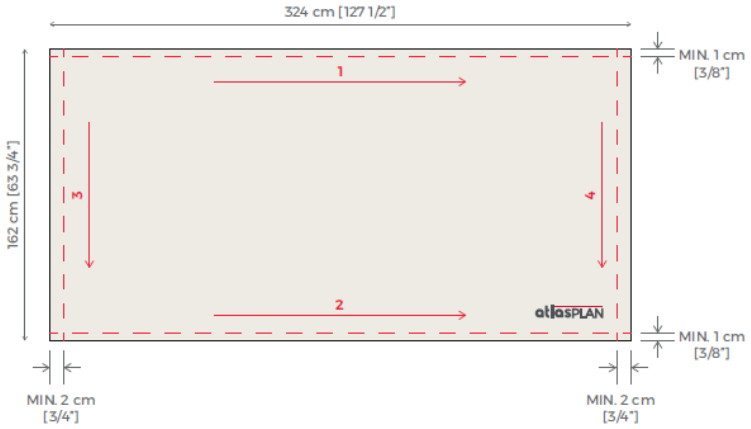
ATLAS PLAN OFFICIAL FABRICATORS TRAINING PROGRAM

- Atlas Plan slabs need to be cut with diamond tools (from the CNC to manual diamond tools).
- The stability of the plate is very important and the slab should be supported for its entirety.
- The plate should not have any scrap and debris from previous operations.
- When cutting 2cm slabs, we suggest the use of foamboard/insulation board to be placed between the table and the slab to absorb residual tension in the slab.

FIRST THING FIRST: DETENSIONING CUTS

- We always suggest to to the detensioning cuts on all 4 sides (3/4'' on the long sides and 3/8'' on the short sides).



Bridge saw

- It needs to have diamond blades.
- In case of a new blade, please remember to "open it up" with a piece of marble, granite or quartz.
- Disk cutting with a bridge saw must be performed wet, with an abundant jet of water directed precisely at the cutting area.

NOTE This document should be intended as main recommendations for cutting and handling the Atlas Plan slabs. For complete information, please refer to the Technical Manual.

Below is a summary table of the general technical parameters according to the disc diameter for thicknesses 6, 12, 20 mm:

LINEAR CUTTING

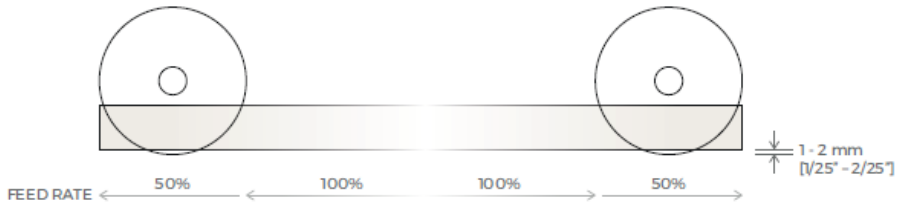
DIAMETER (mm)	DIAMETER (inch)	RPM	FEED RATE (m/min)	FEED RATE (inch/min)
350	14	1800-2500	1,0-1,5	40-59
400	16	1500-2300	1,0-1,5	40-59
450	18	1200-2000	1,0-1,5	40-59
500	20	1000-1600	1,0-1,5	40-59

For the optimal parameters of any given disc please refer to the manufacturer's data sheet.

45° INCLINED CUTTING

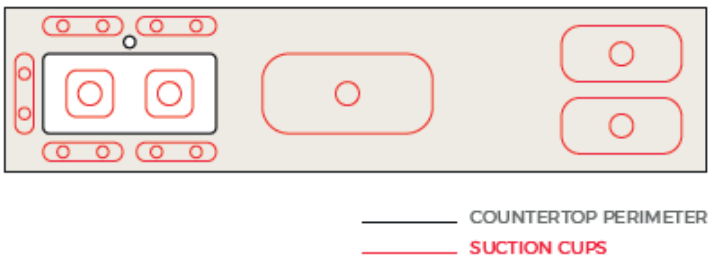
DIAMETER (mm)	DIAMETER (inch)	RPM	FEED RATE (m/min)	FEED RATE (inch/min)
350	14	1800-2500	0,6-0,8	24-32
400	16	1500-2300	0,6-0,8	24-32
450	18	1200-2000	0,6-0,8	24-32
500	20	1000-1600	0,6-0,8	24-32

It is important that the disc fall below the slab level by 1-2 mm [1/25" - 2/25"] so that the cooling water can also be effective from below and the fiber glass can be sliced through.



CNC

- It needs to have core and finger bits <u>for porcelain</u>.
- Magnets need to be used alongside the whole perimeter, but above all in close proximity of the cutting area.



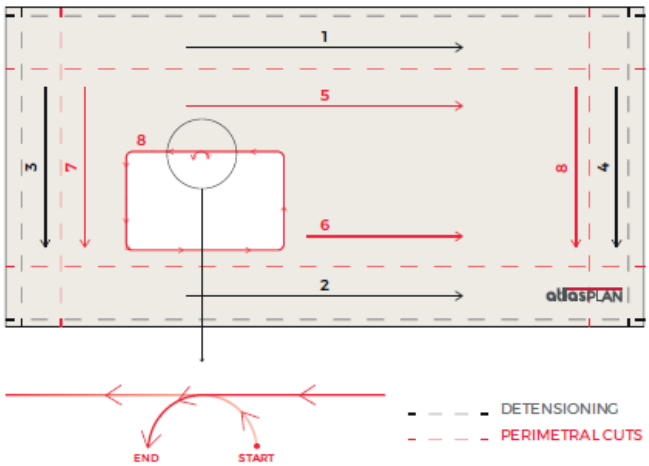
- **Internal holes**: Atlas Plan recommends using a waterjet or CNC contouring machine.
  Circular holes are made using wet diamond core bits. Abundant water flow is required both internally and externally to the cutting circumference.
  If the machine allows it, during the first and last 2 mm [⅛"] the drill bit should have a lower feed rate of about 5 mm/min [¼ in/min]. This minimizes the risk of chipping at the bottom of the slab.

CORE BIT

DIAMETER (mm)	DIAMETER (inch)	RPM	FEED RATE (mm/min)	FEED RATE (inch/min)
10	0,4	2900-3100	25-30	1,0-1,2
20	0,8	2900-3100	25-30	1,0-1,2
30	1,2	1900-2100	27-35	1,1-1,4
35	1,4	1900-2100	27-35	1,1-1,4

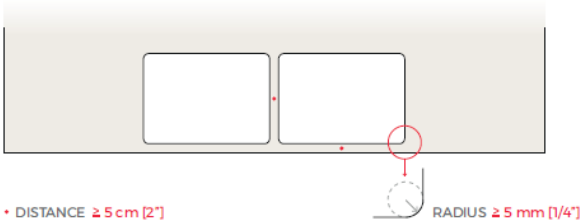
Waterjet

- No need of verification for tools.
- When making internal holes, start cutting from a point inside the perimeter of the hole (at least 2 cm [¾"]), and then move outwards towards the perimeter with a curved trajectory. Once the cut is completed, the nozzle also exits with a curved trajectory, towards the inside of the hole.
- Nozzle feed rate of 1000-1500 mm/min [3.3-5 ft/min] for straight perimeter cuts and a speed of 500-800 mm/min [1.6-2.6 ft/min] for internal holes. The jet pressure must be between 3000 and 3500 bar, with a consumption of abrasive of about 0.35 kg/min [0.77 lbs/min]. For internal holes, it is recommended to reduce the pressure of the jet to 600-800 bar at the start, and then increase to 3000-3500 bar when the jet has completely penetrated the thickness.
- If the machine allows 45° waterjet cuts, a feed rate equal to half the feed rate used for straight cuts is recommended



GENERAL CUTTING RECOMMENDATIONS

- When making holes and internal cuts, leave no less than 5 cm [2”] between two cuts/holes, as well as between a cut/hole and the edge of the slab itself.
- Don’t do 90° angles in all interior corners of the plan. Provide a radius greater than or equal to 5 mm [¼”] at these corners. If the geometry of the hole allows it, use wider radius (8-10 mm) [3/8”].



- **EDGING OF SLABS:** The edges of Atlas Plan porcelain stoneware slabs can be worked with a CNC contouring machine in order to create different profiles. Atlas Plan does not recommend leaving the edges with a sharp edge and advises to make a bevel of at least 1 mm [1/25”] or a rounded edge with a minimum curvature radius of 1 mm.
- **POLISHING OF SLABS**: The outer edge of the slabs, but not the internal edges of the holes, can be shaped using an edge polisher machine. In this case, in the absence of a CNC contouring machine, the edge of the hole must be worked with a manual diamond pad.
  The edge polisher machine is also able to cut the slab’s outer edge at 45°, then it can be polished by specific machines.

THREE IMPORTANT TIPS FOR 2CM FABRICATION

1. Foam board;
2. Piece of quartz/marble/granite remnants at the end of the slab where the blade exits;
3. “Divisional” cut.

The fabrication of 2cm porcelain slab needs to be addressed a bit differently compared to a 12mm slab. When fabricating 12mm the fabricator has some room for mistakes, but 2cm does not. Specifically, there are three little techniques we always suggest to fabricators when cutting 2cm:

- Placing a foam board between the porcelain slab and the working table to absorb the vibration that fabrication causes,
- Performing a divisional cut between different cutting areas in order to further release residual tension present in the slab,
- Placing a piece of debris (quartz or granite would be okay) in the proximity where the disk comes out of the slab.

Our 2cm porcelain slabs get cut like butter if the right procedure is being followed.
Atlas Plan team is always available to come show you the best way to cut 2cm porcelain slabs.

INSTALLATION SUPPORTS

Always installation on flat surfaces,

- **Interior:**
  - Floors/Walls: Concrete + Mortar (''Double buttering'' parallel to the short edge),
  - Vanities 6mm: Full support (Foamboard/Granite/Honeycomb, **Absolutely not** quartz agglomerate, marine plywood).
  - Vanities 12mm: Full/partial support (transversal wooden or iron cross bars),
    - For full: Foamboard/Granite/Honeycomb, **Absolutely not** quartz agglomerate, marine plywood). Adhesive well spread and not to be laid in spots.
    - For partial: no need of other supports.
  - Vanities 20mm: Glued directly on cabinet (with Silicon or similar elastic adhesive),
- **Outside:**
  - Floors/Walls: Thinset 1st floor + wall, then Mechanical anchor for facades),
  - Vanities: As for interiors. Make sure you use silicon for exteriors.

Atlas Plan SLABS Q&A for fabricators

1- Which side should the slab be worked on?

The slab should be laid on its back on both bridge-saw and water-jet. The only exception is for the 12mm slabs with back mesh worked on a CNC, which need to be laid-upside down due to the low grip of the suction cups on the fiberglass.

2- Do we need to release the tension on each slab?

You should cut from the longer sides and work your way to the shorter sides.
The detensioning cut consists in eliminating 1 cm [3/8"] of material on the longer sides and 2 cm [3/4"] of material on the shorter sides: in this way it is possible to release any residual tension in the slab.

3- What type of blade do we need to use?

Diamond blades for cutting porcelain. These are our partners:
Tyrolit, Diatex, Italdiamant, Adi
Terminator DK3 (for the US Market)

4- What about tools for CNC contouring machines?

You need Diamond core bits, finger bits and polishing bits. These are our partners:
Tyrolit - Diatex - Italdiamant – Adi

5- Do you have recommendations for machineries?

Yes, our partners for CNC, bridge-saw and water-jet are:
Donatoni, Intermac and Ferrari&Cigarini.

6- Any recommendation on how to use the diamond tools?

Yes, make sure you lower the feed rate in half when the blade is not fully into the slabs (beginning and end).

7- Any major recommendations for cutting?

Make sure the diamond blade cuts 1/16” below the slab.
Avoid 90 degrees corners (minimum 3/8” radius).
Always lower your entry and exit feed rate by 50%.
Make sure to support with suction caps the area that has to be removed while cutting sinks or holes in general.

8- Any recommendations for glues?

To laminate slabs with slabs we suggest bi-component epoxy glues, while to attach porcelain to a support like wood or foam board we suggest a polyurethane glue. Our partners are Akemi and Tenax, which match their glue to our slabs color portfolio.

9- Can the edges be worked and/or polished?

Yes to both and we recommend to use the wet polishing pads in theirs 3 steps application.

10- Can the edges be shaped and sealed?

Yes, you can miter, bullnose and work the edges as you would in a quartz slab. They can be sealed with a product similar to Fila Stopdirt or Faber.

11- What type of overhang do you recommend?

Depends of the slab thickness, that is:
12mm. 2-3 inches max
20mm. 5 inches max
In case you need to realize a bigger overhung you must use supporting brackets.

12- Does the slab need installation support when used as countertop?

It depends on the slab thickness, that is:
6mm. Slab must be laminated with a support like honeycomb, plywood or kardi/foam boards.
12mm. Slab: needs to be protected by supporting bars spaced 24” max apart.
20mm slab: no support needed. It can be glued to the frame directly.

13- What type of over, flesh or under-mount sink installation you suggest?

They can all be utilized, while the 20mm slab can use the same procedure as a quartz or natural stone one, the 12mm. Slab with under-mount sink installation needs a small supporting layer around the hole in order to screw in the anchoring clips.

14- Can the slabs be repaired?

Yes, we have a partner to repair the surface scratches: Faber scratch kit. And we have a partner for small chipping: Tenax & Akemi repair kit.

ADVANTAGES OF PORCELAIN SLABS

1- GROWING MARKET OPPORTUNITY (Porcelain vs Quartz, Dekton, Neolith, Real Stone)
2- EASIER TO CUT THAN DEKTON AND NEOLITH (Less Silica component)
3- GOOD FOR EXTERIORS (Installation and Stock)
4- MATCHING TILES
5- FULLY REFLECTIVE POLISHED (Not sandy like the Quartz)
6- BEAUTIFUL DESIGN
7- VEIN-THROUGH TECHNOLOGY
8- RESISTANT TO:
    a. TIME,
    b. SCRATCHES,
    c. HEAT,
    d. UV-RAYS (Sunlight),
    e. WATER and CHEMICALS,
    f. SALT and SAND,
    g. SNOW and ICE,
9- 100% HEALTHY AND GREEN (LEED CERTIFICATION)
10- GOOD FOR COOKING (Also Induction cooking)
11- CHIP REPAIRING AND SCRATCH-REPAIRING KITS

HOW TO CUT PORCELAIN SLABS

1- DETENSIONING CUTS
2- NO PLUNGE-CUTTING
3- USE DIAMOND TOOLS
    a. BLADE (DIATEX, TYROLIT, ITALDIAMANT, ALPHA)
    b. DIAMOND HEAD (DIAMOND DRILL FOR BRIDGESAW, DIAMOND FINGER BIT FOR CNC)
4- RESPECTING THE CUT-SPEED (SLOW-IN, PEAK-SPEED-SLOW-OUT)
   50%-100%-50%
   FOR LINEAR CUTS: 25’’/m, 50’’/m, 25’’/m,
   FOR MITER CUTS: 15’’/m, 30’’/m, 15’’/m.
5- SOFT CUTTING (USING A REMNANT OF MARBLE OR GRANIT WHEN YOU ENTER AND EXIT FROM THE SLAB)
6- ALWAYS CUT WITH WATER
7- WAIT TO BE COMPLETELY OUT OF THE SLAB BEFORE YOU LIFT THE BLADE UP TO AVOID CHIPPING
8- NO SHARP CORNERS FOR INTERNAL CORNERS, ALWAYS DO THE RADIUS (NO L-CUT, YES C-CUT), WITH BRIDGESAW USE DIAMOND DRILL, WITH CNC USE DIAMOND FINGER BIT

Please see the technical manual for more precise information. The warranty is valid only if all the specifications of the technical manual are met.