be topped up at the earliest opportunity. All unfinished areas and stockpiles of materials should be covered in the advent of inclement weather to prevent saturation.

Area Preparation

- Prepare the area that requires paving by levelling and compacting the ground. For driveways, ensure that the substrate is properly prepared before paving the area.
- If there is a severe weed problem over the area to be paved, then a landscape material cloth (available at the garden nursery) **may** be used over the ground surface for the prevention of weeds in the future. Do not use plastic sheeting as it does not allow proper drainage.



Mixture Preparation

- Choose a cement colouring Oxide powder (*obtained at local hardware store*) that needs to be added to the cement mixture. The more colouring/pigment you add to the mixture batch, the darker the finished surface of the cobble stones will be. Place a portion of oxide powder in a small container and mix with water (*take note of the amount/level*). The mixture will look like water paint. The importance of noticing the amount of oxide powder with water used, is to ensure consistency for the next batch of cement/pigment mixture.
- Use the cement formula document when preparing the cast mix. Use 42,5MPA cement or stronger in the mix.

- Note: Using “Ready-mix” sand/cement from the local hardware store is not a guarantee that the portion or strength of cement placed by the manufacturer in the bag, is 42.5MPA. Using Ready-mix for paving is also not as strong as when using the recommended 3:2:1 crusher run/sand/cement mixture.
- Bonding Liquid could also be added to the mixture for a stronger result.
- The cement mixture should not be too runny, but also not stiff and requires to flow from one cavity to the other, so that the individual cobble stones are linked after removing the mould as in the picture below.



- This type of mould paving can be produced directly on the area required to be paved or produced individually (mass production) on a plastic sheet until it cures. The cured casts can be directly placed/laid on the prepared surface area.
- If the cement mixture is very runny, the cement mixture will take longer to firm before the mould can be removed. Take note: Do not let the cement cast set/dry in the mould.
- For a stronger cast, place some gravel spaced out (10-13 mm stone) through the cavities of the mould, before filling the mould with the cement mixture. This will make the cast stronger.



Application

- A release agent for cement casts may be used prior to placing the cement mix into the mould, but not really necessary.
- Place cement mixture in the mould cavities. Ensure that all of the gaps are properly filled, compressed and levelled evenly across the mould. After 5-10 minutes remove the mould carefully by **tapping gently** with a rubber mallet on the top side areas and simultaneously start to lift the mould.
- Once the mould appears to be loose, use both hands to lift it up completely.
- Rinse the paving mould with water (especially in the internal corners of mould cavities), if it is not used immediately to cement another cast.



- Note: Edges of the cobble stones might slightly lift (Do not touch wet cement). Leave the fresh cast to set for half an hour before doing touch-ups.
- After an half an hour, **if necessary**, use a damp sponge (**not dripping wet**) and wipe the new cobble stones to smooth the top, rough and lifted edges. Wash sponge every so often before carrying on smoothing again. A trowel may also be used to smooth the surface.



- If the area that requires paving is larger than 10sqm; it is advisable for a minimum of two or more moulds to be used. While the first mould is setting for 5-10 minutes, you can propagate forward with the second one without wasting time.
- When using two or more moulds simultaneously, it is advisable to first start with only one mould and complete the first cast. Once that is done, multiple moulds can be utilized at the same time as in **figure 1**, thus keeping the outer grouting gaps uniform in relation to the inner gaps of the cast.
- Note: ***Never place two moulds next to each other. Placing x2 moulds alongside each other will end up having a wider gap between mould casts in relation to the inner gap thickness.***

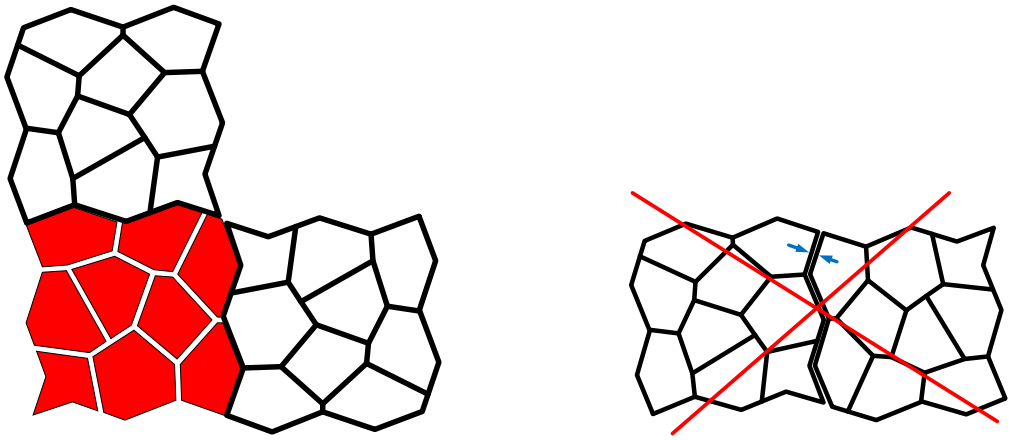


Figure 1.

- Rotate the paving mould 90 degrees for a random pattern finish or place them in a uniform manner. (***See figure 2***).

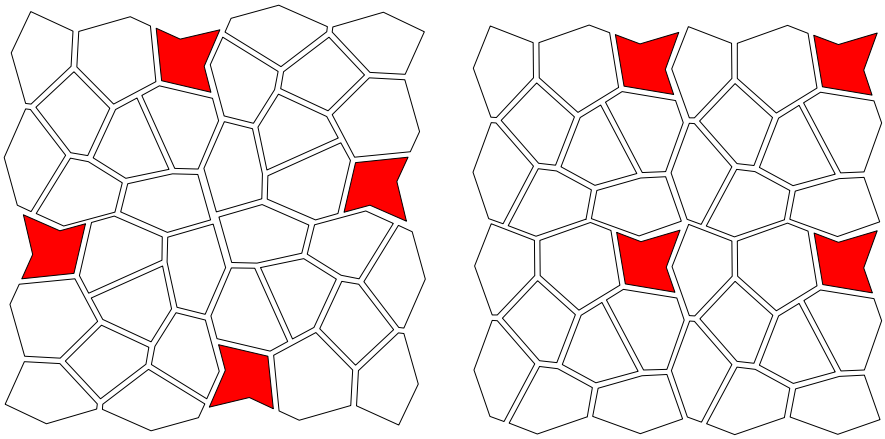


Figure 2.

Paving winding paths & filling up gaps

Winding path method:

- When paving a winding path, place the mould in an overlapping position on the fresh cast, as in **figure 3**. Gently tap with a mallet onto the mould making an indentation in the cement of the previous cast. Remove the mould and use a flat spatula to cut away the unwanted indented cement. Then place the mould in position and proceed with the paving of the next mould tile/cast.



Figure 3.

Filling up gap method:

- If necessary, manufacture your own cobble stones using cardboard strips as spacers between the mould casts and side wall as illustrated in **figure 4**. Prior to grouting, place plastic sheeting over the concrete for two to three days to prevent the surface from drying too quickly and cracking.



Figure 4.

Grouting

- After paving has cured, a dry mix (no water) of cement and fine sand 1:4 is to be used for grouting. Pour the dry mix onto the dry paving and brush into the crevices with a broom/wide paint brush. Very lightly mist spray the grouting mixture in the crevices and allow solidifying over 2 days. Do not use a strong stream of water, since it will displace the grouting mixture. Ensure that the colour of the grouting is darker or lighter than the paving cast. If colour pigment has been initially added to the cement paving mixture, then grouting can remain plain cement grey.
- Grouting may also be substituted with small decorative round pebbles or flowery ground covers in between the crevices.
- After your walkway has cured, protect its finish with a concrete sealer. Follow the manufacturer's instructions for application. The sealer forms a tough, water-resistant finish that is virtually unaffected by the elements.



Borders

- Square or rectangular cobble stones may be used to form borders as in **figure 5** (available at your nearest garden nursery store). The square cobble stones are used to round off and compliment the paving edging. ***Note:*** *Small foundation is required for the permanent fixing of the border edging.*
- Borders could also be put in placed prior to paving with the mould, providing correct measurements have been done.

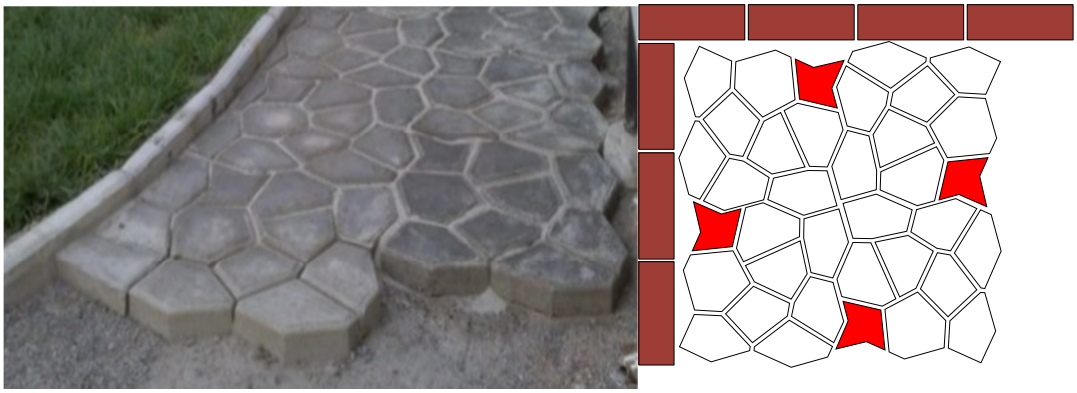


Figure 5.

Constraints/Limitations

- When approaching e.g. a wall and can no longer fit another mould; measure the distance required. Use the mould to produce the required cobble stones for the space required in an open area on a plastic sheet. Use a spatula to trim the required cobble stones for the space that requires filling **(See figure 6)**. Once the trimmed cobble stones are dry to pick up, move them to the remaining space.
- Cardboard spacers can also be used to fill the remaining area as indicated in **Figure 4**.
- If paving casts have been pre-manufacture separately; an angle grinder may be utilized to cut away unwanted segments.

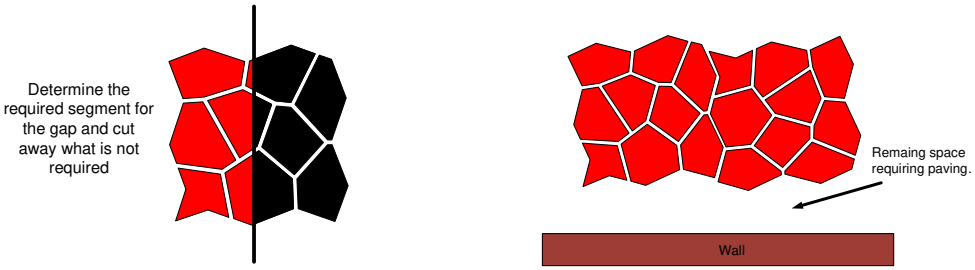


Figure 6.