

Fabrication Manual



Hanex® Solid Surfaces



CREATE

Diversity

INTRODUCTION



Hyundai L&C is one of the global leading manufacturer of premium building materials. The entrepreneurial passion for seeing change as an opportunity and never standing still has made Hyundai L&C as a frontrunner within the market of acrylic solid surface, with a proven track record since 1995. Under our brand name Hanex®, we offer complex patterns and homogeneous structures all through the entire materials by using innovative technology. As a full service provider, we are continuously developing added values in the form of innovative products and services.

Our vision is to innovate your world.

The only limitation of Hanex is your imagination.

Hanex combines imagination and reality, today and tomorrow, nature and urban environment.



INTRODUCTION

This manual is designed to give basic guidelines to help ensure that Hanex Solid Surfaces will be handled, stored, fabricated and installed correctly.

Hanex Solid Surfaces is an ideal material for residential and commercial applications because of its beauty, durability, aesthetics, design flexibility, color choices, and more. Hanex products are non-porous and NSF 51 Certified for food preparation areas. They can be applied in many applications where sanitation is of utmost importance, such as kitchen countertops, hospitals, playrooms, schools and many more. Hanex Solid Surfaces can be fabricated and installed in almost any application with inconspicuous seams, making Hanex truly “solid” in surfacing materials. The design flexibility and usability of Hanex, such as integrated sinks and coved backsplashes, makes it a perfect combination of beauty, design and practicality. Every Hanex Solid Surfaces is covered by the best Limited Warranty in the industry, backed by a nationwide network of industry experts, authorized repair agents, and customer care associates to service your countertop.

The information contained here is deemed reliable; however, none of the contents - including but not limited to the recommendations, pictures, techniques, and or instructions - is to be conceived as implying legal liability of fitness for a particular purpose, any other type of warranty, or being exhaustive or conclusive in its coverage and nature of information. Per each user's specific application, all necessary measures and precautions must be taken in order to confirm and test the adequacy for such needs or applications. The information contained herein is strictly for purposes of reference and as such, Hyundai L&C Corporation and its affiliates assume no liability for its accuracy or suitability or the use of such information for products other than Hanex Solid Surfaces.

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QUALITY OF HANEX

Hanex is highly regarded as an environmentally friendly material with various related certifications such as NSF, Greenguard and SCS.



1.1 SAFETY

Hanex Solid Surfaces should be handled with care to ensure the safety of you and others. When handling Hanex Solid Surfaces, please use all of the necessary safety equipment and including PPE (Personal Protective Equipment). (Refer to the Material Safety Data Sheet and to Chapters 3 and 4 for additional information on proper handling and storage)

Hanex Solid Surfaces products are perfectly safe and are non-hazardous when shipped. However, extra care should be used when working with the product. Due to the weight, sharp edges, and other innate features of the product, having the right PPE (Personal Protective Equipment) and equipment is always recommended. While Hanex Solid Surface is non hazardous, it is important to understand and respect the product when working with it.

For some, the dust from cutting, shaping, or sanding can irritate ones eyes, nose, skin, and delete even passages. When working with Hanex Solid Surfaces products, it is recommended to use the appropriate vacuuming systems along with respiratory equipment to lower the risk of allergic reactions.

If you or someone else is experiencing allergic reactions to the dust, move to a safe place with fresh air. If breathing becomes difficult or irritation becomes severe, consult with a physician right away. In case of an eye irritation, flush with water for at least 15 minutes and consult with a physician right away.



Illustration (1.1-a)

2.1 HANEX PRODUCT COMPOSITION

Hanex Solid Surfaces is made with a composition of Methyl Methacrylate (MMA) and Poly Methyl Methacrylate (PMMA) resin filled with Alumina Trihydrate and other specialized formula to give it the timeless beauty and quality. We are one of only two companies to have successfully developed the DBCU (Double Belt Casting Unit) process to produce superior products. These sheets can be fabricated and used in almost any application (Please review Section 2.4 for recommended use).

Basic Composition

<i>Material Name</i>	<i>Component</i>
MMA (Methyl Methacrylate)	Resin
PMMA (Polymethyl Methacrylate)	Resin
AL (OH) 3 – Alumina Trihydrate	Filler
Cross Linking Agents, Stabilizers, Curing Agents, Pigments, etc.	Additives

Table (2.1-a)

For your safety and the safety of others:

- Use all safety protocols and equipment
- Use common sense and follow all guidelines

SPECIFICATION

2.2 PRODUCT SPECIFICATION

A. Dimensions

Hanex Solid Surfaces Sheet Size

<i>Thickness (mm)</i>	<i>Width (mm)</i>	<i>Length (mm)</i>
6	760	2490*
6	760	3070***
6	930	2490**
12	760	3680
12	930	3680**
19	760	3070**

* only on Solo, Duo and Magic colour groups available

** only in S-008 and N-White available

*** only on require

Table (2.2-a)

Hanex Solid Surface Pallet Packaging

<i>Width (mm)</i>	<i>Length (mm)</i>	<i>Total Weight (kg)</i>
800	3700	1,245
800	2500	845

Table (2.2-b)

Hanex Solid Surface Container Packaging

<i>Container Type (Ft)</i>	<i>Number of Sheets (12mm Sheets)</i>	<i>Weight (kg)</i>
40	300	18,723
20	160	9,985

Table (2.2-c)

2.2 PRODUCT SPECIFICATION

B. Technical Data Sheet

<i>Properties</i>	<i>Unit</i>	<i>Result</i>	<i>Test Standard</i>
Specific Gravity	g/cm ³	1.8	
Tensile Strength	psi	5,400	ASTM D 638
Tensile Modulus	psi	1.4x10 ⁶	ASTM D 638
Elongation	% min	0.42	ASTM D 638
Flexural Strength	psi	9,200	ASTM D 790
Flexural Modulus	psi	1.38x10 ⁵	ASTM D 790
Hardness (Rockwell)		92	ASTM D 785
Thermal Expansion	mm/mc	3.04x10 ⁻⁵	ASTM D 696
Gloss (60° Gardner)		5 ~ 20	ANSI Z124
Color Stability		No change	NEMA LD3
Wear & Cleanability		Passes	No Growth
Boiling Water Surface Resistance		No change	NEMA LD3
High Temperature Resistance		No change	NEMA LD3
Stain Resistance		Passes	NEMA LD3
Impact Resistance		No fracture	NEMA LD3
IZOD Impact Strength	ft.lbs/in	0.28	ASTM D256
Water Absorption Weight	% max	0.03	ASTM D 570
Fungi & Bacteria		No attack	ANSI Z124
Weatherability		No change	ASTM D 1499
NSF 51	Listed	All Colors	NSF

Table (2.2-d)

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SPECIFICATION

2.2 PRODUCT SPECIFICATION

C. Basic Product Conformity

<i>Standards</i>		
Dimensions	Length	+ 0,5 / - 0,0
	Width	+ 0,5 / - 0,0
	Thickness	+ 0,2 / - 0,2
Visual Inspection	Warping	Less than 1.6mm per 3000mm of material
	Foreign Particle	Less than 3 visible particles per sheet
	Color Match	Same Lot
	Bloch	Less than 3 visible particles per sheet
	White Spots	Less than 3 visible particles per sheet
	Discoloration	None
	Partical Distribution	Even Distribution
	Pit Holes	None
	Uneven Sanding	None
	Hairline Crack	None
	CRACK	None
	Concave	None

Table (2.2-e)

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2.2 PRODUCT SPECIFICATION

D. Hanex Solid Surfaces MSDS

1. Chemical Product and Company Identification

Material Identification:

Hanex Solid Surfaces (Hanex is a registered trademark of Hanwha L&C Corp.)

Corporate Identification Manufacturer/Supplier:

Hanwha Living & Creative Corp.

Center1Bldg.7F, #26, Eulji-ro 5-gil, Jung-gu, Seoul, Korea

Tel: +82 27291591 Fax: +82 2 729 1447

Contact for Product Information or Emergency:

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Fax: +49 61965869 019

Email: info@hanwhasurfaces.eu

2. Composition and Information on Ingredients

<i>Component</i>	<i>Case #</i>	<i>% by Weight</i>
Poly-methyl Methacrylate	8011-14-7	>30
Alumina Trihydrate	21645-51-2	<70
Methyl Methacrylate (Degradation product)	80-62-6 <1	<1

Heated above 300° C, Hanex Solid Surfaces can release

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2.2 PRODUCT SPECIFICATION

3. Fire-fighting Measures and Explosion Hazard

- Flammable Properties:
 - Hanex Solid Surfaces can be combusted only with difficulty.
 - Hazardous gases/vapor produced in fire are carbon monoxide, methyl methacrylate, aldehydes
- Extinguishing Media
 - Water, Dry chemical, CO₂
- Fire-fighting Instructions
 - Keep personnel removed and upwind of fire
 - Wear self-contained breathing apparatus

4. Accidental Release Measures

- Safeguard (Personnel):
 - Note: Review FIRE-FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up
 - Use appropriate PERSONAL PROTECTIVE during clean up
- Spill Clean Up:
 - Recover undamaged and minimally contaminated material for reuse and reclamation

5. Handling and Storage

- Handling (Personnel):
 - Avoid breathing dust
 - Avoid breathing fumes generated during sawing, routing or drilling
- Handling (Physical Aspects): - Avoid dust generation
- Storage:
 - Store in a cool place

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2.2 PRODUCT SPECIFICATION

6. Exposure Controls and Personal Protection

- Engineering Controls (Ventilation):
 - Use ventilation that is adequate to keep employee exposure to air borne concentration below exposure limits
- Personal Protection
 - Protective equipment: EYE/FACE PROTECTION
Wear safety glasses during operations such as sawing, sanding, drilling or routing

7. Toxicological Information

- Skin/Eye Irritant:
 - Polymethyl Methacrylate
 - i. The compound is not a skin or eye irritant and is not a skin sensitizer in animals. Single or repeated ingestion produced mild degenerative changes of liver and kidney
 - Methyl Methacrylate
 - i. The compound is a skin irritant and a moderate eye irritant
 - Alumina Trihydrateyleate
 - i. The compound is untested for skin and eye irritant
- Acute Toxicity (LC50):
 - i. POLYMETHYL METHACRYLATE: >2MG/1, 4hr LC50 (Inhalation/Rat)
 - ii. METHYL METHACRYLATE: 7093PPM/4hr LC50 (Inhalatio Rat)
- Acute Toxicity (LD50):
 - i. POLYMETHYL METHACRYLATE: >2000mg/kg, 4hr LD50 (Oral/Cat)
 - ii. METHYL METHACRYLATE: 7900PPM/4hr LD50 (Oral/Cat)

8. Ecological Information

- Biodegradable: No information is available
- Bioaccumulation: No information is available
- Aquatic Toxicity: No information is available

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SPECIFICATION

2.2 PRODUCT SPECIFICATION

9. Disposal Considerations

- Dispose in accordance with federal, state and local regulation
- The owner of the material is responsible for proper waste disposal

10. Other Information

- The data in this Material Safety Data Sheet (MSDS) relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process
- Responsibility for MSDS: Hanex Solid Surfaces products
- This information is based on technical information deemed reliable and is subject to revision as additional information is made available

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2.3 CHARACTERISTICS

A. Chemical and Stain Performance and Report

Hanex Solid Surfaces products are non-porous materials, NSF 51 certified for food preparation areas, that can be applied in many applications where sanitation is of utmost importance, such as kitchen worktops, hospitals, playrooms, schools, and many more. Hanex Solid Surfaces can be fabricated and installed in almost any application with inconspicuous seams, making Hanex Solid Surfaces, truly “solid” in surfacing materials. The design flexibility and usability of Hanex Solid Surfaces, such as integrated sinks and coved backsplashes, makes it the perfect combination of beauty, design, and practicality

<i>Classification</i>	<i>%</i>	<i>Gritty Cleaner or Water</i>	<i>Scotch Brite™ or Sand Paper</i>
Acetic Acid	5	✓	
Acetic Acid	10	✓	
Acetic Acid	90		✓
Acetic Acid	98		✓
Acetone		✓	
Aqua Regia			✓
Ammonia	10	✓	
Ammonium Hydroxide	5	✓	
Ammonium Hydroxide	28	✓	
Benzene		✓	
Calcium Thiocyanate	78	✓	
Chloric Hydroxide	20		✓
Chloroform	100		✓
Citric Acid	10	✓	
Dimethyl Formamide		✓	

Table (2.3-a)

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SPECIFICATION

2.3 CHARACTERISTICS

A Chemical and Stain Performance and Report

<i>Classification</i>	<i>%</i>	<i>Gritty Cleaner or Water</i>	<i>Scotch Brite™ or Sand Paper</i>
Ethanol	95	✓	
Ethyl Ether		✓	
Formic Acid	88		✓
Formaldehyde		✓	
Furfural			✓
Gasoline		✓	
Hydrochloric Acid	10	✓	
Hydrochloric Acid	20	✓	
Hydrochloric Acid	37	✓	
Isopropyl Alcohol		✓	
Kerosene	20	✓	
Methyl Alcohol	5	✓	
Methyl Ethyl Ketone		✓	
Mineral Oil		✓	
Nitric Acid	10		✓
Nitric Acid	30		✓
Nitric Acid	40		✓
Nitric Acid	70		✓
Phenol	40		✓
Phenol	85		✓
Phosphoric Acid	25		✓
Phosphoric Acid	85		✓
Silver Nitrate	10	✓	
Sodium Hydroxide	10	✓	
Sodium Hydroxide	25	✓	
Sodium Hydroxide	40	✓	

Table (2.3-b)

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2.3 CHARACTERISTICS

A. Chemical and Stain Performance and Report

<i>Classification</i>	<i>%</i>	<i>Gritty Cleaner or Water</i>	<i>Scotch Brite™ or Sand Paper</i>
Sodium Hypochlorite		✓	
Sodium Sulphate		✓	
Sulphuric Acid		✓	
Sulphuric Acid		✓	
Sulphuric Acid			✓
Sulphuric Acid			✓
Toluene			✓
Xylene		✓	
Zinc Chloride		✓	

Table (2.3-c)

SUPPLEMENTARY NOTES:

- For exposures to chemicals other than above, it is recommended to test on a sample piece of Hanex Solid Surfaces to confirm suitability for application.
- Some chemical reagents may damage the surface more seriously and will require expert repair or replacement.
- Common domestic residues, such as the examples listed below, can be removed with water and household cleaners:

Alcohol	Cigarette stain	Cooking oil	Curry powder
Hair dyes	Lipsticks	Mustard	Pencil lead
Shoe polish	Sugar	Tomato sauce	Wine
Ink	Coffee	Crayon	Make-up
Juices	Lotions	Nail polish	Salt
Soy sauce	Tea	Vinegar	Food dyes

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2.4 APPLICATION

Hanex Solid Surfaces is an ideal hygienic material for kitchens and baths due to its resistance to heat, moisture, pollutants, bacteria and other harmful agents. With a wide selection of colors and design applications, Hanex Solid Surfaces can transform any space into a beautiful environment. The unlimited design exhibility of Hanex Solid Surfaces makes it a perfect material to use in commercial applications. Many commercial builders are using solid surfaces in hospitals, restaurants, hotels, schools, banks and other areas because of all the advantages solid surface has to offer.

Residential

Worktops, wall coverings, vanities, aprons, window sills, thresholds, shelves, replaces, bar tops...

Commercial

Table tops, signs, name plates, countertops, wall coverings, bar tops, window sills, thresholds, furniture, partitions, vanities, shelves...

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3.1 SHEETS

A. Handling Hanex Solid Surfaces Sheets

Hanex Solid Surfaces is committed in doing everything possible to provide the highest quality materials. There are many protocols to help ensure Hanex Solid Surfaces shipments arrive from your distributor's warehouse in good condition. The information below will outline some key points in receiving and handling Hanex Solid Surfaces products. In addition, it is the responsibility of the receiver to take all necessary precautions to maintain the integrity of Hanex Solid Surfaces products while handling, storing, fabricating, and installing.

Hanex Solid Surfaces sheets are usually transported from the distribution warehouses on pallets. Even though these pallets are specially designed and created to hold the weight of the materials, it is very important to take necessary precautions.

The sheets should be unloaded from the truck with the appropriate lifting devices capable of handling the following dimensions safely.

<i>Hanex Solid Surface Sheet Size</i>	<i>Width (mm)</i>	<i>Length (mm)</i>	<i>Weight (kg)</i>
12	760	3680	59,4
6	760	2490	20

Table (3.1-a)

Note: Depending on the number of sheets that are on the pallet, the weight will differ. Please refer to Chapter 2.2-A for details. Remember to include the weight of the pallet.

HANDLING AND STORAGE

3.1 SHEETS

A. Handling Hanex Solid Surfaces Sheets

When unloading or handling sheets using forklifts, it is recommended to handle one pallet at a time. Please check with the lifting equipment manufacturers for more information. If you are lifting multiple pallets, it is very important to check the weight limit of your equipment and to take caution not to warp the materials with too much weight. Remember, the forklift should have a minimum of 6' forks and the pallets should be handled horizontally to provide full support.

Note: For your safety and the safety of others:

- 1. Use all safety protocols and equipment*
- 2. Always keep safe distance when handling/lifting slab*
- 3. Use common sense and follow all guidelines*

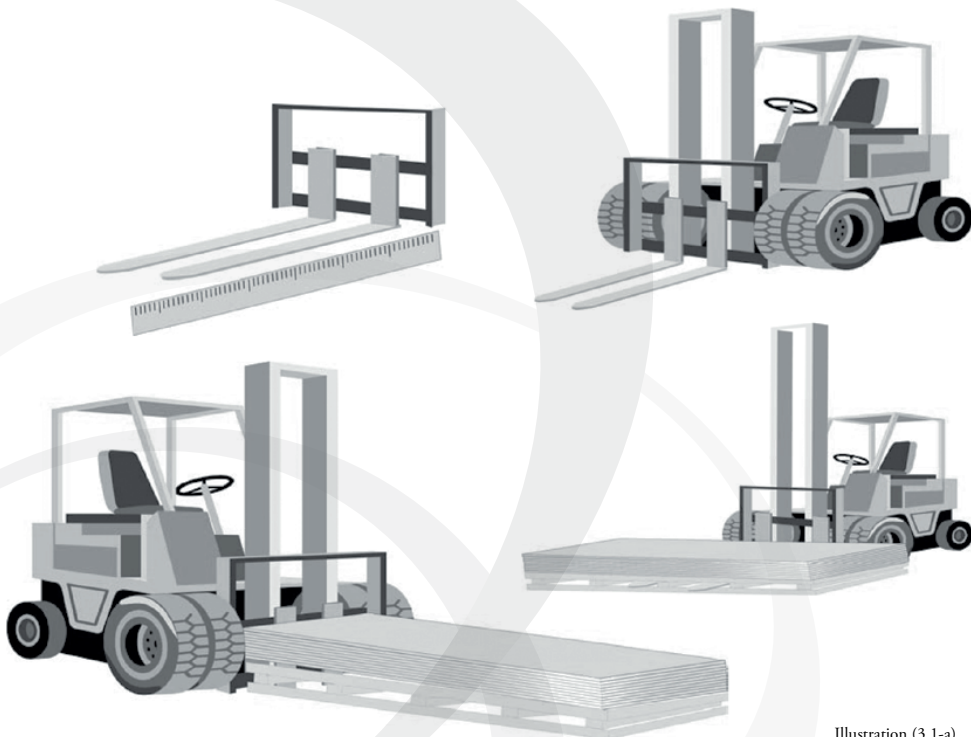


Illustration (3.1-a)

3.1 SHEETS

A. Handling Hanex Solid Surfaces Sheets

If lifting equipment is not available, individual Hanex Solid Surfaces Sheets can be handled manually. In order to keep the integrity of the material and for your safety and the safety of others, it is important to follow the specific procedures listed below:

1. Always handle one sheet at a time
2. Sheets should be handled on its side and never flat
3. Safety gloves, shoes, and proper back support is required
4. Never try to carry an entire sheet on your own

Please see Illustration (3.1-b) for proper handling of the materials



Tips

1. For your safety and the safety of others, always follow safety guidelines in addition to the specific procedures listed above
2. Depending on the surrounding temperature and the temperature of the materials, special care should be taken when the temperature is below 4°C
The material can become brittle and get damaged



Illustration (3.1-b)

HANDLING AND STORAGE

3.1 SHEETS

B. Storing Hanex Solid Surfaces Sheets

Hanex Solid Surfaces sheets should be stored inside, away from outside weather conditions, on a storage system to provide full support to the entire length and width of the material so that it is perfectly leveled. This must be done in order to prevent any warping and damage to the materials when stored.



Tips

1. The sheets can be stored on:
 - Flat evenly supported racking systems or floors (use pallets)
 - A-frames (base of the sheets need to be fully supported)
2. Store sheets for easy access and verification of color identification and lot numbers
3. Avoid extreme weather / temperature conditions. Optimum storage temperatures are $-10,56^{\circ}\text{C} \sim -1,67^{\circ}\text{C}$
4. Do not stack pallets over 5 pallets (20 sheets per pallet)

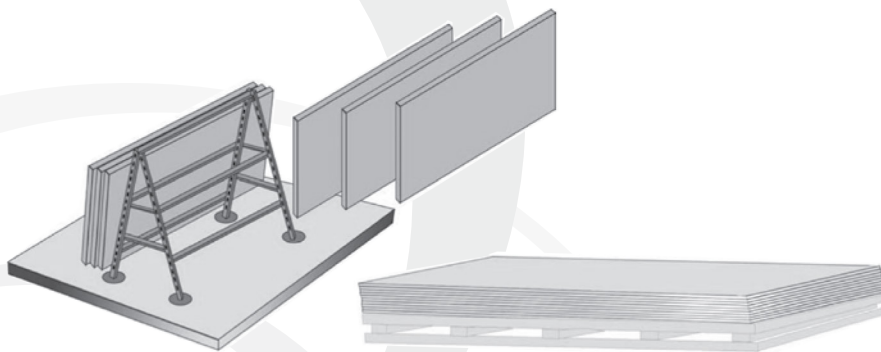


Illustration (3.1-c)

3.2 FABRICATED PRODUCTS

A. Transporting a Fabricated Countertop

It's very important to take every precautionary measure when handling and transporting a fabricated worktop / piece. Special attention should be taken when packaging, loading, transporting, and unloading the top. Remember, improper handling will result in damage to the top, which can cost hundreds to thousands of dollars to fix. Another cost that will be incurred is the time to either fix or replace damaged materials.



Tips

1. Never lay the pieces flat
2. Never transport pieces flat
3. Never carry pieces flat
4. Place support bars or some kind of support boards for sheets with cutouts
5. Always use A-frame or other devices to transport the pieces on a vertical or on a slight lean
6. Do not drop or drag any pieces
7. Secure all pieces when transporting

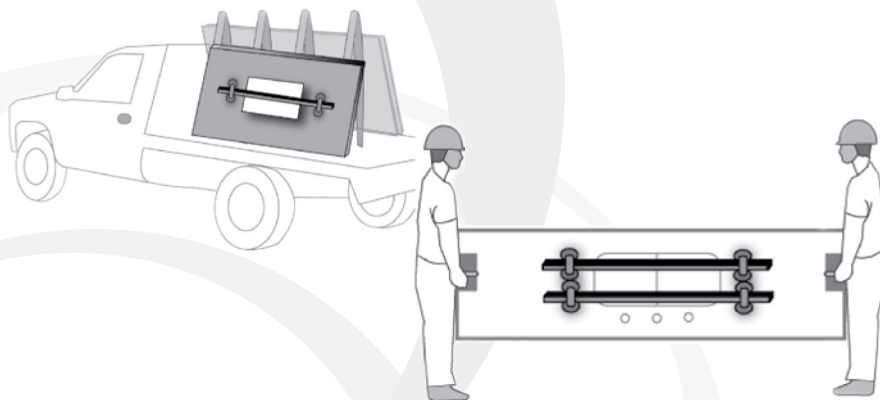


Illustration (3.3-b)

HANDLING AND STORAGE

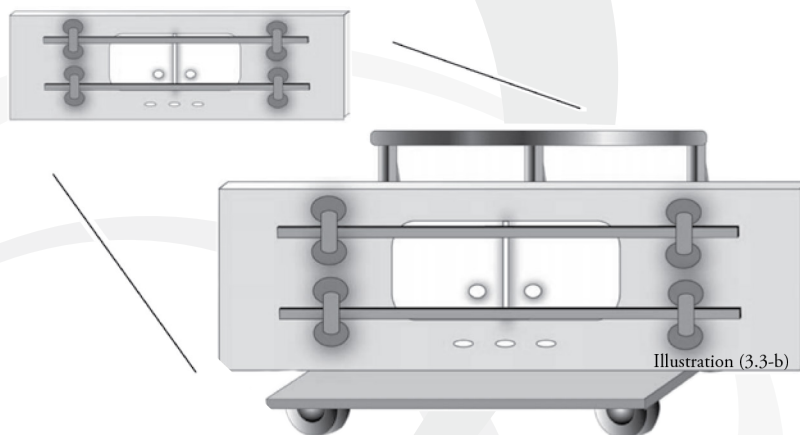
3.2 FABRICATED PRODUCTS

B. Handling Fabricated Top

When handling a fabricated top for installation, it should be done cautiously. Depending on the weight and size, it can be difficult. However, with the right equipment and knowledge, you will be able to complete any job professionally and in a timely manner.

Similar to Section (3.2-A):

1. Never lay the pieces flat
2. Never transport pieces flat
3. Never carry pieces flat
4. Place support bars or some kind of support boards for sheets with cutouts
5. It is recommended to use A-frame or other devices to transport the pieces in a vertical or on a slight lean
6. Do not drop or drag any pieces
7. Please see Chapter 17 for more information on installation instructions



QUALITY CONTROL INSPECTION

4.1 QUALITY CONTROL INSPECTION

Hanex Solid Surfaces is committed to doing everything possible in order to provide the highest quality of materials. There are many protocols to help ensure Hanex Solid Surfaces shipments arrive from your distributor warehouse in good condition to ensure customer satisfaction. When receiving a Hanex Solid Surfaces shipment, it is the responsibility of the fabricators to conduct visual and other quality control inspections. For example, color match, defective materials, chips, scratches, and other problems should be taken into consideration.

Table (4.1-a) will provide some guidelines to help you when inspecting the slabs. If the material does not meet our product specifications when delivered, please contact your local Hanex Solid Surfaces distributor for further assistance.

Notes: After visual and other quality control inspections of the sheets have been completed, if you find any defect which will greatly increase your fabrication time and/or cannot work around it, please contact your Distributor for further instructions

Remember, Hanex Solid Surfaces stands behind its product and will gladly replace defective materials that do not meet our product specifications. However, Hanex Solid Surfaces will not be responsible or liable for any labor charges incurred for fabrication done on the defective materials, any loss of direct, incidental, or consequential damages as a result of being unable to use Hanex Solid Surfaces

QUALITY CONTROL INSPECTION

4.1 QUALITY CONTROL INSPECTION

Product Specification Guideline for Quality Control Inspection

Standards		
Dimensions	Length	3680 mm ± 5
	Width	760 mm ± 5
	Thickness	12 mm ± 5
Visual Inspection	Warping	Less than 1.6mm per 3000mm of material
	Foreign Particle	Less than 3 visible particles per sheet
	Color Match	Same Lot
	Bloch	Less than 3 visible particles per sheet
	White Spots	Less than 3 visible particles per sheet
	Discoloration	None
	Partical Distribution	Even Distribution
	Pit Holes	None
	Uneven Sanding	None
	Hairline Crack	None
	CRACK	None
	Concave	None

Table (4.1-a)

4.2 FABRICATED COUNTERTOPS / PIECES

Fabricated Hanex Solid Surfaces tops are usually picked up from the fabrication shop or they are delivered on a special delivery truck with the right equipment to handle Hanex Solid Surface tops. Information on transporting fabricated Hanex Solid Surfaces tops can be found in Section (3.2-A).

Although the fabricated pieces will go through rigorous inspections at the fabrication shop, before installation, you should check to see if all the pieces are in order and meet the standards. Inspection should include all the criteria set by your shop as well as but not limited to the the following check list.

- Unwrap all pieces and check for transportation damages
- Make sure that all pieces are present and counted for
- Make sure that all pieces correspond to the order
- Check for color, size, dimension, edge profile, thickness, and so on
- Inspect for imperfections and any other obvious defects
- Check to make sure the pieces are not excessively warped and unable to use
- Check to make sure it meets the specification guideline in Table (4.1-a)

Note: If there are any problems that cannot be fixed at the site, contact your shop for options. Most damages and flaws can be repaired with the right tools and knowledge. Please see Chapter 21 for more information

Remember having properly fabricated tops without defects will save time and headaches in the long run

TOOLS AND ACCESSORIES

5.1 FABRICATION WORKSHOP

A. Basic Heavy Machinery

Similar to any other surfacing fabrication workshops, the Hanex Solid Surfaces fabrication workshop should be designed to produce maximum output capacity. Depending on the size and forecast of the business, consideration of the heavy equipment should be carefully researched and implemented.

The following is the basic heavy machinery that can be used on Hanex Solid Surfaces:

Saw (Panel)	Panel Saws or sometimes called vertical saws, will cut full sheets of material with greater accuracy and precision. Depending on the equipment and pricing, panel saws can have many different options that can greatly increase your output capacity.
CNC Machine	Computer Numerically Controlled (CNC) Technology. The path of the machine is controlled by a digital pattern and can be used for many different tasks. Cutting, edge shaping, special design cutting, sawing, routing, and many more depending on the equipment.
Table Saw	Machine designed for cutting
Handling Equipment	Equipment to handle sheets and finished tops from start to finish.
Shaper or V-Groover	For edge buildups, backsplashes and other variety of uses
Air Compressor	For all the hydraulic equipment and tools

Table (5.1-a)

5.1 FABRICATION WORKSHOP

B. Basic Tools and Equipment

In addition to the heavy equipment, the fabrication workshop will require many other tools and equipment.

The following is a brief overview of the basic tools and equipment needed in the Hanex Solid Surfaces Fabrication Workshop. Remember, depending on your shop, you will have different needs.

Handling and Storage equipment	Fork lifts, roller conveyors, vacuum lifter, lifting boom, A-frame, sheet storage racks, A-frame carts, vacuum cups, work bench, racks for finished goods
Hand routers	Trim router, 3.8cm HP, 5cm HP, 8.8cm HP, plunge base router, router bits
Hand tools	Table saw, circular saw, beam saw, drop-cut saw, jig saw, orbital Sander, palm sander, random orbital sander, stationary belt sander, portable belt sander, drill
Glue, caulks & sealers	Various colored & transparent silicone (100%), caulk gun, seaming kit & applicator, denatured alcohol, hot glue gun, glue sticks
Clamps	Spring clamps, C-clamps, bar clamps, vacuum clamping system, PVC ring clamps, wood bar clamps
Misc.	Straight edges, templates, hole saw kit, carpenter's square, drywall square, spray bottles, aluminum papers, sand papers, bits and blades

Table (5.1-b)

TOOLS AND ACCESSORIES

5.1 FABRICATION WORKSHOP

B. Basic Tools and Equipment

Safety Equipment	Respiratory dust mask, ear plugs, safety glass, steel toe rubber boots, waterproof aprons, gloves, back supports, tie-down straps
Basic Shop Supplies	Tape measures, carpenters square, T-square, extension cords, air hoses and accessories, level, 4m straight edge, wax pencils, caulk gun, rags, acetone, razor blade, propane torch & tips, steel wool, masking tape, blue tape, shim kit, template material
Misc.	Cutout templates, hole saw kit, drywall square, spray bottles, aluminum tape, sand papers, bits and blades

Table (5.1-b)

Note: The tools mentioned above, in Table (5.1-b), are a condensed version of the tools and equipment found in fabrication workshops. Please discuss with your tool suppliers for additional tools and equipment needed for your workshop

Remember, every workshop is different and has its own advantages and disadvantages. The tools listed in this manual are for your convenience. It is important to undertake necessary tests and precautions to make sure the tools are suitable for your use and operations

5.2 TEMPLATE TECHNICIAN

Before any fabrication or installation occurs, making accurate templates are a vital part of the whole process. Improper templates can and will cause problems, wasting valuable time and money, not to mention the reputation of everyone involved in the process. Remember, accurate templating is the first step to professional fabrication, expert installation, and customer satisfaction.

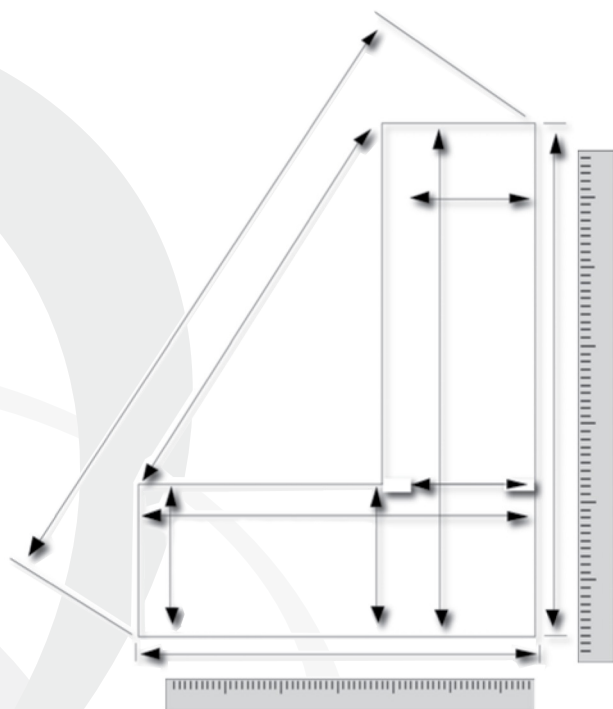
There are various methods to a solving a template job. It is up to you, as the Template Technician and the fabrication plant to agree on which method is best suited for you and for the job.

Note: Sometimes, a specific template method will be the only option due to special circumstances

A. Measurement Template Method

Tools:

- Tape measure
- Pen and paper
- Straight edges
- Level 60cm / 120cm / 180cm
- Squares
- Sample decorative edges
- Sample corner profiles
- Checklist
- Customer sign off sheet



TOOLS AND ACCESSORIES

5.2 TEMPLATE TECHNICAL

B. Luan Strip Template Method

Tools:

- Adequate number of Luan Strips
 - Better to have leftover
 - Usually 3mm thick, 63mm wide, and 2.4m long.
Please check with the Fabrication Plant for preference.
- Utility knife
- Heavy duty scissor or shears
- Hot glue gun
- Glue sticks
- Cardboards
- Magic markers
- Tape measure
- Pen and paper
- Straight edges
- Level 60cm / 120cm / 180cm
- Squares
- Sample decorative edges
- Sample corner profiles
- Plastic corner templates
 - To trace different corners on the template
- Checklist
- Customer sign off sheet

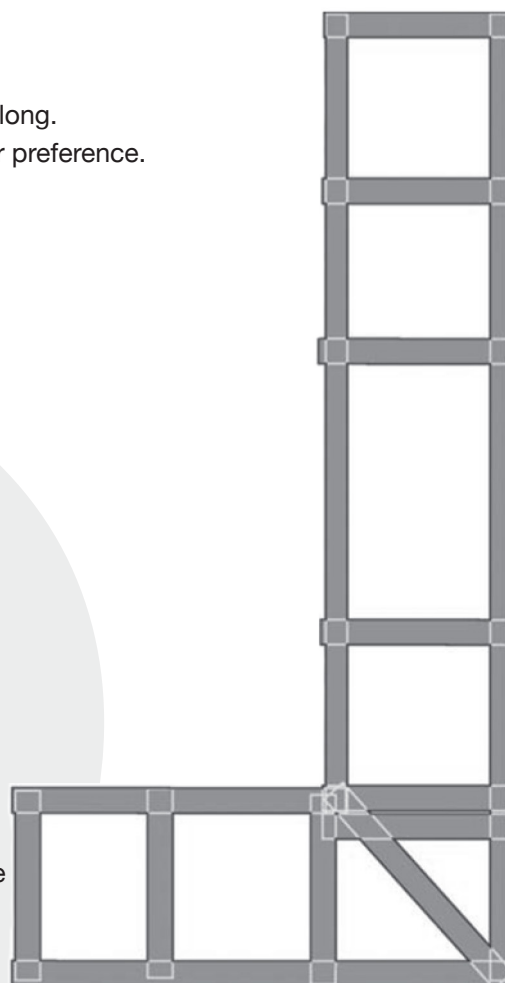


Illustration (5.2-b)

5.2 TEMPLATE TECHNICAL

C. Cardboard and other Template method

Tools:

- An adequate number of cardboard or other template materials
 - Better to have leftover
 - Usually the size is to fit the cabinets with overhang
Please check with the fabrication plant for preference
- Utility knife
- Heavy duty scissor or shears (depending on the template material)
- Hot glue gun
- Glue sticks
- Magic markers
- Tape measure
- Pen and paper
- Straight edges
- Level
- Squares
- Sample decorative edges
- Sample corner profiles
- Plastic corner templates
 - To trace different corners on the template
- Checklist
- Customer sign off sheet

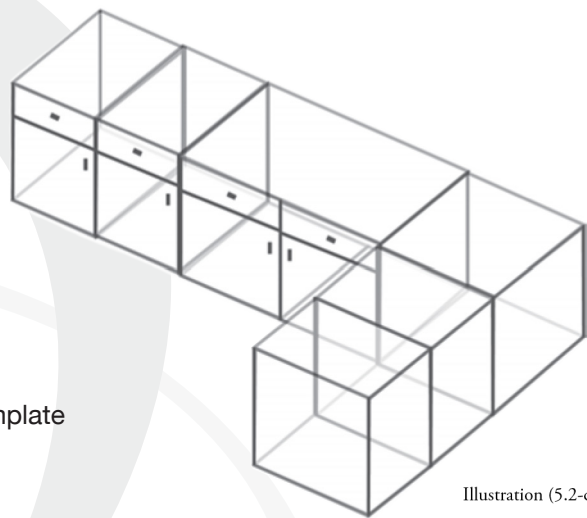


Illustration (5.2-c)

TOOLS AND ACCESSORIES

5.2 TEMPLATE TECHNICIAN

D. Electronic Template Method

With advanced technology being used in some of the Hanex Solid Surfaces fabrication shops, the electronic template method integrates templating and fabrication to greater precision, accuracy, and proficiency.

There are many different electronic templating systems in the market. In addition, some of the equipment and software have come down in price and become more user friendly. In most cases, both the template technician and the fabrication shop have to be on the same platform, in order to be able to integrate templates into the fabrication equipment.

Tools:

- Every system is different, please contact your system provider along with your shop to discuss necessary tools and equipment needed

Note: Make sure you are well trained and proficient on all of the equipment and software before going to the job site

It is advisable to take along other template methods, in case of an equipment failure

5.3 INSTALLATION TECHNICIAN

A. Basic Equipment

As an installation technician of our Hanex Solid Surface product, the following tools will be required. Remember, having the right tools for the job will save time and provide professional results.

Tools:

- Handling Equipment
 - Lifting device
 - A-frame cart or other type of equipment to carry the the top from the truck to the jobsite
- Safety equipment
 - Protective gloves
 - Proper safety shoes
 - Safety glasses and dust mask (when cutting materials)
 - Ear plugs
 - Back support
- Straight edges - Various sizes
- Level
 - Various sizes
- Sander/Polisher and Polishing Pads
 - Series of sandpaper for grinding and finishing
- Silicone
 - Variety of colors to match the top, and other areas
 - 100% silicone

TOOLS AND ACCESSORIES

5.3 INSTALLATION TECHNICIAN

A. Basic Equipment

Tools:

- Circular Saw
 - With triple-chip blades of tungsten carbide
 - In case of special cut on cabinets or other woodworks and alterations
- BasicTools - Hammers
 - Tape measure
 - Builder's square
 - Farmer's square
 - Jig saw
 - Basic necessary tools in the well-organized tool box
- Adhesive Kit
 - Hanex Solid Surfaces Adhesive Kit
 - Seaming gun
 - Remember, the seam kits will be colored matched and ready to use
 - Seaming tools
- Drill
- Shimming materials
 - To align the top for seaming (not to level cabinets)
- Vacuum
- Masking tape
- Razor blades
- Special anchoring bolts
 - For installing sinks and other appliance
- Denatured alcohol
- Various clamps
- Hot glue gun
 - Glue sticks

6.1 SILICONE

A. Types and Application

There are many different types of silicones and similar products in the market. Please verify with the individual manufacturer to make sure that it is compatible with solid surface use. Many of the caulk-sealant products in the market have different additives that are designed to specific uses. To be safe, it is recommended to use 100% silicone at all times.

When fabricating and installing Hanex Solid Surfaces, there are many different applications where silicone will be used. Please read through this manual for the specific guidelines of each application.

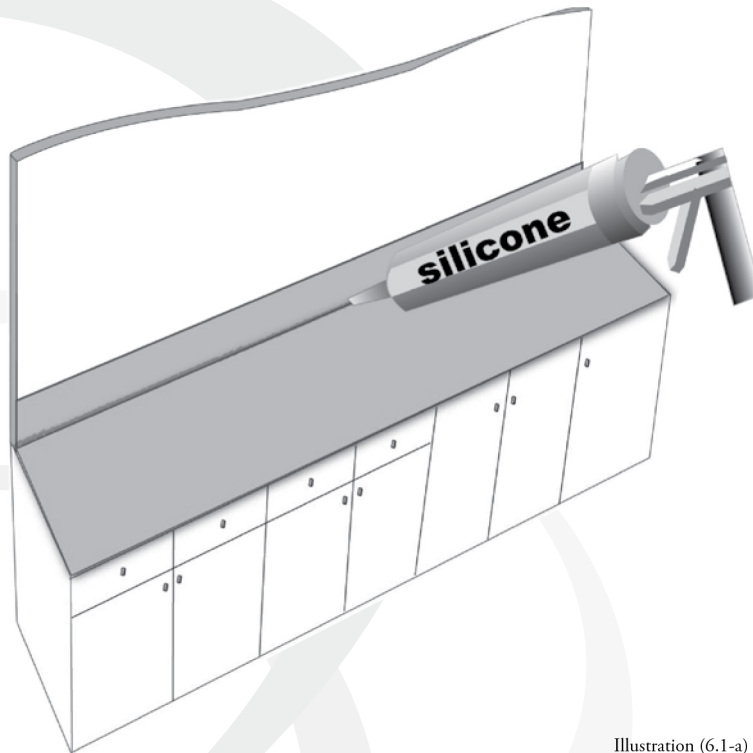


Illustration (6.1-a)

6.1 SILICONE

A. Types and Application

Using Silicone:

1. Clean the surface with denatured alcohol
2. Apply dabs of silicone to use as an adhesive
 - Depending on the application proximity of each application will differ
3. Apply dabs of hot glue
 - This is to hold pieces in place while the silicone dries
 - Apply the hot glue in between the dabs of silicone
4. Set the pieces in place and push it tightly
 - Hold it in place until hot glue dries
5. To use the silicone as a sealant, apply bead of silicone in the corner between the two pieces
6. To have a clean silicone caulking:
 - Spray the corner bead of silicone with denatured alcohol
 - Make sure the bead of silicone touches both the pieces
 - Using either laminate chip or other material, wipe of the excess silicone
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy

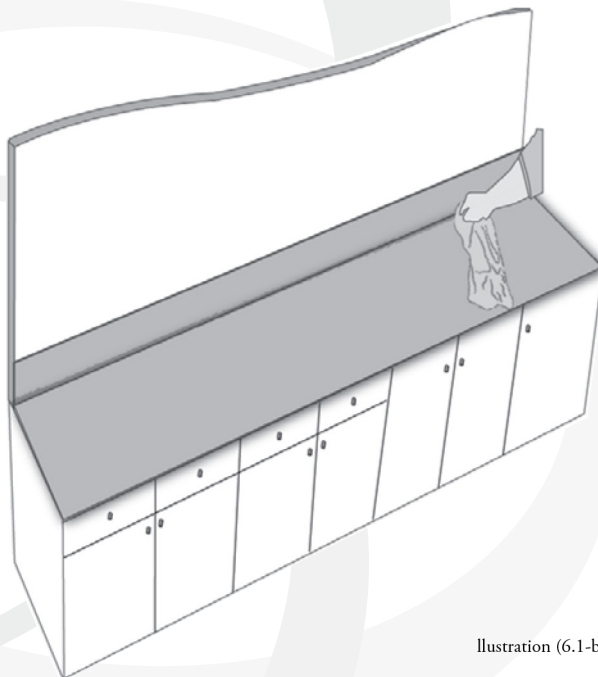


Illustration (6.1-b)

6.2 HANEX SOLID SURFACES ADHESIVE

A. Types and Application

There are many companies that specialize in manufacturing solid surface adhesive products. These companies have a comprehensive line of colors and selections that compliment the Hanex Solid Surfaces product line. However, it is important to note that there are specific adhesive manufacturers who have the authority to brand a special line of adhesives color-matched and manufactured exclusively for Hanex Solid Surfaces. These Hanex Solid Surfaces brand adhesives have been tested and guaranteed with a warranty against manufacture defects.

It is highly recommended to use Hanex Solid Surfaces brand adhesives purchased through your local Hanex Solid Surfaces distributors. Your local Hanex Solid Surfaces distributor will provide you with specialized service and support.

Note: The Hanex Solid Surfaces adhesives are being supplied by third party companies and they are not a liated with Hanwha L&C or with any of its a liates. Hanwha L&C will do its best to test and provide accurate information to best of its knowledge, however, will not be responsible for providing any kind of warranty or reimbursement for damages caused by the product. All questions and claims should be directed towards the manufacturer of the adhesive

6.2 HANEX SOLID SURFACES ADHESIVE

B. Product Description

Hanex Solid Surfaces methyl methacrylate adhesive (MMA) is a specially formulated 10:1 ratio decorative solid surface adhesive. Hanex Solid Surfaces adhesive is translucent, U.V. stable, non-yellowing and readily accepts pigments for color matching applications. It offers excellent adhesion to all types of solid surface products, including dense cast polyester, acrylic, and formulations that include both acrylic and polyester blends. Hanex Solid Surfaces adhesive has a working time of 8–12 minutes and products seamed with Hanex Solid Surfaces adhesive may be handled 55 minutes after application. Fabrication of bonded parts (sanding, finishing, routing) may take place within one hour after assembly of parts. Hanex Solid Surfaces adhesive has excellent performance in U.V. light, impact resistance, wear resistance, scuffing, staining, and in resisting water penetration, including boiling water.

Benefits:

- 100% Reactive
- Translucent
- Color Matched
- Fast Room Temperature Curing
- U.V. Stable
- Sandable
- Phthalate Free
- Non-Yellowing
- Impact Resistant
- Wear Resistant
- Stain Resistant
- Water Penetration Resistant

6.2 HANEX SOLID SURFACES ADHESIVE

C. Physical Properties

Physical Properties—Uncured

	Part A Adhesive	Part B Activator
Viscosity -Brookfield RVF (Spindle 6; 20 rpm)	25–60,000 cps	5–15,000 cps
Color	Clear	Off-White
Weight (pounds per gallon)	9.1	9.4
Mix Ratio by Volume	10	1
Flash Point	51°F (10.5°C)	
Mixed Viscosity 2	0–55,000 cps	
Mix Density	9.13 lb./gal. (1.10 g/cc)	
Open Working Time (Minutes)	8–12 @ 72°F (22°C)	
Fixture Time (Minutes)	15–20 @ 72°F (22°C)	
Functional Cure (Minutes)	50–60 @ 72°F (22°C)	
Full Cure	12 hours @ 72°F (22°C)	
Coverage	480" @ 0.125	

Physical Properties—Cured

	Test Method	Part A	Part B
Tensile Strength	ASTM M-638	3,850 PSI	3,400 PSI
Tensile Elongation		6.9%	
Flexural Strength	ASTM D-790	5,800 PSI	5,950 PSI
Impact Strength	NEMA LD3	4.6 ft., lb.	
Water Absorption	ASTM D-570	0.26%	
Water Resistance	ICPA SS-1	250 cycles	
Hardness—Barcol	ASTM-2583	34/42	

*Test performed by an independent laboratory.

6.2 HANEX SOLID SURFACES ADHESIVE

D. Handling and Application

Hanex Solid Surfaces adhesive (Part A) is flammable, containing methacrylate esters. Keep containers closed after use. Avoid eye and skin contact. Wash with soap and water after skin contact. In case of eye contact, flush with water for 15 minutes and get immediate medical attention. Harmful if swallowed. Keep out of the reach of children. Keep away from heat, sparks, and open flames. NOTE: Because of the rapid curing features of this product, large amounts of heat are generated when large masses of materials are mixed at one time (bond joints and thicknesses greater than 0.125 inches (3 mm) should be avoided). The heat generated by the exotherm resulting from the mixing of large masses of adhesive can result in the release of entrapped air and volatile components as evidenced by gassing. To prevent this, use only enough material as needed for use within the working time for the product and confine the gap thicknesses to no more than 0.125 inches (3 mm).

Dispensing Adhesive:

Hanex Solid Surfaces adhesive is generally applied using pre-measured cartridges or A-Paks. Hand-held guns (manual or pneumatic) are generally used with the pre-measured cartridges. To assure maximum bond strength, clean surfaces must be matted within the specific open time.

Use sufficient material to ensure that 100% of the joints fill when parts are matted and clamped. Avoid over tightening of the seam. Use spring-activated clamps. All adhesive applications, part positioning, and fixtures must occur before the assembly time of the mix has expired. After the indicated assembly time, parts must remain undisturbed until the fixture cure is reached. Avoid contact with copper, brass, or copper alloys in all fittings, pumps, etc. Seals and gaskets should be made of Teflon, Teflon coated PVC foam or polyethylene. Avoid the use of Vitron, BUNA-N, Neoprene or other elastomers for seals or gaskets. Cleanup is best performed before the adhesive has cured. If the adhesive is already cured, careful scraping, followed by a solvent wipe may be the most effective method of cleanup. Application of the adhesive at temperatures between 15°C and 32°C will ensure proper cure speeds. Temperatures below 18°C will (slow cure) dramatically reduce the cure rate; above 32°C will speed cure.

6.2 HANEX SOLID SURFACES ADHESIVE

E. Storage and Shelf Life

All Hanex Solid Surfaces adhesives should be stored in a cool, dry place when not used for a long period of time. Hanex Solid Surfaces Adhesive has a shelf life of 12 months or more when stored at room temperature 22°C in their original unopened containers. The shelf life may be extended by keeping it in correct temperature.

The above information is supplied by the manufacturer of Hanex Solid Surfaces adhesive and all information is provided to be the best of the manufacturer's knowledge. The manufacturer makes no representations or warranties of any kind concerning this data or information on this data sheet. Due to conditions outside the control of the manufacturer, the manufacturer does not accept liability for results obtained. Any questions concerning this information or product use should be directed to the manufacturer.



Illustration (6.2-a)

ADHESIVES

6.2 HANEX SOLID SURFACES ADHESIVE

F. Helpful Hints

Always store the adhesive in an upright position. The adhesive should be stored in the cooler areas of the shop, with temperatures 10°C to 20°C. Storing the adhesive in a separate refrigerator (from lunches, snacks, drinks), will prolong the life of the adhesive. Do not freeze the adhesive.

When using a fresh, unopened tube, squirt a little material out (with no tip attached) to ensure that you have both adhesive and catalyst flow. Many fabricators squirt this out into their trash or onto a piece of paper. Then, attach the tip, squirt a little bit of adhesive out into the trash and you are ready to begin seaming or build-ups.

After you are done using the adhesive, many fabricators leave the tip on the tube. The material will set up in the mix tip, but will not set up in the cartridge or in the feed chamber. You can re-store the tube with the tip attached in the upright position. Then, when you need to reuse the tube of adhesive, simply take off the set up tip, and squirt a little out to make sure you have adhesive and catalyst flow. Attach a clean, new tip onto the cartridge, squirt a little adhesive out of the tip into the trash and you are ready to begin seaming.

7.1 SITE INSPECTION

Before any templating, fabrication, or installation, it's important to have all the information about the job site verified and/or prepared to make sure any unexpected problems do not occur.

Initial site inspection should take place at the time of templating, however, it's important to make sure to check and recheck for any changes before installation begins.

Overview

1. Accessibility to the installation site is very important and should be checked for any obstacles to minimize problems during installation.
 - Car park
 - Car park to the front door
 - Check for distance and any obstacles
 - Entrance size
 - Ceiling height
 - Cabinet clearance
 - Millwork and upper cabinets must not interfere with installation

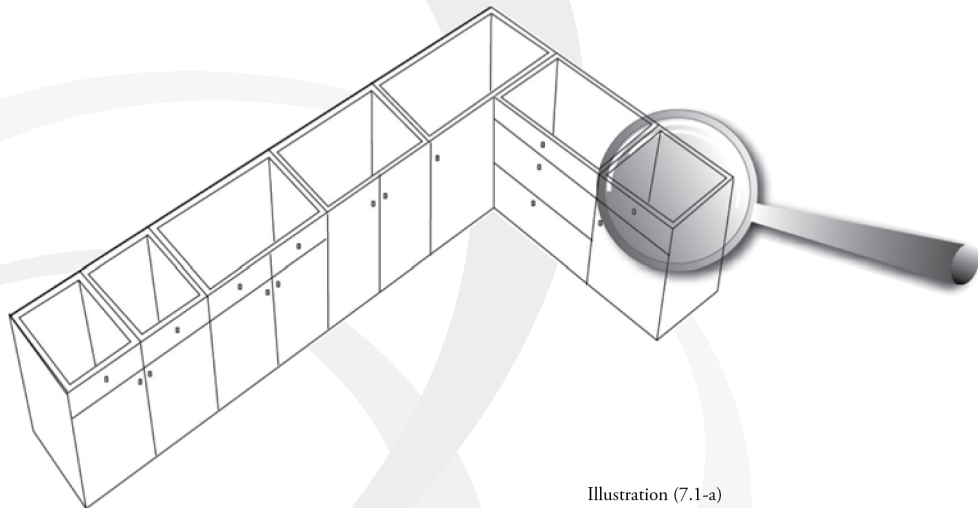


Illustration (7.1-a)

SITE PREPARATION

7.1 SITE INSPECTION

2. Cabinetry condition

- Check to see if the cabinets are installed on a true plane
- Leveled to within 3mm for every 3000mm
 - Section 7.2 for more information
- Stable and rigid

3. Surrounding areas of installation

- Surrounding areas to receive Hanex Solid Surfaces must be stable, rigid, and capable of handling the weight
- Surrounding areas should be clean and should not have any debris which might get in the way

4. Clear all debris

- Old cabinets
 - Make sure all debris, such as old glue, screws, and/or other obstacles which might cause damage to the top are not in the way
- New cabinets
 - Many new cabinets have staples, screws, brads, and such. Make sure to either remove them or make it flush with the cabinets

5. All cabinets, end panels, overhangs, window sills and other base structures to receive the top should be secured to the wall, floor, or other permanent fixture

- No movement should occur
- Remember, any movement will cause stress to the top, causing it to break

6. Electrical and plumbing positioning

7. Wall conditions

8. Adequate reinforcement for areas with cutouts

9. Adequate support

10. Availability of all taps, sinks, cooktops, and other appliances to be installed on the top

11. Cabinet doors and drawers should be installed to ensure that they do not interfere with any overhang or edge details

7.2 LEVELING

During site preparation, either at the time of templating or installing, one of the most important tasks is to make sure all the cabinets are leveled. Leveling the cabinets and clearing all debris from the cabinets will help prevent cracks and/or breaking of the top. If you are not sure, please check and recheck to make sure that all the cabinets are leveled.

Overview

1. Cabinets should be installed on a true (same) plane
2. Cabinets should be leveled to 3mm difference or less for every 3m of cabinetry
 - Up to 3mm difference can be corrected by shimming the cabinets
 - Anything more than 3mm difference cannot be corrected by shimming the cabinets
The cabinets should be reset

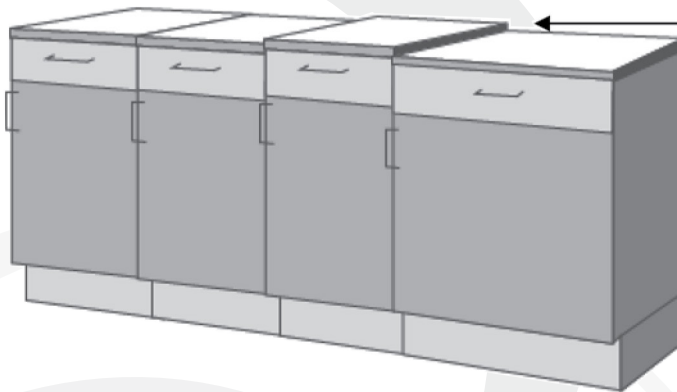


Illustration (7.2-a)

Note: Remember, if the cabinets are not leveled, there is a good chance of breaking the top. Any resetting of the cabinetry should be done by the contractor or cabinet installers. Do not take the risk of liability.

SITE PREPARATION

7.3 CHECKLIST

The following checklist is provided for your convenience and should not be taken as complete or sufficient for all applications. There might be other important information that needs to be added for your business or for the project.

- ☐ Accessibility
- ☐ Cabinet condition
- ☐ Surrounding areas
- ☐ Debris and obstacles
- ☐ Stability of the receiving area
- ☐ Electrical and plumbing position and condition
- ☐ Wall conditions
- ☐ Required reinforcements
- ☐ Adequate support
- ☐ Availability of cabinet doors and drawers
- ☐ Availability of all faucets, sinks, cooktops, appliances, and others which needs to be installed on the countertop
- ☐ Availability of the information from the fabricator
 - ☐ Edge style
 - ☐ Warranty
 - ☐ What to expect from beginning to end
 - ☐ Seam placement
 - ☐ Realistic expectation from the countertop on its performance and appearance
- ☐ Any other information which is required by your shop

Note: Please see Section 7.4 for Code of Conduct for being professional

7.4 CODE OF CONDUCT

Treating all customers with respect and courtesy at all times is the first step in showing professionalism of you and for everyone involved in the process. At Hanex Solid Surfaces and our family of distributors, fabricators, installers, template technicians, and everyone involved, we strive each day to provide the highest customer satisfaction through our quality standard products and services. Remember, as a member of the Hanex Solid Surfaces professional team, your actions will reflect on everyone.

- Scheduling
 - Be on time
 - Notify the customer of any changes prior to the scheduled appointment time
- Dress Code
 - Professional dress code is required
 - Personal hygiene
- Under the influence
 - Do not smoke
 - Do not be under the influence of drugs or alcohol
- Language
 - Do not use inappropriate language during service call
- Clean work surroundings
 - Keep all working areas clean at all time
 - Remember to clean up any debris and dust, during and after installation/
template is complete
 - Take necessary actions to keep debris and dust at minimum
- Do not take lunch breaks at the job site
- Noise
 - Do not play any listening devices (radio) during service call
 - Take necessary actions to keep other noise level at minimum
- Customer questions
 - Provide necessary information and address all concerns before leaving

MEASUREMENTS & TEMPLATES

8.1 MEASUREMENT TEMPLATE METHOD

Before any fabrication or installation occurs, making accurate templates are a vital part of the whole process. Improper templates can and will cause problems, wasting valuable time and money. Not to mention the reputations of everyone involved in the process. Remember, accurate templating is the first step to professional fabrication, expert installation, and customer satisfaction.

There are various methods to taking a template of a job. It is up to you as Template Technician and the fabrication workshop to agree on which method is best suited for you and your project.

Note: Sometimes, a specific template method will be the only option due to special circumstances

Getting templates through measurements sounds easy, however, this method can and usually causes problems. Because, it's very difficult to accurately measure all the dimensions of the tops, this template method is usually not recommended. Especially with different curvature of the walls and other obstacles.

*Note: Please check with your fabrication shop for correct template method to use in the field
Remember some fabrication workshops may not allow measurement template method*

MEASUREMENTS & TEMPLATES

8.1 MEASUREMENT TEMPLATE METHOD

Once all of the site preparation (Chapter 7) has been checked and completed, measurements should be taken accurately with precision and details.

Overview

- Measure all sides
- Measure the diagonal lengths
- Measure the mid points of the cutouts
- Measure the inside dimensions of the base cabinets where the cutout cutouts will be
- Measure the curvature of the walls
- Measure the clearance from the doors and drawers
 - To ensure that they do not interfere with overhangs and edge details
- Make sure to check with the fabrication plant for other important measurements

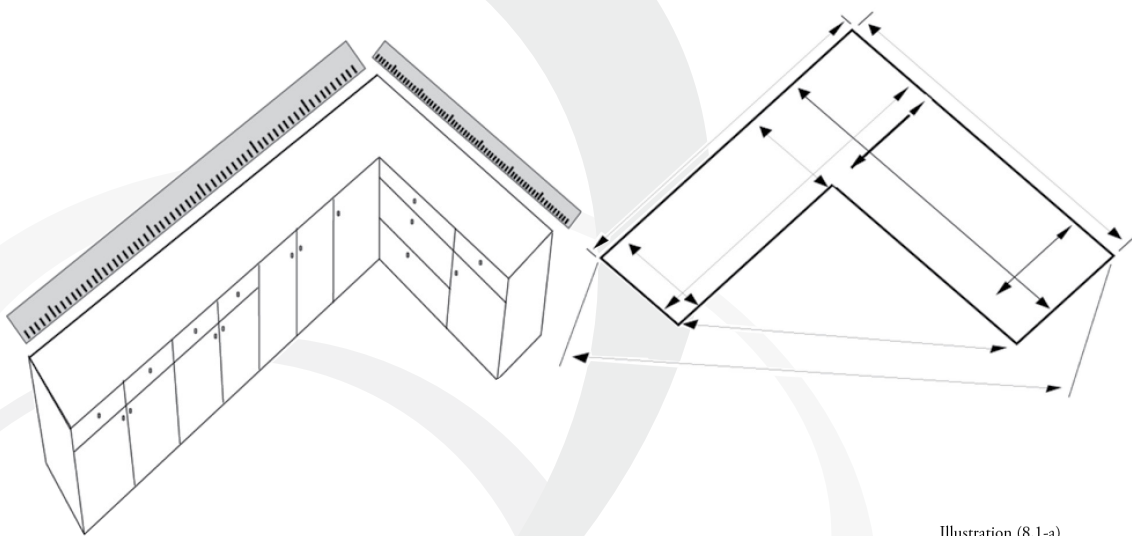


Illustration (8.1-a)

Note: Remember to have detailed drawings, showing where to place the seams, sinks, appliances, and other information

MEASUREMENTS & TEMPLATES

8.2 LUAN STRIP TEMPLATE METHOD

One of the most popular template methods being used, Luan Strip Template Method can be efficient and accurate. Please see Section (5.2b) for Required Tools and Section (7) for Site Preparation.

When working with Luan Strips, they are usually ripped to a specific width prior to arriving at the job site. The width of the strip will depend on the Template Technician and his or her method. However, they are usually ripped as (Overhang + Cabinet Frame = Luan Strip Width).

For Example:

- If you want 50mm overhang and the cabinet frame is 20mm then Luan Strips should be ripped to 70mm. - $(50\text{mm} + 20\text{mm} = 70\text{mm})$
- See Illustration (8.2-a) below for more details

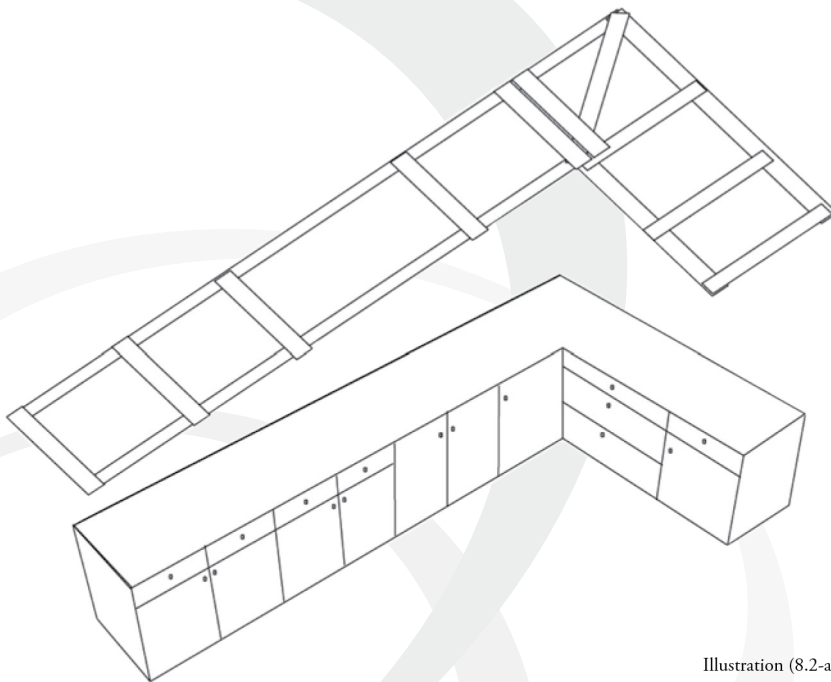


Illustration (8.2-a)

Note: Making the perfect template of the job will be the first step in creating and installing perfect countertop

8.2 LUAN STRIP TEMPLATE METHOD

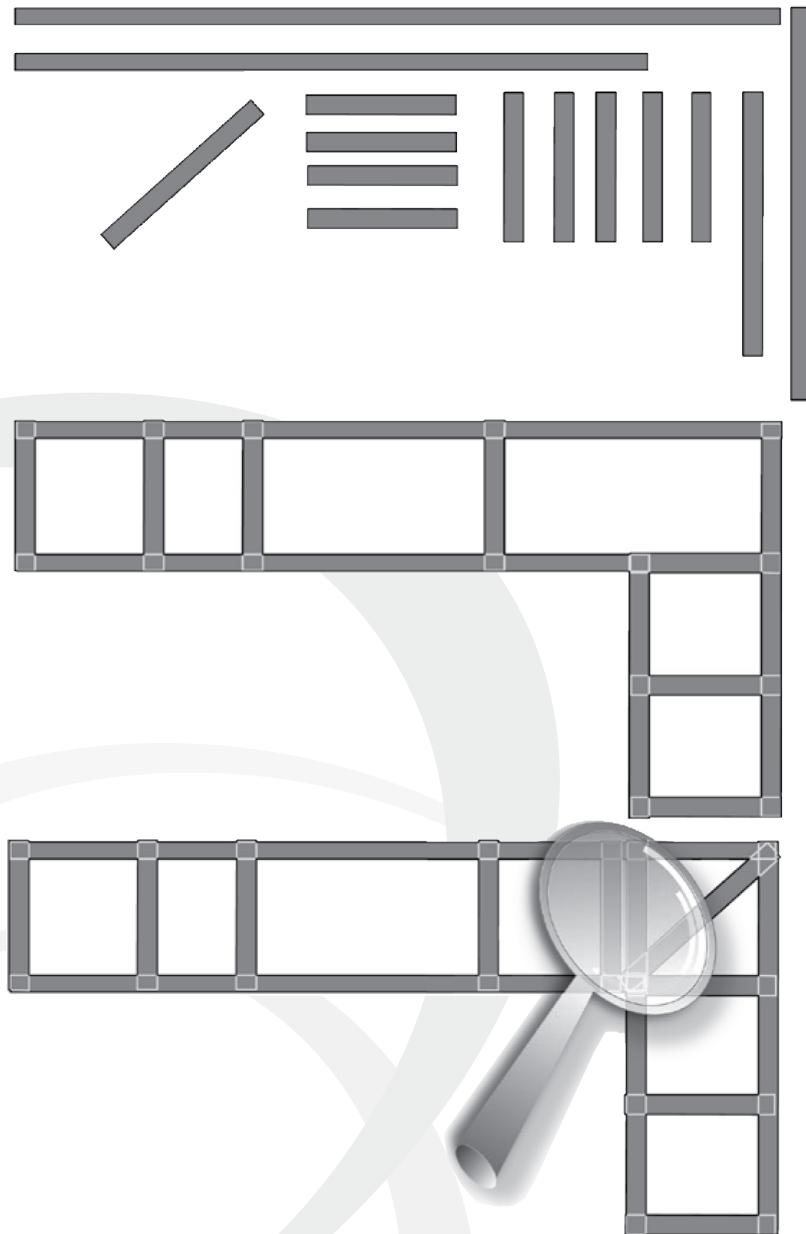


Illustration (8.2-b)

MEASUREMENTS & TEMPLATES

8.2 LUAN STRIP TEMPLATE METHOD

When all the preliminary work has been completed, you are now ready to begin making the templates.

OVERVIEW:

1. Layout luan strip to form frames of the worktop
2. Cut excess material to fit the frames of the cabinet
 - See Illustration (8.2-a) for details
3. Leave generally 3mm gap when using tile backsplash on the back of the worktop
Even though small, this gap will provide little room to move the pieces into place when installing the worktop
4. Determine, if any, the best location for the seam
5. Once all the luan strips are laid out, trimmed, and are satisfied with the placement of seams, mark the corners with magic marker to have an accurate point of reference when gluing the luan strips together
6. Apply ample amount of glue to the corners

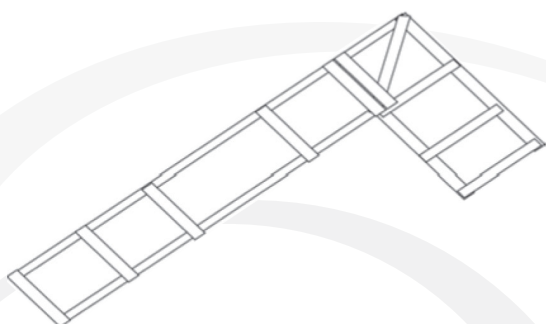


Illustration (8.2-c)

Note: Making physical templates is recommended, because the walls are rarely even. Remember Luan Templates should never be cut or broken. Once they are cut or broken, your templates will not be a true representation of the top

8.2 LUAN STRIP TEMPLATE METHOD

7. Once all the pieces are glued together and dried, mark the location for seam placement
8. At the point where the seam is located, glue two pieces of Luan Strips tightly together to represent a seam
 - See Illustration (8.2-b) for details
9. Remember the marking of the location of the seam on the template is for reference only
During fabrication, the seam placement might change for better results
10. Corners
 - Using the desired mini corner templates, mark corners and cut them off to show the customer how the corner will look and to make sure that during fabrication, the shop won't miss it
11. Edge Details
 - All finished edges should be marked and defined specifically with a name and sample drawing
12. Backsplash
 - Backsplashes should be marked and specified as to the height, placement, and polish locations
13. Cutouts
 - Even though sinks, taps, cooktops, and other appliances should be available for measurement and taken back to the fabrication plant, precise measurements and indications on the templates are very important
 - For example (sinks or cooktops):
 - Measure the inside dimensions of the Base Cabinet (side to side and front to back)
 - Mark on the template how big the opening is
 - To alert the workshop on how far back they should start the cutouts, measure and mark the front to back dimensions, front of the edge of the top to the inside opening of the cabinets, and so on
 - See Illustration (8.2-b) for details

MEASUREMENTS & TEMPLATES

8.2 LUAN STRIP TEMPLATE METHOD

14. Detailed Drawings

- In addition to the templates, detailed drawings of the kitchen and the layout are very important
- The drawings should include:
 - Overall layout of the kitchen
 - Where all the pieces are located
 - Location of all cutouts and holes
 - Any other crucial information should be labeled and identified on the drawing
 - The procedure differs depending on the company, so please check with your fabricator for details

15. Review and sign off from the customer (homeowner or the contractor).

- All the information should be reviewed with the customer.
 - Edge details
 - › Thickness
 - Corner details
 - Backsplash
 - Seam location and how it will look
 - Overhang
 - And any other information which might cause problems after installation
- After all the information has been reviewed and satisfied, customers should sign off on the template, drawing, or on a sign-off sheet

MEASUREMENTS & TEMPLATES

8.3 OTHER TEMPLATE METHOD

Cardboards or other materials can be used to make templates. Depending on the fabrication workshop, the materials and/or process will differ. Similar to any other template method, make sure all the preparations are completed. Please see Site Preparation (Section 7) for details.

Before arriving at the job site, template materials are usually pre-cut to size for standard cabinets. (Depending on the material being used, pre-cut size of the template material will vary). Remember to have the template materials cut to perfect rectangles, with all the corners being 90 degrees.

Place the template materials on the cabinets as illustrated below.

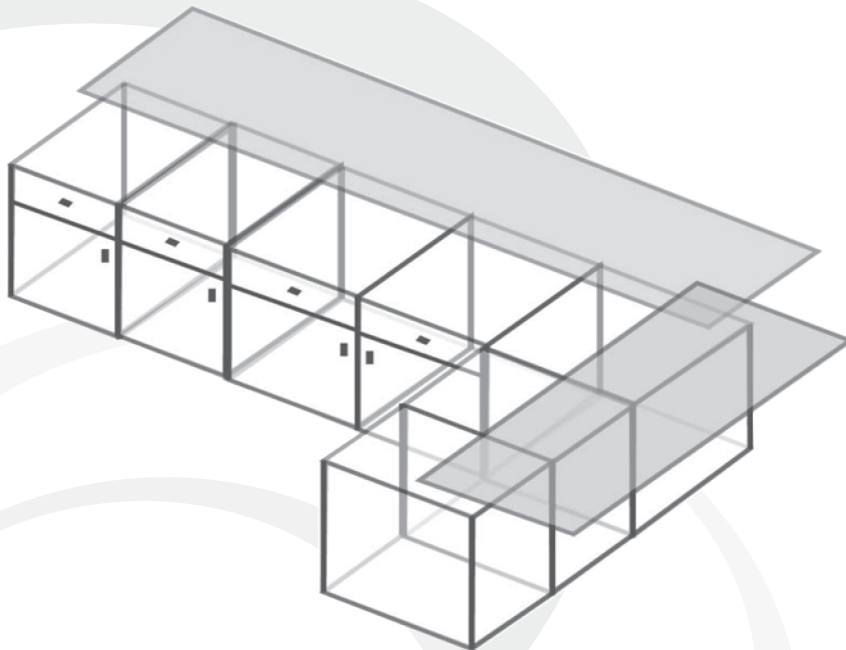


Illustration (8.3-a)

MEASUREMENTS & TEMPLATES

8.3 OTHER TEMPLATE METHOD

Depending on the materials being used, and on how you will be transporting the final template, you will either overlap or place the template materials side by side.

As a Template Technician, it is up to you to determine where the seam for this template will be located. After all the template materials are laid out, trace the front edge of the cabinets. From the trace, you can calculate the edge overhang. Remember, depending on the template material, you can even pre-cut the materials to reflect the edge overhang. However, this process is difficult, due to the curvature of the walls.

It is important to note once again that the seam placement for this template should be perfectly 90 degrees.

After preliminary templates are finished, you will have to include the details, similar to that of any other template method

- Corners
 - Using the desired mini-corner templates mark corners and cut them off to show the customer how the corner will look and to make sure that during fabrication, the plant won't miss it
- Edge Details
 - All finished edges should be marked and defined specifically with name and sample drawing
 - Remember, every fabrication plant has different identification methods, please check with your fabricator for details
- Backsplash
 - Backsplashes should be marked and specified as to the height, placement, and polish locations
 - Indicate type of backsplash

8.3 OTHER TEMPLATE METHOD

• Cutouts

- Even though sinks, taps, cooktops, and other appliances should be available for measurement and ready to take back to the fabrication plant, precise measurements and indications on the templates are very important
- For example (sinks or cooktops):
 - › Measure the inside dimensions of the base cabinet (side to side and front to back)
 - › Mark on the template on how big the opening is
 - › To alert the workshop on how far back they should start the cutouts, measure and mark the front to back dimensions, front of the edge of the top to the inside opening of the cabinets, and so on
 - › See Illustration (8.3-b) for details

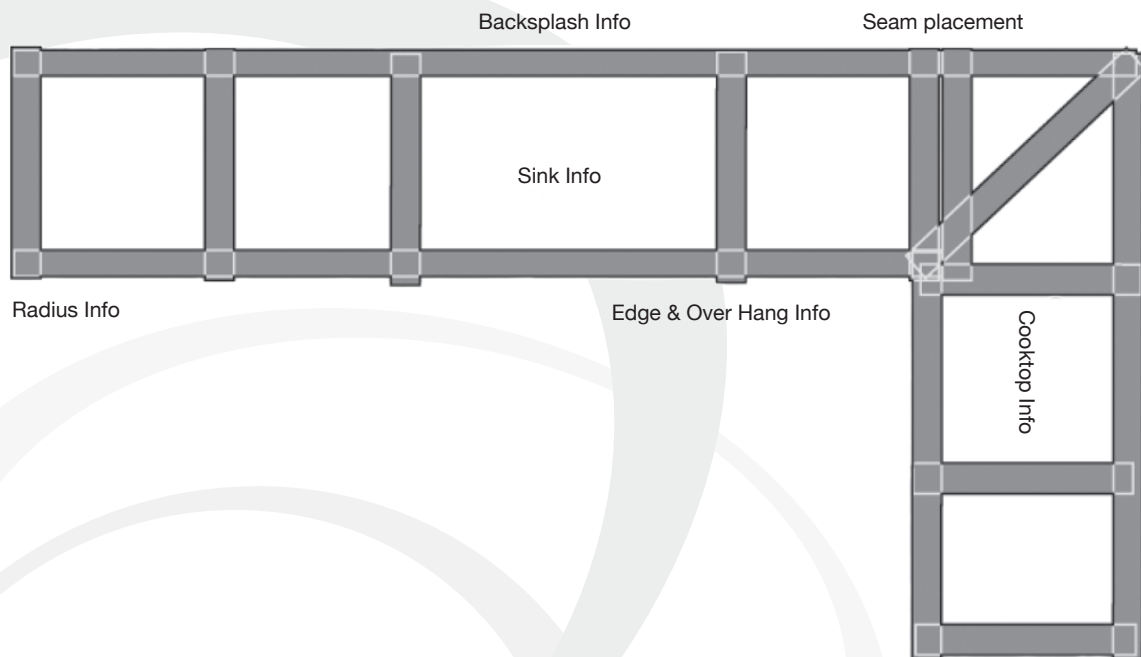


Illustration (8.3-b)

MEASUREMENTS & TEMPLATES

8.3 OTHER TEMPLATE METHOD

- Detailed Drawings
 - In addition to the templates, detailed drawings of the kitchen and the layout are important
 - The drawings should include:
 - › Overall layout of the kitchen
 - › Where all the pieces are located
 - › Location of all cutouts and holes
 - › Any other crucial information should be labeled and identified on the drawing
 - › The procedure differs depending on company, so please check with your fabricator for details
- Review and identification methods off from the customer (homeowner or the contractor)
 - All the information should be reviewed with the customer.
 - › Edge details
 - Thickness
 - › Corner details
 - › Backsplash
 - › Seam location and how it will look
 - › Overhang
 - › And any other information which might cause problems after installation
 - After all the information has been reviewed and satisfied, customers should sign off on the template, drawing, or on a sign-off sheet
- Preparing templates for transportation
 - Cutting or folding templates is not recommended
 - However, templates can be transported in different pieces, depending on the template materials
 - The templates should be separated at the seams

8.4 ELECTRONIC TEMPLATE METHOD

With many advances in technologies, there are different varieties of electronic template method which integrate templating and fabrication to greater precision, accuracy, and proficiency.

There are many different electronic templating systems in the market. In addition, some of the equipment and software have come down in price and became more user friendly. In most cases, both Template Technician and the fabrication shop have to be on the same platform, to be able to integrate templates into the fabrication equipment or make physical templates at the shop. Make sure to investigate different options before making the investment.

Basically, the electronic template method uses different equipment with corresponding software to make digital templates at the job site. Done correctly, electronic template method can be very accurate and proficient. However, due to the different equipment from different manufacturers, instructions on using electronic templates should be inquired with the template manufacturer.

Note: Make sure you are well trained and proficient on all of the equipment and software before going to the jobsite

It is advisable to take along other template methods, in case of an equipment failure

MEASUREMENTS & TEMPLATES

8.5 SEAM PLACEMENT

A. Planning

Careful planning of where to place the seam will save materials, time, and create a beautiful result in the finished product. In addition, there are do's and don'ts in seam placements. Remember, careful planning and correct seam placements are one of the integral parts of providing the customer with quality finished product which will last for years to come.

Overview:

- Try to get a maximum yield on the material. Remember, even though Hanex Solid Surfaces can be fabricated with inconspicuous seams, limiting seams will save time and create beautiful results
- Try to minimize the number of seams in the countertop
- Seams should not go through the following:
 - Cooktops
 - Sinks
 - Over the dishwashers
 - Through any cutouts for appliance

B. Positioning

In order to minimize the possibilities of cracking, there are a couple of rules which need to be followed when positioning the seam on the top. Remember, even though the templates and drawings of the job will be reviewed during fabrication to make sure everything is in order, as a template technician, it is very important to correctly position the seam to help ensure correct fabrication and installation. This will help to ensure a correct fit and flawless installation.

MEASUREMENTS & TEMPLATES

8.5 SEAM PLACEMENT

B. Positioning

All seams should be at least 80mm from all cutouts, such as sinks, cooktops and other appliances. In addition, seams should not be closer than 7cm together to prevent any failure.

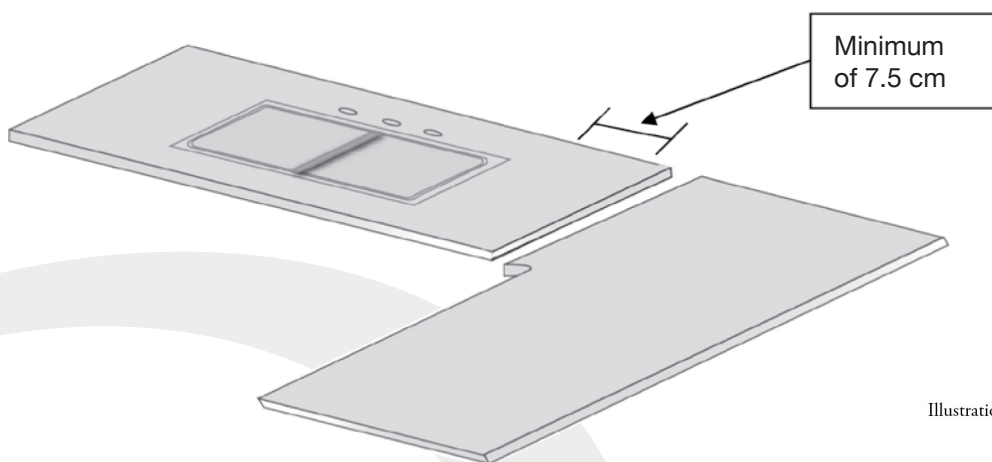


Illustration (8.5-a)

Seams should be avoided over the dishwasher whenever possible. However, if it is unavoidable, reinforcement of the seam is required.

It is important to make note on the templates if a seam over the dishwasher is unavoidable. The fabrication shop will review the layout and try to rearrange the design according to your notes.

Special support will be required during installation, if seam over a dishwasher is unavoidable.

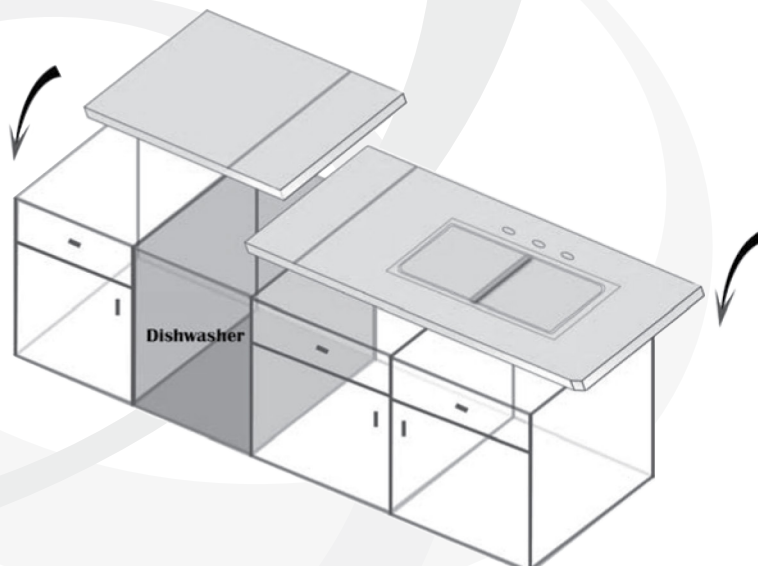


Illustration (8.5-b)

MEASUREMENTS & TEMPLATES

8.5 SEAM PLACEMENT

B. Positioning

On a “L” shaped top or top with an angle, the seam should never be placed on the corners. This is to prevent the top from cracking on the corners.

All seams need to be at least 25mm from the radius of any inside corner. Please note, this does not mean 25mm from the corner, however 25mm from the end of the radius of any inside corner. (Illustration 8.5-c)

If an “L” shaped top or top with angles are fabricated and seamed at the workshop, please take extra care during transportation and installation. Remember, the top will have more chance of breaking during transportation and installation due to its weight and shape.

Note: All inside corners must have minimum of 12mm radiuses 90° angles are not acceptable in any inside corners

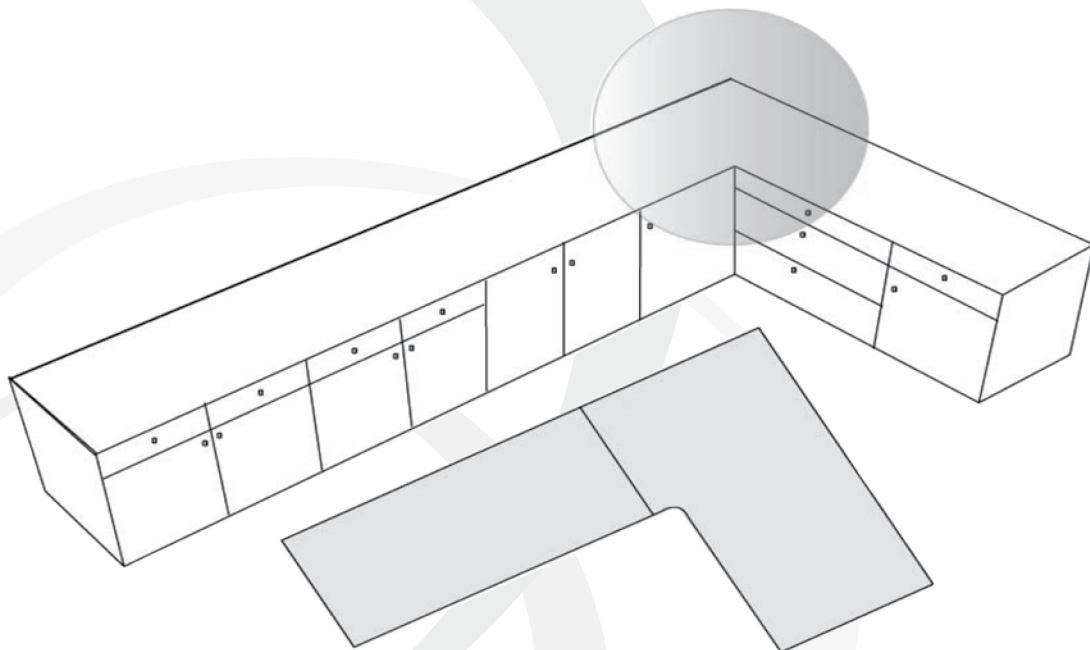


Illustration (8.5-c)

8.5 SEAM PLACEMENT

B. Positioning

All seams must be properly supported in addition to the seam plates (Chapter 10.7) with full perimeter support. As a result, seams through overhangs are not allowed on peninsulas, islands, or on any places where seams and seam plates are not properly supported.

However, seams that are perpendicular to the overhangs are allowed. Please see Illustration (8.5-d) for more details.

Note: If seams are not properly supported, there is a good chance of cracking or the seam failures

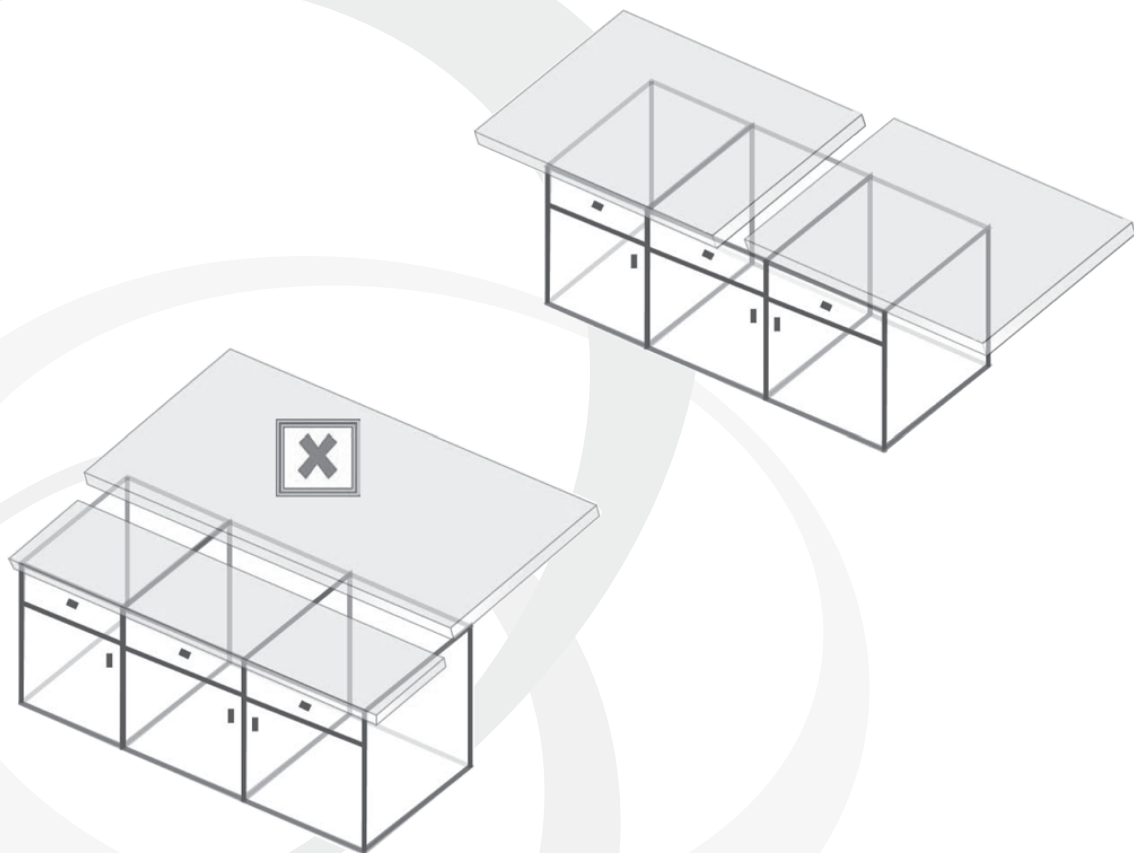


Illustration (8.5-d)

MEASUREMENTS & TEMPLATES

8.5 SEAM PLACEMENT

B. Positioning

With new innovative designs in both residential and commercial applications, there will be many occasions where you as Template Technician / Fabricator will face different challenges. If you are not sure where to place a seam, please consult with Hanex Solid Surfaces Technical Services for further assistance. Contact information can be found on page 224.

There are specific reasons for not allowing seams through certain cutouts and over appliances. However, on rare occasions you will be faced with circumstances where you have no other choice but to place seams through appliances and cutouts. Remember, **NO SEAMS THROUGH COOKTOP CUTOUTS UNDER ANY CIRCUMSTANCES.**

However with the correct support and special fabrication methods, you can place the seam over dishwashers and sinks. Remember, this is not recommended and should only be used if you have no other choice. Please consult with Hanex Solid Surfaces Technical Services for assistance and approval. If prior approvals are not received, it can void all warranties on the materials.

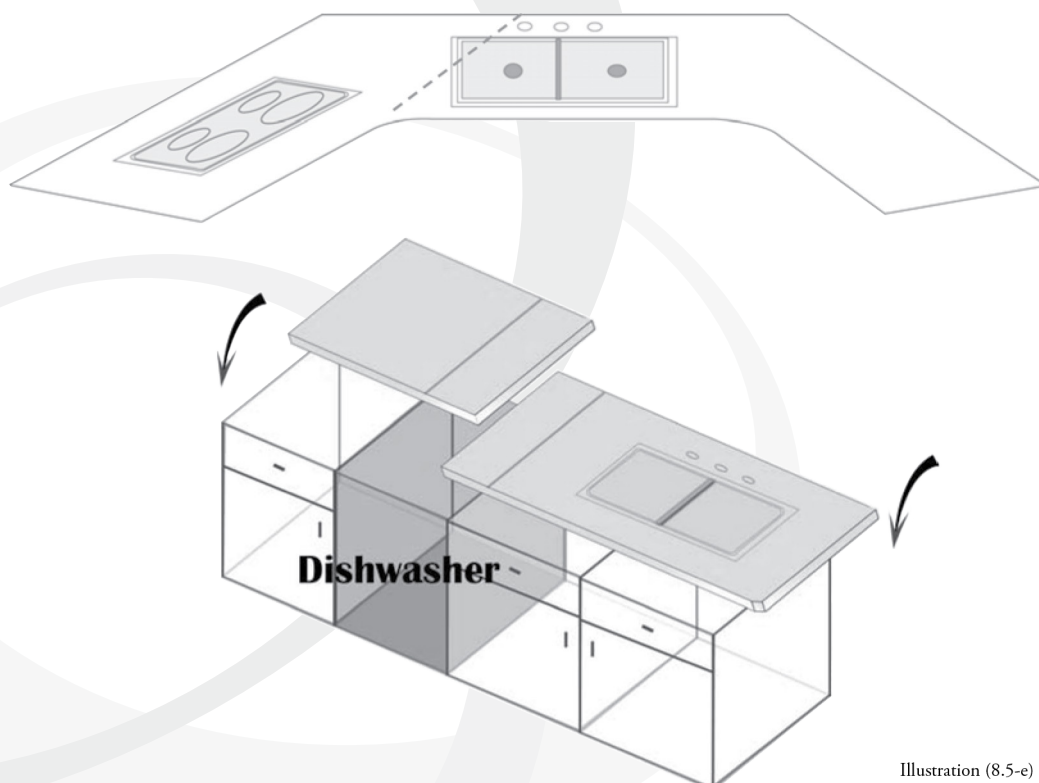


Illustration (8.5-e)

INITIAL CUTTING FOR FABRICATION

9.1 CUTTING TOOLS

In order to have a successful end result, it is important to plan/measure and plan/measure again before cutting into the materials. Luckily, unlike other surfacing products in the market, solid surfaces can be repaired, however, this will take valuable time, which will eventually cost you money.

Having the right tool for the job is very important. With advancement in technologies and innovative ideas, there are many cutting tools in the market that can be used to cut Hanex Solid Surfaces materials. Remember, not all the cutting tools are listed in this manual. Please check with the tool manufacturers for further assistance.

There is a wide variety of tools that can be used to cut Hanex Solid Surfaces. Here are some types of tools many fabricators use:

- Circular saw
- Hand held routers
- Table saw
- Panel saw
- CNC routers
- Jig saws, hacksaws, non-solid surface blades and bits, and auger bits should never be used on Hanex Solid Surfaces (Not even for rough cuts)
- Water-cooled cutting equipment with diamond blades

These tools can be found in many woodworking shops and they can be used on Hanex Solid Surfaces. However, in order to have a successful result, you will need special blades and bits. Additionally, all saws must have 4,000 ~ 6,000 rpm (revolutions per minute) and routers must have 10,000 ~ 28,000 rpm. Please check Table (9.2-a) and Table (9.2-b) for more details and requirements on blades and bits.

INITIAL CUTTING FOR FABRICATION

9.2 SPECIAL BITS AND BLADES

When cutting Hanex Solid Surfaces, make sure all pieces are supported. It is recommended to have a wide selection of work benches. These benches should be made from materials that are very sturdy and should be perfectly flat. It is also recommended that these benches are made with slots on the surface to accept clamps.

Saw Blades

Blade Diameter (mm / inch)	# of Teeth	Plate (mm / inch)	Task (mm / inch)
200 / 8	64	2.2 / 0.09	2.8 / 0.11
250 / 10	80	2.6 / 0.10	3.2 / 0.13
300 / 12	96	2.6 / 0.10	3.2 / 0.13
350 / 14	108	3.0 / 0.12	3.6 / 0.14
400 / 16	120	3.6 / 0.14	4.4 / 0.17
450 / 18	144	3.6 / 0.14	4.4 / 0.17
500 / 20	160	3.6 / 0.14	4.4 / 0.17

Table (9.2-a)

Routers

Task	Minimum Power	Spec
Light use	N / A	Carbide bits that are specially designed for solid surface use. Check with the manufacturer of the tools for more details.
General use (Edge, Seam, cutouts, etc)	1½ HP	
Heavy duty use (Coving, bulk cuts, etc)	3 HP	
Revolution per minute (RPM)		10,000 - 28,000

Table (9.2-b)

INITIAL CUTTING FOR FABRICATION

9.3 BASIC RECOMMENDATION

For successful results and to save time, many fabricators make a “Cut List.” A “Cut List” is a list of specific pieces for specific jobs. For example, if you are fabricating an L-shaped top with an island, your “Cut List” will consist of all the pieces that will be used for the L-shaped top and for your island. Depending on how you plan to fabricate, the list includes actual surfaces of the tops, edge build-ups (Chapter 11), backsplashes (Chapter 15), seam plates (Chapter 10), high strength blocks (Chapter 13), and decorative pieces (Chapter 14).

Remember, it is better to plan/measure and plan/measure again before actually cutting into the materials. Having an accurate „Cut List“ and all the right pieces can save you time, materials, and professional end results.

OVERVIEW:

- Make sure all pieces are supported before cutting Hanex Solid Surfaces
- Jig saws and hacksaws should never be used on Hanex Solid Surfaces for any reason
- When using a router to cut or to route the edges for smooth finish, always run the router left to right. This is to ensure you have the correct control of the router and have perfect result
- When using a circular saw, the accuracy of the cut will differ depending on the equipment. Please check with the tool manufacturer for assistance. In many cases, the accuracy of the cut will not be good enough for fabricating Hanex Solid Surfaces. As a result, use a circular saw for rough cutting and use router and straight-edges for final cuts

Note: When talking about the accuracy of the cut, it is referring to the straightness and smoothness of the cut. When gluing two pieces of Hanex Solid Surfaces together, the accuracy of the cut is very important to acquire inconspicuous seams (Chapter 10 & 11)

INITIAL CUTTING FOR FABRICATION

9.3 BASIC RECOMMENDATION

OVERVIEW CONTINUED:

- When using table saws, depending on the equipment, the accuracy of the cuts will vary. Once again, please check with the manufacturer for assistance. Many times, the cuts will be accurate enough for edge buildups and backsplashes, however it will not be accurate enough for seaming two pieces of Hanex Solid Surfaces (Chapter 10, 11, 15)
- When using panel saws, depending on the equipment, the accuracy of the cuts are very accurate. However, please check with the manufacturer for assistance and run some testing before cutting all the materials to size. Many times, the cuts will be accurate enough for general fabrications
- CNC routers are one of the most accurate ways to cut. Depending on the equipment, CNC can be used in many different ways, especially when cutting curves, detailed cuts, and decorative cuts as well

Note: There are many different equipment and ways to cut Hanex Solid Surfaces, however, it is important to choose a method that best suits your workshop

While CNC and panel saws are great to have and will greatly reduce your fabrications time, they are very expensive

Even though using straight-edges and templates can be bothersome, it is recommended to take the time to do it right. Remember, having the right cuts will save you time and headaches during fabrications and installations

INITIAL CUTTING FOR FABRICATION

9.4 FABRICATION TABLES

When cutting Hanex Solid Surfaces, make sure all pieces are supported. It is recommended to have a wide selection of work benches. These benches should be made from materials that are very sturdy and should be perfectly flat. It is also recommended that these benches are made with slots on the surface to accept clamps.

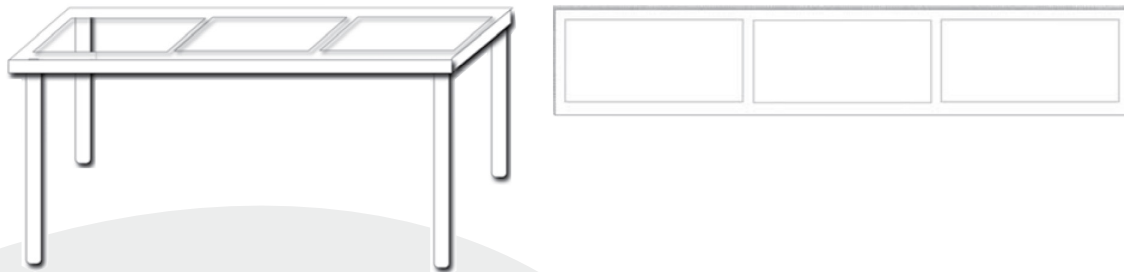


Illustration (9.4-a)

Depending on the fabricator's height, comfort, fabrication methods, and the size of the job, benches can be arranged in many different sizes. As a guide, work benches should range in sizes from 1800mm x 700mm to 3000mm x 700mm with a recommended height of 800mm. All tables should have a leveling device fitted to the legs, so they can be aligned and leveled prior to fabrication.

Note: There are many different types of pre-made benches out in the market. Whether you make or purchase your benches, it is important to regularly check for damages, flatness, and leveling

Remember, if your benches are not maintained, you will have an array of difficulties during Fabrication and installations, where you will be required to repair your top, or even rebuild your entire top again

SEAMING PIECES TOGETHER

10.1 SEAMING TOOLS

Hanex Solid Surfaces products are non-porous materials and NSF-51 certified for food preparation area. Due to its innate features, Hanex Solid Surfaces can be fabricated and installed in almost any application with inconspicuous seams. As a professional fabricator, you are responsible for fabricating Hanex Solid Surfaces to give its user all the benefits it has to offer.

One of the biggest advantages of solid surface over other surfacing materials in the market are the inconspicuous seams. Some people refer to it as invisible, however, due to legal issues, the term used in the industry is “inconspicuous seams”. Depending on the skills of the fabricator, the seams can be almost invisible to human eyes.

Here are some of the tools needed:

- Router (3 HP – need to be powerful because it will be cutting two sheets of material at the same time)
 - Router bits (depending on the seaming method, it will be differ)
 - 12mm X 38mm double flute bit
- Wavy edge bits
- CNC bits
- Some type of saw for a rough cut
- Straight edge
- Clamps
- Denatured alcohol
- Clean rags
- Release tape (clear boxing tape will work as well)
- Ski router
- Vacuum
- Sandpaper (80 grits)
- Panel saw (Optional)
- CNC router (Optional)
- Pulling and tightening equipment

SEAMING PIECES TOGETHER

10.1 SEAMING TOOLS

Before any fabrication and installation of Hanex Solid Surfaces, careful planning of seam placements are important (Chapter 8). This will help to ensure the minimal use of materials while maximizing product performance and beauty.

In order to achieve inconspicuous seams, you will need to cut the pieces to be seamed to have an almost perfect match along the seam line.

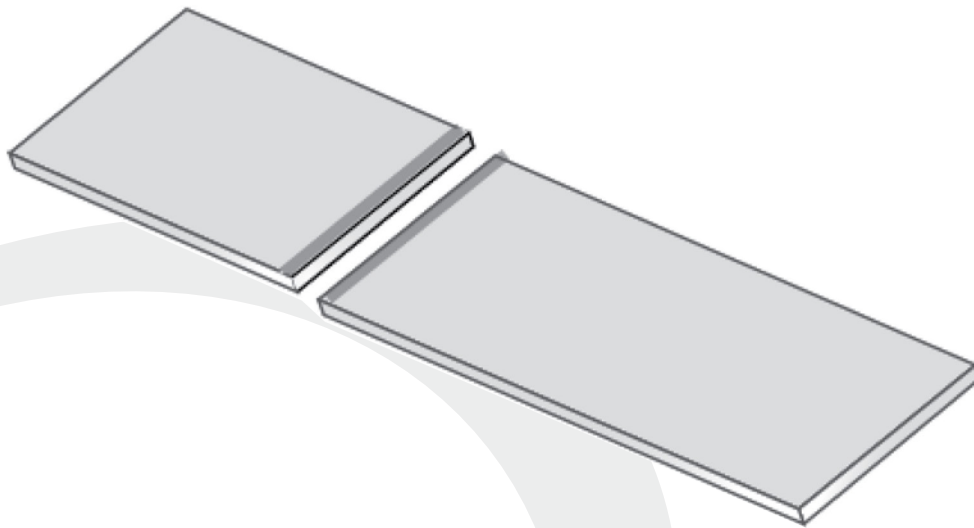


Illustration (10.1-a)

There are many different ways to cut the materials to have an almost exact match along the seam line. We will cover three ways to accomplish this task.

- Mirror Cut
- Panel Saw
- CNC Router

SEAMING PIECES TOGETHER

10.2 SPECIAL CUTS FOR SEAM

A. Mirror Cuts

One of the best methods of obtaining perfectly machined joints without spending money on expensive equipments is to use the “Mirror Cut” technique. The trick is to cut the two pieces of materials that are being seamed at the same time. By doing so, you will have an mirror image of the cut on the other side, and when the two pieces are put together, they will match perfectly.

Directions:

1. Layout the pieces that are going to be seamed together
2. Take the pieces and separate them exactly 9mm apart. It is very important that the pieces are exactly 9mm apart from one another throughout the seam line (Illustration 10.2-a)

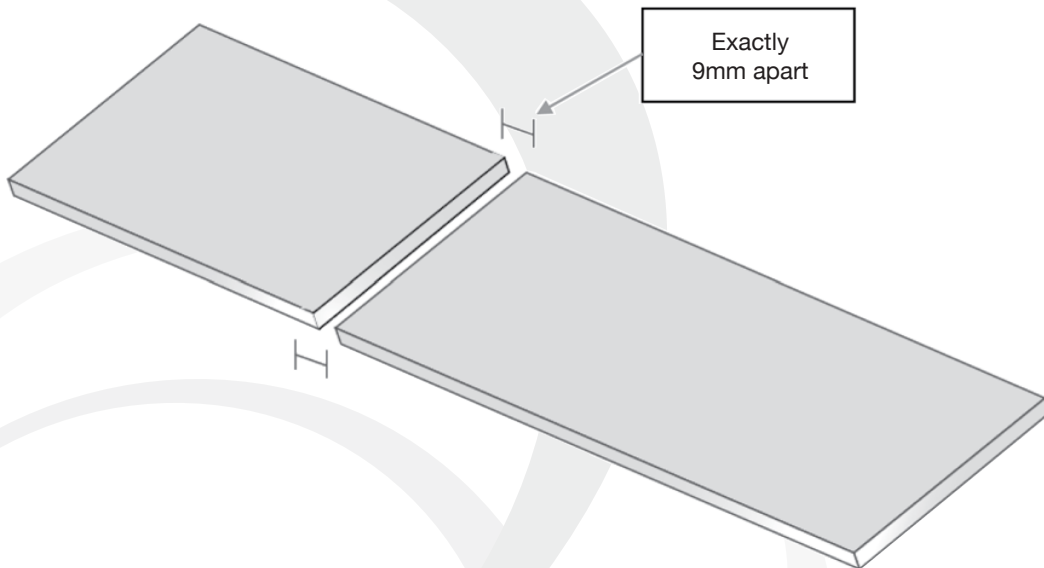


Illustration 10.2-a

SEAMING PIECES TOGETHER

10.2 SPECIAL CUTS FOR SEAM



Tips

Having exactly 9mm gap between two pieces will take time to measure and can be frustrating sometimes. Experienced fabricators have different methods and tools to help them with this task. Here is one method that is widely used by many fabricators.

Distance blocks, or spacers, can be produced to align the pieces exactly 9mm apart from one another. This tool can be made from any material that will keep its form and will not contract or expand easily. Some fabricators use laminate chips and pieces of Hanex Solid Surfaces to make this tool.

Illustration (10.2-b)

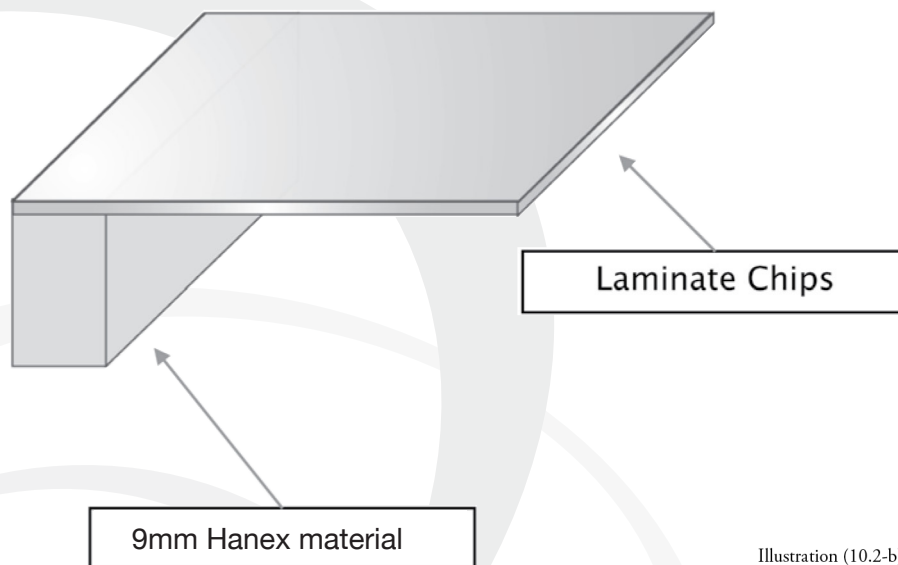


Illustration (10.2-b)

SEAMING PIECES TOGETHER

10.2 SPECIAL CUTS FOR SEAM

Directions:

3. Clamp the two pieces down so they do not move
4. Prepare your router with 12mm bit
5. Place the straight edge onto the left hand piece to be machined. The straight edge should be perfectly parallel to the gap
6. Make sure the distance of the straight edge is set so the router bit will cut exactly same amount of material from both pieces of the material. The router bit should be cutting about 1.6mm from each piece



Tips

To place the straight edge in the right place, measure the distance from the edge of the router bit to the edge of router base. Add 3mm to the distance. Place the straight edge exactly same distance you just measured on the left side for the material. See Illustration (10.2-c)

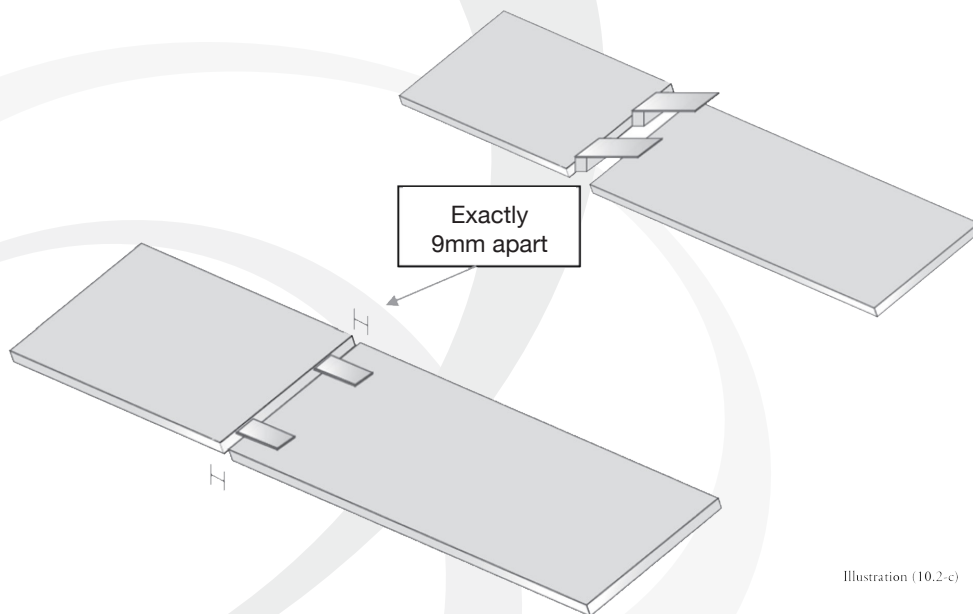


Illustration (10.2-c)

INITIAL CUTTING FOR FABRICATION

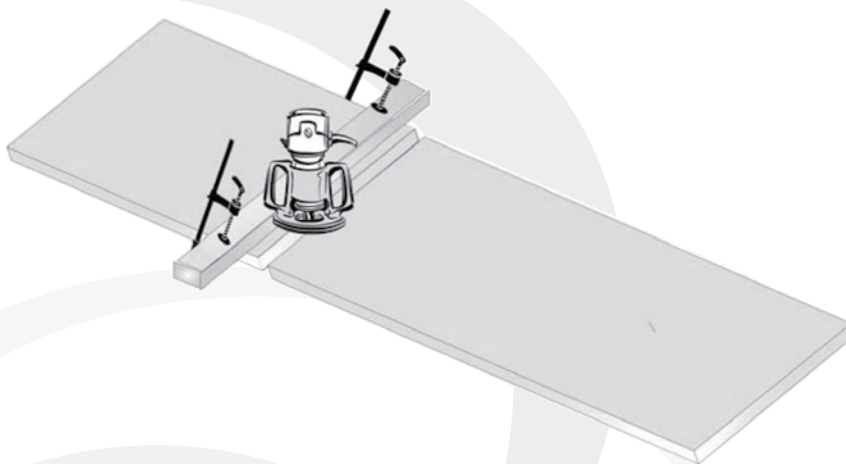
10.2 SPECIAL CUTS FOR SEAM

Directions:

7. Clamp the straight edge secure
8. Set the dept of the router to cut all the way trough the materials
9. Check to make sure that all the pieces are securely clamped in place
10. Run the Router from left to right in one continuous motion

*Note: Make sure that the pieces are perfectly leveled and flat
Check for any obstacles that can get in your way during your cut
Once you start your cut, do not stop and cut from left to right in one continuous motion*

Illustration (10.2-d)



Tips

Once you have completed your cut, check to see if your cut is smooth and free of any chipping or flaws. Pull the seam together without any adhesive. If the seam line disappears, you have a good cut. However, if the seam line does not disappear, it is advisable to re-cut your pieces before pulling your seam together. Remember, what you see is what you will get.

SEAMING PIECES TOGETHER

10.2 SPECIAL CUTS FOR SEAM

B. Using Special Cutting Equipment

If your workshop has special cutting equipment, such as a CNC router or panel saw, make sure to use special blades and bits with it. Remember, without the right blades and bits, the material will have chatter marks which will show up in the seam and may cause cracks and seam failures. Please refer to Chapter 9 for more info on the spec on the blades and bits.

When you are cutting your pieces with a CNC router or a panel saw, depending on your equipment, most of the time, you can seam your pieces together without doing any more final cuts.

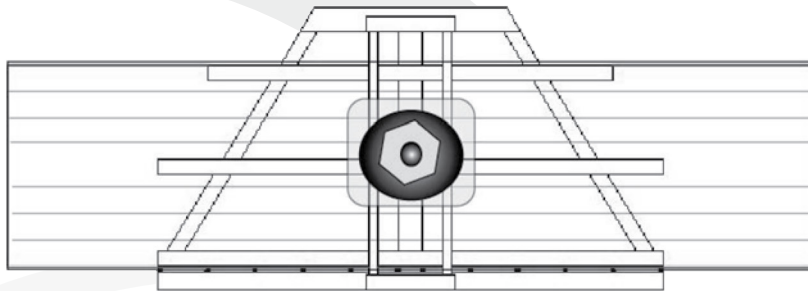


Illustration (10.2-e)

Note: Unless you are using CNC router or panel saw with right blades and bits, you should never use the following tools as your final cuts

- Circular saw
- Table saw
- Router (cutting each pieces separately)
- Or, any other cutting method, unless it is specified by the manufacturer

SEAMING PIECES TOGETHER

10.3 SEAM PREPARATIONS

Directions:

1. Once the joints have been accurately cut and matched, prepare the fabrication table, making sure that the table top is flat and leveled. Place the release tape along the seam line. Clear packaging tape can be use as release tape. This will ensure Hanex Solid Surfaces will not adhere to the work table
2. Abrade the bottom portion of the seaming edge for better bonding. Use 80 grit or courser sandpaper to crate the roughness in the material. Do not round off the top edges when you are abrading the edges. It will show a bad seam line when finished. Leave about 1.6mm on the top of the edge. Illustration (10.3-a)
3. Finally, clean all pieces, including the release tape with denatured alcohol

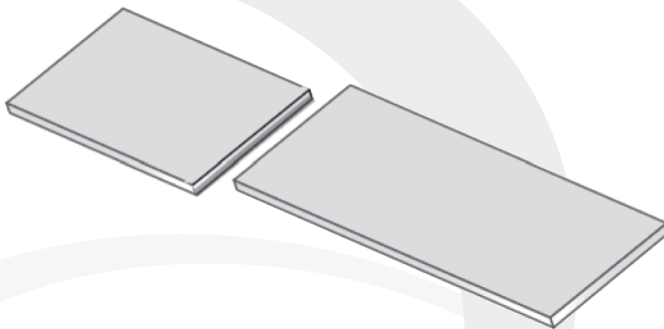


Illustration (10.3-a)

Note: Abrading the seaming edge to create a mechanical bonding can be argued. Over the past years, both the glue companies and solid surface manufacturers have conducted many tests to see if abrading the edge before the seam will create stronger bonding. Unfortunately, the study is still inconclusive

SEAMING PIECES TOGETHER

10.4 ADHESIVE APPLICATION

Before applying any adhesive, it is important to properly prepare the seam area. Adhesive kits are ready to use from the cartridge. Similar to the two part epoxy, the Hanex Solid Surfaces seaming kit is composed of colored glue and catalyst. However, with its applicator, mixing tip, and pre-measured cartridge, there is no need to worry about correctly mixing epoxy and matching color.

Directions:

1. Never compensate an irregular fit by changing or altering connection
2. During dry fit, the seam should have been pulled together without using any glue to make sure the seams are aligned and placed correctly
3. Once all the pieces are aligned and ready to join together, separate the pieces to apply the adhesive (seaming kit)
4. Approximately 3mm gap will be enough to apply the seaming kit
5. Clean the seaming area and the contact point with denatured alcohol
6. Prepare the seaming kit
 - Place the cartridge in the applicator
 - Open the cap and attach mixing tip
 - Using the applicator trigger, squeeze out the adhesive until it is ready to usePlease refer to Chapter 6 for more info
7. Apply the seam kit in the gap
8. Remember, even if the glue is not sticking to the side, the release tape under the seam will hold the glue in place
9. After the seam adhesive is applied, pull the seam together using the seaming tool or other methods (Chapter 10.5)
10. Make sure you do not have any gap, groove, or other errors
11. The seam should be leveled and have nice flush surface
12. When the seam is pulled together, excess seam adhesive will squeeze out to the top
13. Wait for the glue to cure completely before sanding
14. For further details on using Hanex Solid Surfaces adhesive, refer to Chapter 6

SEAMING PIECES TOGETHER

10.5 PULLING AND TIGHTENING

Pulling and tightening the seam is very important in getting the right finish. Before applying the Adhesive, you have to decide what kind of clamping method you will use to pull the seam together. With innovative tools in the market, pulling seams have become very simple. However, using the tools correctly is still the responsibility of the fabricators.

There are several ways of pulling a seam, this manual will only cover three basic methods. Please consult with tool manufacturers for different options.

- Using wood blocks and simple clamps
- Using suction cups and simple clamps
- Using vacuum clamping system

Whatever clamping method you use, it is important to make sure you are familiar with the method. Unlike the other two methods, you will have to hot glue the wood blocks along the seam line before applying the adhesive.

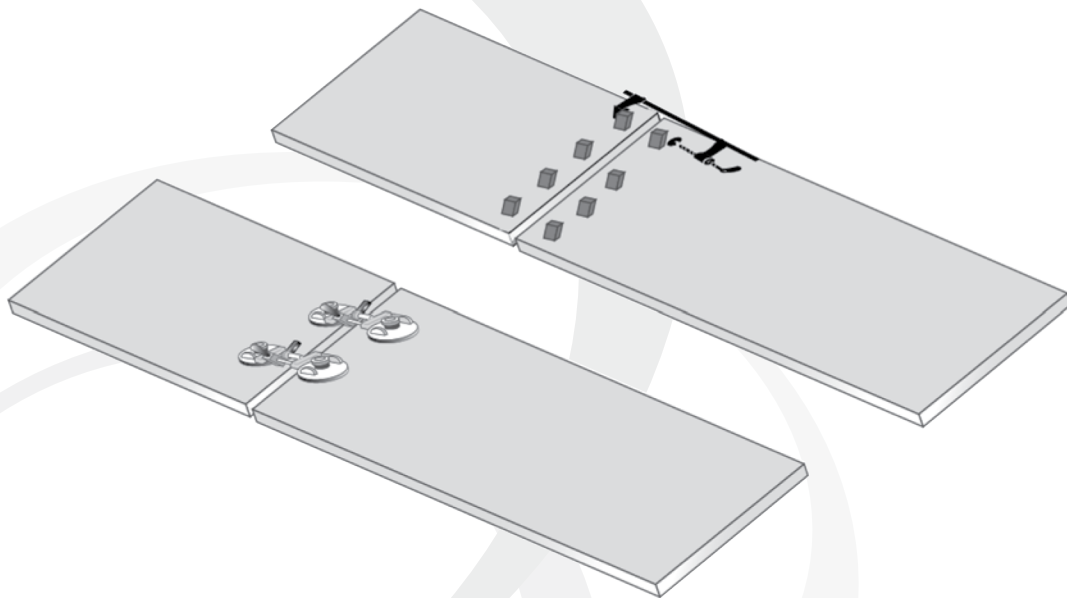


Illustration (10.5-a)

SEAMING PIECES TOGETHER

10.5 PULLING AND TIGHTENING

After all the preparations have been completed, apply the adhesive. Please see Chapter 6.2 and Chapter 10.4 for detailed instructions. Allow the adhesive to sink to the bottom of the gap for the total length of the joint line. Depending on the clamping method being used, bring the two pieces together.

- If you are using wood blocks and clamps or suction cups to pull your seams together, you will have to bring the two pieces together manually
 - Apply the clamps to tighten
 - If you are not using spring clamps, be careful not to over tighten to starve the joints
- For the vacuum clamping system, depending on the manufacturer, the process will differ. However, the basic principle will be the same
 - After applying the adhesive, attach the vacuum cups or plates and lock the air knob
 - Turn on your vacuum and turn the lever to pull and level the materials
 - The benefits of using this equipment is that if you follow the manufacturer's instructions correctly, you will have great results without worrying about the leveling, over tightening, or other problems that can arise



Tips

- Make sure the sheets are flat before seaming
- Make sure to dry-fit to check for quality of the cuts
- Complete all the preparation before applying adhesive
- It is easier to start at the furthest point and pull the adhesive applicator towards you
- Do not remove excess adhesive when it is still wet

SEAMING PIECES TOGETHER

10.6 REMOVING EXCESS GLUE

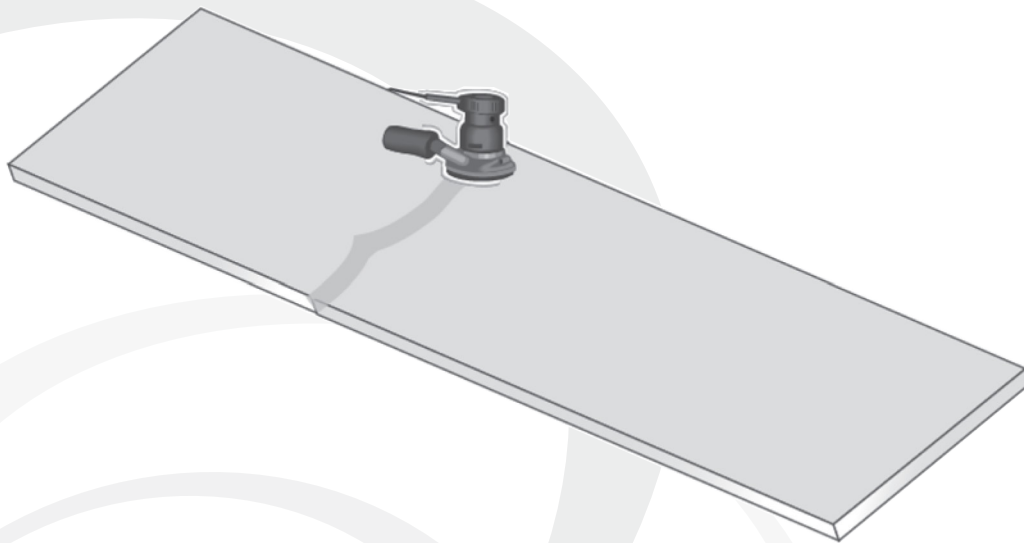
It is important to note that the excess glue should not be removed when wet. In some cases, the glue might shrink during the curing process. If you were to remove the excess glue when it is still wet, you will risk void lines in the seam.

Removal of excess glue after fully curing can be done in a couple different ways.

- Sanding
- Ski Routers

When sanding the excess glue off the seam, make sure to take necessary precautions not to create high and low spots in the materials. (Chapter 16)

Illustration (10.6-a)



Note: Remember to feather out during sanding to prevent high/low areas. It is recommended to sand an area of about 450–500 mm evenly

SEAMING PIECES TOGETHER

10.6 REMOVING EXCESS GLUE

The ski routers can be purchased or can be made using a trim router, 12mm bit, and skis (piece of wood or even Hanex Solid Surfaces). Attach the skis to the bottom of the router base and you are ready.

Directions:

1. Set the bit flush with the top. It is highly recommended to check your bits and the setting of the router before proceeding
2. Run the ski router over the cured seam line to remove excess glue. Make sure you have your protective eye gear
3. After the excess glue has been removed, sand the area. Please see Chapter 16 for further information on sanding and polishing
4. Remember to feather out the seam area to prevent any high/low spots

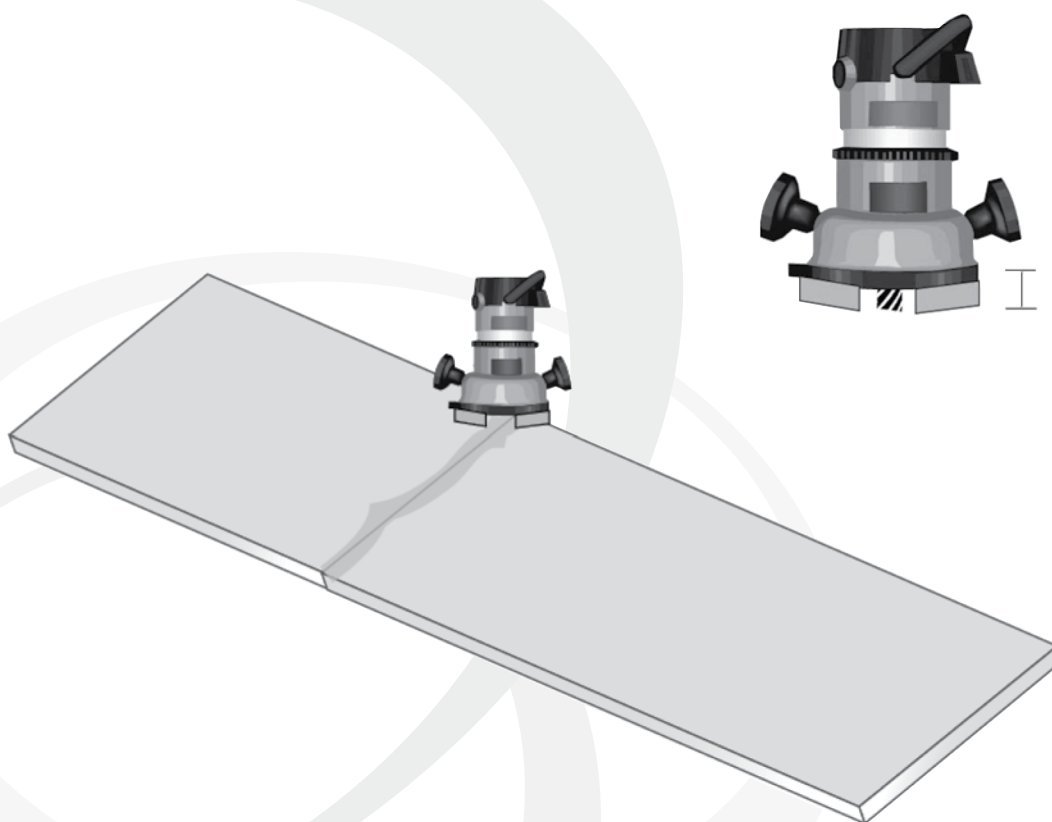


Illustration (10.6-b)

Note: To eliminate any chance of the ski router damaging the surface, it is recommended to set the bit slightly higher (about 0.8mm above the surface)

SEAMING PIECES TOGETHER

10.7 SEAM PLATES

To provide the seam with strong support which will last a long time, seam plates must be installed on all seams. There are many advantages of having seam plates. Among them, it will help to prevent seam failures, cracks, sagging, and many more.

Seam Plate Specifications:

- 100mm wide
- Made from Hanex Solid Surfaces material
- Side edges need to have 45° angles to prevent stress

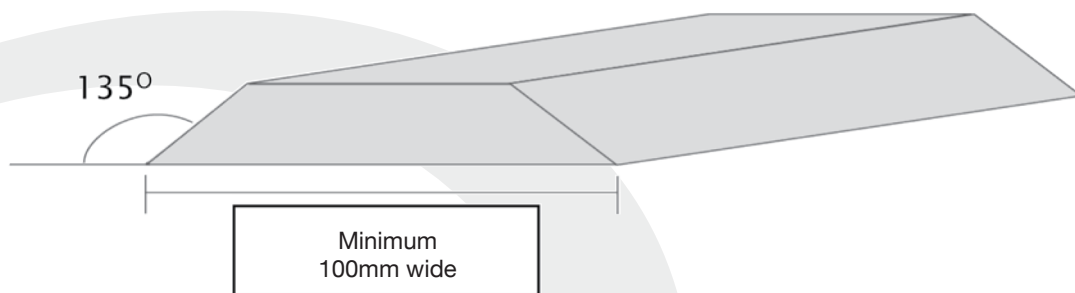


Illustration (10.7-a)

Note: Remember, any 90° angles in the material will be a stress riser. Seam plates should be cut to 45° angle to prevent any stress

SEAMING PIECES TOGETHER

10.7 SEAM PLATES

Directions:

1. Make sure the seam plates run the full length of the seam
2. Make sure the seam plates fit right up to the back of the front edge build-ups. There shouldn't be any gap between the back of the front edge build-up and the seam plate
3. Make sure the seam plates do not rock due to the excess glue from the seam
4. Abrade both the seam plate and the top before applying the adhesive
5. Make sure to center the seam plate to cover the seam right down the middle. The seam plate should cover 50mm on both sides of the seam
6. Make sure to cover the entire surface between the seam plate and the top. Apply seam adhesive about every 19mm as a guide to give 100% coverage. Tracing the seam plate prior to applying the adhesive will help

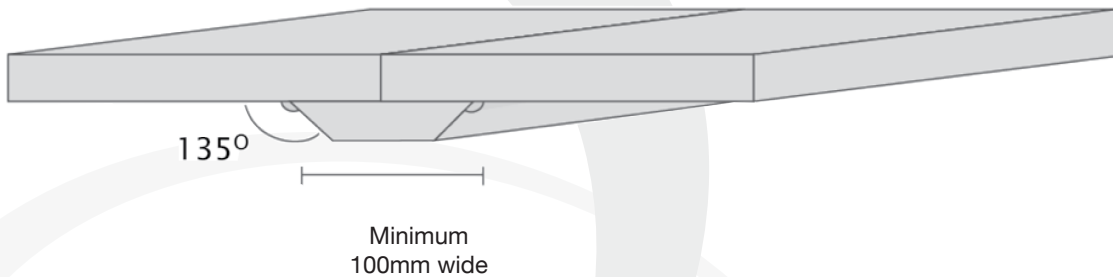


Illustration (10.7-b)

Note: Do not remove the adhesive beading out from the side. This bead of adhesive will add strength to the seam and reduce the stress between the seam plate and the top

SEAMING PIECES TOGETHER

10.8 FIELD SEAMS

During the initial site inspection, templating and fabricating, it must be decided on which seam will be done in the field and which will be done during the fabrication at the shop. There are many factors that will decide this.

Here are some of the reasons for field seams:

- Size and shape of the top
- Transportation
- Accessibility to the job site
- Installations difficulties

It is important to try to minimize field seams, because you are not in a controlled environment. Additionally, the dust, noise and time can be an annoyance to the customer.

When planning a field seam, all necessary preparations should be done in the shop to help minimize the risk of anything going wrong at the site. Additionally, it will speed up the entire process during installation.

Directions:

1. Follow same procedure in Chapter 10.1 – 10.3 and 10.7 in preparing the seam
2. Attach the seam plate to only one side of the seam at the shop
See Illustration (10.8-a)

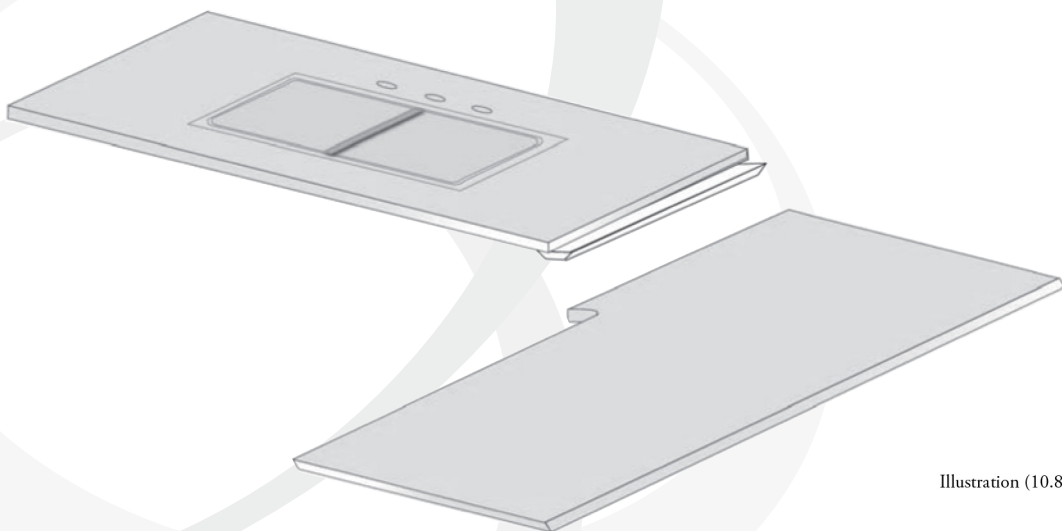


Illustration (10.8-a)

SEAMING PIECES TOGETHER

10.8 FIELD SEAMS

Directions:

3. Place all the pieces on the installation site (Chapter 17)
4. Wipe the area with denatured alcohol and let it dry
5. Apply seam adhesive to the seam plate. Make sure to have full coverage
6. Place the second piece on the seam plate with 3mm gap to apply adhesive along the seam
7. Apply adhesive along the gap
8. Using the clamping system you use, pull and tighten the seam together
9. Wait for it to cure
10. Remove excess adhesive (Chapter 10.6)
11. Polish to match the finish

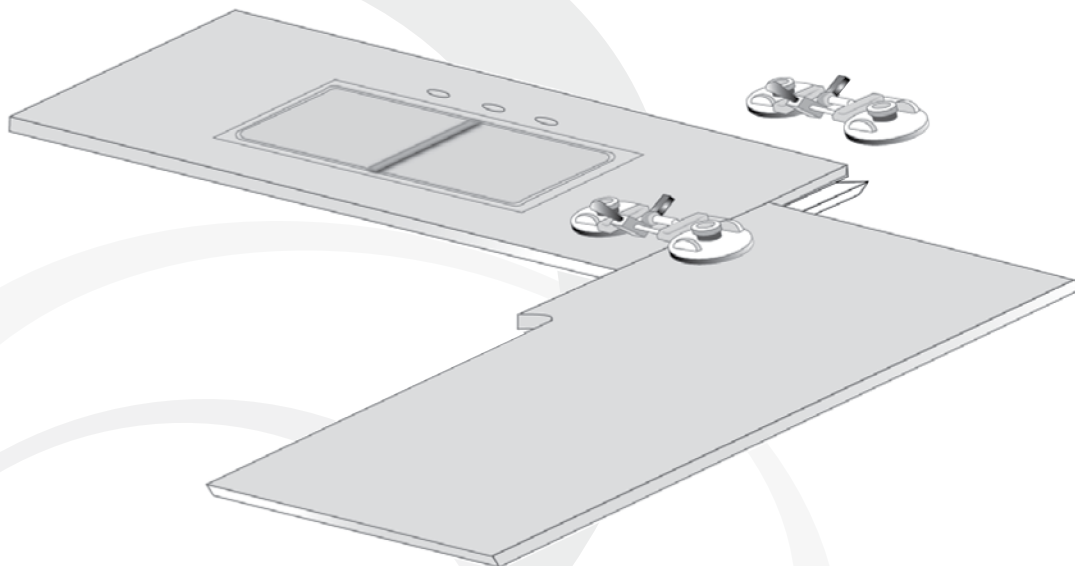


Illustration (10.8-b)



Tips

Take all necessary precaution to minimize dust and noise. Your customer will appreciate your professionalism.

11.1 EDGE BUILDUP AND DETAILING TOOLS

Edges on Hanex Solid Surfaces countertops can be fabricated to any thickness and design. Due to its inconspicuous seams, the edge details can truly bring out the beauty and creativity of its designers.

There are three ways to correctly fabricate edges for Hanex Solid Surfaces. These methods have been tested and verified to be reliable. It is important to follow the guidelines of each method. Remember, you as fabricator have the responsibility to provide professional fabrication and installation of Hanex Solid Surfaces to create beautiful and reliable surfacing for the customers.

The three edge build-up methods are:

- Drop Edge
- Stacked Edge
- Using V-Grooving equipment or shaping machine



Illustration (11.1-a)

The detailing of the edges can be achieved through special decorative bits and polishing. See Chapter 11.5 for more details.

EDGE BUILDUPS

11.2 DROP EDGE

Many fabricators use the Drop Edge Method to build up their edges. This method can be accomplished by cutting two strips of material to the desired thickness, depending on the thickness of the edge, and gluing it vertically on to the bottom of the top to create the edge build-up.

The Drop Edge Method of building up the edges is used by many fabricators, because it minimizes the chance of seam line showing in two places. With this method, instead of two seam lines showing, there is only one seam line to worry about. Remember, if fabricated correctly, the seam line shouldn't be very visible to the naked eye.

Directions:

1. Cut the strips to desired thickness
2. You will need two strips for each edge build-up. One for the front and second strip to be seamed up against the first strip for added strength. Illustration (11.2-a)

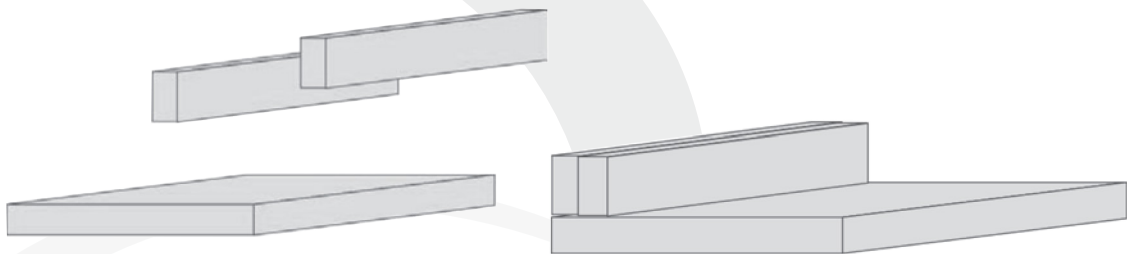


Illustration (11.2-a)

Note: Depending on the decorative edge details, you might need to use another piece. Some decorative edge bits will cut more than 25mm of the edge to create the look. If the bit is more than 12mm of material off, you have to worry about the glue line showing between the strips as well

11.2 DROP EDGE

Directions:

3. Inside Corner (Thermoforming)

- You can thermoform two strips of material for the inside corner Illustration (11.2-b)
- Please refer to Chapter 20 for more details on how to thermoform Hanex Solid Surfaces
- Make sure the thermoformed pieces does not line up with the seam

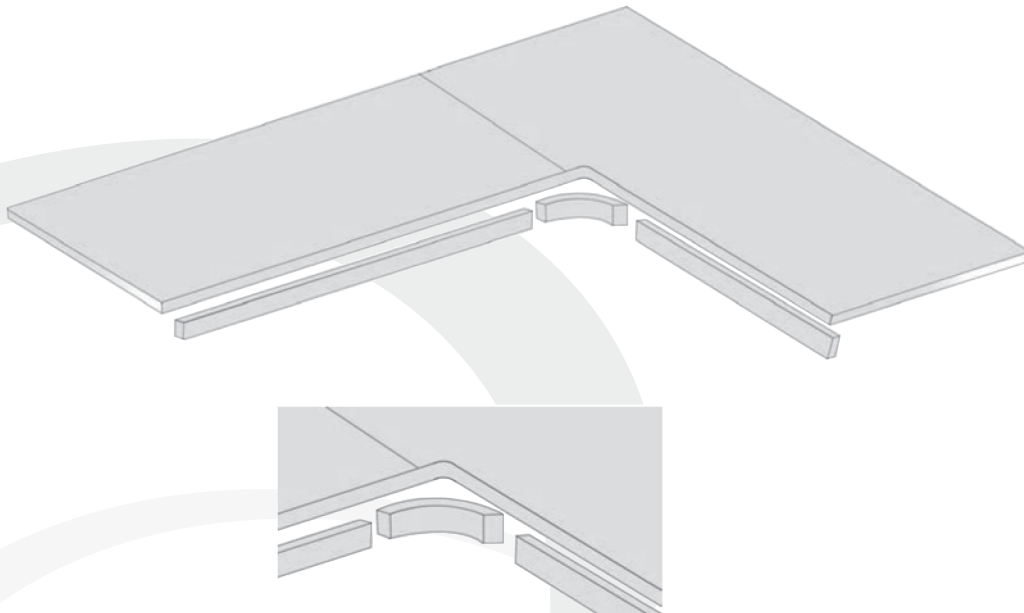


Illustration (11.2-b)

*Note: All inside corners should have at least 12.5mm radius
The manufacturer's warranty will be voided if any inside corner radius is less than 12mm
Remember, the bigger the radius, the better*

EDGE BUILDUPS

11.2 DROP EDGE

Directions:

4. Inside Corner (Corner Blocks)

- Cut two pieces of same color material into 150mm x 150mm
- Bond the two pieces underside of the countertop
- Remember, the thickness of the material is 12mm. If your edge build-up is more than 25mm, you will need to laminate more pieces for the corner blocks

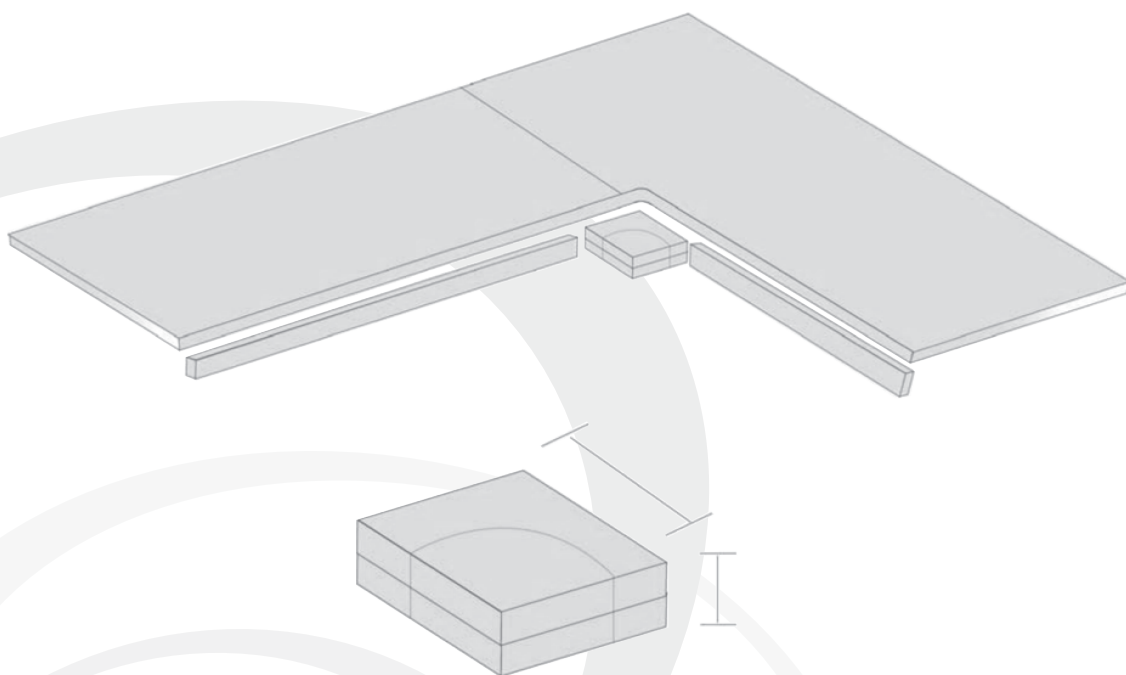


Illustration (11.2-c)

*Note: All inside corners should have at least 12.5mm radius
The manufacturer's warranty will be voided if any inside corner radius is less than 12.5mm
Remember, the bigger the radius, the better*

11.2 DROP EDGE

Directions:

5. Outside Corner

- Similar to the inside corner of the edge build-ups, the outside corners can be thermoformed or use corner blocks, if the radius is big enough. However, if the radius is not big, you can just use the strips and use templates to route the radius
- Try to minimize the seams on the outside corner. See Illustration (11.2-d)

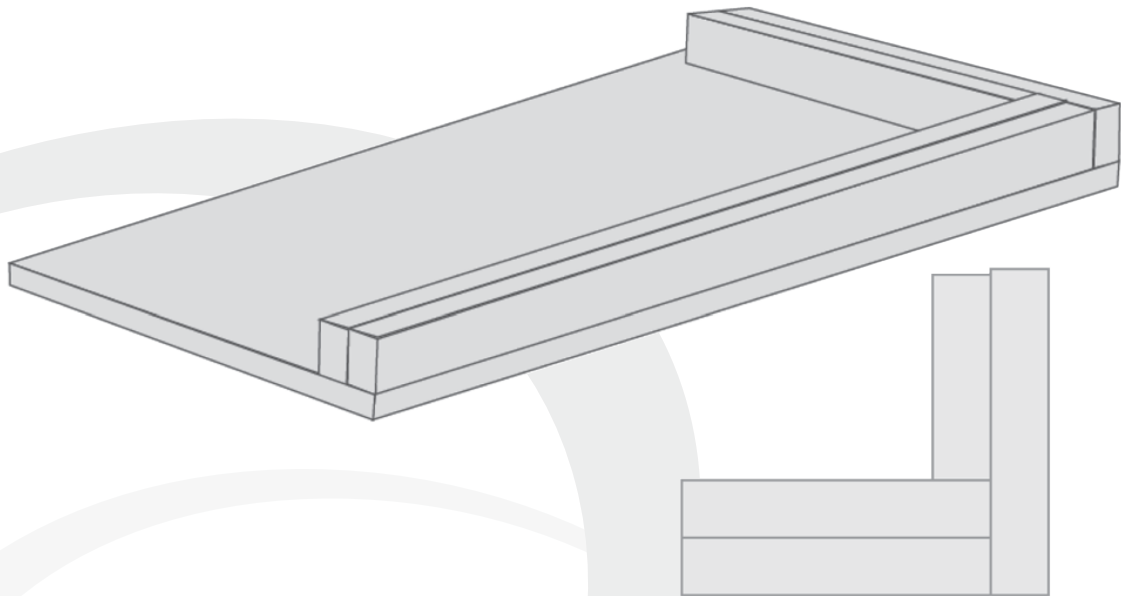


Illustration (11.2-d)



Tips

To minimize the chance of seams showing in the edge build-ups, it's recommended to lay out the build-up strips as described in Illustration (11.2-b)

EDGE BUILDUPS

11.2 DROP EDGE

Directions:

6. Dry-fit all the pieces to make sure the seam lines disappear
7. Remember, if you see seam lines when you clamp down the pieces, you will see the seam line after
8. In most cases, the seam lines will show if your cutting instrument is blunt and is not cutting the strips cleanly
9. Use small wooden blocks to set guides Illustration (11.2-e)
10. Use hot glue to set the wooden blocks
11. Take all the pieces and sand slightly with 80 grit sandpaper
12. Wipe all the pieces down with denatured alcohol
13. Apply adhesive and clamp all the pieces down

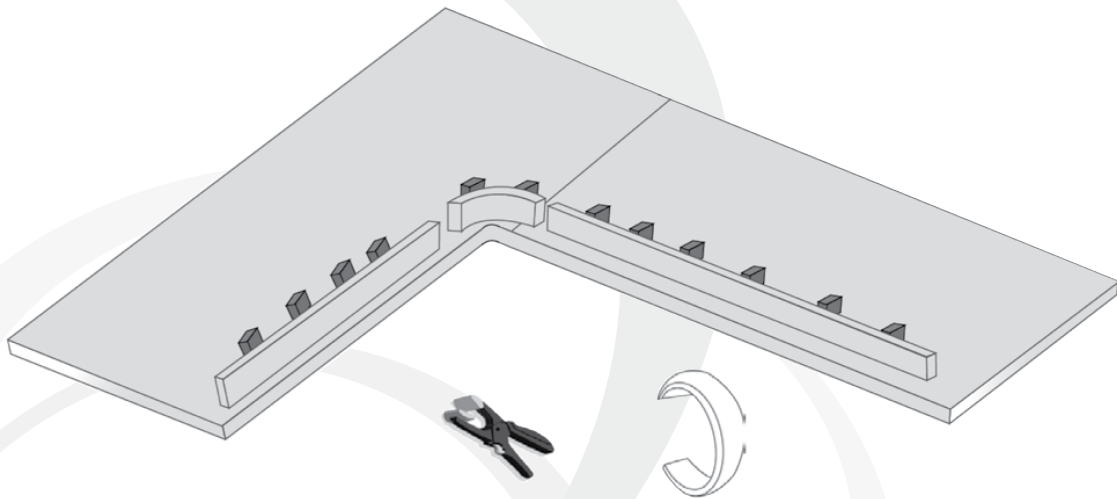


Illustration (11.2-e)



Tips

Always use spring clamps for right pressure

11.3 STACKED EDGE

Another way to build up edges is to use Stacked Edge Method. Similar to the Dropped Edge Method, you cut strips of material for the edge build-up. However instead of setting the strips vertically, you stack the strips on top of each other to create the thickness. If the edge build-up is 38mm (standard), two strip on top of each other will create that build-ups (including the top itself).

The Stacked Edge Method is used widely as well, because of its strength. However, there is the risk of having two seam lines showing if not done correctly.

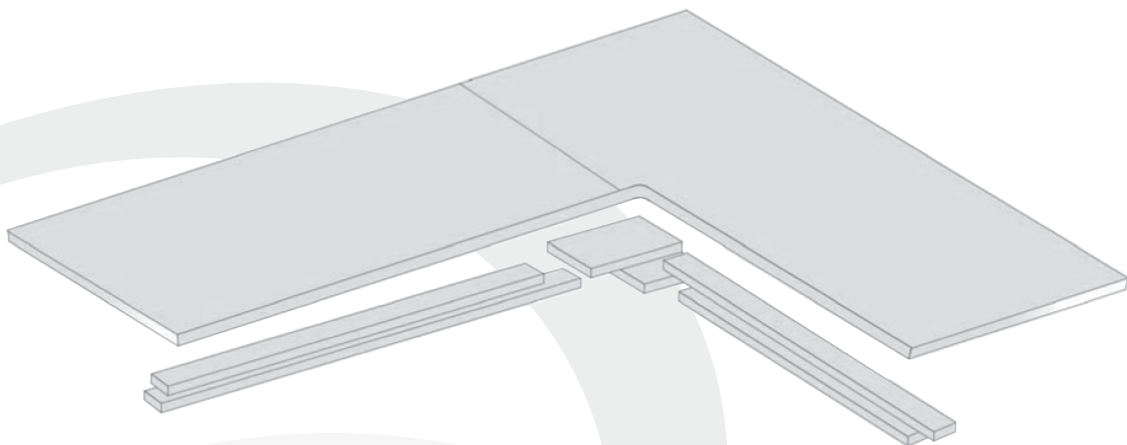


Illustration (11.3-a)

Note: Minimum of 25mm width is required, however 50mm width is recommended for the build-ups

EDGE BUILDUPS

11.3 STACKED EDGE

Directions:

1. Cut the strips to desired thickness
2. You will need two strips for each edge build-up, depending on the thickness of your edge
3. Inside Corners
 - In order to provide strength to the inside corners, the blocks should be overlapped, working as seam plate for each other. Remember you have to have a seam plate in all the seams. Illustration (11.3-b)
 - Cut two pieces of same color material to 101.6mm x 152.3mm
 - Overlap the pieces on each other and fit the strips right up against the corner pieces. Illustration (11.3-b)

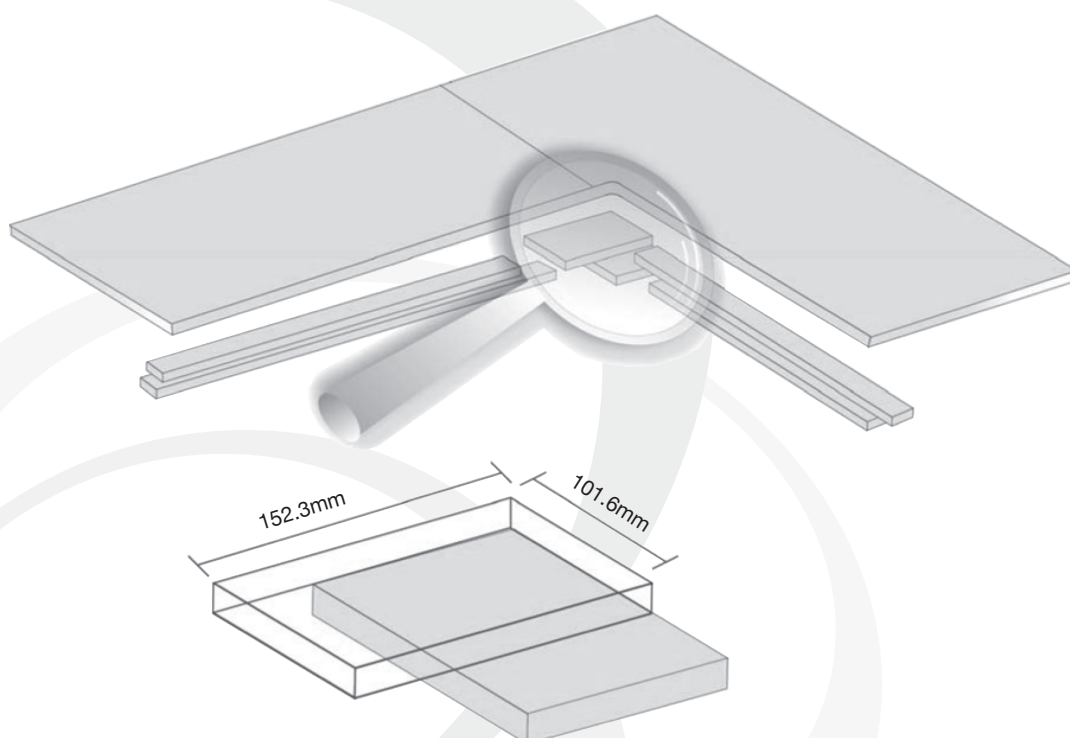


Illustration (11.3-b)

11.3 STACKED EDGE

Directions:

4. Dry-fit all the pieces to make sure the seam lines disappear
5. Remember, if you see a seam line when you clamp down the pieces, you will see the seam line after
6. In most cases, the seam lines will show if your cutting instrument is blunt and is not cutting the strips cleanly
7. Use small wooden blocks to set guides. Illustration (11.3-c)
8. Use hot glue to set the wooden blocks
9. Take all the pieces and sand slightly with 80 grit sandpaper
10. Wipe all the pieces down with denatured alcohol
11. Apply adhesive and clamp all the pieces down

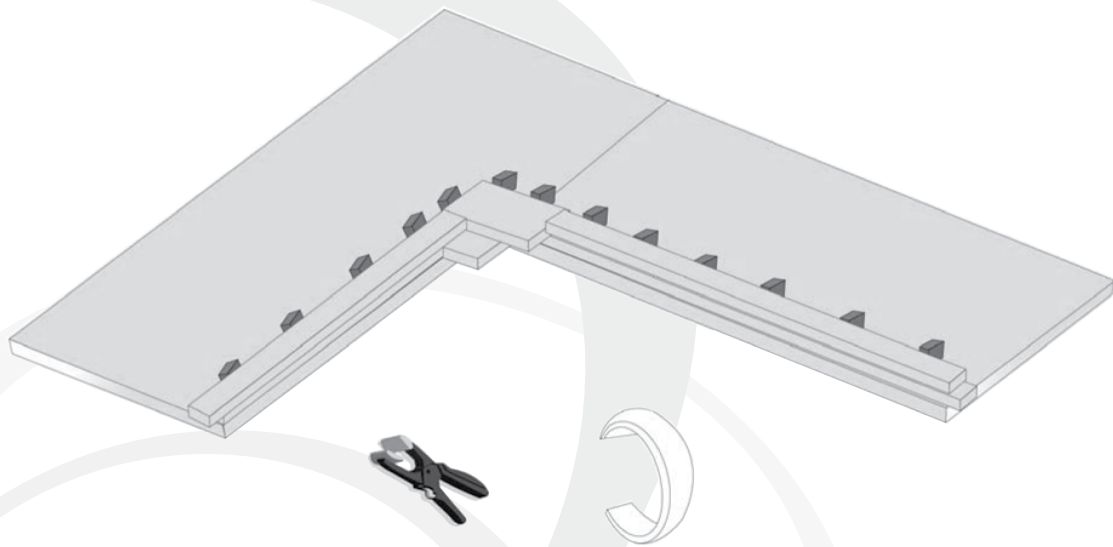


Illustration (11.3-c)



Tips

Always use spring clamps for right pressure

EDGE BUILDUPS

11.4 V-GROOVING

If your shop can afford the luxury of purchasing V-Grooving machines or other equipment like a shaper, you can accomplish edge build-ups easily.

It is important to consult the manufacturer for instructions. However we will briefly go over the basic principles of V-grooving the edge build-ups.

V-Grooving machines will rout out a “V” in the material so you can fold the material to create 90° fold. This method will require special taps to hold the two pieces together. Please check with the manufacturer for more details.

After the route, remember to prep the seaming area by wiping it down with denatured alcohol to remove any contaminants. When the glue cures, the edge build-up is ready for the decorative route and polishing, unlike other methods where you have to route out all the excess glue and imperfections.

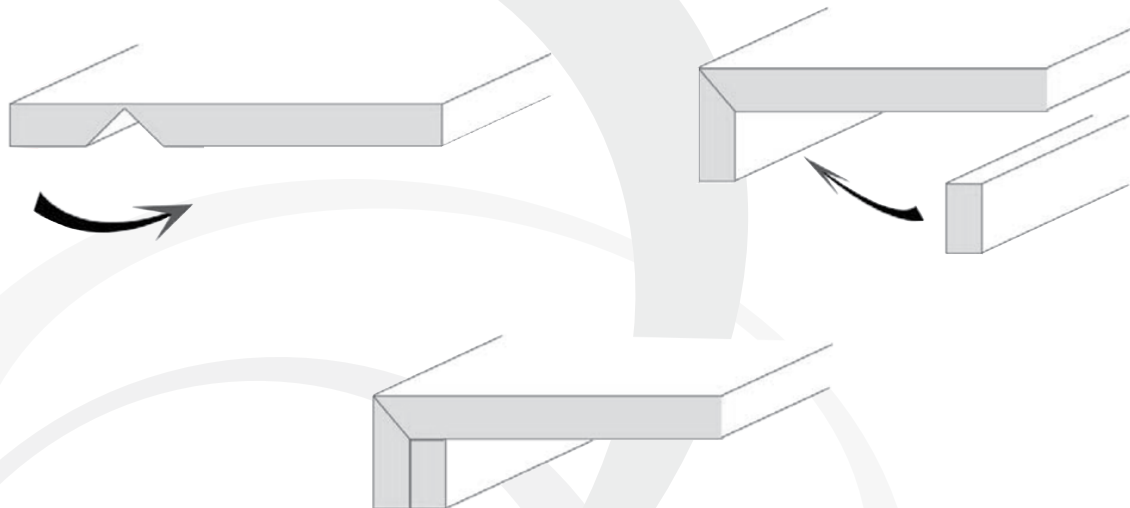


Illustration (11.4-a)

11.5 PREPARING BUILDUP OR DECORATIVE EDGE

After completing the build-up of the edges, excess glue and imperfections have to be routed off before decorative edge bits can be applied to the edge.

Directions:

1. Make sure all the glue has cured and there are no soft spots
2. Remove all the clamping equipment
3. Remove all the blocks which were used as a guide for the edges
4. Flip the countertop over to show the top surface of the countertop
5. Either use a template guide, such as a interlocking straight edge system with radius corners or use a top bearing flush cutter to route off any extra glue or imperfections

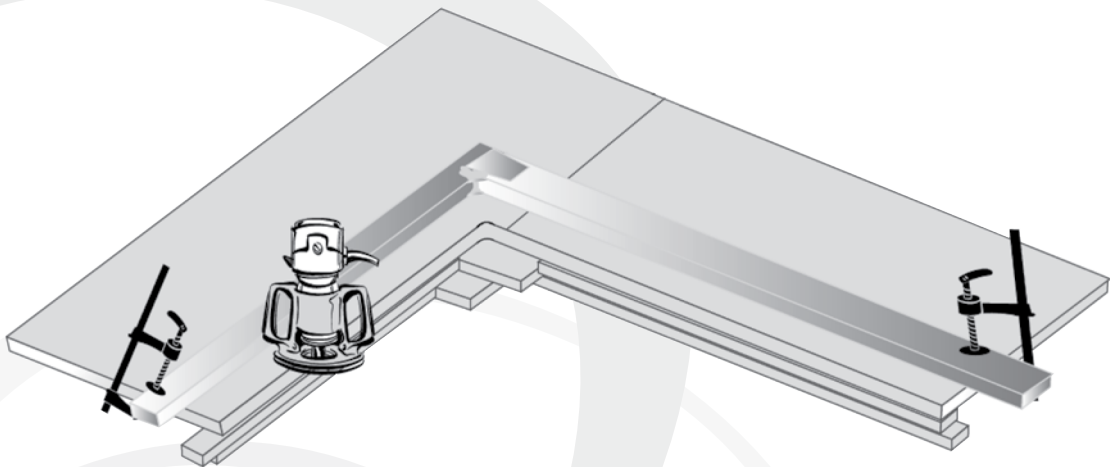


Illustration (11.5-a)

*Note: Run the router from left to right
Make sure to clamp all the pieces down before routing*

11.6 DECORATIVE EDGE PROFILE

Having the right decorative edge profile is a matter of choice. Decorative edges can be very easy to do and can generate lots of interest and profits.

There are many tool manufactures with special bits to create a variety of beautiful edges. Remember, it is important to check with the bit manufacturer for any disclaimer and special instructions.

Directions:

1. After you have completed all the build-ups and preparation work, you can run the router with your decorative bit
2. Most of the bits will have a template guide in the bottom of the bit and it will ride along the material. This is the reason for Chapter 11.5
3. Among the many different types of decorative edges, most commonly used are: eased edge, 6mm, 12mm, 19mm radiuses, full bull nose, half bull nose, ogee, roman ogee, triple pencil, etc.
4. After the decorative edges have been profiled on to the top. Sand the edge to match the finish of the top
5. See Chapter 16 for sanding and polishing details

Note: There are many different bit manufacturers in the market, make sure to check with the manufacturer for special instructions

Remember, Hanex Solid Surfaces will not be responsible for any damages to the top due to faulty bits

Run the router from left to right for smooth route

Always test the bit on test material to check for depth and other issues

When working with elaborate bits, make sure your edge build-ups have enough materials to cover the profile

12.1 TYPES AND INSTALLATIONS

With Hanex Solid Surfaces, the end-users have the choice of a vast array of choices in style and installation options for sinks and bowls. The most common type used with Hanex Solid Surfaces are integrated solid surface sinks and bowls. However, Hanex Solid Surfaces can accommodate any type, style, and installation option.

Depending on the type of installation option, the tools required will differ. Here are some of the list of tools needed for a general installation purpose:

- 3hp router
- Sink or bowl model template
- Template guide
- 12.7mm double fluted carbide router bit
- Clamps
- Seaming kit
- Silicone
- Hot glue
- Guide blocks
- Sink clips for solid surface
- Decorative router bits

When using integrated solid surface sinks or bowls, here are some fabrication options:

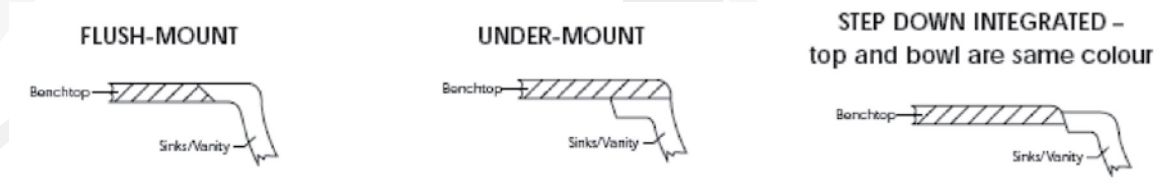


Illustration (12.1-a)

SINKS AND BOWLS

12.2 INTEGRATED SOLID SURFACE SINKS / BOWLS

A. Drop-In or Angle Mount

Directions (Fabrication):

1. Set up top areas to be machined for the sink installation, ensuring the top is well supported along both front and back edges, and is true and level
2. Mark the exact location for the sink and place sink model template in position, ensuring the allowance of the 30mm diameter copying ring
3. Once a template is placed in exact position, clamp to the top, ensuring clamps are positioned well away from the area of the router handles
4. Place hot melt blocks around the perimeter of the router template to ensure exact location for further steps in the fabrication process
5. Set up router with 30mm diameter copying ring and 10mm diameter straight router bit, and router out unwanted bench top area, ensuring two or three passes to complete Hanex Solid Surfaces removal

Note: Ensure adequate support on the under side of the Hanex Solid Surfaces off-cut to ensure no damage is caused by the final break through the router bit

6. Now fit the 15 degree router cutter and proceed to machine the edge profile in several steps until the desired sink edge location is obtained

Notes: (A) For flush finishing of the sink to the face of the top, ensure sink edge is marginally located above the top surface of the top

(B) For sinks that are required to be fitted below the top surface, the desired distance is determined by the profile on the profiling bit (usually 2mm), once again ensure the sink is positioned slightly above the required finished position, to allow for slight machining of the top surface of the sink

7. Remove the router template, ensuring that the hot melt location blocks remain in position

12.2 INTEGRATED SOLID SURFACE SINKS / BOWLS

Directions (Installation):

8. Once the routing process is completed the pre-installation will require precise preparation. Once the Hanex Solid Surfaces adhesive is applied to the countertop and sink edges, speed in application is essential
9. With the use of 50mm wide plastic packaging tape, place tape around the underside of the sink cutout, this will ensure that excessive adhesive does not drop through the edges to be bonded
10. Clean both the top and sink edges with denatured alcohol
11. Prepare Hanex Solid Surfaces adhesive bulk cartridge and mixer tip, and run a bead of Hanex Solid Surfaces adhesive around the perimeter edge of the sink and top
12. Now place sink into bench top aperture ensuring sink is aligned correctly. Once in position, place a weight in the bottom of the sink to hold in place during the Hanex adhesive curing process
13. Do not move or machine sink for at least three hours after application
14. For sink step-down application, replace the router template between the hot melting location blocks, and router to desired finish
15. For flush fitting sink design, simply remove excess Hanex Solid Surfaces adhesive ooze with a hand plane, and finish sand

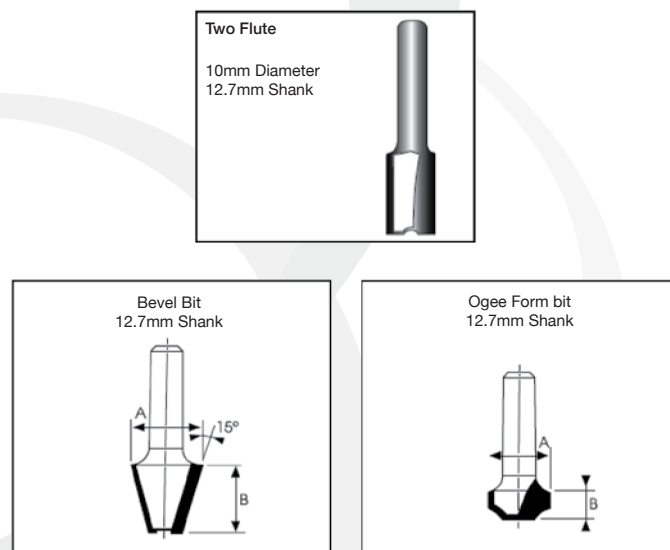


Illustration (12.2-a)

SINKS AND BOWLS

12.2 INTEGRATED SOLID SURFACE SINKS / BOWLS

B. Under-Mount

Directions (Positioning and Preparation):

1. Sinks are recommended for bonding to 12mm Hanex Solid Surfaces sheet thickness or greater. Turn the Hanex Solid Surfaces sheet back-side up on a well supported surface. Position the bowl on the sheet
2. With a flat sanding block and #80 grit sandpaper, sand the underside of the sheet where the bowl is to be bonded to remove factory sanding lines or scuff marks
3. With a flat sanding block, scuff sand with #80 grit sandpaper the top flange of the bowl. Do not round over or knick the rim

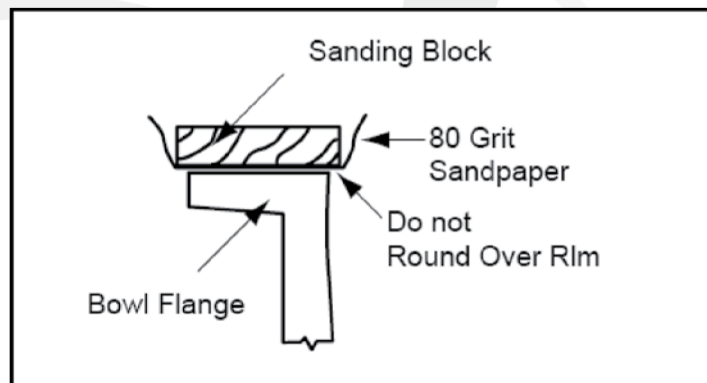
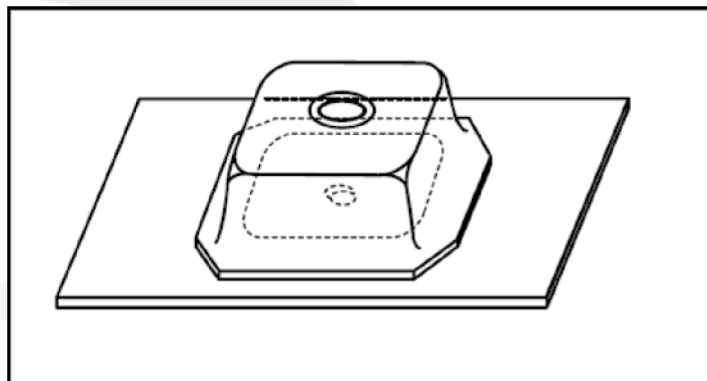


Illustration (12.2-b)

12.2 INTEGRATED SOLID SURFACE SINKS / BOWLS

Directions (Bonding):

4. Hot glue the guide blocks to the back of the sheet around the perimeter of the sink, to keep the sink from sliding when bonding
5. Remove the bowl and clean the areas to be bonded with denatured alcohol and allow to dry
6. Prepare Hanex Solid Surfaces adhesive seaming gun and apply ample amount of adhesive to the rim of the sink or the bowl
7. Place sink in position between the guide blocks
8. Slip bowl slightly to obtain good adhesive transfer to the bowl flange, then clamp bowl to top by means of a 10mm diameter continuous thread with clamping blocks at each end
9. Ensure sufficient pressure is applied to obtain adhesive ooze around bowl flange
10. Allow to dry completely

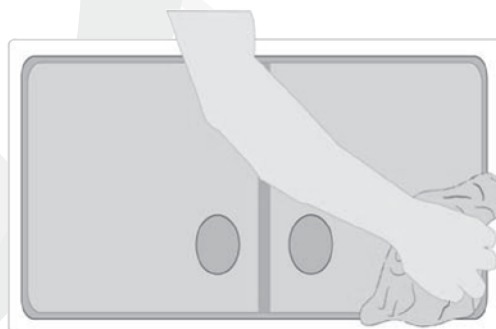
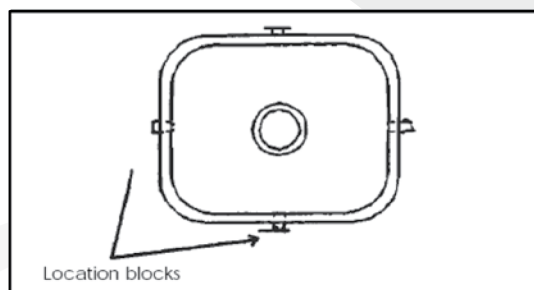


Illustration (12.2-c)



Tips

To ensure total adhesive cover to the areas for bonding, some fabricators smooth the adhesive line with timber spatula

SINKS AND BOWLS

12.2 INTEGRATED SOLID SURFACE SINKS / BOWLS

Directions (Shaping):

11. Cut the sheet material from the centre of the bowl area with the special straight router bit with an oversized bearing
 - Many fabricators like to use templates to pre-cut the sink cutout before installing the sink
 - However, it is important to make the final cut with the router and specified bearings
12. Start from the top to avoid damage to the edge
13. Use specially-designed, bowl-router bits to shape either a flush or other bowl edge trims

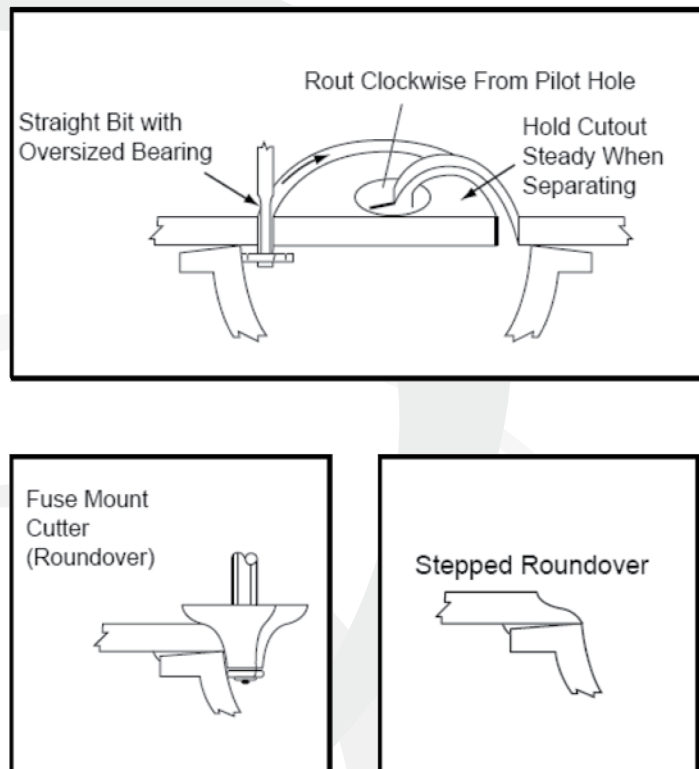


Illustration (12.2-d)



Tips

Precutting the sink cutout or making a pilot hole in the center is helpful, because it will help to ensure visual verification of proper glue coverage when boning the sink to the countertop

12.3 NON-SOLID SURFACE SINKS / BOWLS

A. Under-Mount

There are many different types of sinks in the market. However, the most common and favored sink style is the stainless steel. Some consumers like to match the sinks with their appliances, while others want it for many different reasons. Nevertheless, Hanex Solid Surfaces will support most types of sinks available, whether it be stainless steel, cast iron, solid surface or culture marble.

With so many different manufacturers of sinks in the market, it is very important to have the sinks available during the template phase so the template technician can take the sink to the fabrication plant for an exact cutout. Please consult the sink manufacturer for the specifications and other details on the product.

Because the sinks, faucets, cooktops, and other appliances that need to be installed on the countertop are taken by the template technician to the fabrication plant for exact measurements and cutouts, most of the fabrication and installation preparation should be finished. Please check with your fabrication plant for details.

OVERVIEW:

- Under-mount sinks are usually installed with 100% silicone
- Depending on the weight and style of the the sinks, sometimes special clips are used to hold the sinks in place
 - Please check with the fabrication plant for more details on types of clips and how they are used
 - Usually, pre-drilled slots are available for clamping the clips to the sinks
- Clean the sink and the installation area with denatured alcohol
- Place a bead of silicone on the installation lip of the sink
- Using either the clip or other devises to properly hoist the sink into the place

SINKS AND BOWLS

12.3 NON-SOLID SURFACE SINKS / BOWLS

A. Under-Mount

- Wipe off excess silicone
 - Please see Section (11.6) for tips on how to easily remove silicone using denatured alcohol
- It is always advisable to have other supports for the sink, in addition to using 100% silicone
 - Please check with your fabrication plant on specifics and available tools and equipments to be used to support under-mount sinks
- Remember, 100% silicone will need at least 24 hours to dry
 - Please notify the customer not to touch or use sink, and the surrounding area for at least 24 hours

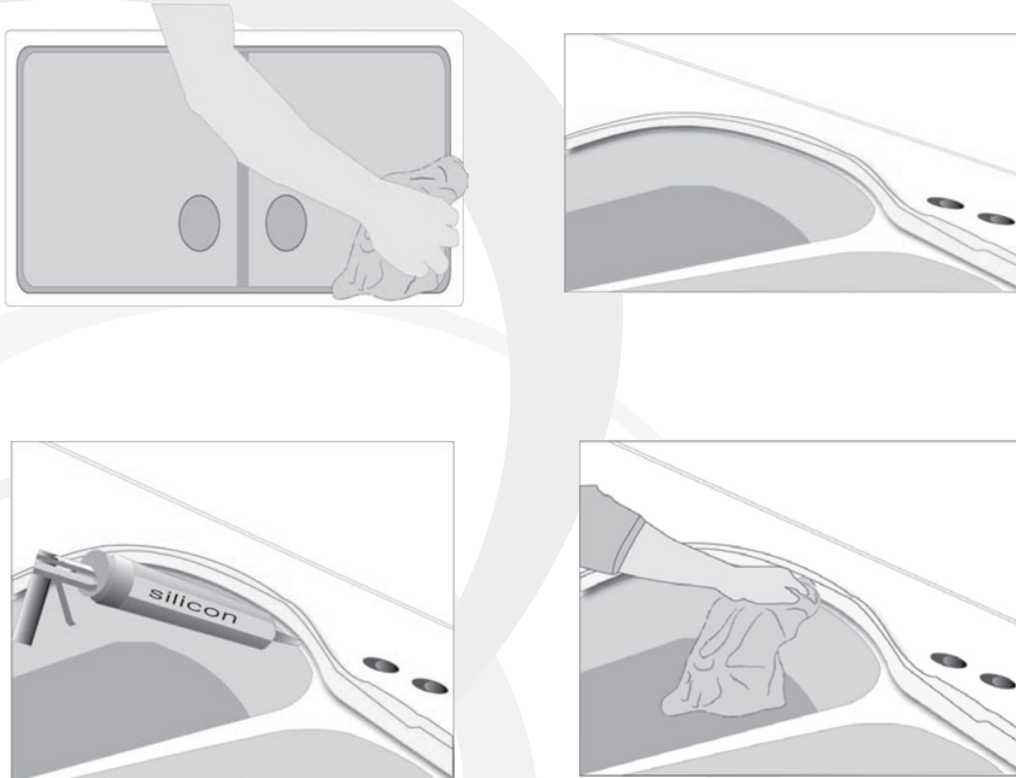


Illustration (12.3-a)

12.3 NON-SOLID SURFACE SINKS / BOWLS

B. Drop-In

Drop-in sinks are unpopular with many consumers, however, to cut costs, some consumers choose drop-in sinks, instead of using under-mount.

Note: Drop-in sinks are usually less expensive, because of the fabrication and installation expense

The edges for drop-in sink cutouts do not have to be polished

Secondly, during installation, drop-in sinks are less time consuming less risky

OVERVIEW:

- Clean the sink and installation area with denatured alcohol
- Apply bead of 100% silicone around the cutout
- Drop-in the sink
- Apply bead of 100% silicone around the join between the sink and the countertop
- Wipe off excess silicone



Illustration (12.3-b)

SINKS AND BOWLS

12.4 CAST IRON AND OTHER HEAVY SINKS

When installing Hanex Solid Surfaces cast iron or other heavy sinks, please check with the fabrication plant, for any special instructions. The following information is only one way to install heavy sinks. Once again, please check with your fabrication plant, if the following information can be used.

Cast Iron Sinks and other heavy sinks can be either top-mounted/drop-in or under-mounted.

Drop-In:

- Follow same instruction in Section (12.3)
- No other support should be necessary. However, with many different types of sinks available in the market, please check with the sink manufacturer for instructions

Under-Mount:

- Follow same instruction in Section (12.2)
- However, a special frame is required to support the weight
- Install either 25mm x 75mm handmade wood frame or pre-made frames, which can be purchased through many tool suppliers
- The frame needs to be attached to the sink base cabinets
- Remember, the frame and installation should hold the weight of the sink, water, and any dishes in the sink
- Installation:
 - Place the sink on the frame
 - Attach all plumbing
 - Install countertop
 - Apply 100% silicone on the rim of the sink
 - Position the countertop in place
 - Wipe off excess silicone

13.1 COOKTOPS OVERVIEW

Described in Chapter 10.7, seam plates are used to strengthen the integrity of the top. These high strength joints provide many advantages to the top, such as preventing cracks and other failures. In addition to the seams and inside corners, cooktop cutouts need to be fabricated in a certain way to give extra barrier between the cooktop and Hanex Solid Surfaces.

There are many different cooktops available today that produce a high amount of heat which can be transferred to Hanex Solid Surfaces and cause it to fail. These fabrication steps are used to reinforce the cutout as much as possible in order to prevent any failures.

CHECKLIST:

- A router should be used for all cutouts
- Use templates for the cutouts
- Specially designed corner blocks must be used in all four corners. Minimum of 100mm x 100mm blocks are required
- Try to make the cutout as big as possible to provide space between the cooktop and Hanex Solid Surfaces
- Special radius cuts are required for all four corners
- Be sure to sand all the sides of the cutout. All top edges of the cutout need to have a radius of 3mm. Bottom edges need to be sanded smooth
- Apply heat reflection tape (aluminum tape) all the way around the cutout
- Be sure not to fold the aluminum tape
- If possible, apply a heat barrier tape (Nomex® or similar) that will provide a protective barrier against heat. (used in fire-fighter equipment)
- Make sure there is ventilation available under and inside the inside of the cabinet where the cooktop is on
- Finally, educate the customer of the proper use of the protective tapes. Specify not to remove or alter any part of the protective tape

13.2 USING TEMPLATES

There are a wide range of cooktops available in the market. Having templates available for each model would be almost impossible.

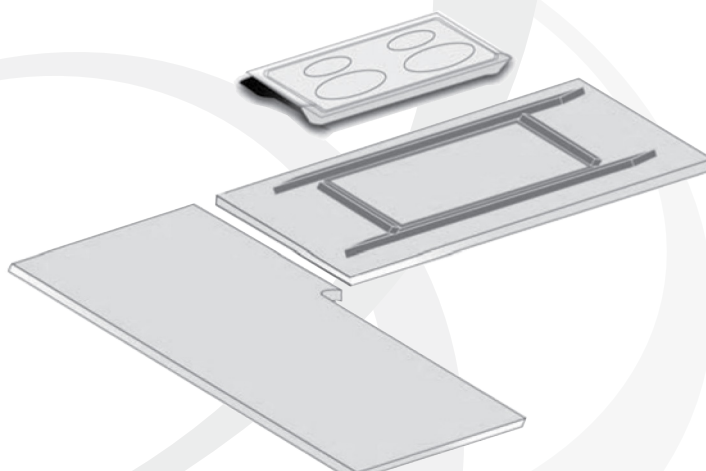
Remember, it is required to cut the cooktop cutouts with a router for smooth cuts, preventing any rough edges. Unless you are using a CNC, you will need to make a template for each and every cooktop cutout.

Using strips of MDF will be the easiest way to make the templates fast and inexpensive. (Illustration 13.2-a). A minimum of 75mm wide MDF strips are recommended to have stability when using the router on the templates.

Directions:

1. Cut MDF into a minimum of strips of 75mm wide
2. Trace the cutout on the top
3. Remember to center the cutout from the front and back
4. Be sure that enough room is required from the edge
5. Take the MDF strips and hot glue them to the cutout lines
6. Make sure you have enough glue to hold the MDF in place
7. All corners should be at 90 degrees to make sure your templates are aligned correctly

Illustration (13.2-a)



13.3 COOKTOP CUTOUTS

After you have finished making the cutout template and it is secured to the top, you are now ready for routing.

Directions:

1. Make sure you are using a minimum of 38mm hp plunge router with right carbide bits See Chapter 5
2. Use 19mm top bearing flush cutter bit to ride along the template
3. The bearing should be about 12mm down the templates and be riding on the side of the MDF safely
4. Plunge the router into the material to make a starter hole
5. Carefully, follow the templates and cut the material
6. Make sure you run your router clockwise slowly
7. Do not force the router to cut faster, this will create nicks
8. Make sure not to tip the router
9. After finishing the cut, spray the template with denature alcohol to release it from the top
10. You might need to use a chisel
11. Let the alcohol soak in to release the glue before trying to remove the template
12. Use caution not to chip or scratch the top

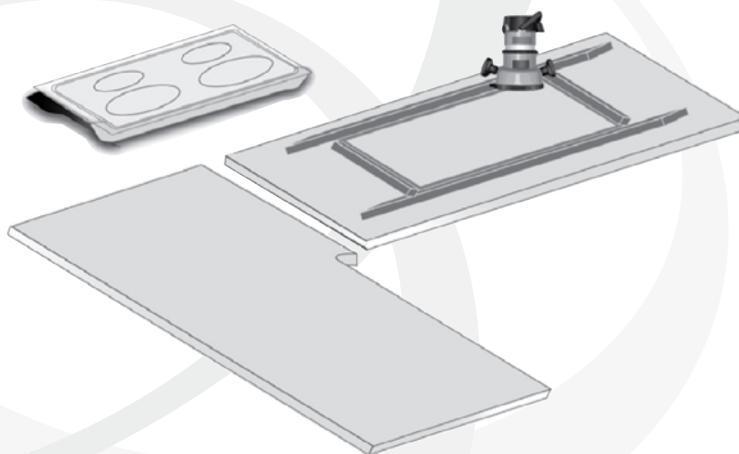


Illustration (13.3-a)

13.4 HIGH STRENGTH CORNER BLOCK

Similar to seam plates, high strength corner blocks should have a minimum size and specification.

Directions:

1. All four corners require high strength corner blocks
2. These blocks need to be 100mm x 100mm or bigger for adequate support
3. Like the seam plates, these blocks will not be visible when installed. Different colored Hanex Solid Surfaces (scrap pieces) can be used
4. The corner blocks need to have 45° angles on all four sides except when the side of the block is fitted right against the edge build-ups
5. After corner blocks are ready, line up the blocks to center the blocks in the corner
6. Attach the blocks using Hanex Solid Surfaces adhesive in all four corners and use clamps to hold them in place
7. There must be 100% glue coverage on the blocks

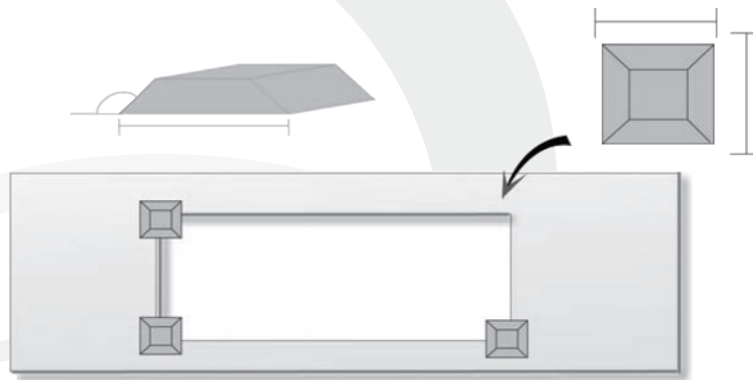


Illustration (13.4-a)

Note: *These high strength corner blocks are required and will void Hanex Solid Surfaces manufacturer warranty if they are not properly used*

13.5 FINAL ROUT AND SANDING

These steps to strengthen the cooktop cutouts can be tedious, however, they will provide an extra barrier to prevent any failures.

Directions:

1. After the adhesive kit is dry, cut off the extra materials of the corner blocks with a router
2. Remember, only routers are permitted
3. After the corner blocks are installed, you can rout out extra materials in each corner to provide a little more space between the cooktop and Hanex Solid Surfaces.

Illustration (13.5-a)

- Using your router, route out each corner at a 45° angle to cut
- Use 19mm router bit or bigger
- Before routing the corners, it is highly recommended that you retrace and measure the cooktop again
- Because the corners of most cooktops are square, it will cover the radius corners

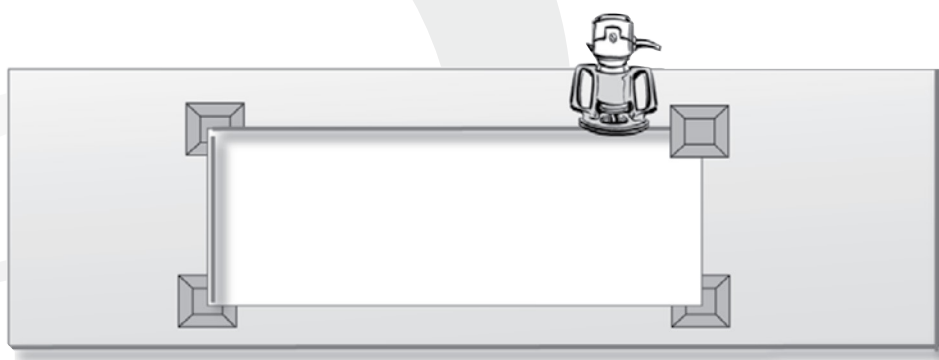


Illustration (13.5-a)



Tips

Use the pencil marking of the cooktop as your guide on how far you should route the corners. Remember, the router bit should only go up to the pencil marking and should not cut further

13.6 PREVENTIVE MEASURES

After all the cuts are made, there are a couple more steps to add additional preventive measures.

Directions:

1. Route a 3mm radius on the top edges of the cutout
2. Sand entire cutout with 150 grit (or equal) sandpaper
3. The entire cutout (top and bottom) must be sanded until smooth
4. All chips and router chatters must be sanded out and cutout must be free of any stress risers
5. After sanding, clean the area with denature alcohol to eliminate dust
6. Finally, apply heat reflection tape (aluminum tape) all the way around the cutout
7. Make sure not to fold the aluminum tape
8. If possible, apply heat barrier tape (Nomex® or similar) that will provide protective barriers against heat (Contact your distributors for more information on Nomex® tapes)

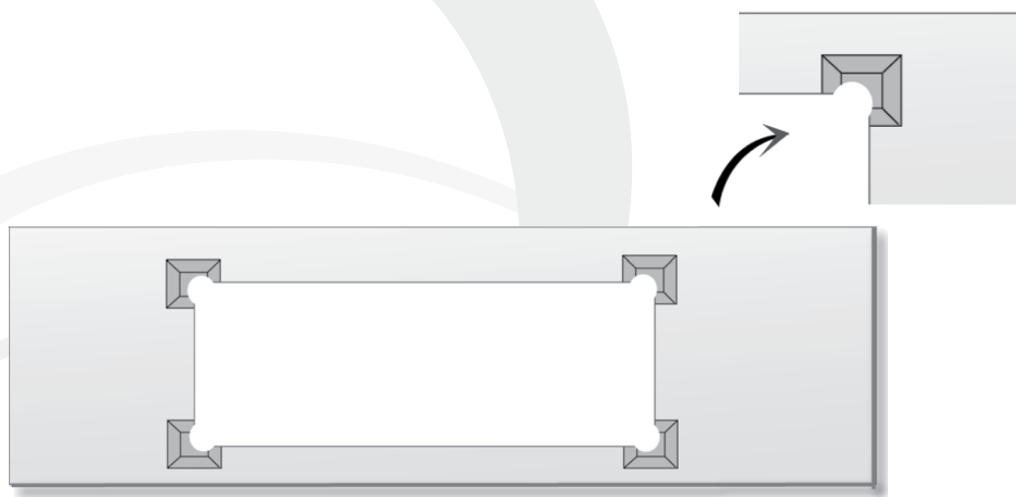


Illustration (13.6-a)

13.6 PREVENTIVE MEASURES

Potential Problems:

- Excessive heat
- Stress points in the cutout
- Missing protective heat reflection and/or barrier tape
- Faulty cooktop
- Not enough space between the cooktop and the countertop
- Missing high strength corner blocks
- Seam through the cooktop
- Customer abuse
- Not properly supported
- Not sanded properly
- Oversize cooking pots and pans, where the heat is transferred to the countertop

Preventions:

- All cutouts need to be completed with a router
- Use templates for the cutouts
- Specially designed corner blocks must be used in all four corners minimum of 100mm x 100mm blocks are required
- Try to make the cutout as big as possible to provide space between the cooktop and Hanex Solid Surfaces
- Special radius cuts are required for all four corners
- Make sure to sand all the sides of the cutout. All top edges of the cutout need to have 3mm radiuses. Bottom edges need to be sanded smooth
- Apply heat reflection tape (aluminum tape) all the way around the cutout
- Make sure not to fold the aluminum tape
- If possible, apply heat barrier tape (Nomex® or similar) that will provide a protective barrier against heat (used in Fire-fighter equipment)
- Make sure there is ventilation available under the inside and inside the cabinet the cooktop is on
- Finally, educate customer in proper use of the protective tapes. Specify not to remove or alter any part of the protective tape

DECORATIVE OPTIONS

14.1 SURFACES

A. Inlays

Hanex Solid Surfaces can be used in many different applications due to its versatility. One of its advantages over other surfacing materials in the market is the ability to inlay different colors in the surface. The inlay can be either hard or soft, however, the end result will be a non-porous, sanitary surfacing which can be used for signage, decorations, and many other applications.

SOFT INLAY (BASICS):

- Depending on the size of the inlay and the complicity of it, different tools can be used
 - Small inlays can be completed with a router, with or without templates
 - However, if the inlay is complicated and requires intricate cuts, CNC routers can be very effective
- Basically, the routed area is filled with an inlay kit or mixture of resin, pigments, and initiator
 - It is recommended to use inlay kits that are available through many different manufacturers
 - However, with proper knowledge, inlay kits can be made for a fraction of the cost. Please take necessary precautions when working with mixtures. The chemicals can be very hazardous
 - Follow all safety requirements and protocols set by the manufacturers
- Make appropriate dams with either hot glue or other similar materials
- Mix the resin with the catalyst and pour it in
 - Depending on the amount of catalyst used, the reaction time will differ
 - Remember, too many catalysts can cause cracks to develop
- Sand and polish
- Depending on the number of colors and layers of the inlay, the process may need to be repeated

14.1 SURFACES

A. Inlays

HARD INLAY (BASICS):

- Hard inlay is basically taking another piece of material and seaming it into the surface
- Hard inlays are used to give accent stripes and even used in repairs
- Using a desired straight router bit, route out the material
 - Depending on the thickness, the router bits can vary in size
 - It is important to keep the slot less than 5mm deep

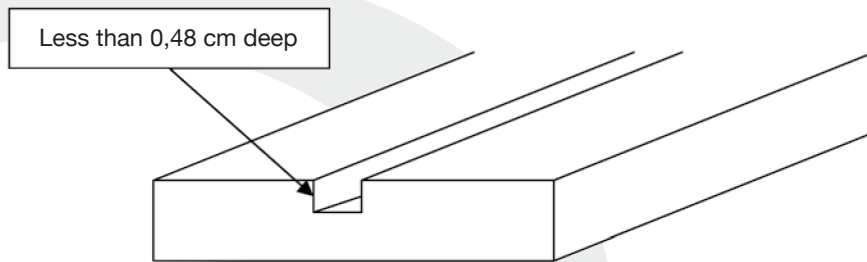


Illustration (14.1-a)

DECORATIVE OPTIONS

14.1 SURFACES

A. Inlays

HARD INLAY CONTINUED:

- The inserted pieces should be made with a slight angle
 - Make the inserted piece about 1.6mm bigger than the inlay slot you just created
 - The slight angle will help to create a firm fit, without any visible seam lines
Illustration (14.1-b)
- Depending on the inlay, you might need to thermoform the inserted piece
See Chapter 20 for more details
- Dry fit all the pieces for an ensured proper fit
- Abrade all pieces with 80 grit sandpaper
- Wipe down with denatured alcohol
- Apply seam adhesive
- Place the insert piece and rock back an forth to snug it into place
- Clamp down until glue cures
- Sand and polish for desired finish

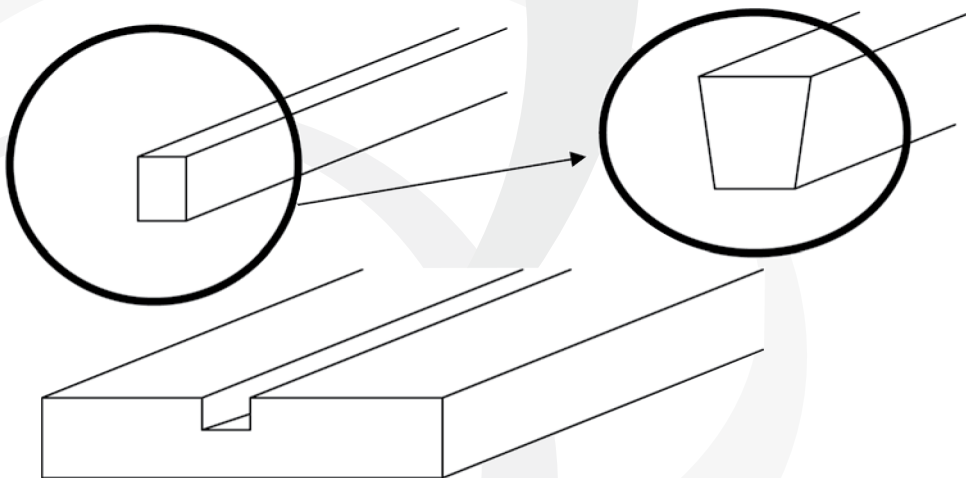


Illustration (14.1-b)

14.2 EDGES

A. Inlays

Creating edge inlays can be different depending on how you fabricate your edge build-ups. Please refer to Chapter 11 for details on edge build-ups.

STACKED EDGE BUILD-UPS:

- Replace the middle strip with another color. Illustration (14.2-a)
- Using the right colored seam adhesive is important
 - Because of the inside corners and other places where the build-up strips will be seam, it is important to use the right color seam adhesive
 - Use the same color seam adhesive as the top for the first layer
 - Use the color of the inlay seam adhesive for the second layer
- Follow instructions in Chapter 11 for edge build-up to finish the inlay and the edge



Illustration (14.2-a)

DECORATIVE OPTIONS

14.2 EDGES

A. Inlays

DROPPED EDGE:

- For dropped edge build-ups, the inlay slots have to be routed out and the inserted piece can be seamed in, to create the edge inlay
 - Using a desired router bit, route out the material
 - Depending on the thickness, the router bits can vary in size
 - It is important to keep the slot less than 5mm deep
 - The inserted pieces should be made with a slight angle
 - Make the inserted piece about 1.6mm bigger than the inlay slot you just created
 - The slight angle will help to create a firm fit, without any visible seam lines
- Illustration (14.2-b)
- Depending on the inlay, you might need to thermoform the inserted piece
See Chapter 20 for more details
 - Dry fit all the pieces for an ensured proper fit
 - Abrade all pieces with 80 grit sandpaper
 - Wipe down with denatured alcohol
 - Apply seam adhesive
 - Place the inserted piece and rock back and forth to snug it into place
 - Clamp down until glue cures
 - Sand and polish for desired finish

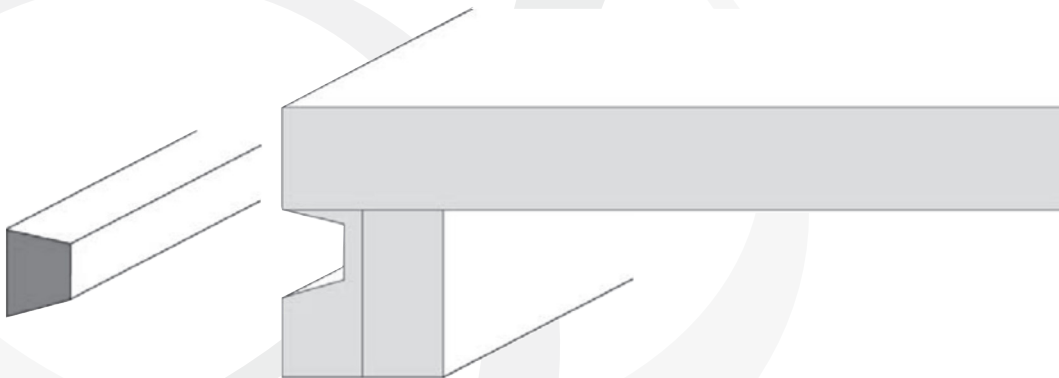


Illustration (14.2-b)

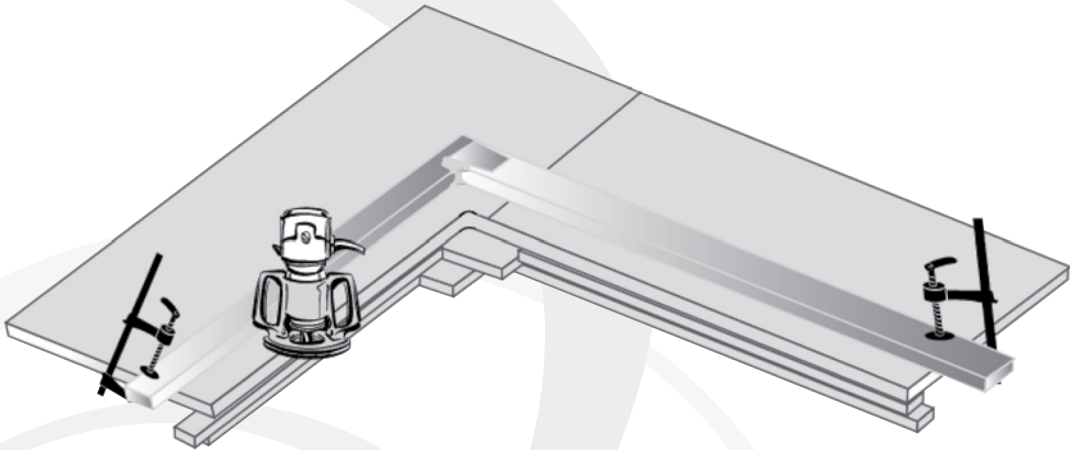
14.2 EDGES

B. Edge Profiles

After completing the build-up of the edges, excess glue and imperfections have to be routed off before decorative edge bits can be applied to the edge.

Directions:

1. Make sure all the glue has cured and there are no soft spots
2. Remove all the clamping equipment
3. Remove all the blocks which were used as a guide for the edges
4. Flip the countertop over to show the top surface of the countertop
5. Either use a template guide, such as an interlocking straight edge system with radius corners or use a top bearing flush cutter to route off any extra glue or imperfections



Illustration(14.2-c)

*Note: Run the router from left to right
Make sure to clamp all the pieces down before routing*

DECORATIVE OPTIONS

14.2 EDGES

Having the right decorative edge profile can be very important to some but not to others. Decorative edges can be very easy to do and can generate lots of interest and profits.

There are many tool manufactures with special bits to create a variety of beautiful edges. Remember, it is important to check with the bit manufacturer for any disclaimer and special instructions.

Directions:

1. After you have completed all the build-ups and preparation work, you can run the router with your decorative bit
2. Most of the bits will have a template guide in the bottom of the bit and it will ride along the material. This is the reason for Chapter 11.5
3. Among the many different types of decorative edges, most commonly used are: eased edge, 6mm, 12mm, 19mm radiuses, full bull nose, half bull nose, ogee, roman ogee, triple pencil, etc.
4. After the decorative edges have been profiled on to the top. Sand the edge to match the finish of the top
5. See Chapter 16 for sanding and polishing details

Note: There are many different bit manufacturers in the market, make sure to check with the manufacturer for special instructions
Remember, Hanex Solid Surfaces will not be responsible for any damages to the top due to faulty bits
Run the router from left to right for smooth route
Always test the bit on test material to check for depth and other issues
When working with elaborate bits, make sure your edge build-ups have enough materials to cover the profile

14.3 SINKS

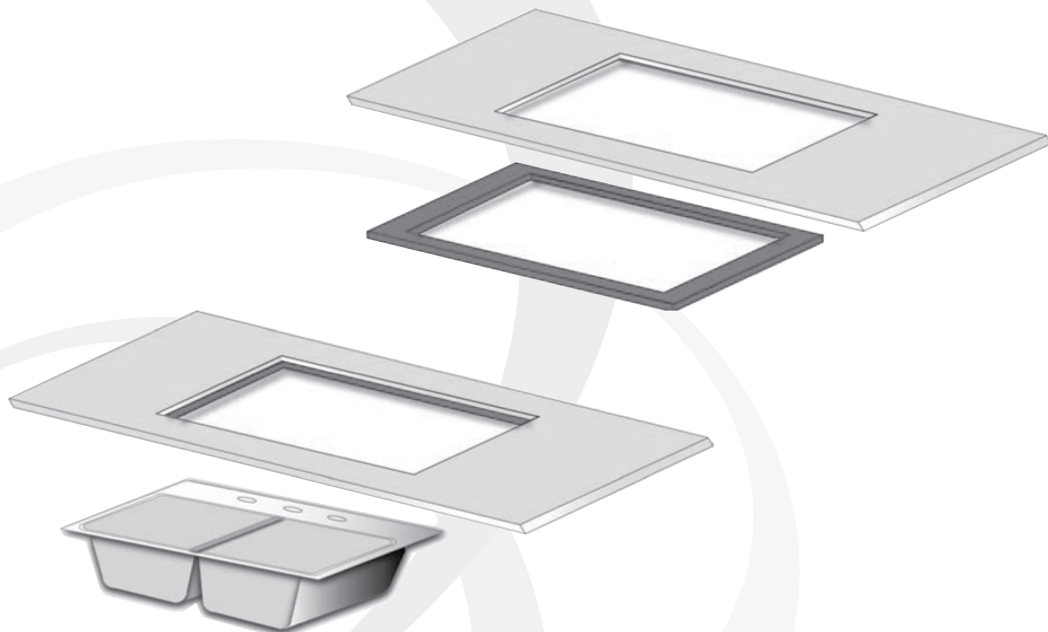
A. Inlays

Very similar to edge inlays with stacked edge build-ups, adding a strip of a different color material between the countertop and the sink will create the inlay.

Directions:

1. Cut a piece of Hanex Solid Surfaces material of inlay color you choose
2. The piece should be at least 50mm bigger than the perimeter of the sink cutout
Illustration (14.3-a)
3. Using Hanex Solid Surfaces adhesive kit, glue down the inlay piece to the bottom of the countertop
 - This process can be done at the same time when the under-mount sink is installed
4. Follow direction in Chapter 12 for proper sink installations

Illustration (14.3-a)



BACKSPLASHES

15.1 LOOSE BACKSPLASH

There are two ways to install loose backsplashes to the countertop. First, backsplashes can be seamed to the top using a Hanex Solid Surfaces seam kit. Secondly, it can be installed using silicone, because there are some installers or customers who do not want the backsplashes to be permanently glued to the top.

USING HANEX SOLID SURFACES SEAM KIT (PERMANENT):

1. Using masking tape, tape both the backsplash and the countertop where the glue (adhesive kit) will squeeze out
2. Prepare the adhesive kit. (Chapter 6.2)
 - Apply the adhesive kit along the countertop where the backsplash will meet
3. Apply dabs of silicone on the back side of the splash
 - Approximately 300mm apart
4. Apply dabs of hot glue on the back side of the splash as well
 - This is to hold the splash in place, while the silicone dries
 - Apply the hot glue in between the dabs of silicone
5. Set the backsplash on the countertop
 - Hold the splash tightly up against the wall and to the countertop
6. Hold it in place until hot glue dries
7. Excess glue will squeeze out
8. Remove excess glue and tape

*Note: Backsplash installation guidelines will differ depending on fabricator
Please check with the design of the countertop and the homeowner on how the backsplashes should be installed
Some fabricators use seam kit to permanently attach the backsplash to the countertop, because of the settling of the house. This way, the backsplash will be lowered along with the countertop when the entire cabinets and countertops move*

15.1 LOOSE BACKSPLASH

The second way to install loose backsplash is to use silicone in order to adhere the splash to the wall and also use colored silicone to detail finish the joints where the splash meets the countertop.

USING SILICONE:

1. Clean the surface with denatured alcohol
2. Apply dabs of silicone on the back side of the splash
 - Approximately 305mm apart
3. Apply dabs of hot glue on the back side of the splash as well
 - This is to hold the splash in place, while the silicone dries
 - Apply the hot glue in between the dabs of silicone
4. Set the splash on the back of the countertop and push it tightly to the wall
5. Hold it in place until hot glue dries
6. After the hot glue sets, apply a bead of silicone in the corner between the splash and the countertop for water proofing the gap
7. To have a clean silicone caulking:
 - Spray the corner bead of silicone with denatured alcohol
 - Make sure the bead of silicone touches both the splash and the countertop
 - Spatula wipe off the excess silicone
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy

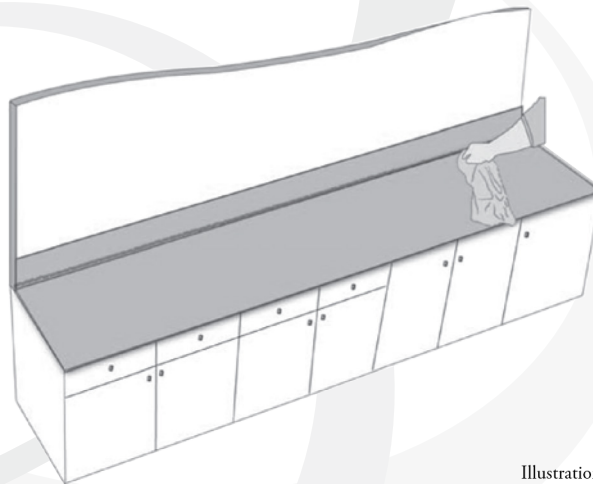


Illustration (15.1-a)

BACKSPLASHES

15.1 COVED BACKSPLASH

An integrated cove backsplash is extremely popular and is a fabrication technique which can set the solid surface industry apart from any other surfacing materials in the market.

While coved backsplash is a desired feature of solid surface, there are specific fabrication techniques that need to be followed. If fabricated correctly, a coved backsplash can add beauty and functionality to the countertop.

Precautions:

- It is extremely important, that the onsite template has been produced to the identical shape of the wall and the cabinets
 - Otherwise gaps will show along the top edge
 - If the wall is badly distorted, consideration should be given to fitting a Hanex Solid Surfaces cap to the top edge. Illustration (15.2-a)
- Same materials should be used in the fabrication of the backsplash
 - Same sheets or sheets from the same Lot # are recommended
- Make sure the seam lines are inconspicuous
- The cove build-up must have be inserted into a notch in the deck
 - This is to help with the strength of the backsplash and to ensure proper seam Illustration (15.2-a)
 - Not installing a notch in the deck will result in a visible seam and the warranty will be voided

Illustration (15.2-a)



15.2 COVED BACKSPLASH

A. Using V-Groove Equipment

Using V-grooving machines are one of the fastest ways to achieve a coved backsplash. However, the equipment can be costly and should be considered according to your business model.

Depending on the equipment, actual techniques will differ. Please consult the equipment manufacturer for more details and instructions. The basic principles of the V-grooving of the backsplashes are to route specific shapes into the material, where it can be folded up 90°.

Directions:

1. Measure the thickness of the material to calibrate the equipment
2. Apply appropriate tape, recommended by the manufacturer, on the back of the cut.
This tape will hold the material together after the cut
3. Run the material into the machine
4. Wipe down the area with denatured alcohol
5. Apply seam adhesive and fold up the material to make your coved backsplash
Illustration (15.2-b)
6. Sand and polish the area after curing



Illustration (15.2-b)

BACKSPLASHES

15.2 COVED BACKSPLASH

B. Using Special Tools (Hand Held Coved Router)

This method is used by many fabricators because of its simplicity and the cost of the tools required is minimal.

Directions:

1. Cut the backsplash piece (A) 9mm smaller than it's actual height
 - This is because the insert piece (B) will add the 9.52mm in height
2. Cut the insert piece (B) 22mm thick
 - 12mm x 22mm x length of the backsplash
3. Abrade the pieces (A) and (B) together and seam them perpendicular to each other
Illustration (15.2-c)
 - Make sure to use some type of spring clamps and to set the clamps at about 152.4mm apart for the entire length
4. On the top, notch out 3mm deep and 22mm wide with a rabbit bit, where the backsplash will be located Illustration (15.2-c)

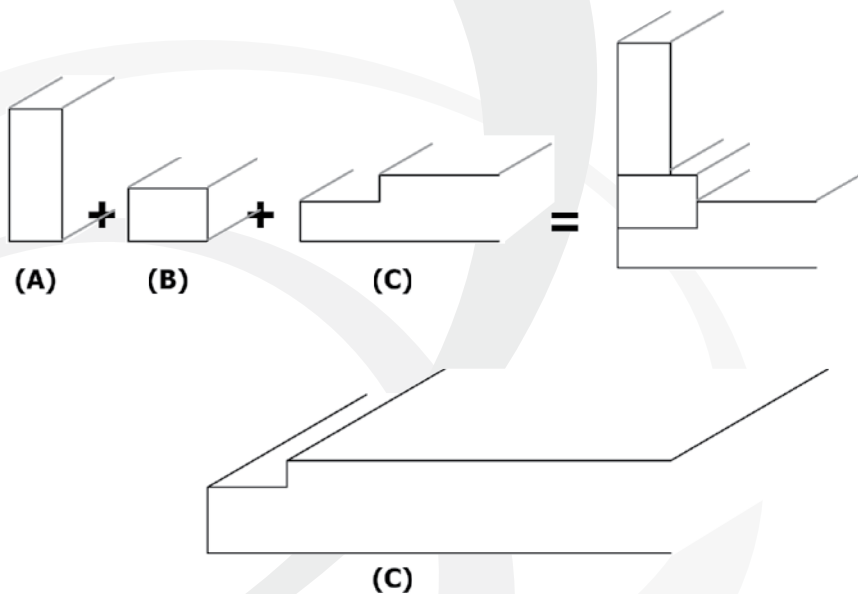


Illustration (15.2-c)

15.2 COVED BACKSPLASH

Directions:

5. Once the notch is complete and the glue has cured, it is ready to pull all the pieces together
6. It is very important to keep all the splash pieces at 90° to the countertop
7. Using a MDF or particleboard, make square blocks with one edge cut at 45°. These blocks will be used to hold the backsplash pieces to the top. Remember, there are other methods and clamping equipments available
8. Place the blocks every 300mm apart. Illustration (15.2-d)
 - One should be placed about 50.8mm from both ends
9. Dry fit the pieces together and clamp them down to see if there are any gaps or imperfections
10. Hot glue the blocks to the deck. Make sure the blocks are against the backsplash
 - It is important that the blocks are in place to make the backsplash 90° to the deck of the countertop

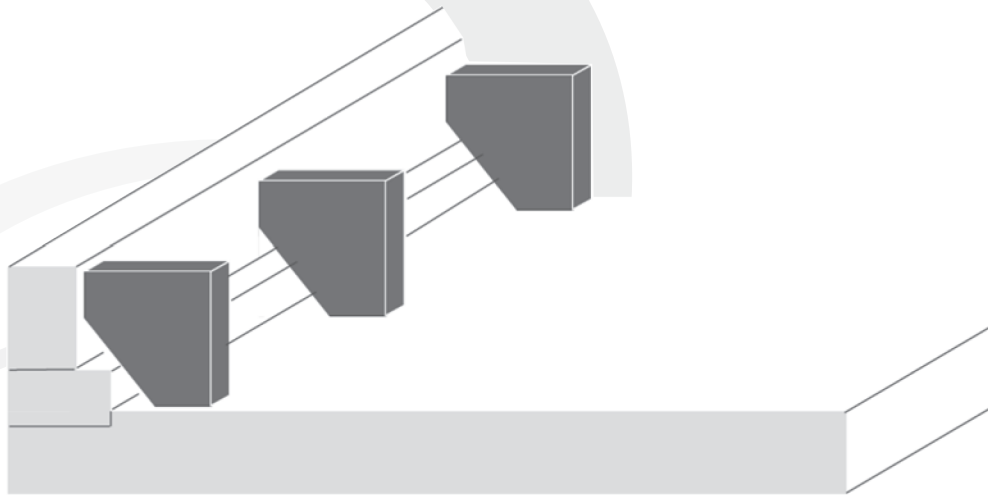


Illustration (15.2-d)

BACKSPLASHES

15.2 COVED BACKSPLASH

Directions:

11. After all the blocks are hot glued to the top, wipe down both the notch and the back-splash with denatured alcohol to remove any dust
12. When the denatured alcohol is completely dry, apply Hanex Solid Surfaces seam adhesive to the notch with 3mm bead
 - Refer to Chapter 6.2 for bonding instructions
 - The adhesive bead should be placed in three places in in the notch: front, back, and the middle



Illustration (15.2-e)

15.2 COVED BACKSPLASH

Directions:

13. Place the backsplash piece on the notch and clamp it down with appropriate clamping system
 - Clamp the backsplash downward from front to back first to make sure the backsplash is glued down all the way and is kept at 90° to the countertop
 - Clamp the bottom of the backsplash to the Blocks to push the backsplash against the front of the notch to create an inconspicuous seam line



Illustration (15.2-f)



Tips

When setting the backsplash in the notch, set it back a little and push it forward. This will help to create good glue coverage, ensuring the seam adhesive will be under the backsplash and in front of the seam line

BACKSPLASHES

15.2 COVED BACKSPLASH

Directions:

14. When the glue cures, remove the clamps, wood blocks and any hot glue residue
15. Calibrate the cove router to have the bit touch the deck of the countertop and the backsplash
16. Run the router from left to right
17. It is important to keep the router tight up against the splash to route out all the necessary materials. Remember, it will be very difficult to sand the backsplash, because it is not flat on the table
18. After successfully routing out the cove, sand and polish to desired finish

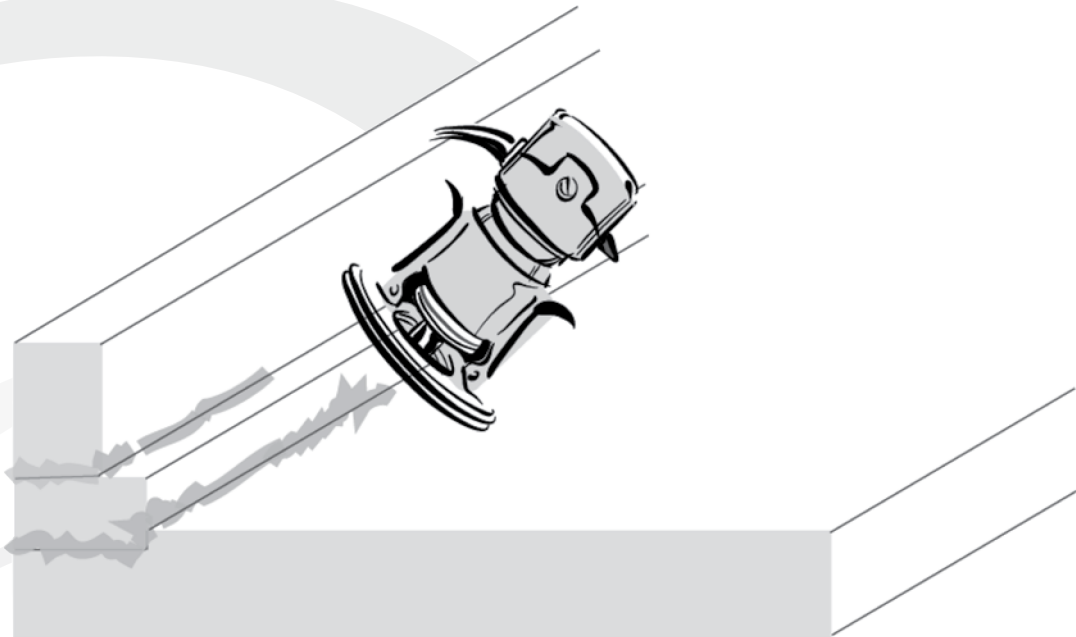


Illustration (15.2-g)



Tips

The cove router will have guides that are 90° to the wall on both sides of the base, keeping it from allowing the bit to go too far and damaging the material or the back-splash

15.2 COVED BACKSPLASH

C. Other Innovative Methods

There are advantages and disadvantages of the methods which were described in the previous sections of this manual on cove backsplashes. To begin with, the V-groove is fast and easy, however very costly. Secondly, the handheld router is inexpensive and pretty simple to do, however, sanding the splash that is already attached to the countertop is fairly difficult.

As a result, some fabricators are coming up with other innovative methods of fabricating the cove backsplashes that are simple, inexpensive, and most importantly, up to specific standards set by the manufacturers. This manual will cover one of the methods of fabricating the cove backsplash. However, please note, that there are other innovative methods and special tools to help with fabricating the cove backsplash. Please check to see, which method will be best suited for your company. Remember, it is very important to check with Hanex Solid Surfaces Technical Support to see if the method you choose is up to specific standards and will be covered under warranty.

PRECAUTIONS:

- It is extremely important, that the onsite template has been produced to the identical shape of the wall and the cabinets
 - Otherwise gaps will show along the top edge
 - If the wall is badly distorted, consideration should be given to fitting an Hanex Solid Surfaces cap to the top edge. Illustration (15.2-a)
- Same materials should be used in the fabrication of the backsplash
 - Same sheets or sheets from same lot # are recommended
- Make sure the seam lines are inconspicuous
- The cove build-up must have to be inserted into a notch in the deck
 - This is to help with the strength of the backsplash and to ensure a proper seam. Illustration (15.2-a)
 - If the backsplash is built, without the notch in the deck, not only the appearance of the seam will be bad, but the top will be voided of its warranty

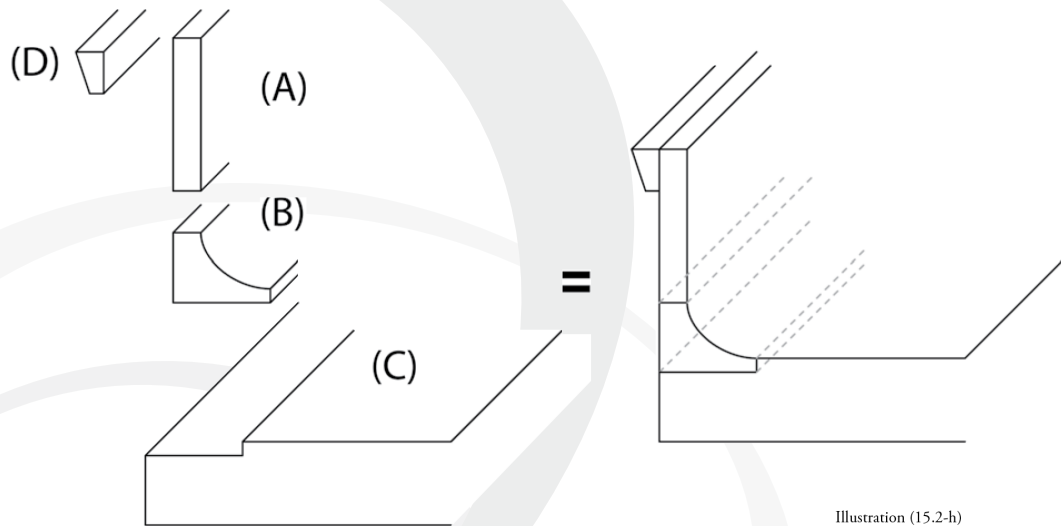
BACKSPLASHES

15.2 COVED BACKSPLASH

This method is innovative because of its simple tooling requirement and ability to sand the back-splashes and most of the cove before installing it to the countertop.

Directions:

1. Similar to Chapter 15.2-b, you will need three pieces of materials
 - You will need backsplash piece (A) that is 9mm smaller than it's actual height
 - This is because the insert piece (B) will add the 9mm in height
 - The insert piece (B) should be 22mm thick, however, the cove will be already routed in
 - 12mm x 22mm x length of the backsplash
 - On the top, notch out 3mm deep and 22mm wide with a rabbit bit where the back-splash will be located. Illustration (15.2-h)



15.2 COVED BACKSPLASH

Directions:

2. However in this method, the pieces “A” and “B” will be fabricated differently
 - Cut a strip of material which will be used for the backsplash at 125mm wide, the length of the top
 - Set the strip face up and clamp it on the table
 - Using 9mm cove router bit, route one edge of the strip
 - It is important to leave 3mm of flat surface on the piece. This 3mm will be fitted into the “C” notch

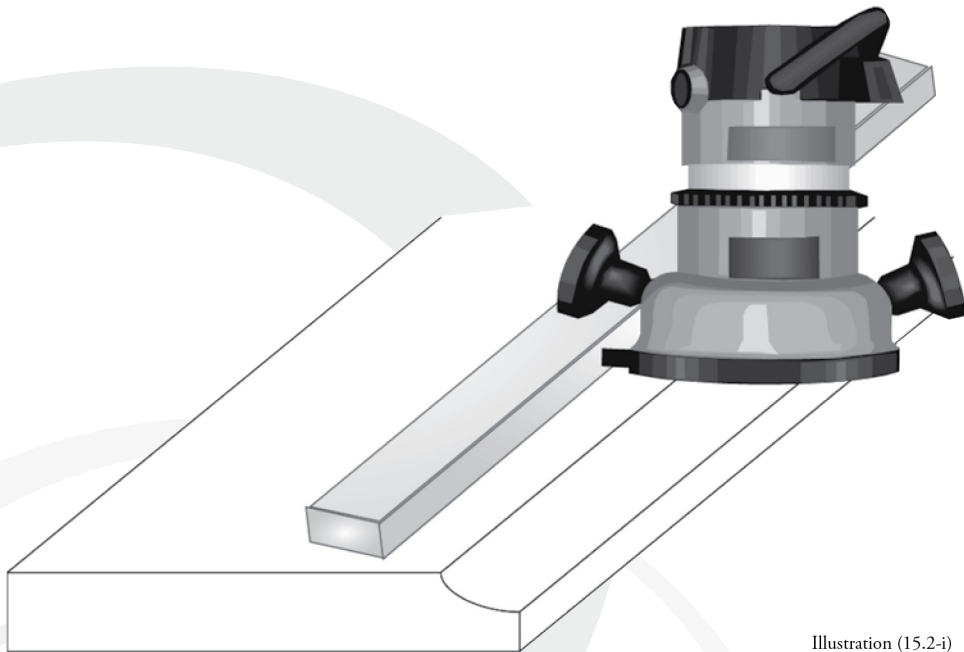


Illustration (15.2-i)

BACKSPLASHES

15.2 COVED BACKSPLASH

Directions:

- Using the table saw with a sharp blade, cut the material at an exact thickness of the materials. Illustration (15.2-j)
- To cut, set the table saw up with a sharp blade and set the fence accordingly to cut the distance from front edge to the scribed line

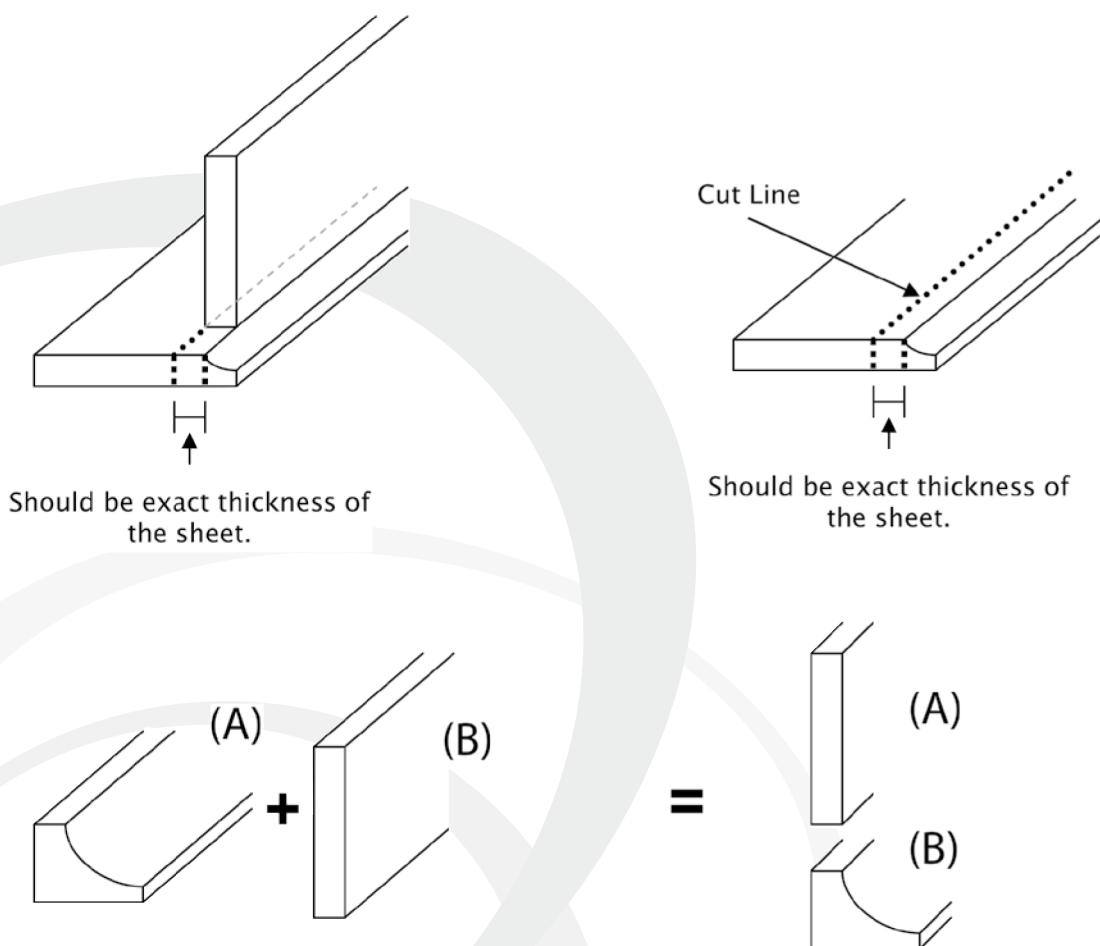


Illustration (15.2-j)



Tips

To measure the exact thickness of the cut, place a scrap piece of the Hanex Solid Surfaces material at perpendicular to the backsplash aligned with where the radius cut begins and using a utility knife or a sharp pencil, mark the line and cut accordingly

15.2 COVED BACKSPLASH

Directions:

5. The two pieces will become the backsplash. Illustration (15.2-j)
6. Please note, depending on the desired thickness of the backsplash, the strip “A” can be cut to size, or in the beginning, instead of 125mm strip, you can choose the width of the thickness
 - See Illustration (15.2-k) for details

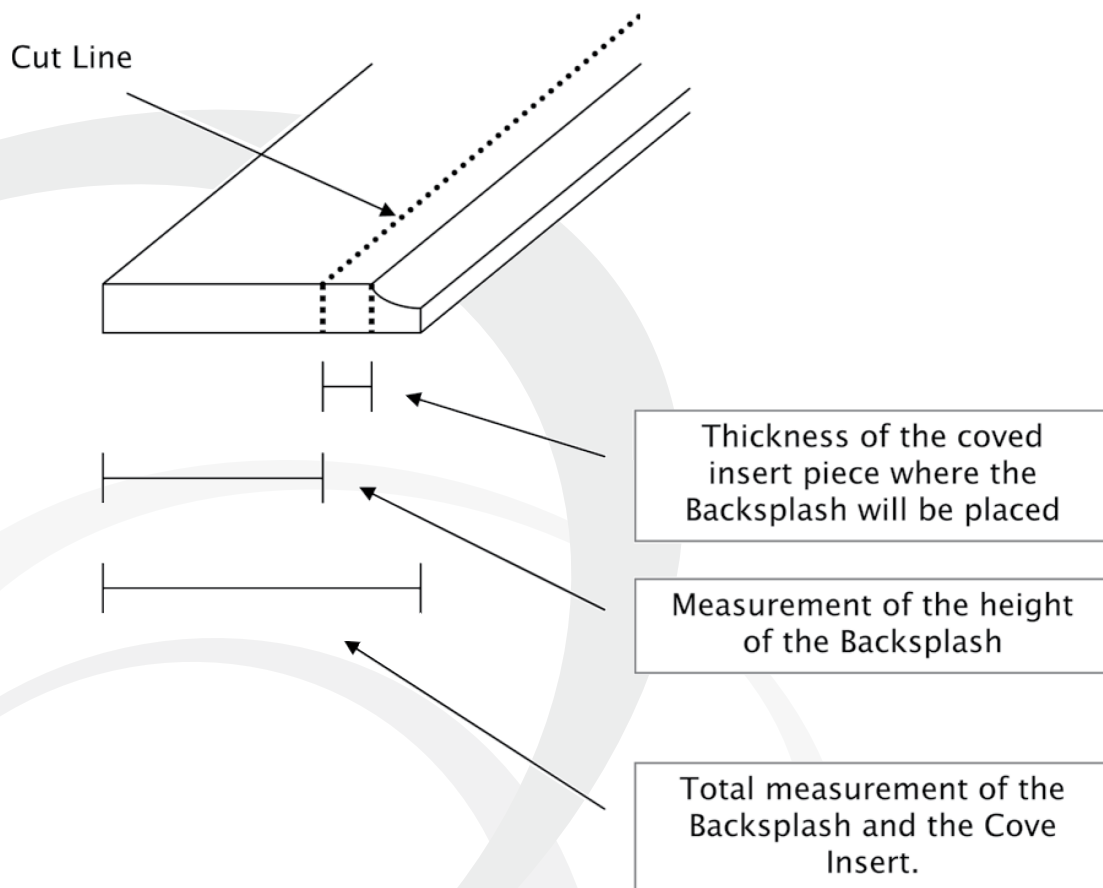


Illustration (15.2-k)

BACKSPLASHES

15.2 COVED BACKSPLASH

Directions:

7. After all the pieces are cut and ready, glue the piece “A” with piece “B”
8. Using Hanex Solid Surfaces adhesive, glue the two pieces together
 - Make sure to abrade the bottom edge of the splash and top of the cove for proper bonding
 - Wipe all the pieces down with denatured alcohol
 - Place release tape on the table
 - When the alcohol dries place seam adhesive on the cove insert piece “B” (about 6mm bead in the middle will be enough)
9. Clamp the glued pieces using some type of spring clamp to give constant pressure
 - The clamps should be properly spaced to give constant pressure to entire length of the seam
10. After the adhesive fully cures, remove the clamps and sand the backsplash to desired finish

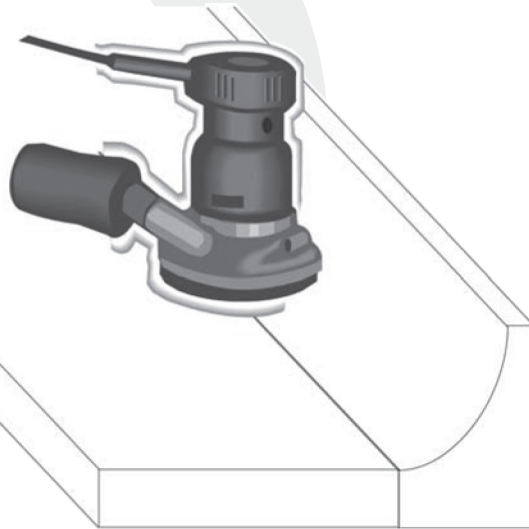


Illustration (15.2-i)

Note: It is recommended to use a profile (soft) pad on the sander to allow the pad to curve to the cove. Take necessary precautions not to sand aggressively to deform the cove

15.2 COVED BACKSPLASH

Directions:

11. Once all the pieces are ready it is time to pull the remaining pieces together
12. It is very important to keep all the splash pieces 90° to the countertop
13. Using a MDF or particle board, make square blocks with one edge cut at 45°. These blocks will be used to hold the backsplash pieces to the top. Remember, there are other methods and clamping equipments available
14. Place the blocks every 300mm apart. Illustration (15.2- m)
 - One should be placed about 50mm from both ends
15. Dry fit the pieces together and clamp them down to see if there are any gaps or imperfections
16. Hot glue the blocks to the deck. Make sure the blocks are against the backsplash
 - It is important that the blocks are placed to make the backsplash 90° to the deck of the countertop



Illustration (15.2-m)

BACKSPLASHES

15.2 COVED BACKSPLASH

Directions:

17. After all the blocks are hot glued to the top, wipe down both the notch and the back-splash with denatured alcohol to remove any dust
18. When the denatured alcohol is completely dry, apply Hanex Solid Surfaces seam adhesive to the notch with 3mm bead
 - Refer to Chapter 6.2 for seam kit instructions
 - The adhesive bead should be placed in three places in the notch: front, back, and the middle



Illustration (15.2-n)



Tips

Sanding the contact points, especially the bottom edge of the cove splash on the slight angle, will allow the splash to fit easily into the notch

15.2 COVED BACKSPLASH

Directions:

19. Place the backsplash piece on the notch and clamp it down with the appropriate clamping system. Illustration (15.2-o)
 - Clamp the splash downward from front to back first to make sure the splash is glued down all the way and is kept at 90° to the countertop
 - Clamp the bottom of the backsplash to the blocks to push the splash against the front of the notch to create an inconspicuous seam line
20. When the glue cures, remove the clamps, wood blocks and any hot glue residue
21. Sand and polish to desired finish
 - Remember, the backsplash is already sanded, take necessary precautions not to touch the backsplash while sanding

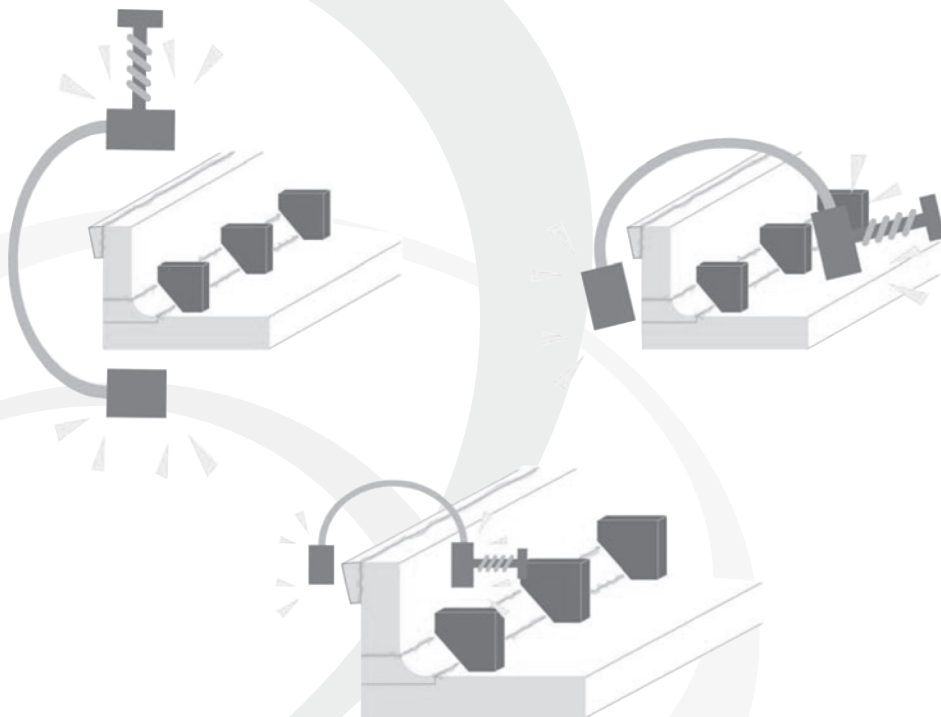


Illustration (15.2-o)

BACKSPLASHES

15.3 FULL HIGH BACKSPLASH

A. Full High Loose Backsplash

Depending on the specification of the job, some jobs will require full high backsplash. Similar to a regular backsplash, it can have both loose set-on or coved. Because of the size and odd shape, full high backsplash can only be seamed at the job site.

Directions:

1. Full high backsplash precise templates should always be used to make a proper fit
2. The template can be made in the beginning or after the countertop has been installed
3. If templates cannot be made due to any reason, measurements can be taken.
Remember, any error in the measurement can alter an entire backsplash
4. Refer to Chapter 8 for measurement or template instructions
5. After all the pieces are cut to size using a straight edge and router, dry fit the backsplash pieces to verify proper fit
6. Using Hanex Solid Surfaces seam kit, glue the backsplash pieces together if the backsplash is made with more than one piece
7. Before the installation of the backsplash, it needs to be cut for any switch or outlet on the back wall
8. Remember, **DO NOT USE JIGSAW** to cut the material. Use small routers to make the cutouts

Note: When making the template and fabricating the backsplash, make sure to leave 3mm gap for the expansion at the wall, cabinets, and window trim, if the material is between enclosed space

15.3 FULL HIGH BACKSPLASH

Directions:

9. Clean the surface with denatured alcohol
10. Apply dabs of silicone on the back side of the splash
 - Approximately 305mm apart
11. Apply dabs of hot glue on the back side of the splash as well
 - This is to hold the splash in place, while the silicone dries
 - Apply the hot glue in between the dabs of silicone
12. Set the splash on the back of the countertop and push it tight to the wall
13. Hold it in place until hot glue dries
14. After the hot glue sets, apply bead of silicone in the corner between the splash and the countertop for water proofing the gap
15. To have a clean silicone caulking:
 - Spray the corner bead of silicone with denatured alcohol
 - Make sure the bead of silicone touches both the splash and the countertop
 - Using a spatula wipe off the excess silicone
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy

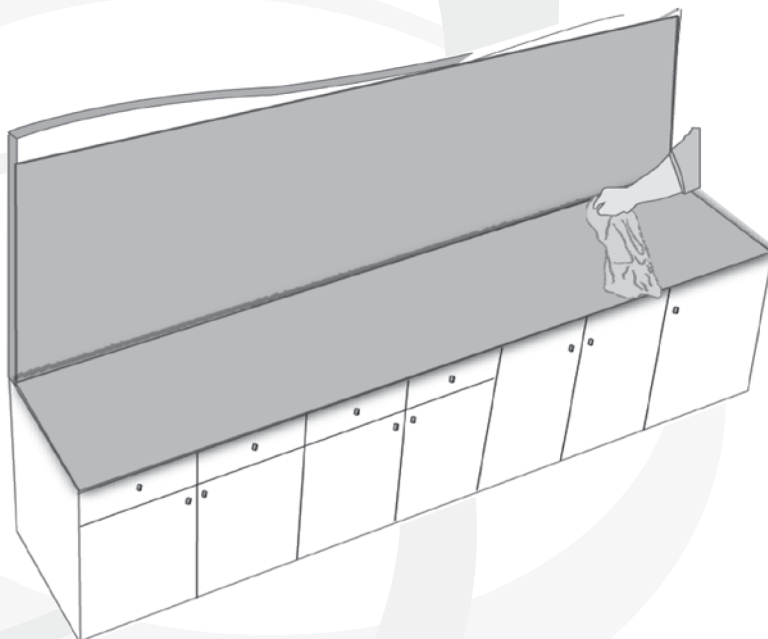


Illustration (15.3-a)

BACKSPLASHES

15.3 FULL HIGH BACKSPLASH

A. Full High Coved Backsplash

A full high coved backsplash can be very difficult to do. If a job specifies full high coved backsplash, it is important to have a very precise template. Because of its odd shape, some parts of the fabrication have to be done at the site.

Directions:

1. Using any one of the methods described in Chapter 15.2 a coved backsplash with 75mm or higher should be fabricated at the shop
2. After the countertop is installed, the rest of the splash can be templated, fabricated, and installed. Illustration (15.3-b)
3. In full high backsplash precise templates should always be used to make sure of a proper fit
4. If templates cannot be made due to any reason, measurements can be taken. Remember, any error in the measurement can alter an entire backsplash
5. Refer to Chapter 8 for measurement or template instructions
6. After all the pieces are cut to size using a straight edge and router dry fit the backsplash pieces on top of the existing coved splash for a proper fit
7. Before the installation of the backsplash, it needs to be cut for any switch or outlet on the back wall
8. Remember, **DO NOT USE JIGSAW** to cut the material. Use small routers to make the cutouts

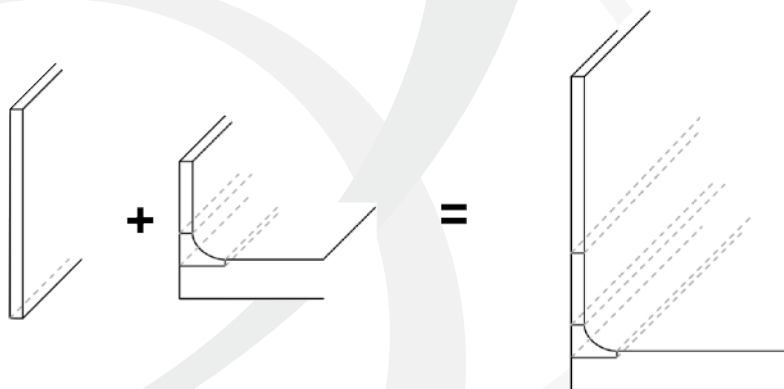


Illustration (15.3-b)

15.3 FULL HIGH BACKSPLASH

Directions:

9. Dry-fit to ensure proper installation
10. For the back wall panel, which will be placed on top of the existing backsplash, apply enough dabs of silicone and hot glue to hold it in place
11. Apply Hanex Solid Surfaces seam kit, on existing coved backsplash
12. Using the right equipment, place the back panel piece in place
13. Due to the gravity of the material, the seam should be tight. However, it is recommended to use proper seam joining techniques described in Chapter 10
14. After the glue cures, sand and polish the area accordingly to match the finish

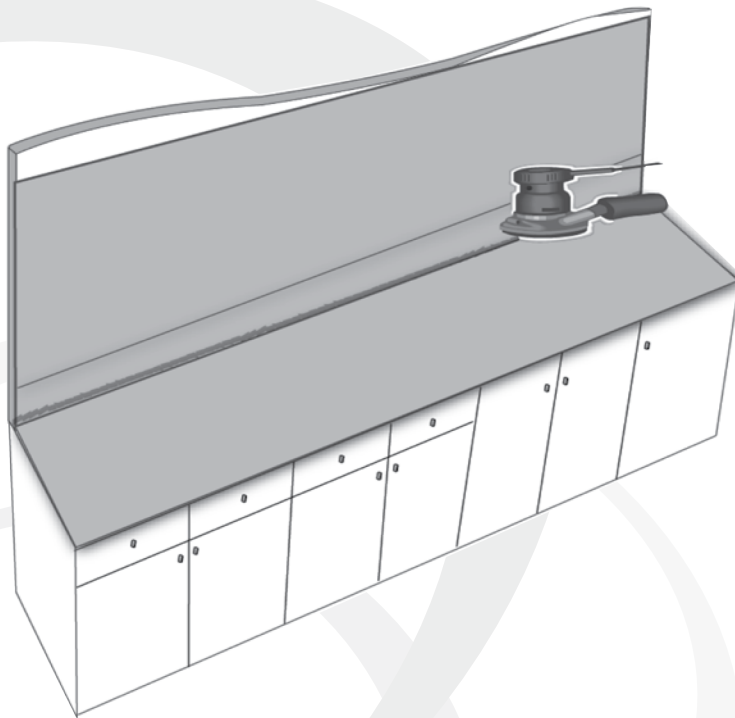


Illustration (15.3-c)

SANDING / POLISHING

16.1 DIFFERENT SANDING EQUIPMENT

Before any sanding or polishing of Hanex Solid Surfaces, having the right tools and sanding pads are important to get the proper finish you desire. There are many types of sanders available for use today in the market. For the most part, most orbital sanders can be used on Hanex Solid Surfaces, however, **BELT SANDERS MUST NOT BE USED** at any time. Belt sanders can create too much heat which can cause damage and it can also create nicks that can be a stress risers to the countertop. The orbital sanders should be set at the right speed for optimal use. Please check with the tool manufactures for details.

In addition to the sanders, having the right sandpaper is another task. Because there are so many different sandpapers in the market, it is recommended that the fabricators check with the sandpaper manufacturers for specifications and proper use.

Different types of Sandpapers

<i>Types</i>	<i>Spec.</i>
Standard Grits	Average size of the grits in entire sheet (dry)
Micron Paper or similar	All grits the same size (dry)
Abralon	Can be used wet or dry
Trizact	Color coded and must be use wet

Table (16.1-a)

Different types of Finish

<i>Finish</i>	<i>Remarks</i>
Matte	Most commonly used / Easy to maintain
Semi-Gloss	Commonly used / Fairly easy to maintain
Gloss	Not recommended / High maintenance
High Gloss (Mirror)	For displays, not recommended for countertops / Very high maintenance

Table (16.1-b)

16.1 DIFFERENT SANDING EQUIPMENT

This technical information is designed to provide support in fabrication, installation, and/or to ensure performance of Hanex Solid Surfaces. The information is based on the technical data which Hanwha L&C believes to be reliable and is intended for a person or persons having knowledge of this technical area. None of the contents, including but not limited to the instructions, recommendations, graphics, techniques, and guidelines should be understood as implying of legal, warranty, or any type of liability by Hanwha L&C and its affiliates.

This chart is only a guideline and should be tested for proper use in your application:

<i>Finish</i>	<i>Standard Grit</i>	<i>Micron</i>	<i>Abralon</i>	<i>Trizact</i>
Matte Finish (Light Color)	120, 150, 180, Red Scotch-Brite™	80, 60, Red Scotch-Brite™		
Matt Finish (Dark Color)	120, 150, 180, 220, 320, Grey Scotch-Brite™	80, 60, 30, Grey Scotch-Brite™	180, 360, Grey Scotch-Brite™	
Semi-Gloss	120, 150, 180, 220, 320, 600-(Wet)	80, 60, 30, 15	180, 360, 500	
High Gloss	120, 150, 180, 220, 320, (600, 800, 100) Wet	80, 60, 30, 15, 9, 5	180, 36, 500, 100, 2000, 4000	60 Micron Blue, Green, Orange, White, All Wet
Mirror Finish	All of the above plus 1) Marine-grade rubbing compound 2) Finesse it compound 3) Liquid glass as final coat.			

Table (16.1-b)

** The Micron and Trizact is a registered trademark of 3M Corporation. The Abralon is a registered trademark of Mirka Corporation. Scotch-Brite™ is a registered trademark of 3M Corporation.

SANDING / POLISHING

16.2 SANDING

To get a good and proper finish of your Hanex Solid Surfaces, it is important to follow specific guidelines. If the sanding is not completed correctly, it can create swirl marks and can even damage your top.

Directions:

1. When sanding, always sand in the same direction to prevent swirl marks
2. In order not to miss any area, sand front to back and side to side in circular motion
3. The circular motion should be done clockwise
4. Make sure to overlap half the diameter of the sander
 - If the sanding is 152mm, it should be overlapped by 76mm

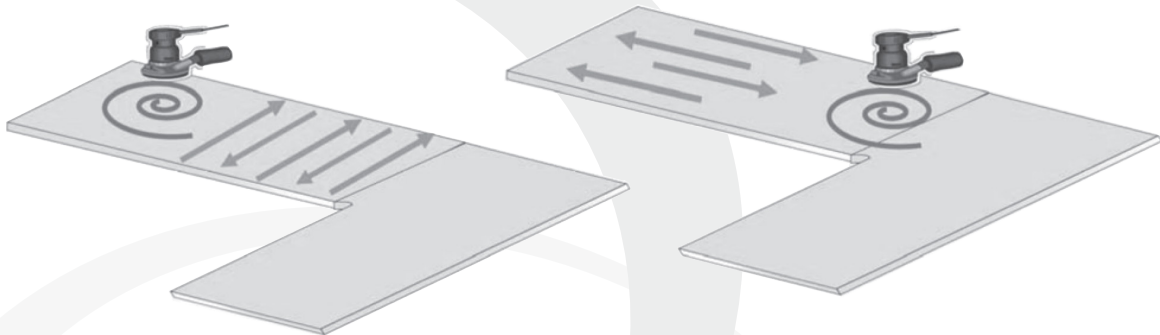


Illustration (16.2-a)



Tips

It is important to wipe off the dust after each grit of the sandpaper used. This is to ensure proper sanding at right grit. The dust which is created has the same size particulates as the sandpaper used. If this dust is not removed, it will scratch the surface.

16.3 POLISHING

To high polish the surface of the Hanex Solid Surfaces, there are more steps that need to be taken. However, it is important to inform the customer of its high maintenance.

Directions:

1. Follow the steps in Chapter 16.2 to sand the top to gloss finish
2. Remember to wipe down all the dust after every step of the sanding
3. There are three rubbing compounds that need to be used to achieve high gloss finish
 - Marin Paste Rubbing Compound
 - Finesse-it
 - Liquid Glass
4. It is important to use different pads for each compound
5. Use the first pad with Marine Paste Rubbing compound. Spread small amount of the paste onto the surface
6. Make sure to coat the pad with the compound before proceeding
7. Polish the top just as you would sand with sandpaper
8. Similar to sanding, polish front to back and side to side clockwise in circular motion
9. Wipe down the compound before proceeding to next step
10. Change pad and follow previous steps using Finesse-it compound
11. Repeat the steps with 3rd pad and Liquid Glass
 - Once the Liquid Glass has been worked into the surface, wait about 5 minutes and buff the entire area



Tips

In high polish, minor scratches can be removed by buffing pad and compounds, instead of going through entire sanding process.

16.4 ADVANTAGES & DISADVANTAGE OF DIFFERENT FINISH

At Hanwha L&C, we continue to strive in providing innovative products and excellence in customer service. To ensure customer's expectations are met it is important to inform customers regarding the advantages and disadvantages of a different finish.

At Hanwha L&C, development of new colors and patterns are just some of the things we do to continue to cater to the needs of our customers with regard to each individual's specific needs.

The basic composition of all Hanex Solid Surfaces is the same, however, it is important to understand that certain dark or heavily pigmented colors, and special designed patterns are not recommended for certain use.

Since these colors are more likely to show scratches, dusts, haziness, and other ordinary wear and tear compared to the lighter, textured colors, it is recommended that customers use caution when choosing colors especially from the following list. This is especially recommended if the material were to be installed in areas of heavy usage and contact, such as kitchen work surface, desk, reception desk, etc.

All Hanex Solid Surfaces products are developed to provide surfacing capabilities like no other. Even though the basic composition remains the same, the overall pigmentation may differ and some colors can have higher density of pigments necessary to produce such beauty and texture.

16.4 ADVANTAGES & DISADVANTAGE OF DIFFERENT FINISH

The following decors are heavily pigmented colours, and are prone to show scratches, dust, haziness, and ordinary wear and tear more easily than lighter textured décors. Therefore, the following décors are not recommended for use in residential and commercial applications that will be subject to heavy use, and/or, horizontal application use, and will not be covered under the Hanex 10 year commercial and domestic limited warranty in relation to claims for scratches of ordinary wear and tear. The following colours are subject to this disclaimer:

D-015 Blackhill	D-021 Bluewave	D-028 Black Beat
T-007 H-Indigoblue	T-025 Chestnut	T-049 Hazelnut
P-005 Night Gleam	P-007 Brown Eyes	M-003 M-Red
M-005 N-Orange	M-007 M-Black	RE-06 Cacao Umber
GAD-014 Hades	NA-04 Viento	BL-206 Slate Grey
G-005 Blackburn	GAR-010 Black Spot	

Table (16.4-a)

Notes: Hanex Solid Surfaces Lifetime Limited Warranty does not cover against minor conditions such as scratches, stains, water spots, and burns, which may be corrected by Hanex Solid Surfaces care & maintenance instructions/guidelines or customer expectation issue. This list should be updated periodically when new colors and designs are launched

INSTALLATION

17.1 TRANSPORTATION

A. Transporting Fabricated Countertop

It's very important to take every precautionary measure when handling and transporting a fabricated countertop to the job site. Special attention should be taken in packaging, loading, transporting, and unloading of the countertop. Remember, improper handling will result in damage to the countertop, resulting in significant additional costs. Not to mention, extra time to either fix or replace damaged materials.

Careful transportation to the job site is critical:

- Never lay the pieces flat
- Never transport pieces flat
- Never carry piece flat
- Place support bars or some kind of support boards for sheets with cutouts
- Always use A-frame or other devices to transport the pieces on a vertical or on a slight lean
- Do not drop or drag any pieces
- Secure all pieces when transporting

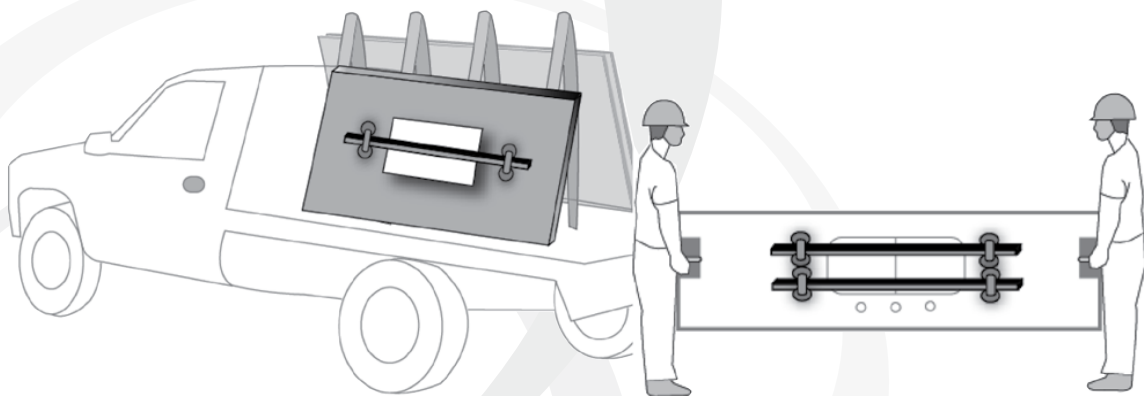


Illustration (17.1-a)

17.1 FEATURED PRODUCT

B.Handling Fabricated Countertop

Handling a fabricated countertop for installation should be done cautiously. Depending on the weight and size, it can be difficult. However, with the right equipment and knowledge, you will be able to completed any job professionally and in a timely manner.

SIMILAR TO SECTION (3.3-A):

- Never lay the pieces flat
- Never transport pieces flat
- Never carry piece flat
- Place support bars or some kind of support boards for sheets with cutouts
- Is recommended to use A-frame or other devices to transport the pieces in a vertical or on a slight lean
- Do not drop or drag any pieces

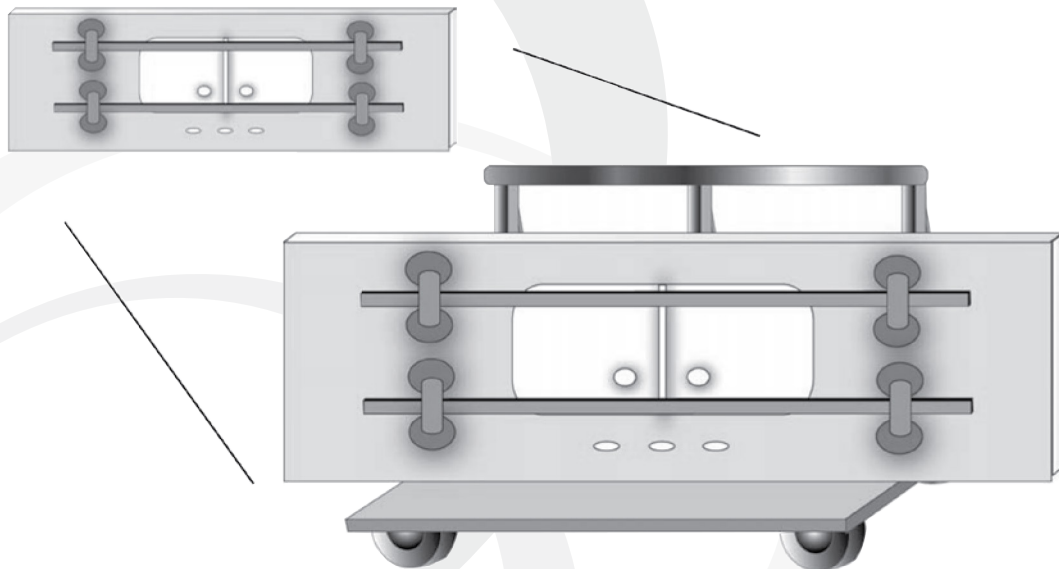


Illustration (17.1-b)

17.2 BEFORE UNLOADING THE COUNTERTOP

Taking special care during transportation is crucial. Fabricated pieces are prone to breakage during transporting and installation because of its special design and cutout, making the material more fragile.

Here are some special handling advice. For full list please see (Chapter 3.3)

- Never lay any pieces flat
- Never carry any pieces flat
- Always use special A-frame or other devices designed to transport engineered stone materials or “glass”
- Always carry the material vertically
- Having support bars is recommended
- Having support bars for the pieces with cutouts are required
- Good rule to follow is to handle the materials like handling glass

Before unloading and bringing the fabricated pieces into the job site, it is important to check the following:

- Check to see if the cabinets are leveled. If for any reasons, the cabinets are not leveled, (please see Chapter 7 for details on site preparation and cabinet condition) notify the customer or the contractor
- Check to see if the cabinets are high in the middle
- Make sure that all cabinets are secured and sturdy enough to carry the load of the countertop
- If for any reason you are not satisfied with the condition of the job site, do not unload the fabricated pieces, until the job site is up to specifications noted in this manual and rules set forth by the fabrication workshop

17.3 BEING PROFESSIONAL

A. Basic Code

Treating all customers with respect and courtesy at all times is the first step in showing professionalism of you and for everyone involved in the process. At Hanex Solid Surfaces and our family of fabricators, installers, template technicians, and everyone involved, we strive each day to provide highest customer satisfaction through our quality standard products and services. Remember, as a member of the Hanex Solid Surfaces professional team, your actions will reflect on everyone.

☐ Scheduling

- ☐ Be on time
- ☐ Notify the customer of any changes prior to the scheduled appointment time

☐ Dress Code

- ☐ Professional dress code is required
- ☐ Personal hygiene

☐ Under the influence

- ☐ Do not smoke
- ☐ Do not be under the influence of drugs or alcohol.

☐ Language

- ☐ Do not use inappropriate language during service call

☐ Clean work surrounding

- ☐ Keep all working area clean at all time
- ☐ Remember to clean up any debris and dust, during and after installation/template is complete
- ☐ Take necessary actions to keep debris and dust at minimal

☐ Do not take lunch breaks at the job site

☐ Noise

- ☐ Do not play any listening device (radio) during service call
- ☐ Take necessary actions to keep other noise level at minimal

☐ Customer questions

- ☐ Provide necessary information and address all concerns before leaving

17.3 BEING PROFESSIONAL

B. Common Sense

In addition to the the Code of Conduct in (Chapter 7.4) and previous pages, it is important to use common sense to show the customer that you, as representative of your company and representative of all the other companies, including Hanex Solid Surfaces, will strive to provide the best possible customer satisfaction.

EXAMPLE:

- Moving Blankets
 - Placing moving blankets from the entrance to the job location is a good way to gain customer confidence
 - Remember, many homes and other job sites have flooring or expensive flooring. By placing some of the inexpensive moving blankets, you are showing the customer that you are taking every necessary precautions to prevent any damage to their property
 - Making sure that your shoes or tools do not touch the customer's flooring, cabinets or furniture
 - Remember, use the blankets to cover the floors and place the tools and other equipments on top of it
- Information Packets
 - Always carry enough information packets, such as care and maintenance, warranty, and any other literatures provided by your company, Hanex Solid Surfaces, fabrication plant and so on
 - By providing the information prior to customer asking, will show the customer that you care
- Dress Code
 - Proper attire and personal hygiene is very important in showing professionalism
 - Remember to dress in a clean uniform if possible
- Comments
 - Refrain from using negative language at the job site
 - Using improper language will allow the customers to think you are incapable of doing the job correctly

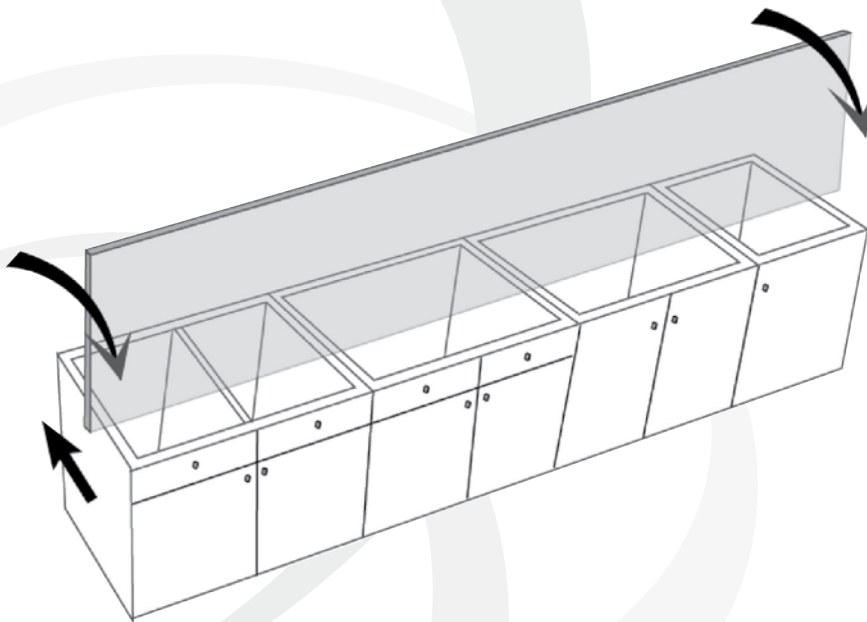
17.4 DRY FIT

When all the preliminary precautions are satisfied, it is time to dry fit the pieces to make sure everything is fitting correctly. Remember, some pieces might be oversized purposely for onsite adjustment.

Due to the size of the fabricated top, the pieces can be very heavy. Take all necessary precautions in setting the pieces on the cabinets.

- Prior to lifting the pieces, make sure the cabinets are prepared correctly
- Discuss with others, who are lifting the top with you, on how you will maneuver the piece into place. Remember, due to the weight and dimension of the fabricated top, it can be difficult to handle
- Always lift vertically
- Usually, the tops are placed into position by lifting the top vertically and placing it on the cabinets (still on a vertical position)
- Carefully, slide the top towards the back wall and lower the front until the top is placed into position
- See Illustration (17.4-a) for details

Illustration (17.4-a)



INSTALLATION

17.4 DRY FIT

After all the pieces are in place, you are ready to dry fit the entire top to make sure everything is fitting correctly. Remember, if you see anything out of the ordinary, it's important to make any correction at this time, before proceeding.

During dry fitting, make sure of the following:

- All pieces fit correctly
- Make sure there are no high or low areas
- Make sure there is no sagging
- Make sure all pieces are properly supported
- Make sure the pieces do not teeter-totter (caused by high middle)
- All the seam areas are aligned
- Shim the seam area as needed
- Pull the seam together to see how the seam will turn out
- Make sure there are 3mm gap at the walls for expansion
- The expansion gap should be 1mm for every 1m of the material. This rule applies only for the materials that are between two walls or other obstacles

If all pieces are placed accordingly and everything is in order, you are ready.

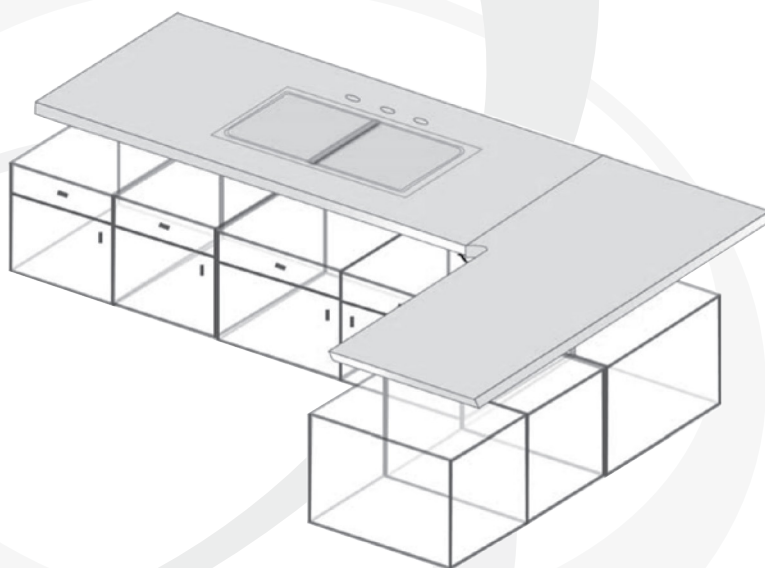


Illustration (17.4-b)

17.5 FIELD SEAMS

During the initial site inspection, templating, and fabricating, it must be decided on which seam will be done in the field and which will be done during the fabrication at the shop. There are many factors that will decide this.

Here are some of the reasons for field seams:

- Size and shape of the top
- Transportation
- Accessibility to the job site
- Installation difficulties

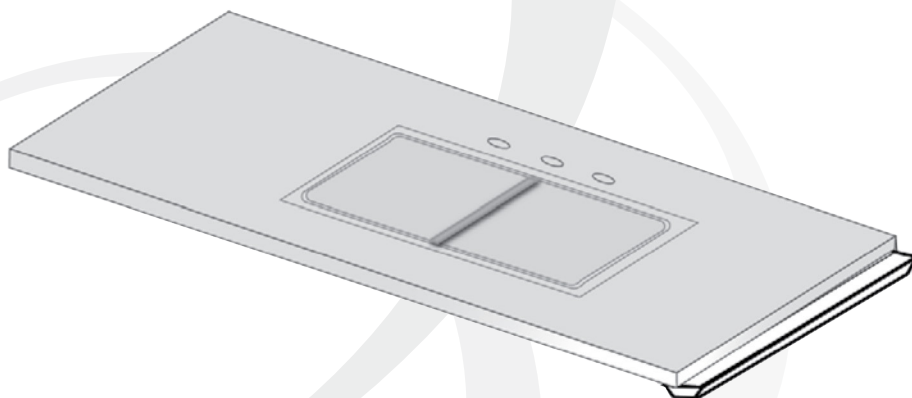
It is important to try to minimize field seams, because you are not in a controlled environment. Additionally, the dust, noise, and time can be an annoyance to the customer.

When planning a field seam, all necessary preparations should be done in the shop to help minimize the risk of anything going wrong at the site. Additionally, it will speed up the entire process during installation.

Directions:

1. Follow same procedure in Chapter 10.1 – 10.3 and 10.7 in preparing the seam
2. Attach the seam plate to only one side of the seam at the shop. See Illustration (17.5-a)

Illustration (17.5-a)



INSTALLATION

17.5 FIELD SEAMS

Directions:

3. Place all the pieces on the installation site
4. Wipe the area with denatured alcohol and let it dry
5. Apply seam adhesive to the seam plate. Make sure to have full coverage
6. Place the second piece on the seam plate with 3mm gap to apply adhesive along the seam
7. Apply adhesive along the gap
8. Using the clamping system you use, pull and tighten the seam together
9. Wait for it to cure
10. Remove excess adhesive (Chapter 10.6)
11. Polish to match the finish

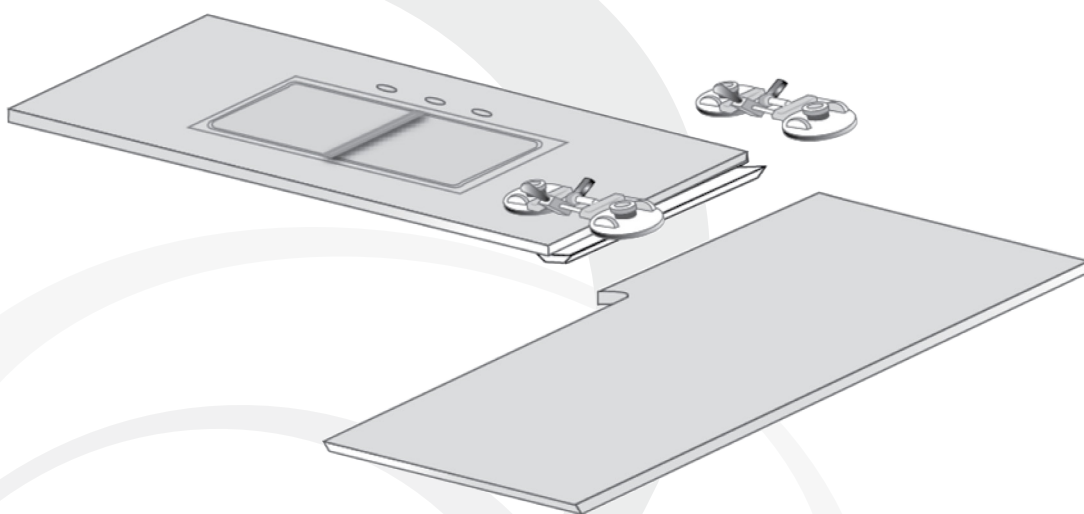


Illustration (17.5-b)



Tips

Take all necessary precaution to minimize dust and noise. Your customer will appreciate your professionalism.

17.6 FIXING THE TOP TO THE CABINETS

When all the dry fitting is completed, you are now ready to fix the top to the cabinets.

The cabinets should have either full perimeter support that is capable of handling the material without sagging or breaking. It is important to make sure that the cabinets are capable of the load and have strong perimeter frames.

Remember, with either perimeter support make sure the seams are supported well and the supports are adequately placed for the sinks and other cutouts.

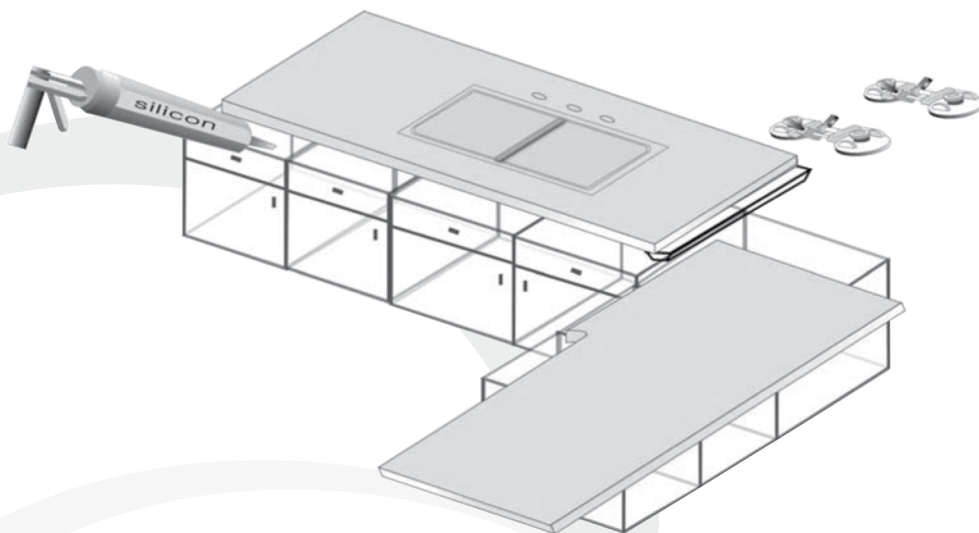


Illustration (17.6-a)

Directions:

1. Adhere the top to the cabinets using flexible silicone (100% silicone is recommended)
This will allow the top to move “expand and contract”
2. DO NOT use liquid nail or other rigid adhesive to adhere the top to the cabinets
3. Place dabs of silicone approximately 250mm apart (should be less than 300mm apart)
4. Allow at least 24 hours for the silicone to dry completely

INSTALLATION

17.7 BACKSPASH

Depending on the type of backsplash, the installation will differ. Please refer to Chapter 15 for full details. For the purpose of this chapter, instructions on the installing of loose backsplashes will be explained.

There are two ways to install loose backsplashes to the countertop. First, backsplashes can be seamed to the top using Hanex Solid Surfaces adhesive kit. Secondly, it can be installed using silicone, because there are some installers or customers who do not want the backsplashes to be permanently glued to the top.

USING HANEX SOLID SURFACES ADHESIVE KIT (PERMANENT):

- Using masking tape, tape both the backsplash and the countertop where the glue (adhesive kit) will squeeze out
- Prepare the adhesive kit (Chapter 6.2)
 - Apply the adhesive kit along the countertop where the backsplash will meet
- Apply dabs of silicone on the back side of the splash
 - Approximately 300mm apart
- Apply dabs of hot glue on the back side of the splash as well
 - This is to hold the splash in place, while the silicone dries
 - Apply the hot glue in between the dabs of silicone
- Set the backsplash on the countertop
 - Hold the splash tightly up against the wall and to the countertop
- Hold it in place until hot glue dries
- Excess glue will squeeze out
- Remove excess glue and tape

*Notes: Backsplash installation guidelines will differ depending on fabricator
Please check with the design of the countertop and the homeowner on how the backsplashes should be installed*

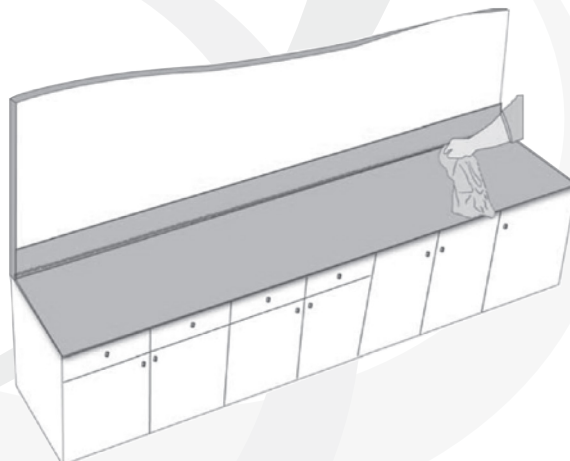
17.7 BACKSPLASH

The second way to install a loose backsplash is to use silicone to adhere the splash to the wall and colored silicone to detail finish the joints where the splash meets the countertop.

USING SILICONE:

- Clean the surface with denatured alcohol
- Apply dabs of silicone on the back side of the splash
 - Approximately 300mm apart
- Apply dabs of hot glue on the back side of the splash as well
 - This is to hold the splash in place, while the silicone dries
 - Apply the hot glue in between the dabs of silicone
- Set the splash on the back of the countertop and push it tight to the wall
- Hold it in place until hot glue dries
- After the hot glue sets, apply bead of silicone in the corner between the splash and the countertop for water proofing the gap
- To have a clean silicone caulking:
 - Spray the corner bead of silicone with denatured alcohol
 - Make sure the bead of silicone touches both the splash and the countertop
 - Using a spatule wipe off the excess silicone
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy

Illustration (17.7-a)



INSTALLATION

17.8 INSTALLING APPLIANCES

Hanex Solid Surfaces is a non-porous material that is stain, scratch, and heat resistant compared with other materials in the market. However, it is important to take necessary precautions when installing cooktops and other appliances to Hanex Solid Surfaces countertops or any other surfacing material.

Please follow all recommendations provided by the appliance manufacturer. In addition, here are some common regulations in installing appliances to Hanex Solid Surfaces .

- Avoid placing seam on or near a dishwasher
- Never screw anything directly into Hanex Solid Surfaces
- Make sure the dishwasher is secured tightly to the countertop frame or the cabinets. Remember, dishwashers vibrate a lot, and if they are not secured properly, it might cause cracks in the countertop
- On the cooktop cutout, follow all instructions in Chapter 13. Remember to apply a heat barrier and heat reflection tape around the cutout to reflect the heat from the cooktop
- Placing two continuous layers of the aluminum tape will allow better heat dispersion
- Do not fold the tape under the edge. This will allow the heat to transfer into Hanex Solid Surfaces

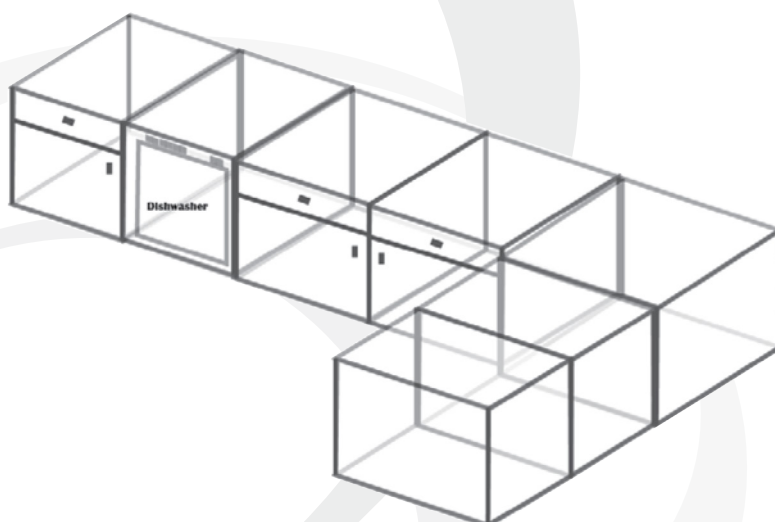


Illustration (17.8-a)

17.9 FAUCET HOLES

Because there are so many different types of the faucets in the market, many times the faucet holes need to be drilled at the site unless the homeowners have the faucets ready during the site inspection or when making the templates.

Directions:

1. Standard hole saw can be used
2. 6mm pilot bit attached to the hole saw is recommended
3. On kitchen faucets, 9mm hole saw are usually used. However, please check the size of the faucet and manufacturer instructions
4. Take necessary precautions to center the hole to the sink or bowl

Notes: Do not twist or force the drill, when drilling the hole. This can cause stress on the top and create hairline cracks

When the hole is almost cut, be careful not to push though too hard. The drill can slam into the top and cause damage

Sand the hole smooth

INSTALLATION

17.9 INSTALLATION CHECKLIST

The following checklist is provided for your convenience and should not be taken as complete or sufficient for all applications. There might be other important information that needs to be added for your business or for the project.

- ☐ Make sure the installations are color matched and are in good condition
- ☐ All installations are flat and there are not gaps between the countertops and the cabinets. The cabinets should be flat and leveled
- ☐ There is full perimeter support for the top. Remember, the countertop should be supported every 300mm or less
- ☐ Make sure there are 1mm gap for every 1m of material when the surface is enclosed between two walls or other obstacles
- ☐ Never install any mechanical fasteners directly into Hanex Solid Surfaces. Make sure to use proper fastener guide
- ☐ Always leave color match material with the customer for future repair
 - ☐ Minimum of 0.36 sq.meter is required
- ☐ Make sure all seams are supported correctly
- ☐ Make sure the inside corners have enough radius (minimum of 12.7mm radius)
- ☐ Support all over-hangs properly
- ☐ Sanding and polishing is done correctly and any nicks and/or scratches are removed
- ☐ Cooktops and other appliances are installed properly
- ☐ All cutouts are supported and fabricated correctly
- ☐ All “stress risers” are removed
- ☐ A copy of Care and Maintenance Instructions are available
- ☐ Customer is satisfied
- ☐ Have answered all questions
- ☐ Care and maintenance education has been completed

18.1 COUNTERTOP SUPPORT

A. Full Perimeter Support

One of the easiest and most important guidelines in fabrication and installation of the Hanex Solid Surfaces countertop is proper support. Countertops that are not properly supported can be severely damaged and will not be covered under warranty.

When setting the Hanex Solid Surfaces countertop on the cabinets, full perimeter support is mandatory. There are many ways to construct full perimeter support, however this manual will cover three specific ways.

CABINET FRAME:

- All Hanex Solid Surfaces countertops must be supported every 300mm or less
- Depending on the cabinet, the cabinet frames can be used as the full perimeter support
- Make sure to check the cabinets for strong frames and sturdiness
- Because Hanex Solid Surfaces tops must be supported every 300mm, extra support frames attached directly into the cabinets might be required
- The recommendation for support frames:
 - Moisture resistant MDF
 - Moisture resistant plywood
 - Particle board is not acceptable for use as support
- It is important to provide extra support under seams

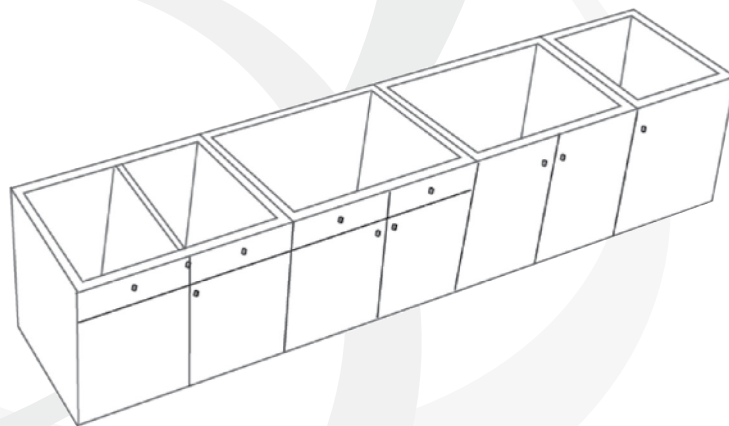


Illustration (18.1-a)

SUPPORTS

18.1 COUNTERTOP SUPPORT

SUPPORT BUILD-UP:

- In some cases, the countertops cannot be installed directly onto the cabinets, because of the edge build-up blocking access to the top drawers and doors
- The recommendation for support frames:
 - Moisture resistant MDF
 - Moisture resistant plywood
 - Particle board is not acceptable for use as support
- These frames can be cut and installed in a couple different ways:
 - It can be installed on the countertop directly before installation. See Illustration (18.1-b)
 - It can be installed on the cabinets
- The strips should be glued on to Hanex Solid Surfaces countertops using 100% pure silicone for lasting adhesion and hot glue to set it in place right away
- If you used stacked edge build-ups with 50mm wide strips, there is no need to place additional support in the front edge

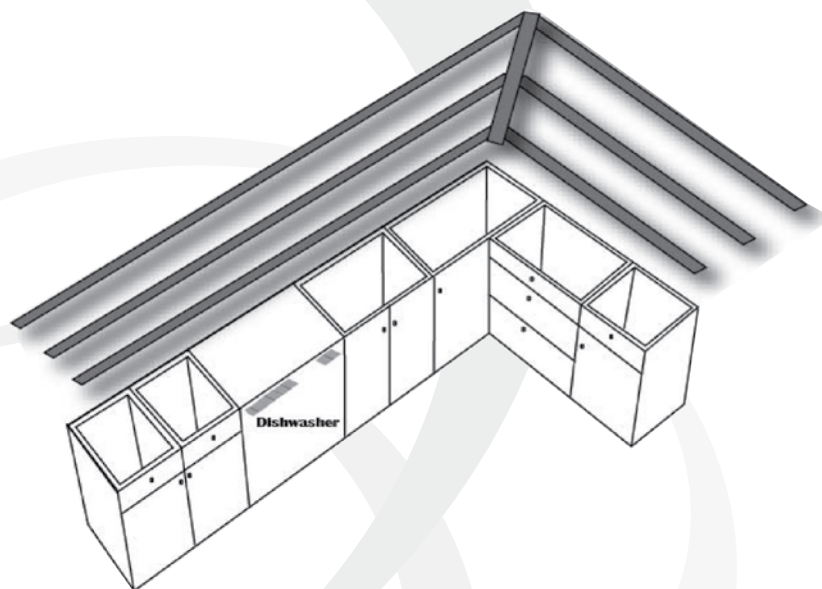


Illustration (18.1-b)

Notes: Full under-layment (sub-top) supports are not allowed

There needs to be air flow on both sides of the material after installation

If the cabinets have dust covers built-in, they need to be cut or removed

18.1 COUNTERTOP SUPPORT

SUPPORT BUILDUP:

- When placing a wood build-up support right behind the edge build-up, it is required to have 3mm gap between the edge build-up and the support strip
- This gap will give room for the Hanex Solid Surfaces seam kit residual left behind from gluing edge buildups
- More importantly, because of the contraction and expansion property of the material, it is recommended to have 3mm gap between the edge buildup and the support strip
- Illustration (18.1-c)

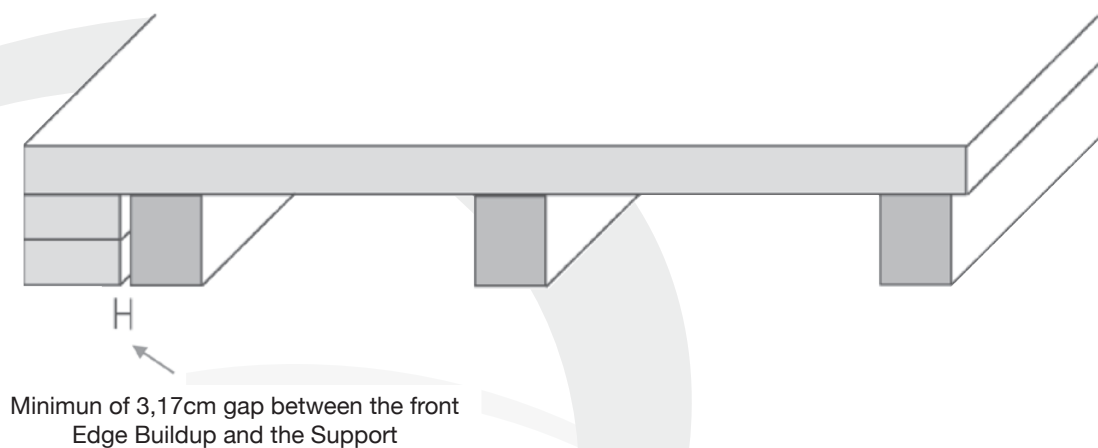


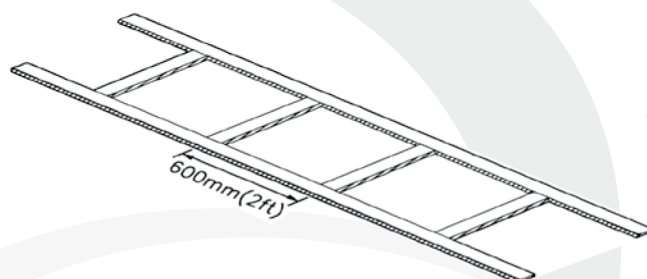
Illustration (18.1-c)

SUPPORTS

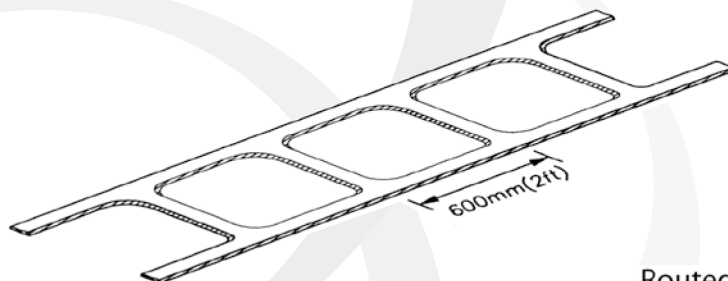
18.1 COUNTERTOP SUPPORT

FRAMING:

- Many fabricators don't use framing techniques to provide support to the Hanex Solid Surfaces countertops, however, this method can provide support to the countertop especially when the cabinet conditions are not very good
 - Please note, proper cabinet framing and support is always required before installation
- The frame can be made with either strips glued together or from a solid piece of material with middle routed out. See Illustration (18.1-d)
- The following materials are recommended for support frames:
 - Moisture resistant MDF (25mm thick)
 - Moisture resistant plywood (25mm thick)
 - Particle board is not acceptable for use as support



Constructed ladder system



Routed ladder system

Illustration (18.1-d)

18.2 OVERHANG SUPPORT

Depending on the project, you might be required to provide an overhang support for the counter-top. Thefollowing are some guidelines to follow when working with overhangs.

<i>Requirements</i>	<i>12mm Hanex Solid Surfaces Material</i>	<i>6mm Hanex Solid Surfaces Material</i>
All overhangs	It's always safe to use proper support for any overhangs	
Support required	It's always safe to use proper support for any overhangs over 150mm	ALWAYS REQUIRED 6mm material not recommended for countertop use
Ladder support or corbels	150-375mm use solid substrate along with corbels evenly spaced less than 0.9 apart	
Solid substrates with legs or columns	Overhangs over 400mm use solid substrate along with legs or columns	
Service bars	Solid substrates and bracket support is always required	

Table (18.2-a)

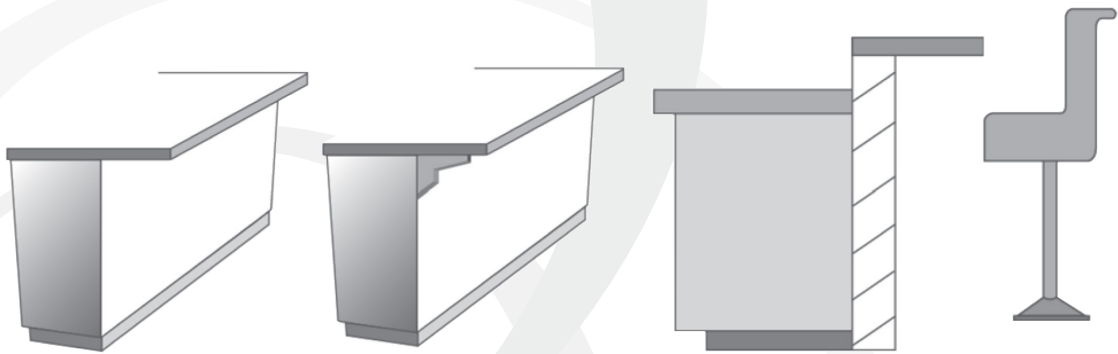


Illustration (18.2-a)

SUPPORTS

18.2 OVERHANG SUPPORT

In many islands, there are overhangs that need to be supported properly. However, because full underlayment (sub-tops) is not allowed, the following guidelines are required for proper installation:

- Overhangs of 175-375mm need to be properly supported. See Table (18.2-a) on previous page
- For full underlayment (sup-tops), it is recommended for only the overhang and not in over the cabinets. See Illustration (18.2-b)
- Use 75mm coarse threaded screws to fix the overhang support to the cabinets

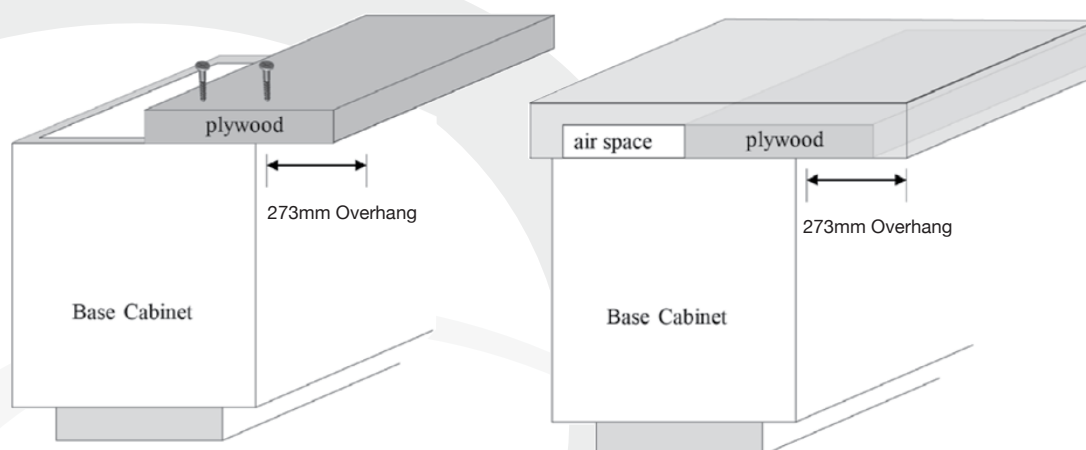


Illustration (18.2-b)

*Notes: This is not considered full underlayment (sub-top)
The air space over the cabinet will allow the material to expand and contract accordingly*

19.1 APPLICATIONS

Commercial applications of Hanex Solid Surfaces will require different fabrication procedures as well as installation requirements. Because there are many different types of commercial applications, special instructions and updates can be found through technical bulletins, Hanex Solid Surfaces websites, and by contacting Hanex Solid Surfaces customer service centers.

In many commercial applications, there are greater chances of possible exposure to extreme temperatures, stress, and other factors which need to be addressed differently compared to normal residential use. With all the benefits solid surface has to offer, Hanex Solid Surfaces can be used in a variety of applications with great results.

This chapter will cover two main areas in commercial application of Hanex Solid Surfaces:

- Food Service Area (hot and cold wells)
- Bain-Marie

FOOD SERVICE AREA (HOT AND COLD WELLS):

- It is important to have the hot wells as far away from the cold wells
 - Try to have all the hot wells together and cold wells together
- Use minimum of 150mm x 150mm high strength corner build-ups on all the cutouts.
 - Please refer to Chapter 13.4 for details
- For all the cutouts, round over 3mm radius on top and bottom
- Make sure to sand everything smooth
- Multiple hot or cold wells should be at least 75mm between cutouts
- All cabinets underneath the wells have to be well ventilated
- Apply heat barrier and reflection tapes
 - Please refer to Chapter 13.6 for details
- Take all necessary precautions and recommendations by manufacturers

COMMERCIAL APPLICATIONS

19.1 APPLICATIONS

BAIN-MARIE

- A large pan containing hot water in which smaller pans may be set to cook food slowly or to keep food warm (Source:Dictionary.com)
- It is a requirement for the manufacturer of the stainless steel tank equipment for the bain-marie to manufacture all hot tank sections with an inner and outer walls
- Specialized insulation is fitted between both skins to reduce the heat transfer towards the Hanex Solid Surfaces countertop
- The flange of the stainless steel tank is required to be aligned at least 3mm above the surface of Hanex Solid Surfaces countertop
- The gap must be filled with heat-resistant silicone
- Make sure to apply heat barrier and resistance tape prior to fitting the tank.
See Illustration (19.1-a)

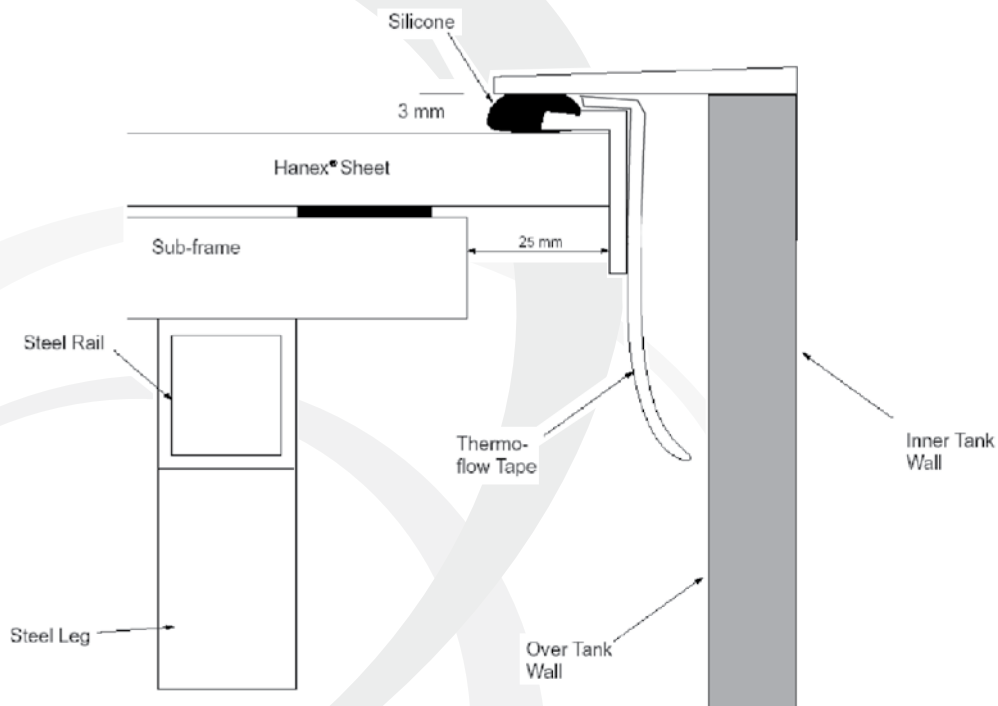


Illustration (19.1-a)

20.1 APPLICATIONS

Due to its versatility, Hanex Solid Surfaces is used in many other applications in both commercial and in residential use. The applications can range from furniture, signage, stair railings, art, deco, walls, partitions and many more. This chapter will discuss briefly about Hanex Solid Surfaces wall applications.

There are many different wall applications, however, many of it is used as:

- Shower surrounds
- Bath surrounds
- Wainscot
- Partitions
- Signage
- Framing
- Etc.

Most of the fabrication and installation techniques are very similar, however, depending on the applications, special precautionary measures might be required. Please check with Hanex Solid Surfaces Technical Service Center for more details.

Notes: Remember, rigid adhesives cannot be used on Hanex Solid Surfaces at anytime

Special anchoring system should be used when anchoring Hanex Solid Surfaces to the wall or as free standing partitions

VERTICAL APPLICATIONS

20.2 FABRICATION AND INSTALLATION

Directions:

1. Using any one of the template methods, measure template to the desired application of the walls or partitions
 - See Chapter 8 for more details
2. Cut the sheets oversized by about 12mm around the perimeter
3. After tracing the template or marking the measurement on the cut pieces, make the final cut using a router
4. Sand the edges and the surface to desired finish
 - See Chapter 16 for more details
5. Dry-fit the pieces to make sure of a proper fit
6. Using 100% silicone (for long lasting adhesion) and hot glue (for immediate and temporary adhesion), attach the pieces to the wall
 - Attach the back wall pieces first
 - Afterwards, side wall pieces should be attached
7. Remember to measure all the cutouts and cut prior to installation
 - If making the cutouts after installation, make sure all measurements are done properly

Notes: When seaming the pieces together, make sure that the final pieces can be safely handled and is accessible to the job site

It is important to have gap 1mm for every 1m of material for expansion and contraction, if the materials is between enclosed space

The inside corners should not be hard seam. The inside corners need enough gap for the material to expand and contract

Fill in the gap with 100% silicone

Outside corners can be hard seams using Hanex Solid Surfaces seam kits

20.2 FABRICATION AND INSTALLATION

Directions:

8. To attach the pieces to the wall, place bead of 100% silicone all around the perimeter of the sheet and place needs a dimension dabs of silicone every 250mm - 300mm
9. Additionally, enough dabs of hot glue should be applied to hold the pieces in place, until the silicone dries completely
10. Using proper tools, like a small detailed router, cut the faucet holes
 - Do not try to make any cuts when the sheets are on the wall
11. When all the pieces are installed and gaps are filled in with 100% silicone, batten strips and corner pieces should be installed if needed
 - Batten strips or corner pieces can be made with strips of the same colored Hanex Solid Surfaces
 - Cut strips at about 50mm wide and set over the seam
 - Silicone the strip over where the two pieces of material meets

Notes: Side wall pieces should be tight against the back wall

If there is glass door being installed, leave about 3mm gap where the side wall meets the glass door frame

Fill with 100% silicone for water proof

This gap is to give enough room for expansion of the material

21.1 GENERAL RULES

A. Material Preparation

Unlike other materials, Hanex Solid Surfaces can be thermoformed to create any desired shape to fit your needs. Properly preparing the materials is required for good end results.

Directions:

1. Remove the protective film from the material
2. Cut all the pieces accurately to its required dimensions
 - It is important to consider the shrinking and expanding during the thermoforming process
3. Sand all the pieces to matted finish
 - All surfaces, including the edges should be sanded
 - This is to prevent rips and cracks during thermoforming process
4. Follow the Table (21.1-a) on maximum inside radiuses

<i>Sheet Thickness</i>	<i>Maximum Inside Radius</i>	<i>Material Grade</i>
6mm Material	25mm Radius	Solo, Duo
12mm Material	50mm Radius	Solo, Duo
12mm Material	150mm Radius	Trio
12mm Material	178mm Radius	Palazzo
12mm Material	200mm Radius	Brionne

Table (21.1-a)

Notes: The above chart is an estimated numbers. Take necessary precautions and test when thermoforming the Hanex Solid Surfaces products

21.1 GENERAL RULES

B. Mold Preparation

Unless the material to be thermofotmed is an inlay piece, where it can be formed free-hand, having proper and accurate mold is highly recommended. The molds can be made from MDF. materials, due to its properties. It is important to make both male and female sections to hold the heated pieces in the desired shape.

Directions:

1. Using high quality plywood or MDF boards, cut and shape the pieces to desired dimensions
2. The mold surface must be sanded smooth and free of any defect, which can be transferred to the materials
3. Depending on the shape, the molds should be properly supported and strong enough to endure pressure and heat
4. Solid wood or metal molds are not recommended, because they can insulate the heat and slow down the process

Notes: There are special equipment and molds designed for thermoforming solid surface materials. Please check with the manufacturer for further details

21.1 GENERAL RULES

C. Oven Preparation

Having the right oven is essential for properly thermoforming Hanex Solid Surfaces. As a general rule, the oven must be able to heat the material uniformly. There are some fabricators who use torches with open flame to heat the materials. Using an open flame to heat the material is NOT permitted at anytime.

Directions:

1. The oven should be calibrated
 - Please consult with the manufacturer for proper calibration
2. Preheat the oven to desired temperature
3. The oven should be designed for solid surface sheets and be able to heat uniformly
4. The materials should be fully enclosed in the oven
5. Depending on the oven, radius, thickness, and other factors, the time and temperature may vary
6. Calibration
 - On a test piece of Hanex Solid Surfaces material drill a 1.6mm diameter
 - Insert the temperature gauge wires in the hole and on the surface. Cover with aluminum tape on both areas
 - Check to see when the temperature reaches about 150° inside the hole and 160° outside the surface:
 - Your oven temperature and time will be most effective in thermoforming the material
 - Use the data to thermoform properly with the oven

Notes: Accurately calibrating and testing the oven will help to ensure good results

21.2 THERMOFORMING

Directions:

1. The oven should be calibrated
 - Please consult with the manufacturer for proper calibration
2. Preheat the oven to desired temperature
3. The oven should be designed for solid surface sheets and be able to heat uniformly
4. The materials should be fully enclosed in the oven
5. Depending on the oven, radius, thickness, and other factors, the time and temperature may vary
6. Place the material in the oven at desired temperature and time
 - Please see Table (21.2-a) for basic guidelines
7. Quickly place the heated material in the mold
8. Using the molds, slowly form the material to desired shape

<i>Sheet Thickness</i>	<i>Oven Temperature</i>	<i>Time</i>
Hanex 6 mm	175°C - 187°C	10 -15 min
	175°C - 187°C	20 -25 min
Brionne 12 mm	175°C - 187°C	20 -25 min

Table (21.2-a)

Notes: Do not force the material. Instead make sure to check to see if the material was heated enough at the right temperature

21.3 THERMOFORMING CHECKLIST

Taking special care during transportation is crucial. Fabricated pieces are prone to breakage during transporting and installation because of its special design and cutout, making the material more fragile.

CHECKLIST:

- ☐ The oven temperature should not exceed over 175°C
- ☐ When the oven temperature reaches over 175°C the material can blister and permanently damage the material
- ☐ It is recommended to calibrate the oven with a sample piece of material before thermoforming Hanex Solid Surfaces
- ☐ Preheat the oven to desired temperature
- ☐ Make sure that all pieces are fully enclosed in the oven for proper heat distributions
- ☐ Place the heated material in the mold and clamp it securely
- ☐ Remember, proper cool down is important. Take enough time to cool the material down properly
- ☐ At the end of a cool down period, remove the material from the mold and finish the cool down at room temperature

Notes: Do not use open flame to heat Hanex Solid Surfaces for thermoforming under any circumstance

Using open flame from torch will make the material blister and damage the product

22.1 INSIDE CORNER REPAIR

Directions:

1. Sand the area to be repaired
2. Encompass damaged area with pie-shaped template and raise template with 6mm plywood shims
3. Clamp to deck
4. Using a 25mm template guide and a 1,27cm straight bit, route through the deck only (leave onion skin of material)
5. Use wide router base to remove deck over build-up area
6. Route bevel into deck (deck thickness only) using bevel bit as shown
7. Remove template
8. Using plug template, mark a line on the build-up (this line will be 19mm over)
9. Slide template to line it up with the marks (no 6mm shims are needed)
10. Using 25mm template and 1,27cm flute bit, route through damaged build-up
11. Remove template
12. Hot melt two pieces of repair material (one at a time) to plug template and route with 2,54cm straight bit with bearing
13. Slide repair build-up pieces into build-up and mark out backside to line up with existing build-up
14. Either cut build-up repair pieces to exact size using 2,54cm top bearing bit and two 25mm x 50mm strips hot melted to pieces (this will leave a 12mm radius at the inside corner) or rough cut pieces a 6mm over size with a jigsaw
15. Make your deck plug the same as in steps #6 & #7 in bevel repair. Each repair will act as seam plate to one another. All seams are 25mm off the radius as required
16. Glue up and sand

REPAIR

22.1 INSIDE CORNER REPAIR

Inside Corner Repair – Step by Step

1. Sand area to be repaired
2. Encompass damaged area with pie-shaped template and raise template with 6mm shims and clamp to deck
3. Using 25mm template guide and 12mm straight bit, route through deck only (leave onion skin material)
Use wide router base to remove deck over buildup area
4. Route bevel into deck (deck thickness only) using bevel bit as shown

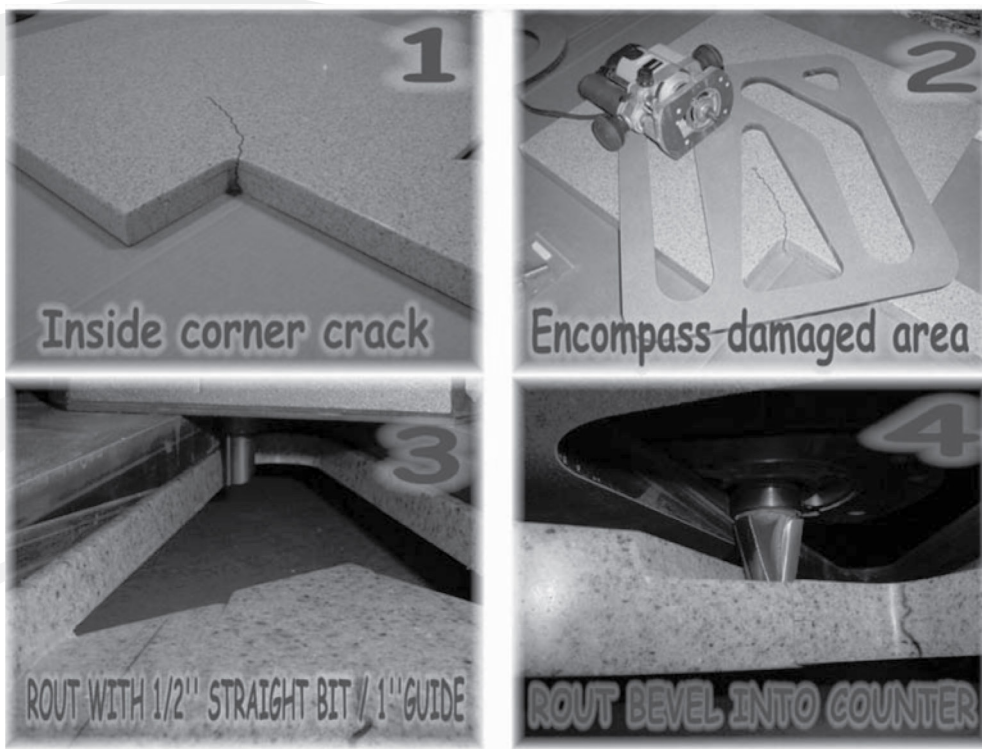


Illustration (22.2-a)

22.1 INSIDE CORNER REPAIR

Inside Corner Repair – Step by Step

5. Remove template. Deck is ready
6. Using plug template, mark a line on buildup (this line will be 19mm over)
7. Slide template to line up with marks (no shims needed)
8. Using template and 1,27cm single flute bit, route through damaged buildup (as shown)

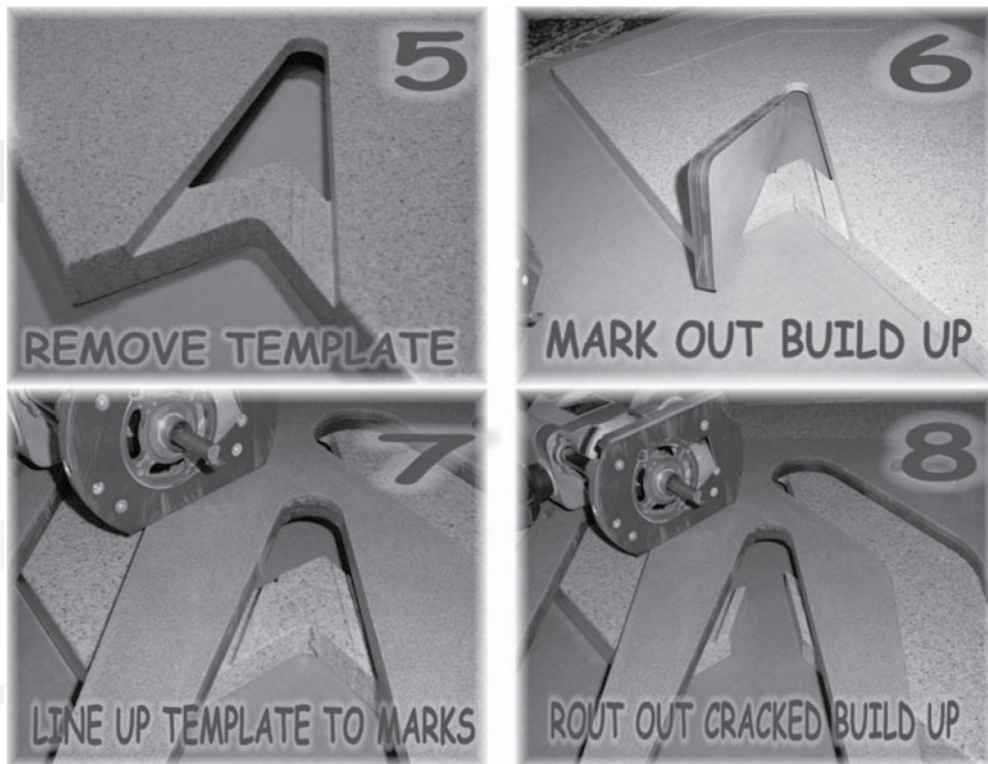


Illustration (22.2-b)

REPAIR

22.1 INSIDE CORNER REPAIR

Inside Corner Repair – Step by Step

9. Remove template. Countertop is now ready
10. Hot melt two pieces (one at a time) of repair material to the plug template and route with 2,54cm top bearing straight bit
11. Slide repair buildup piece into buildup and mark out (2 pieces)
12. Cut new buildup pieces even with existing buildup in rear while leaving a 6mm extra in the front

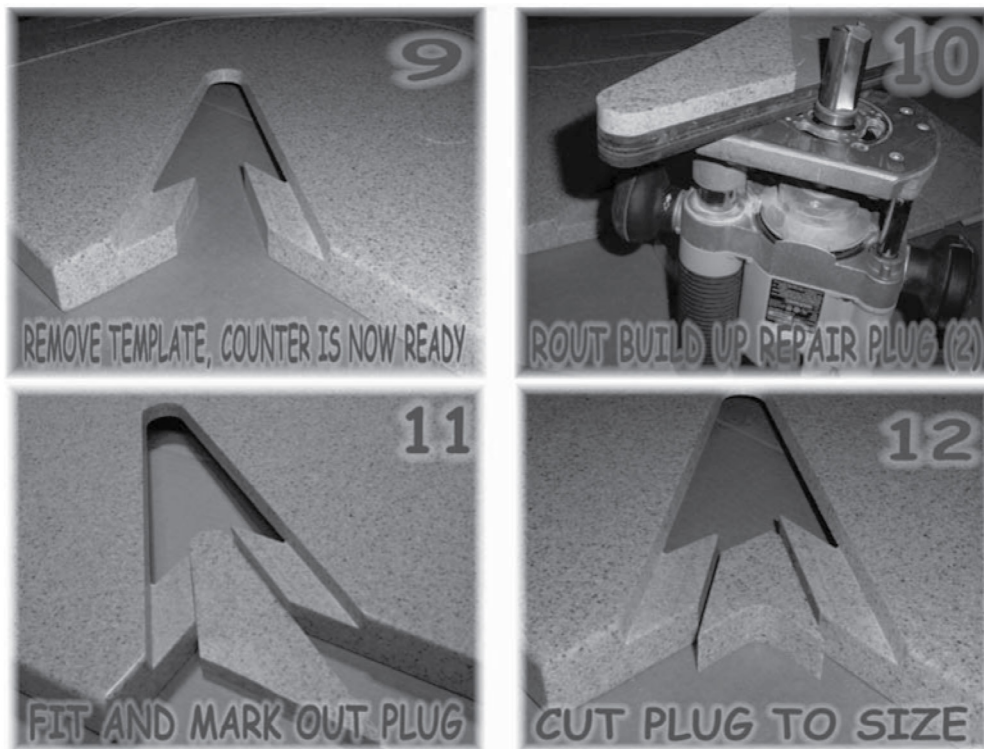


Illustration (22.2-c)

22.1 INSIDE CORNER REPAIR

Inside Corner Repair – Step by Step

13. Make your deck plug the same as in step # 5 of the bevel repair, using the correct template. The buildup is repaired using a horizontal bevel, while the deck is repaired using a vertical bevel. Each repair will act as seam plate for one another. All seams are 25mm off the radius as required. Glue up and sand.

Templates by Andreas...



Illustration (22.2-d)

22.2 BEVEL REPAIR

Directions:

1. Sand the area to be repaired so that all dirt/grease, etc. is removed
2. Encompass entire crack with template. Attach template to deck using 4 dime size dabs of hot melt or by hot melting blocks around template to hold in place
3. Route out damaged area using a 25mm template guide and 9mm or 12mm straight flute bit
4. Using the counter bevel bit, route opening of template. Allow bearing to have 3mm to 6mm coverage on template
5. Remove the template with denatured alcohol and a chisel or putty knife
6. Take the color matched repair piece along with matching plug template and hot melt them together with the good side up
7. Cut the repair piece 9mm bigger than the template
8. Mount a plug bevel bit into the router table. Take the repair template with the color matched repair piece hot melted to it and place it onto the router table with the template side resting on the router table. Raise the bit up so bearing is within 3mm of the repair piece and let the template ride on the bearing
9. With the templates still attached to the plug, place the plug in the counter. If it is too high, lower the bit in the router table and re-route the plug, repeating the process until the plug fits flush with the countertop
10. Remove the template from the plug as in step # 5

22.2 BEVEL REPAIR

Directions:

11. Clean all surfaces to be glued with denatured alcohol using clean white cloth
12. Place aluminum tape on the underside of the counter cutout to stop glue from dripping
13. Place aluminum tape on the good side of the plug with a 25mm overhang to stop glue from dripping
14. Apply glue to the plug and then the opening
15. Place plug in opening pressing down firmly. (No clamping is required or recommended since clamping may cause the piece to shift or build stress into the repair)
16. Remove tape from plug and check for flushness with deck. Plug should fit the same as it did when it was dry fitted as in step #9
17. Let adhesive cure and sand repair area flush with 80-grit sandpaper
18. Once flush, change sandpaper to achieve desired finish

REPAIR

22.2 BEVEL REPAIR

Bevel Repair – Step by Step

1. Sand area to be repaired so all dirt/grease, etc. is removed. This will allow clean seams/ hot melt will hold templates better
2. Hot melt template with four dime size dabs of glue to counter so crack is encompassed and route using a 25mm template guide and a 9mm or 12mm flute bit (leave template on)
3. Using alternate bevel bit (as shown) route opening of template. Allow bearing to have 32mm to 63mm coverage on template

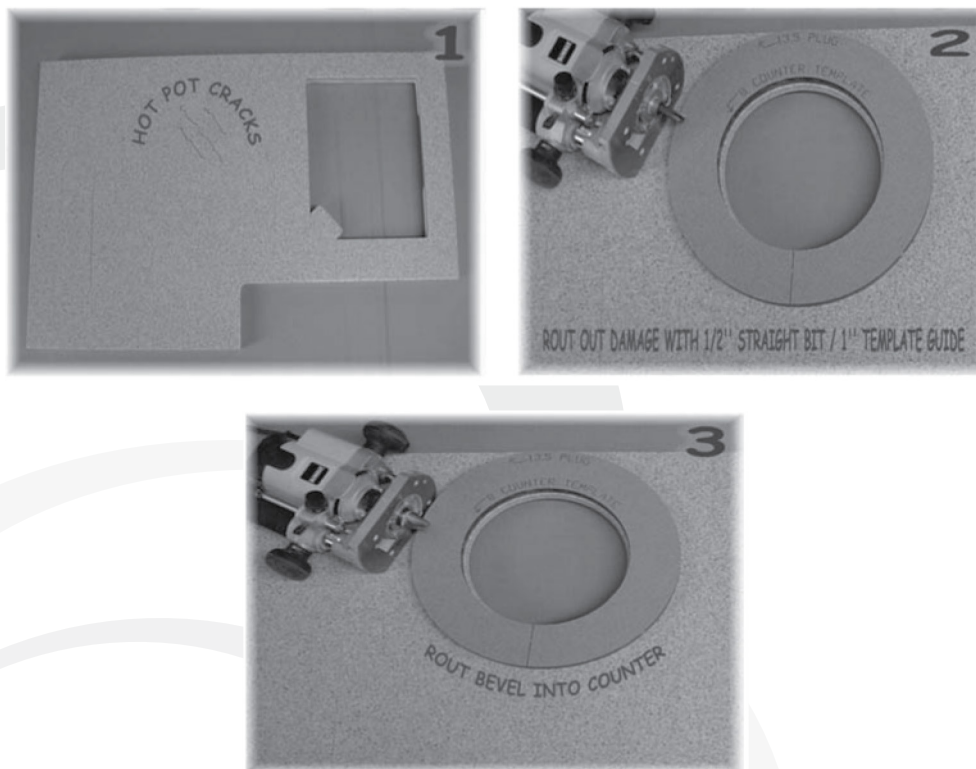


Illustration (22.3-a)

22.2 BEVEL REPAIR

Bevel Repair – Step by Step

4. Remove template with denatured alcohol and chisel or putty knife
5. Take color match piece and the matching plug template – hot melt together both parts good side up. Cut repair piece 9mm bigger than the template (jigsaw ok)
6. Raise bit up so bearing is within 3mm of repair piece and let template ride on bearing. (This makes plug as big as possible, you can always make it smaller)

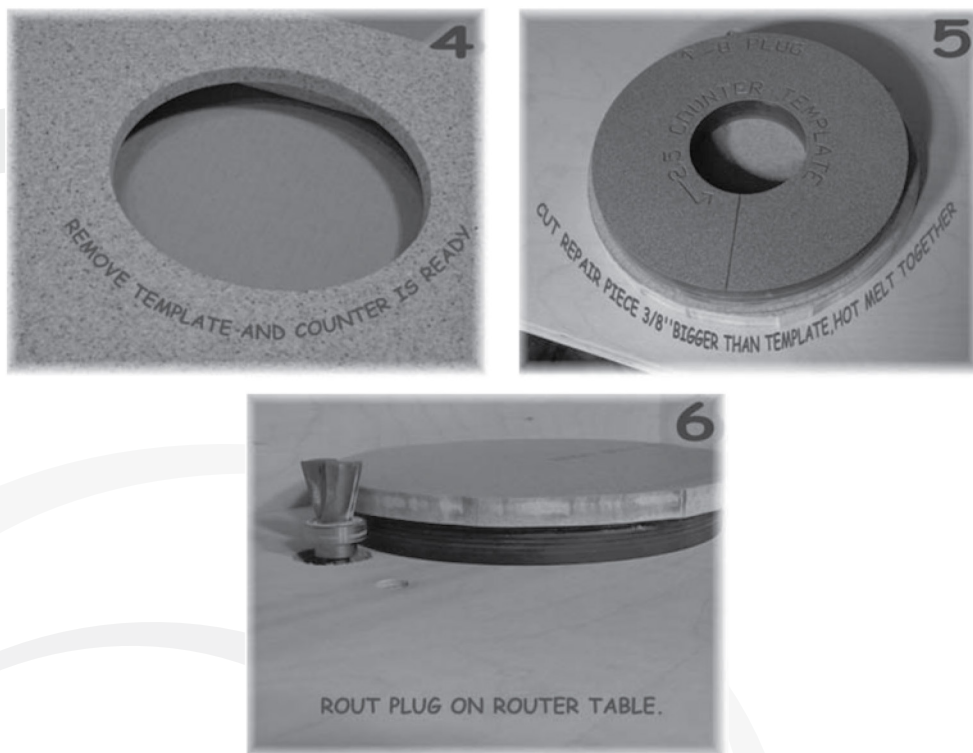


Illustration (22.3-b)

REPAIR

22.2 BEVEL REPAIR

Bevel Repair – Step by Step

7. With template still on plug test in counter. If it is too high, just lower bit in router table. This will make the plug smaller. Repeat until plug is flush with top
8. Remove template from plug. Clean all surfaces with white rag and denatured alcohol. Place aluminum tape on underside of counter cutout to stop glue from dripping, and place aluminum tape on good side of plug overhang 25mm to stop glue from dripping. First apply glue to plug, then to the opening. Place plug in opening remove tape from plug and check for flushness with deck (no clamping required) just like a bevel mount sink



Illustration (22.3-c)

22.3 SOLID SURFACE SINK REPLACEMENT

Solid Surface Sink Replacement

The following directions are for the removal of an average 406mmx 533mm sink using the Andreas Dustless Sink template . Using this system the removal of the sink is virtually dustless . The template allows the fabricator to come within 25mm of any obstruction, which means in most cases the top does not need to be removed. The process take between 2 ½ -3 hours. If for any reason, you are not satisfied with the condition of the job site do not unload the fabricated pieces, until the job site is up to specifications noted in this manual and rules set for by the fabrication shop.

Directions:

1. On the deck surface, measure back 25mm from the inside of the sink on all four sides
2. Center the appropriate Andreas Dustless Sink template between the marks
3. Hot melt 12mm x 25mm x 152mm blocks around the template to hold it in place
4. Secure the sink in place with a pipe clamp as shown in Figure 1
5. Tape off outside of counter/cabinet with blue painters tape (painters tape won't ruin the finish on the cabinets) to help control dust leakage from door cracks and other openings
6. Use pipe foam to block the space between the top of the cabinet and the underside of the counter
7. U sing a Dewalt #625 router or equivalent set at 8000 RPMS (the router must be set at 8000 RPMS due to the size of the blade to ensure safety and quality of the cut) insert the Andreas 152mm dustless sink removal bit and the 16mm template guide (Figure 2) and align the blade to the seam as shown in Figure 3
8. Spray the blade with cutting lubricant and route the backside of the sink first, keeping firm downward pressure on the router at all times

22.3 SOLID SURFACE SINK REPLACEMENT

Directions:

9. Place web clamp on the counter over the sink and snug the new sink to counter making sure it is centered in old sink opening
10. Clean off the surface and then place sink clips around the sink at the web clamp openings with a generous amount of hot melt (Figure 5)
11. Remove the web clamp and lower the sink
12. Clean the surface of the sink and the cutout
13. Apply 6mm bead of seam adhesive to the sink flange approximately 6mm from the outside of the flange
14. Raise the bowl back into the opening (sink clips will guide the bowl in exact location as before)
15. Replace web setup and tighten the clamp until a 3mm+ deflection is in the web clamp (Figure 6)
16. After adhesive is cured remove sink clips with denatured alcohol and sand with 80 grit sandpaper
17. Finish off with finer sandpaper as needed to achieve desired finish



Tips

Changing a double sink will require two pipe clamp setups along with a double sink template and the appropriate web clamp

22.3 SOLID SURFACE SINK REPLACEMENT

Solid Surface Sink Replacement - Step by Step

1. On the deck surface, measure back 1" from the inside of the sink on all four sides
2. Center the appropriate Andreas Dustless Sink template between the marks
3. Hot melt 12mm x 25mm x 152mm blocks around the template to hold it in place
4. Secure the sink in place with a pipe clamp as shown in Figure 1
5. Tape off outside of counter/cabinet with blue painters tape (painters tape won't ruin the finish on the cabinets) to help control dust leakage from door cracks and other openings
6. Use pipe foam to block the space between the top of the cabinet and the underside of the counter

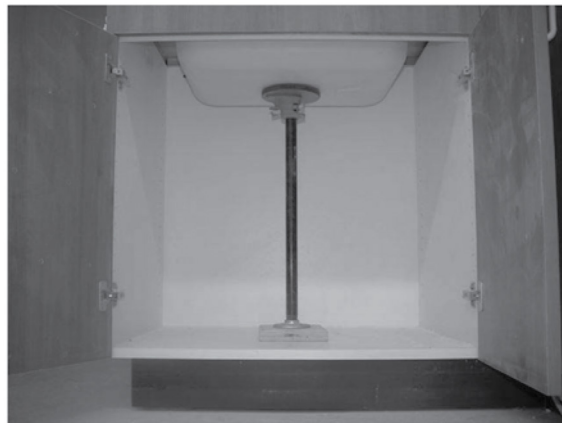


Illustration (22.4-a)

22.3 SOLID SURFACE SINK REPLACEMENT

Solid Surface Sink Replacement - Step by Step

7. Using a Dewalt #625 router or equivalent set at 8000 RPMS (the router must be set at 8000 RPMS due to the size of the blade to ensure safety and quality of the cut) insert the Andreas 152mm dustless sink removal bit and the 16mm template guide (Figure 2) and align the blade to the seam as shown in Figure 3
8. Spray the blade with cutting lubricant and route the backside of the sink first, keeping firm downward pressure on the router at all times
9. Look at the shaft of the bit to ensure the blade has completely stopped spinning then remove the router from the template
10. Remove the template from the counter
11. Vacuum dust from around the bottom of the template

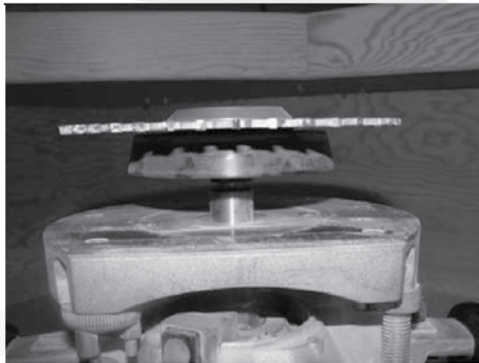


Illustration (22.4-b)

22.3 SOLID SURFACE SINK REPLACEMENT

Solid Surface Sink Replacement - Step by Step

12. Apply aluminum tape around the back half of the sink seam that was just cut. (This will hold the sink in place and prevent the sink from pinching the blade on the final sink cut)
13. To remove the front of the sink, turn the sink template 180 degrees and place it back on the countertop
14. Cutout front of sink (router can move in a forward or backward direction due to it's multitooth design)
15. Again, look at the shaft of the bit to make sure that the blade has completely stopped spinning and then remove the router and the template
16. Vacuum the template, the sink and the sink cabinet
17. Remove old sink and inspect the cut where the sink was removed from the counter to ensure a smooth cut and that all old flanges have been removed

22.3 SOLID SURFACE SINK REPLACEMENT

Solid Surface Sink Replacement - Step by Step

18. Take the new sink and run aluminum tape 1.6mm down from the edge of the bowl, under where the seam line is going to be
19. Turn the tape up at a 90 degree angle to act as a gutter to catch excess glue from seaming
20. Add the 200mm extension and the donut to the pipe clamp setup as shown in Figure 4
21. Place the new sink onto the pipe clamp setup and raise it into the underside of the sink opening
22. Place web clamp on the counter over the sink and snug the new sink to counter making sure it is centered in old sink opening
23. Clean dust off the surface, and then place sink clips around the sink at the web clamp openings with a generous amount of hot melt (Figure 5)

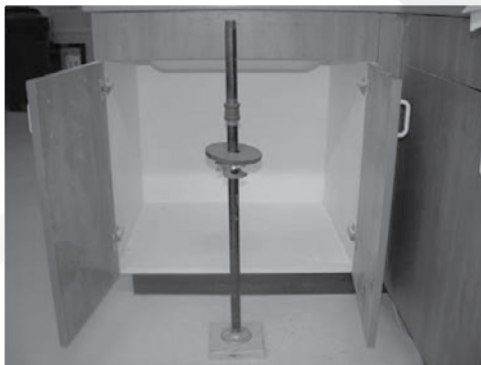


Illustration (22.4-c)

22.3 SOLID SURFACE SINK REPLACEMENT

Solid Surface Sink Replacement - Step by Step

24. Remove the web clamp and lower the sink
25. Clean the surface of the sink and the cutout
26. Apply 6mm bead of seam adhesive to the sink flange approximately 6mm from the outside of the flange
27. Raise the bowl back into the opening (sink clips will guide the bowl in exact location as before)
28. Replace web setup and tighten the clamp until a 3mm+ deflection is in the web clamp (Figure 6)
29. After adhesive is cured remove sink clips with denatured alcohol and sand with a festool rotex sander placed on direct drive with 80 grit sandpaper
30. Switch the festool rotex sander back to random orbital drive and finish off with finer sandpaper as needed



Tips

Changing a double sink will require two pipe clamp setups along with a double sink template and the appropriate web clamp

CHECKLISTS

23.1 SAMPLE CHECKLIST

A. Site Evaluation

The following checklist is provided for your convenience and should not be taken as complete or sufficient for all applications. There might be other important information that needs to be added for your business or for the project.

- ☐ Contact name, address, phone number, map, mileage, and other information about the job site
- ☐ Accessibility: Verify truck and other equipment accessibility to the jobsite, road conditions, and product accessibility to the job site, after the materials are unloaded from the truck
- ☐ Accessibility
- ☐ Cabinet condition
- ☐ Surrounding areas
- ☐ Debris and obstacles
- ☐ Stability of the receiving area
- ☐ Electrical and plumbing position and condition
- ☐ Wall conditions
- ☐ Required reinforcements
- ☐ Adequate substrates
- ☐ Availability of cabinet doors and drawers
- ☐ Availability of all faucets, sinks, cooktops, appliances, and others which needs to be installed on the countertop
- ☐ Availability of the information from the fabricator
 - ☐ Edge style
 - ☐ Warranty
 - ☐ What to expect from beginning to end
 - ☐ Seam placement
 - ☐ Realistic expectation from the countertop on its performance and appearance
- ☐ Any other information which are required by the fabrication plant and required by your company

23.1 SAMPLE CHECKLIST

B. After Measurement and Template

The following checklist is provided for your convenience and should not be taken as complete or sufficient for all applications. There might be other important information that needs to be added for your business or for the project.

- ☐ Templates and measurements have been made according to specification by the fabrication plant
- ☐ Create drawing of the kitchen with measurement
- ☐ Create drawing of the templates, cabinets, and placement of appliances
- ☐ Indicate all countertop and cabinet dimensions
- ☐ Check and specify on the drawing and on the templates for anything abnormal, such as straightness, leveling, curves, etc.
- ☐ Mark location of all cutouts
 - ☐ Sinks/Bowls
 - ☐ Cooktops
 - ☐ Others
- ☐ Mark location of all appliances
- ☐ Mark location of all centerlines of the cutouts
- ☐ Indicate interior and exterior dimensions of the cabinets with cutouts
- ☐ Indicate all overhangs and other special features of the installations
- ☐ Indicate extra support needed on the installations
- ☐ Indicate all edge details and specify all edges along with drawings
- ☐ Mark all corners and radius
- ☐ Indicate all splashes and specifics of it
 - ☐ Placement, height, edge profile...
- ☐ Indicate all seams in both drawings and in the templates
- ☐ Indicate all drilling configurations
 - ☐ Faucet holes, electric plug, filter water...
- ☐ Go over all details and Customer Sign Off sheet with the customer
- ☐ It will be good practice to take photograph of the job area (optional)

CHECKLISTS

23.1 SAMPLE CHECKLIST

C. After Installation

The following check list is provided for your convenience and should not be taken as complete or sufficient for all applications. There might be other important information that needs to be added for your business or for the project.

- ☐ Make sure the installations are color matched and are in good condition
- ☐ All installations are flat and there are not gaps between the countertops and the cabinets. The cabinets should be flat and leveled
- ☐ There are full perimeter support for the top. Remember, the countertop should be supported every 300mm or less
- ☐ Make sure there are 1mm gap for every 1m of material when the surface is enclosed between two walls or other obstacles
- ☐ Never install any mechanical fasteners directly into Hanex Solid Surfaces. Make sure to use proper fastener guide
- ☐ Always leave color match material with the customer for future repair
 - ☐ Minimum of 0,36 sqm is required
- ☐ Make sure all seams are supported correctly
- ☐ Make sure the inside corners have enough radius (Minimum of 12mm radius)
- ☐ Support all overhangs properly
- ☐ Sanding and polishing are done correctly and all nicks and scratches are removed
- ☐ Cooktops and other appliances are installed properly
- ☐ All cutouts are supported and fabricated correctly
- ☐ All “stress risers” are removed
- ☐ A copy of Care and Maintenance Instructions are available
- ☐ Customer is satisfied
- ☐ Have answered all questions
- ☐ Care and maintenance education have been completed

24.1 WARRANTY INFORMATION

Commercial 10-Year Limited Warranty for Hanex

Hanwha L&C Corporation (hereunder „Hanwha“) warrants to the original purchaser or owner in the U.S. and Canada that its product Hanex Solid Surfaces, when fabricated and installed by Certified Hanex Solid Surfaces fabricator/installer for commercial use, shall be free from defect in material, under normal use and service, for (10) years from the date of sale to the original purchaser. Hanwha, at its discretion, will provide Hanex Solid Surfaces material only, free of charge, for product failures due to manufacture defect during the 10 years following initial installation. The commercial warranty is not transferable.

Exclusions for Hanex Solid Surfaces Commercial 10-Year Limited Warranty:

1. Failure to comply with Hanwha's recommended storage, handling, fabrication and installation, and Care & Maintenance guidelines
2. Damage caused by accidents, abuse, misuse, fabrication/installation error, exposure to extreme heat, or act of nature
3. Installed Hanex Solid Surfaces product that is removed from their original place of installation or alteration/repair performed on product by someone other than a Certified Hanex Solid Surfaces fabricator/installer
4. Appearance of joints or seams due to improper fabrication/installation or improper grout or caulk due to improper maintenance
5. Minor conditions such as scratches, stains, water spots, and burns, which may be corrected by Hanex Care & Maintenance instructions/guidelines

No other warranties, express or implied, are made, including merchantability or fitness for a particular purpose. Except as provided herein, Hanwha is not liable for any loss of direct, incidental, or consequential damages as a result of the inability to use Hanex Solid Surfaces. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. Some states do not allow the exclusion or limitation of implied warranties or of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

To register or make a claim under this warranty, contact your original dealer or fabricator/installer or for further assistance, contact:

Hanwha L&C Europe GmbH, Düsseldorf Str.13, 65760 Eschborn, Germany
Tel: +49) 6196 5869 012, Fax: +49) 6196 5869 019, Email: info@hanwhasurfaces.eu

CUSTOMER SERVICE INFORMATION

24.1 WARRANTY INFORMATION

Hanwha L&C Corporation (hereunder “Hanwha”) warrants to the original purchaser/owner in the U.S. and Canada that its product Hanex Solid Surfaces, shall be free from manufacturing defects in material under normal use and service. Hanwha, at its discretion, will repair or replace product failures only due to manufacturing defects.

This Lifetime Limited Warranty is available only to the original owner(s) of the residence in which Hanex Solid Surfaces has been originally installed. The Lifetime Limited Warranty is Non Transferrable and applies to Hanex Solid Surfaces product only, for interior, residential application(s) in North America. This warranty is void unless the product has been paid for in full, and the product must be registered on or before 30 days of installation.

Under this Lifetime Limited Warranty, Hanwha’s authorized agents must be permitted sufficient time and opportunity to inspect the product(s), evaluate and respond to any claim. All decisions regarding the existence of manufacturing defects or affecting this Warranty shall be made by Hanwha and shall be final and binding upon all parties.

The professional fabricator/installer is responsible to inspect the Hanex Solid Surfaces material before fabricating and/or installing the Hanex Solid Surfaces product. It is also the end user’s responsibility to inspect the finished product before permanent installation. This warranty does not cover any defects that were visible at the time of fabrication/installation and were not avoided during fabrication/installation. All parties must agree to comply with the terms and conditions outlined in this Lifetime Limited Warranty.

This Lifetime Limited Warranty applies to product(s) that was installed after January 1, 2010.

Exclusions for Hanex Solid Surfaces Lifetime Limited Warranty:

1. Any residence where the original purchaser is not the occupant
2. Materials and/or services that have not been paid in full
3. Failure to comply with Hanwha’s recommended storage, handling, fabrication and installation and Care & Maintenance guidelines
4. Damage caused by accidents, abuse, and/or misuse
5. Acts of Mother Nature
6. Improper workmanship of fabrication and/or installation
7. Exposure to extreme heat; a trivet is always recommend for the use of your Hanex Solid Surfaces
8. Installed Hanex Solid Surfaces product that is removed from their original place of installation or alteration/repair performed on product by one other than Certified Hanex Solid Surfaces fabricator/installer

24.1 WARRANTY INFORMATION



9. Product(s) installed in any outdoor application
10. Color variation from samples
11. Failure caused by inadequate support or structural movement
12. Exposure to harsh or corrosive chemicals and cleaners
13. Excessive weight placed on Hanex Solid Surfaces
14. Appearance of edges, joints or seams due to improper fabrication/installation. Appearance of grout and/or caulk is not covered under warranty
15. Supplemental repairs including, but not limited to, plumbing modifications, electrical, tile, cabinetry, flooring, backsplashes etc that may be necessary to repair or replace the Hanex Solid Surfaces under this warranty
16. Minor conditions such as scratches, stains, water spots, and burns, which may be corrected by Hanex Solid Surfaces Care & Maintenance instructions/guidelines

When choosing a color, please refer to samples only as a general indication of a particular color's design pattern, aesthetics, and hue. Samples are not guaranteed to be an exact replica of Hanex Solid Surfaces sheets and may vary from the actual, installed Hanex Solid Surfaces.

No other warranties express or implied, are made, including merchantability or fitness for a particular purpose. Except as provided herein, Hanwha is not liable in tort or contract for any loss of direct, incidental, or consequential damages as a result of the use or the inability to use Hanex Solid Surfaces. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state, or in Canada, from province to province. Some states/provinces do not allow the exclusion or limitation of implied warranties or of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Hanwha makes no other guarantee, representation, or warranty (express or implied) with respect to its products, except as expressly stated herein. No one other than Hanwha is authorized or permitted to make or provide any promise, representation or warranty with respect to Hanex Solid Surfaces.

To register, as an alternative to online registration noted above, or make a claim under this warranty, please contact your original dealer and/or fabricator/installer. For other assistance, contact: Hanwha L&C Europe GmbH, Düsseldorf Str.13, 65760 Eschborn, Germany
Tel: +49) 6196 5869 012, Fax: +49) 6196 5869 019, Email: info@hanwhasurfaces.eu

CUSTOMER SERVICE INFORMATION

24.2 Care & Maintenance Information

Unlike other surfacing materials which are produced by laminating or coating, Hanex Solid Surfaces is non-porous and solid through the entire material. These features make Hanex Solid Surfaces virtually maintenance free and repairable. To ensure long lasting beauty, follow these guidelines to prevent damages and care for your investment.

Everyday Cleaning

- Wipe clean with a damp cloth or sponge
- Basic stains: Clean with mild detergents or general purpose cleaners
- Periodically go over entire surface with an abrasive cleanser or wet white Scotch Brite™ pad to maintain a uniform appearance

Heat Damage

- The innate feature of Hanex Solid Surfaces gives it excellent heat resistant properties compared to other surfacing materials in the market. However, to prevent any damages from heat, never place hot items directly on Hanex Solid Surfaces. Always use trivets with rubber feet when placing hot items on the countertop. Remember, placing hot pans or heat-generating appliances directly on Hanex Solid Surfaces may cause damages to your countertop. Avoid direct and indirect heat with temperatures over 80°C (170°F)

Chemical Damages

- Avoid strong chemicals that can cause damages to your surfaces such as oven cleaners, acetone, paint removers and others. If exposed, promptly flush with water. Remember, prolonged contact with harsh chemicals can cause serious damage to your countertop

CUSTOMER SERVICE INFORMATION

24.2 Care & Maintenance Information

Simple Steps to Avoid Damages

- Avoid cutting directly on Hanex Solid Surfaces, use a cutting board
- Never place hot pans directly on the countertop. Even though Hanex Solid Surfaces can withstand temperatures up to 176,67°C (350°F), prolonged or extreme heat could cause permanent damage
- Strong acids, such as those found in drain cleaners, should be flushed with water immediately. Some of these items, when left on the surface may cause whitening, which can be difficult to remove

Removing Persistent Stains

- To remove persistent stains, cigarette burns or scratches: scrub with an abrasive cleaners and green Scotch Brite™ pad
 - Deep scratches can be removed by carefully sanding lightly with 120 grit sandpaper, followed by 220 grit and finishing with 320 grit sandpaper. Complete by rubbing the surface with a wet, green Scotch Brite™ pad in a circular motion to restore the finish
- Note: Different methods can be used depending on the finish*
- For deep scratches and/or other damages which may require expert repair, please contact your authorized Hanex Solid Surfaces repair agent or Certified Hanex Solid Surfaces fabricator

CUSTOMER SERVICE INFORMATION

24.3 FAQ

What is Hanex Solid Surfaces?

Hanex Solid Surfaces is an ideal material for residential and commercial applications because of its beauty, durability, aesthetics, design flexibility, color choices, and more. Hanex Solid Surfaces products are non-porous material and NSF 51 Certified for food preparation areas. They can be applied in many applications where sanitation is of utmost importance, such as kitchen countertops, hospitals, playrooms, schools and many more.

What is Hanex Solid Surfaces made of?

Hanex Solid Surfaces is made with a composition of Methyl Methacrylate (MMA) and Poly Methyl Methacrylate (PMMA) resin filled with Alumina Trihydrate and other specialized formula to give it the timeless beauty and quality. We are one of only two companies to have successfully developed the DBCU (Double Belt Casting Unit) process to produce superior products.

Where can I see Hanex Solid Surfaces displays?

Please contact your nearest distributor to find your local retail design center and/or fabricator.

Where can I purchase Hanex Solid Surfaces?

Hanex Solid Surfaces can be purchased through your local Kitchen and Bath dealers, fabricators, contractors, and builders. To find the nearest vendors, please contact your local distributor for more info.

Can I receive some Hanex Solid Surfaces samples?

Hanex Solid Surfaces samples are provided to help our customers in making the right selection from the vast array of colors and designs.

Is Hanex Solid Surfaces repairable?

Unlike other surfacing materials, Hanex Solid Surfaces can be repaired to its original condition. Hanex Solid Surfaces is non-porous and solid throughout the entire material. These features make Hanex virtually maintenance free and completely repairable. Please visit our Care & Maintenance section for more details.

24.3 FAQ

How do I clean and take care of my Hanex Solid Surfaces countertop?

Unlike other Surfacing materials which are produced by laminating or coating, Hanex Solid Surfaces is non-porous and Solid through the entire material. These features make Hanex Solid Surfaces virtually maintenance free and repairable. To ensure long lasting beauty, follow the guidelines to prevent damages and care for your investment. Please visit our Care & Maintenance section for more details.

What is NSF 51?

According to NSF website, "No other independent testing programs require companies to comply with the strict standards imposed by NSF and its product certification programs. From extensive product testing and material analyses to unannounced plant inspections, NSF is the only thirdparty testing organization to undertake a complete evaluation of every aspect of a product's development before it can earn our certification."

NSF 51 is one of the certification program specifically designed for food preparation area. NSF imposes strictest standards to ensure consumer health and safety. Hanex Solid Surfaces have been tested by NSF, certified, and is currently listed as NSF 51 Certified.

Can I fabricate and install Hanex Solid Surfaces myself?

To ensure proper fabrication, installation, and warranty coverage, Hanex Solid Surfaces is only available to certified fabricators.

Who can fabricate and install my Hanex Solid Surfaces countertop?

To ensure proper fabrication, installation, and warranty coverage, Hanex Solid Surfaces is only available to certified fabricators. To become a Certified Hanex Solid Surfaces Fabricator, please contact your local distributor for more information.

Who can repair or refinish my Hanex Solid Surfaces countertop?

Minor scratches and damages can be easily repaired. Please visit our Care & Maintenance section for more details. However, for deep scratches and/or other damages which may require expert repair, please contact your authorized Hanex Solid Surfaces Repair Agent or certified fabricator.

CUSTOMER SERVICE INFORMATION

24.3 FAQ

What do I do with small sample material fabricator left after installation of Hanex Solid Surfaces?

It is required by Hanwha L&C for fabricators to leave color matched materials at the jobsite with the customers. These color matched materials can be used at later time for repair. In many occasions, the fabricators will either make trivets or cutting boards out of the color match materials as an added service to it customers. Please keep these color matched materials for future use.

Are there different finishes in Hanex Solid Surfaces?

Your Hanex Solid Surfaces can be finished to have matte, semi-gloss, high-gloss finish. Remember, some colors may require more maintenance with different finish. Please consult with your fabricator, distributor, or sales representative for recommendation to best suit your needs.

I am still confused about heat-resistance properties of Hanex Solid Surfaces.

The innate feature of Hanex Solid Surfaces gives it excellent heat-resistant properties compared to other surfacing materials in the market. However, to prevent any damages from heat, never place hot items directly on Hanex Solid Surfaces. Always use trivets with rubber feet when placing hot items on the countertop. Remember, placing hot pans or heat-generating appliances directly on Hanex Solid Surfaces may cause damages to your countertop. Avoid direct and indirect heat with temperatures over 80°C. In most cases, the damages can be repaired, however to protect your Hanex Solid Surfaces countertop, always use trivet when placing hot items or heat-generating appliances.

What are the advantages of Hanex Solid Surfaces over granite countertops?

With the beauty of granite, there are many limitations with it. If granite is not properly sealed regularly, it can be easily stained, harbor bacteria, molds, viruses, and other germs that can be unhealthy. Depending on the size of your countertop, granite countertops will have visible seams and other imperfections that may cause problems. There are many other benefits of Hanex Solid Surfaces over granite, however, most importantly, your Hanex Solid Surfaces is fully repairable and renewable.

Additionally, unlike granite, Hanex Solid Surfaces comes with a 10-Year Limited Commercial Warranty, best in the industry.

24.3 FAQ

What are the advantages of Hanex Solid Surfaces over laminates countertops?

Laminates over time will separate due to moisture. Hanex Solid Surfaces is non-porous, solid, and homogenous. The water absorption ratio is among the lowest in the industry. In daily use of Hanex Solid Surfaces, moisture cannot penetrate it. There are many other benefits of Hanex Solid Surfaces over laminates, however, most importantly, your Hanex Solid Surfaces is fully repairable and renewable. Additionally, unlike laminates, Hanex Solid Surfaces comes with a Commercial 10-Year Limited Warranty, best in the industry. See warranty information on page 216.

What are the advantages of Hanex Solid Surfaces over tiles countertops?

Hanex Solid Surfaces can be fabricated and installed in almost any application with inconspicuous seams, making Hanex Solid Surfaces truly “solid” in surfacing materials. The design flexibility and usability of Hanex Solid Surfaces, such as integrated sinks and coved backsplashes, makes it perfect combination of beauty, design, and practicality. Unlike tiles, you don’t have the grouts to clean, disinfect, and worry about harboring bacteria, viruses, and germs. There are many other benefits of Hanex Solid Surfaces over tiles, however, most importantly, your Hanex Solid Surfaces is fully repairable and renewable. Additionally, unlike tiles, Hanex Solid Surfaces comes with a Commercial 10-Year Limited Warranty, best in the industry. See warranty information on page 216.

What are the advantages of Hanex Solid Surfaces over other countertops materials like wood, concrete, stainless steel?

Hanex Solid Surfaces is an ideal hygienic material for kitchens and baths due to its resistance to heat, moisture, pollutants, bacteria and other harmful agents. With wide selection of colors and design applications, Hanex Solid Surfaces can transform any space into a beautiful environment. The unlimited design flexibility of Hanex Solid Surfaces makes it a perfect material to use in commercial applications. Many commercial builders are using solid surfaces in hospitals, restaurants, hotels, schools, banks and other areas because of all the advantages solid surface has to offer.

CUSTOMER SERVICE INFORMATION

24.3 FAQ

What is the warranty in Hanex Solid Surfaces

Your Hanex Solid Surfaces comes with a Commercial 10-Year Limited Warranty, best in the industry. See warranty information on page 209. The inherent properties of Hanex Solid Surfaces with its DBCU manufacturing process, Hanex Solid Surfaces name is recognized in the industry for quality. Hanex Solid Surfaces can only be fabricated and installed by Certified Hanex Solid Surfaces fabricators, so you have the assurance of quality product, expert installation, and the industry's best warranty. Additionally, your countertop is backed by nationwide network of industry experts, authorized repair agents, and customer service associates to service you.

How much is Hanex Solid Surfaces?

The cost of solid surface fabrication and installation will vary due to the complexity of design, application, edge details, color selection, and more. Please consult with your dealer for quotation.

Remember to ask your dealer to bid your project in Hanex Solid Surfaces. You will be pleasantly surprised.

Working and Living Green



Our integrated environmental, health and safety stewardship commitment encompasses Hanwha L&C | Surfaces products, operations and employees. It is our commitment to customers, partners, communities and employees to produce more and more sustainable products, pursue environmentally friendly manufacturing processes and to be ecologically minded and responsible in all we do.





Hanex[®] Solid Surfaces



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