

Fabrication Manual

Introduction

Hanex® 100% Acrylic Solid Surface 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 covered back-splashes, makes it a perfect combination of Beauty, Design, and Practicality. Every Hanex® 100% Acrylic Solid Surface 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.

This Manual is designed to give basic guidelines to help ensure that Hanex® will be Handled, Stored, Fabricated, and Installed correctly. Giving its users a long-lasting beauty and comfort of having the finest products in their homes and businesses.

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, Hanwha 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® 100% Acrylic Solid Surface.

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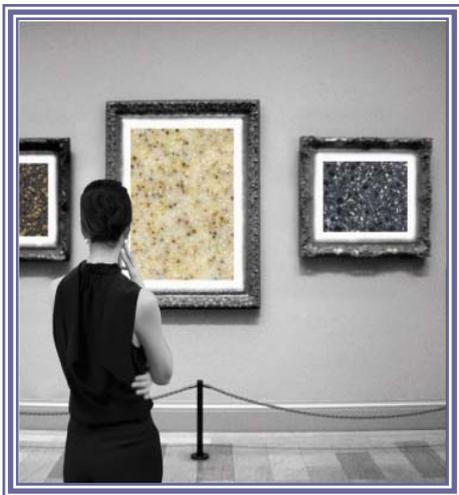
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*YOU CREATE THE
MASTERPIECE
WE'LL SUPPLY
THE COLORS*



What does it take to create your masterpiece? A distinctive vision, vivid colors, and quality materials designed to retain their beauty over time. Hanex can help you turn your vision into a reality. Hanex 100% Acrylic Solid Surface offers bold designer patterns and colors that capture the look of natural granite. Plus our innovative manufacturing process makes Hanex a joy to fabricate, meaning smoother cuts, less dust, and exceptional color and pattern consistency. The result? Your customers get the elegance and beauty they're looking for as well as the superior value and durability of 100% acrylic solid surface. You enjoy healthy profit margins and reliable, responsive service. That's a thing of beauty any way you look at it. With these new colors, Hanex continues its role as a leading innovator in acrylic solid surface. For additional information, contact Hanwha Surfaces today. We're certain you'll appreciate the unique blend of quality, elegance and value as a true work of art.

HANWHA L&C CORP

Hanwha Bldg. #1 Changgyo-dong, Chung-gu, Seoul, Korea
TEL: 82-2-729-2906, 1591
E-mail: h9517535@hanwha.co.kr

Hanwha Europe GmbH

Mergenthaller Allee 79-81, 65760 Eschborn, Germany
TEL : 49-6196-5016-31
E-Mail : sky@hanwha.de

ISSFA

NKBA
National Kitchen & Bath Association

Specifications

2.1 Hanex® Product Composition

Hanex® 100% Acrylic Solid Surface 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

Material Name	Component
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)

Note

For your safety and the safety of others:

- Use all safety protocols and equipments.
- Use Common Sense and follow all guidelines.

Specifications

2.2 Product Specification

2.2-a Dimensions

Hanex® Sheet Size

Thickness (mm)	Width (mm)	Length (mm)
12	760	3680
6	760	2490

Table (2.2-a)

Hanex® Pallet Packaging

Thickness (mm)	Sheet Weight (kg)	Pallet Weight (kg)	# of Sheets per Pallet	Total Weight (kg)
12	59.4	30	10	624
6	20	30	40	830

Table (2.2-b)

Hanex® Container Packaging

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

Table (2.2-c)

Specifications

2.2 Product Specification

2.2-b Technical Data Sheet

Table (2.2-d)

Properties	Unit	Result	Test Standard
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	ANSI Z124
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
Wetherability		No change	ASTM D 1499
NSF 51	Listed	All Colors	NSF

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Specifications

2.2 Product Specification

2.2-c Basic Product Conformity

Heading		Standards
Dimensions	Length(mm)	3680 ± 5
	Width(mm)	760 ± 5
	Thickness(mm)	12 ± 0.3
Visual Inspection	Warping(mm)	Less than 1.6 per 3,000 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 Hols	None
	Uneven Sanding	None
	Hairline Crack	None
	CRACK	None
	Concave	None

Table (2.2-e)

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Specifications

2.2 Product Specification

2.2-d Hanex® MSDS

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL IDENTIFICATION

HANEX (HANEX is a registered trademark of HANWHA L&C CORP.)

COMPANY IDENTIFICATION

MANUFACTURER/SUPPLIER ;

HANWHA LIVING & CREATIVE CORP.

HANWHA Bldg., 1 Changgyo-dong, Chung-gu, Seoul, Korea

CONTACT DETAILS FOR INFORMATION:

HANWHA LIVING & CREATIVE CORP.

HANWHA Bldg., 1 Changgyo-dong, Chung-gu, Seoul, Korea

Ph: +82 2 729 1591

Fax: +82 2 729 1447

2. COMPOSITION AND INFORMATION ON INGREDIENTS

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

Heated above 300 deg C, "HANEX" can release

3. FIRE-FIGHTING MEASURES AND EXPLOSION HAZARD

FLAMMABLE PROPERTIES:

"HANEX" can be combusted only with difficulty.

Hazardous gases/vapour 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.

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Specifications

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.

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.

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Specifications

7. TOXICOLOGICAL INFORMATION

SKIN / EYE IRRITANT:

POLYMETHYLMETHACRYLATE

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

The compound is a skin irritant, is a moderate eye irritant, and is a skin sensitizer in animals.

ALUMINA TRIHYDRATEYLATE

The compound is untested for skin and eye irritant, and is untested for animal sensitization.

ACUTE TOXICITY (LC50):

POLYMETHYLMETHACRYLATE:	>2MG/1, 4hr LC50(Inhalation/Rat)
METHYL METHACRYLATE:	7093PPM/4hr LC50(Inhalation/Rat)

ACUTE TOXICITY (LD50):

POLYMETHYLMETHACRYLATE:	>2000mg/kg, 4hr LD50(Oral/Cat)
METHYL METHACRYLATE:	7900PPM/4hr LD50(Oral/Cat)

8. ECOLOGICAL INFORMATION

BIODEGRADATION: No information is available

BIOACCUMULTION: No information is available

AQUATIC TOXICITY: No information is available

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Specifications

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 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" products

This information is based on technical information deemed reliable and is subject to revision as additional information is made available.

END OF MSDS

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Specifications

2.3 Characteristic

2.3-a Chemical and Stain Performance and Report

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Classification	%	Gritty Cleaner or Water	Scotch Brite™ or Sand Paper
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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Specifications

Table (2.3-b)

Classification	%	Gritty Cleaner or Water	Scotch Brite™ or Sand Paper
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	✓	

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Specifications

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

Table (2.3-c)

Test Method:

- 16 hours of exposure per substance.
- For exposure to chemicals other than as seen above, it is recommended to test on a sample piece of Hanex® to confirm suitability for application.
- Common domestic residues, such as the examples listed below removed with water and household cleaners.

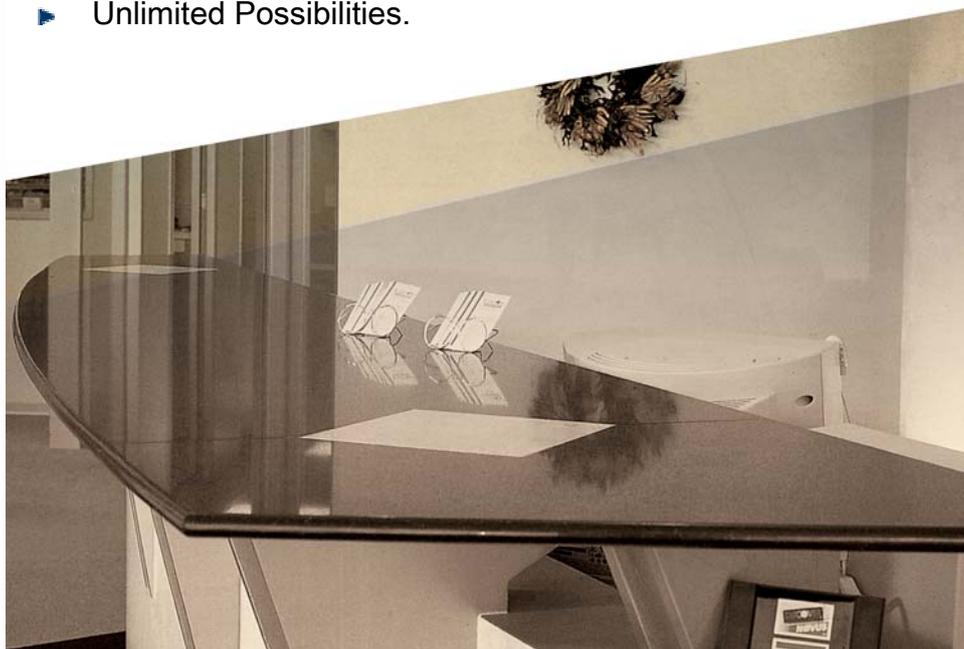
Alcohol	Hair Dyes	Shoe Polish
Ink	Juices	Soy Sauce
Cigarette stain	Lipsticks	Sugar
Coffee	Lotions	Tea
Cooking Oil	Mustard	Tomato Sauce
Crayon	Nail Polish	Vinegar
Curry Powder	Pencil Lead	Wine
Make-up	Salt	Food Dyes

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2.4 Application

Hanex® 100% Acrylic Solid Surface 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® can transform any space into a beautiful environment. The unlimited design flexibility of Hanex® 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
 - ▶ Countertops, wall coverings, vanities, aprons, window sills, thresholds, shelves, fireplaces, bar tops...
- Commercial
 - ▶ Table tops, signs, name plates, countertops, wall coverings, bar tops window sills, thresholds, furniture, partitions, vanities, shelves...
- Décor
 - ▶ Unlimited Possibilities.



Handling and Storage

3.1 Sheets

3.1-a Handling Hanex® Sheets

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

Hanex® 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.

Hanex® Sheets	Width (mm)	Length (mm)	Weight (kg)
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

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 180cm forks and the pallets should be handled horizontally to provide full support.

Note

For your safety and the safety of others:

- Use all safety protocols and equipments.
- Always keep safe distance when handling/lifting slab.
- Use Common Sense and follow all guidelines.

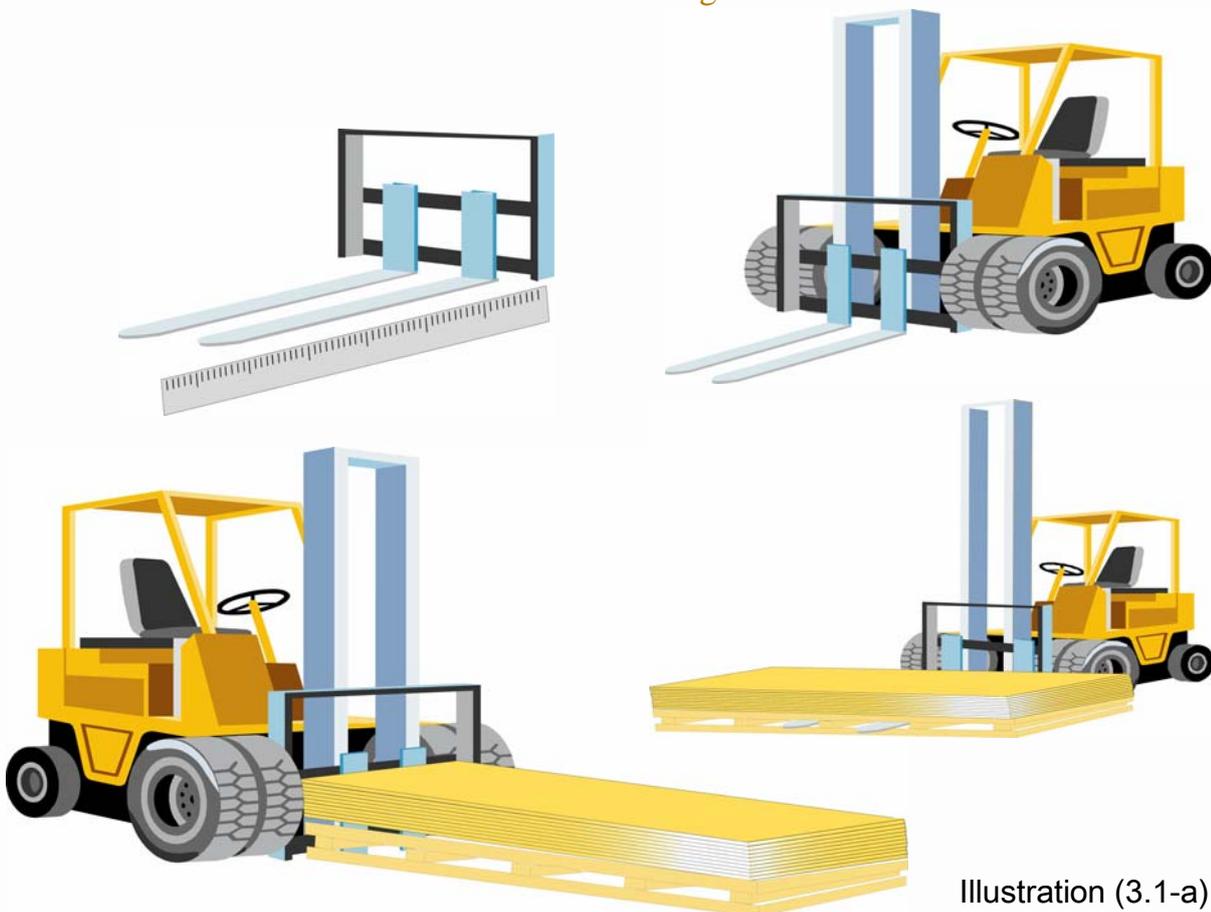


Illustration (3.1-a)

Handling and Storage

If lifting equipment is not available, individual Hanex® 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:

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

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

Tip

For your safety and the safety of others, always follow safety guidelines in addition to the specific procedures listed above.

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.

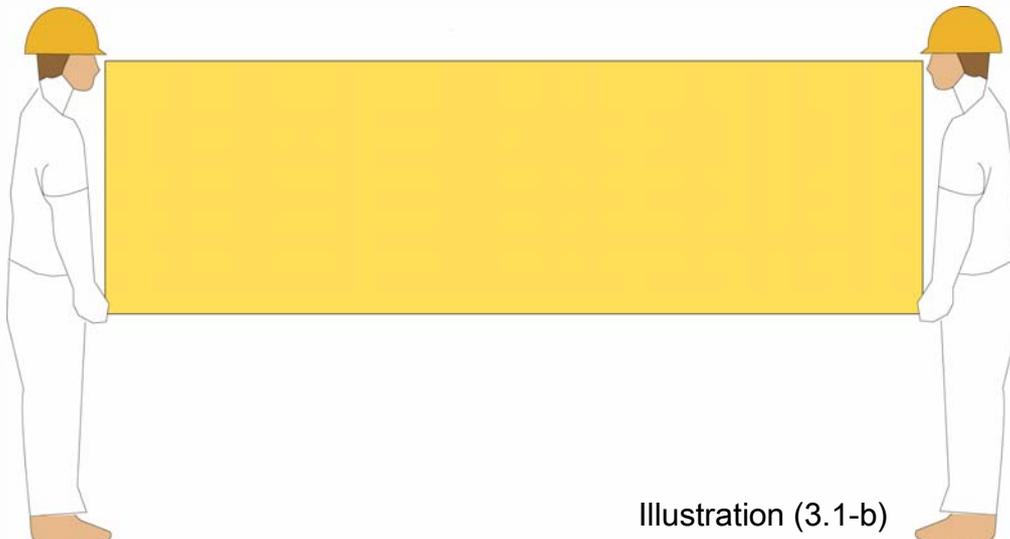


Illustration (3.1-b)

Handling and Storage

3.1 Sheets

3.1-b Storing Hanex® Sheets

Hanex® 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.

Tip

Here are some tips on storing Hanex® Sheets

- 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).
- Store sheets for easy access and verification of color identification and lot numbers.
- Avoid extreme weather / temperature conditions. Optimum storage temperatures are 13°C ~ 30°C
- Do not stack pallets over 5 pallets (10 sheets per pallet)

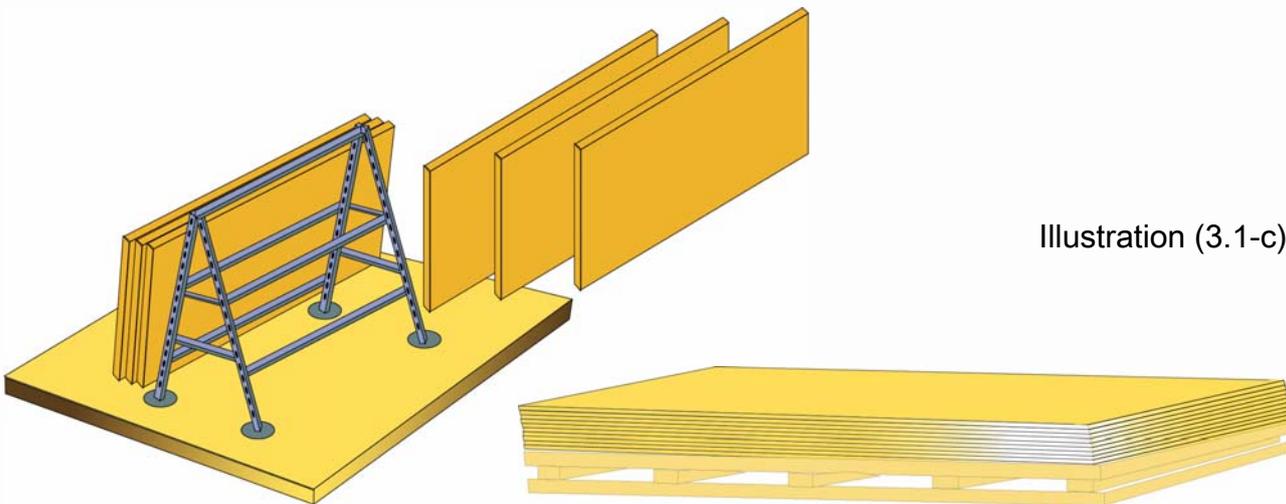


Illustration (3.1-c)

Handling and Storage

3.2 Fabricated Products

3.2-a *Transporting Fabricated top*

It's very important to take every precautionary measure when handling and transporting the fabricated top to the job site. 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 .

Careful transportation to the job site is critical:

- ❖ Never lay the pieces flat.
- ❖ Never transport pieces flat.
- ❖ Never carry pieces flat.
- ❖ Place support bars or some kind of support boards for sheets with cut-outs.
- ❖ 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

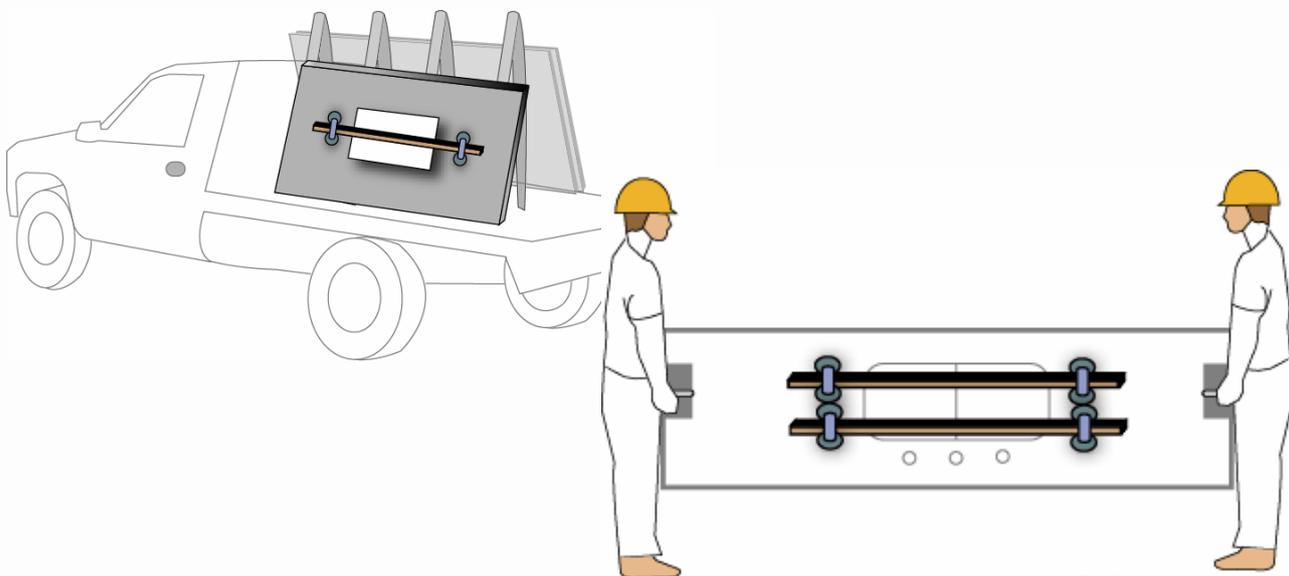


Illustration (3.3-a)

Handling and Storage

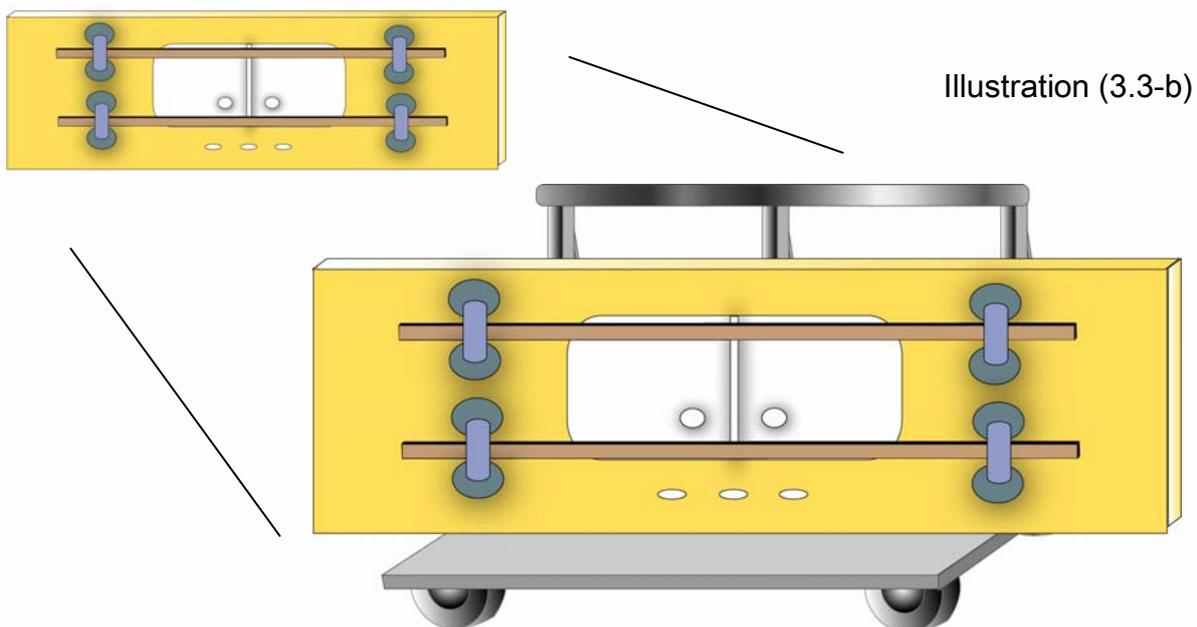
3.2 Fabricated Product

3.2-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 (3.3-a):

- ❖ Never lay the pieces flat.
- ❖ Never transport pieces flat.
- ❖ Never carry pieces flat.
- ❖ Place support bars or some kind of support boards for sheets with cut-outs.
- ❖ It 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.
- ❖ Please see Chapter 17 for more information on installation instructions.



Quality Control Inspection

4.1 Hanex® Sheets

Hanex® is committed to doing everything possible in order to provide the highest quality of materials. There are many protocols to help ensure Hanex® shipments arrive from your distributor warehouse in good condition to ensure customer satisfaction. When receiving a Hanex® 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® Distributor for further assistance.

Note

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® stands behind its product and will gladly replace defective materials that do not meet our product specifications. **However, Hanex® 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 the inability to use Hanex®**



Illustration (4.1-a)

Quality Control Inspection

Table (4.1-a)
Product Specification Guideline for Quality Control Inspection

Heading		Standards
Dimensions	Length(mm)	3680 ± 5
	Width(mm)	760 ± 5
	Thickness(mm)	12 ± 0.3
Visual Inspection	Warping(mm)	Less than 1.6 per 3,000 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
	Particle Distribution	Even Distribution
	Pit Holes	None
	Uneven Sanding	None
	Hairline Crack	None
	CRACK	None
Concave	None	

Table (4.1-a)

Quality Control Inspection

4.2 Fabricated Top

Fabricated Hanex® 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® tops. Information on transporting fabricated Hanex® tops can be found in Section (3.3-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 & Accessories

5.1 Fabrication Shop

5.1-a Basic Heavy Machinery

Similar to any other surfacing fabrication shops, the Hanex® fabrication shop 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®

Saw (Panel)	Panel Saw or sometimes called Vertical Saw, will cut full sheets of material with greater accuracy and precision. Depending on the equipment and pricing, Panel Saw 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	Equipments 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 equipments and tools.

Table (5.1-a)

Tools & Accessories

5.1 Fabrication Shop

5.1-b Basic Tools and Equipments

In addition to the heavy equipment, the Fabrication Shop will require many other tools and equipment.

The following is a brief overview of the basic tools and equipments needed in the Hanex® Fabrication Shop. Remember, depending on your shop, you will have different needs

Handling and Storage Equipments	Fork Lifts, Roller Conveyors, Vacuum Lifter, Lifting Boom, A-frames, 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 & Accessories

Table 5.1-b Continued

Safety Equipments	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, 1.2meter Level, 2.4meter & 3.6meter 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), is a condensed version of the tools and equipments found in fabrication shops. Please discuss with your tool suppliers for additional tools and equipments needed for your shop.

Remember, every shop is different and has its own advantages and disadvantages. The tools listed in this manual is 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.

5.2-a Measurement Template Method

Tools:

- Tape Measure
- Pen and Paper
- Straight Edges
- Level 60cm,120cm,180cm
- Squares
- Sample decorative edges
- Sample corner profiles
- Check List
- Customer sign off sheet

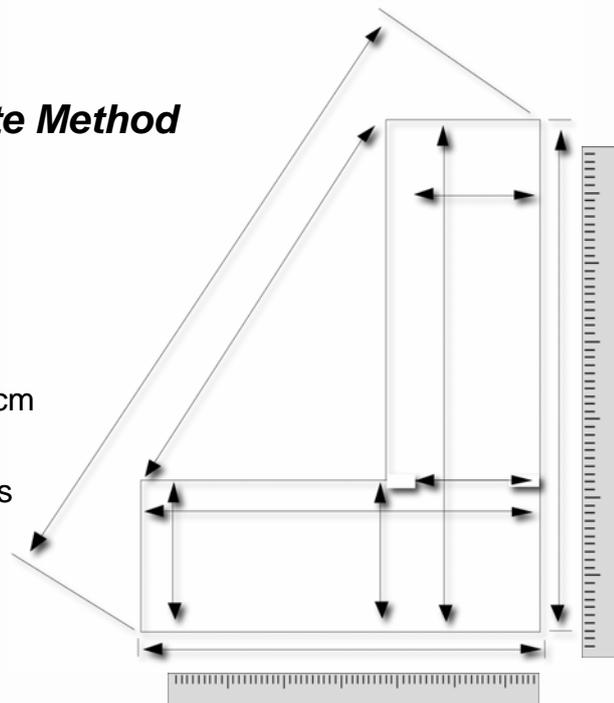


Illustration (5.2-a)

Tools & Accessories

5.2-b Luan Strip Template Method

Tools:

- Adequate number of Luan Strips
 - Better to have leftover
 - Usually 3mm thick, 63mm wide, and 2400mm 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
- Check List
- Customer sign off sheet

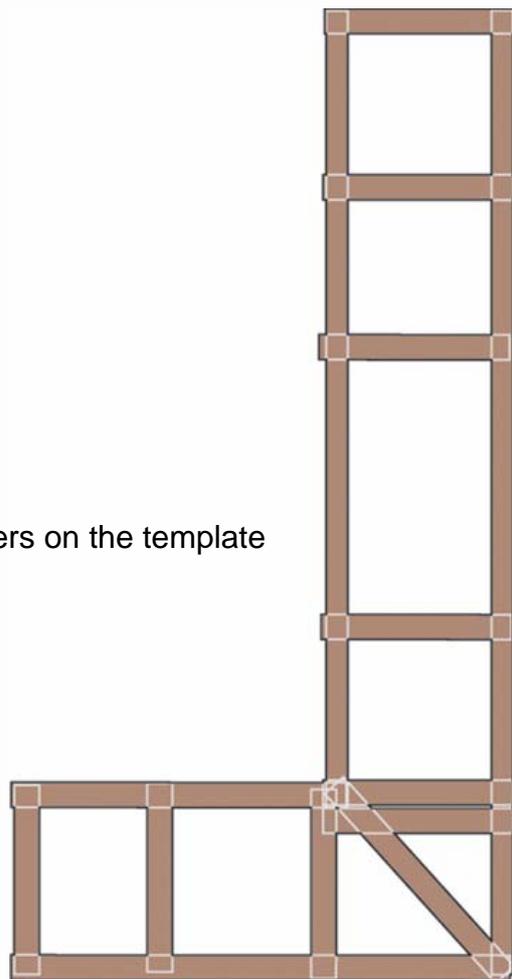


Illustration (5.2-b)

Tools & Accessories



5.2-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 60cm,120cm,180cm
- Squares
- Sample decorative edges
- Sample corner profiles
- Plastic Corner templates
 - To trace different corners on the template
- Check List
- Customer sign off sheet

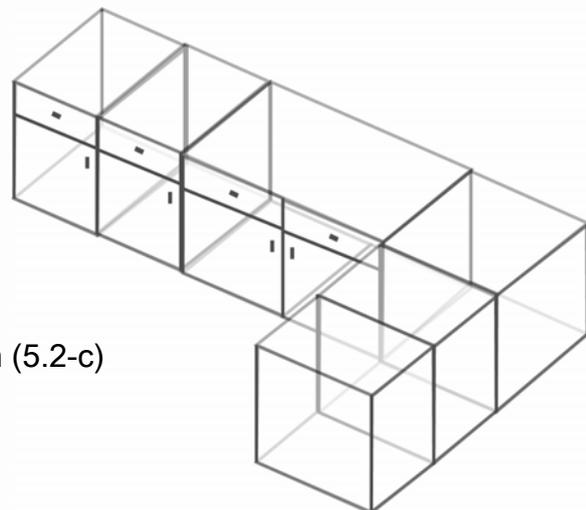


Illustration (5.2-c)

Tools & Accessories

5.2-d *Electronic Template Method*

With advanced technology being used in some of the Hanex® 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 these 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 the equipments and software before going to the job.

It is advisable to take along other template methods in the beginning, or every time, just in case the equipment fails (even you).

Remember, it is better to be well prepared than going back to the jobsite for re-template

Tools & Accessories

5.3 Installation Technician

5.3-a Basic Equipments

As an Installation Technician of our Hanex® 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 (180cm to 240cm recommended)
- Level
 - Various Size (At least 120cm recommended)
- 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 & Accessories

Tools:

- Circular Saw
 - With triple-chip blades of tungsten carbide
 - In case of special cut on cabinets or other woodworks and alterations
- Basic Tools
 - Hammers
 - Tape Measure
 - Builder's Square
 - Farmer's Square
 - Jig Saw
 - Basic necessary tools in the well organized tool box
- Seaming Kits
 - Hanex® Seaming 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
- Etc.

6.1 Silicone

6.1-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.

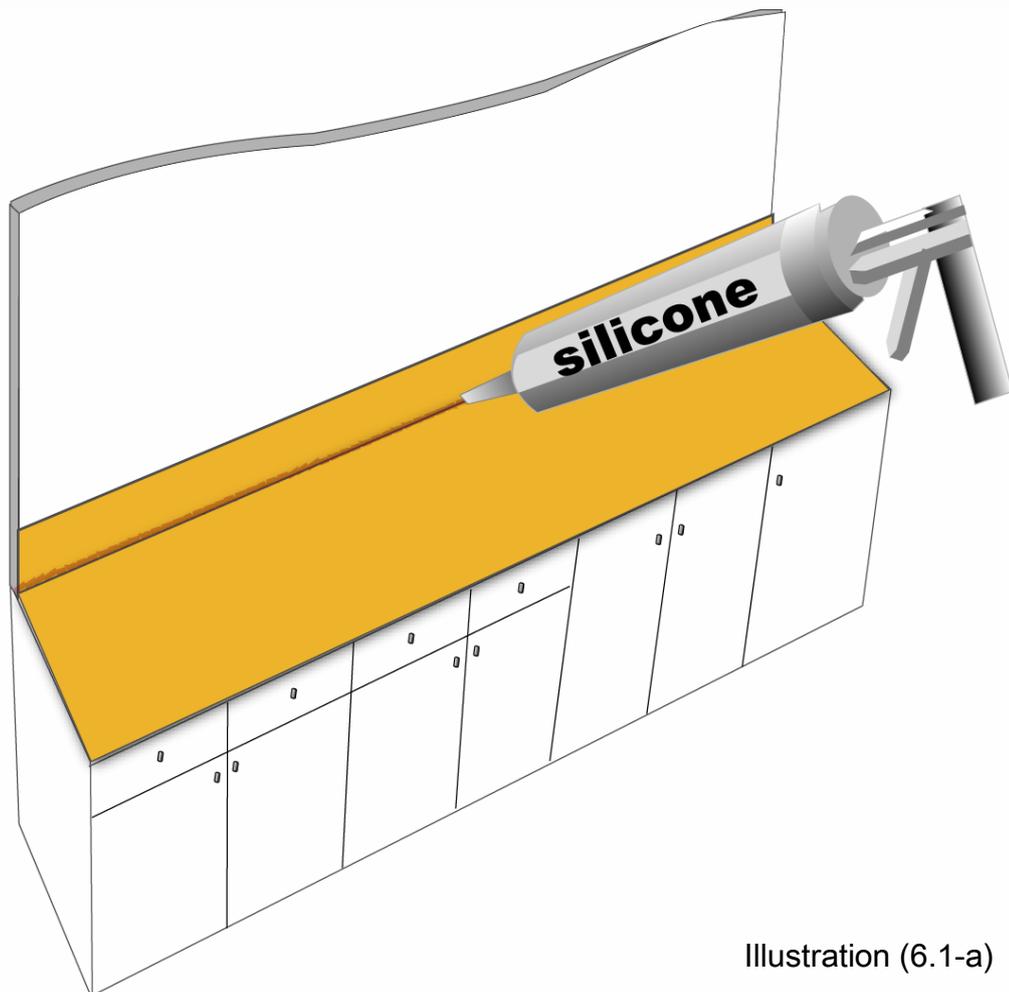


Illustration (6.1-a)

Adhesives

Using Silicone:

- Clean the surface with Denatured alcohol.
- Apply dabs of silicone to use as an Adhesive
 - Depending on the application proximity of each application will differ.
- 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.
- Set the pieces in place and push it tightly
 - Hold it in place until Hot Glue dries.
- To use the silicone as a sealant, apply bead of silicone in the corner between the two pieces.
- 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 off the excess silicone.
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy.

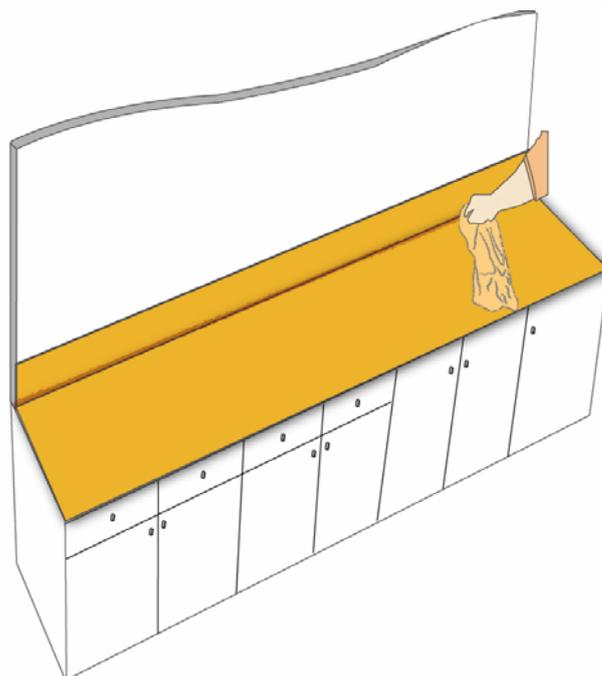


Illustration (6.1-b)

6.2 Hanex® Adhesive

6.2-a Types and Applications

There are many companies that specialize in manufacturing Solid Surface Adhesive products. These companies have a comprehensive line of colors and selections that cover the Hanex® 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®. These Hanex® brand adhesives have been tested and guaranteed with a warranty against manufacture defects.

It is highly recommended to use Hanex® brand adhesives purchased through your local Hanex® Distributors. Your local Hanex® Distributor will provide you with specialized service and support.

The information in this section is provided by Acrybond™ Solid Surface Adhesives. A third party adhesive manufacturer of Hanex® Solid Surface. Any questions, comments, and concerns should be directed to Acrybond™.

Note

The Hanex® Adhesives are being supplied by third party companies and they are not affiliated with Hanwha, Hanwha Surfaces, or with any of its affiliates. Hanwha Surfaces 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-b *Product Description*

Hanex® Methyl Methacrylate Adhesive (MMA) is a specially formulated 10:1 ratio decorative solid surface adhesive. Hanex® 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® Adhesive has a working time of 8–12 minutes and products seamed with Hanex® 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® 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
- Etc.

Adhesives

6.2-c *Physical Properties*

Physical Properties—Uncured

	Part A	Part B
	Adhesive	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	51oF (10.5oC)	
Mixed Viscosity 2	0–55,000 cps	
Mix Density	9.13 lb./gal. (1.10 g/cc)	
Open Working Time (Minutes)	8–12 @ 72oF (22oC)	
Fixture Time (Minutes)	15–20 @ 72oF (22oC)	
Functional Cure (Minutes)	50–60 @ 72oF (22oC)	
Full Cure	12 hours @ 72oF (22oC)	
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-d *Handling and Application*

Hanex® 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® 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 60° F (15° C) and 90° F (32° C) will ensure proper cure speeds. Temperatures below 65° F (18° C) will (slow cure) dramatically reduce the cure rate; above 90° F (32° C) will speed cure.

6.2-e *Storage and Shelf Life*

All Hanex® Adhesives should be stored in a cool, dry place when not used for a long period of time. Hanex® Adhesive has a shelf life of 12 months or more when stored at room temperature 72° F (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® 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)



6.2-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 21°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.

Site Preparation

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

- Accessibility to the installation site is very important and should be checked for any obstacles to minimize problems during installation.
 - Parking Lot
 - Parking Lot to the Front Door
 - Check for distance and any obstacles
 - Entrance size
 - Ceiling height
 - Cabinet clearance
 - o Millwork and upper cabinets must not interfere with installation

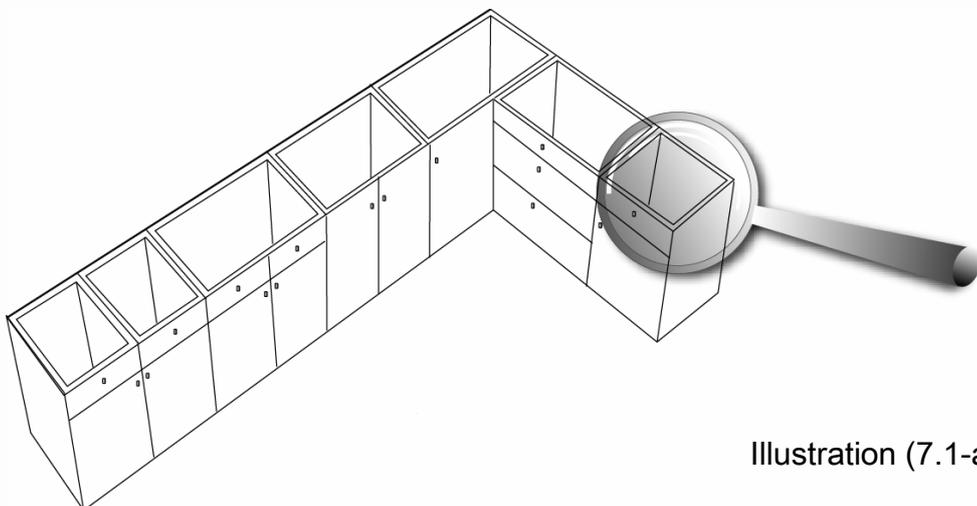


Illustration (7.1-a)

Site Preparation

- Cabinetry Condition
 - Check to see if the Cabinets are installed on a True Plane
 - Leveled to within 3mm for every 3,000mm
 - o Section 7.2 for more information
 - Stable and Rigid
- Surrounding areas of installation
 - Surrounding areas to receive Hanex® 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.
- Clear all debris
 - Old cabinets
 - o 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
 - o Many new cabinets have staples, screws, brads, and such. Make sure to either remove them or make it flush with the cabinets.
- 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.
- Electrical and Plumbing positioning
- Wall Conditions
- Adequate reinforcement for areas with cut-outs
- Adequate support
- Availability of all faucets, sinks, cook tops, and other appliances to be installed on the top.
- Cabinet doors and drawers should be installed to ensure that they do not interfere with any overhang or edge details

Site Preparation

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:

- Cabinets should be installed on a True (same) Plane.
- Cabinets should be leveled to 3mm difference or less for every 3,000mm 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.

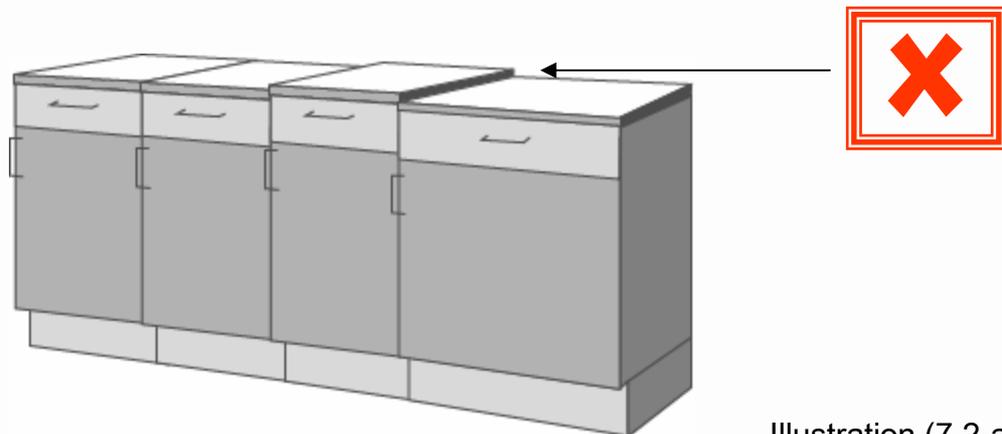


Illustration (7.2-a)

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 Check List

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.

- 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, cook-tops, 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 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® 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® 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.

Measurements & Templates

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 Shop 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.

8.1 Measurement Template Method

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 Shops may not allow Measurement Template Method.

Measurements & Templates

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 cut-outs.
- Measure the inside dimensions of the base cabinets where the cut-out cut-outs 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.

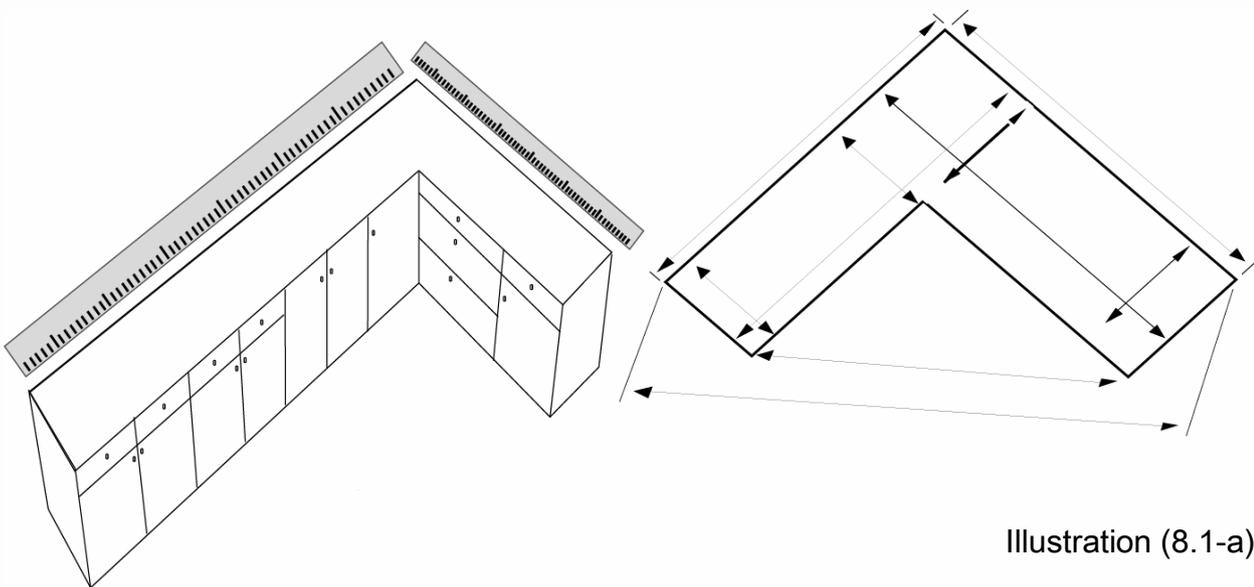


Illustration (8.1-a)

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 (5.2-b) 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, than Luan Strips should be ripped to 70mm.
 - (50mm + 20mm = 70mm)
- See illustration (8.2-a) below for more details

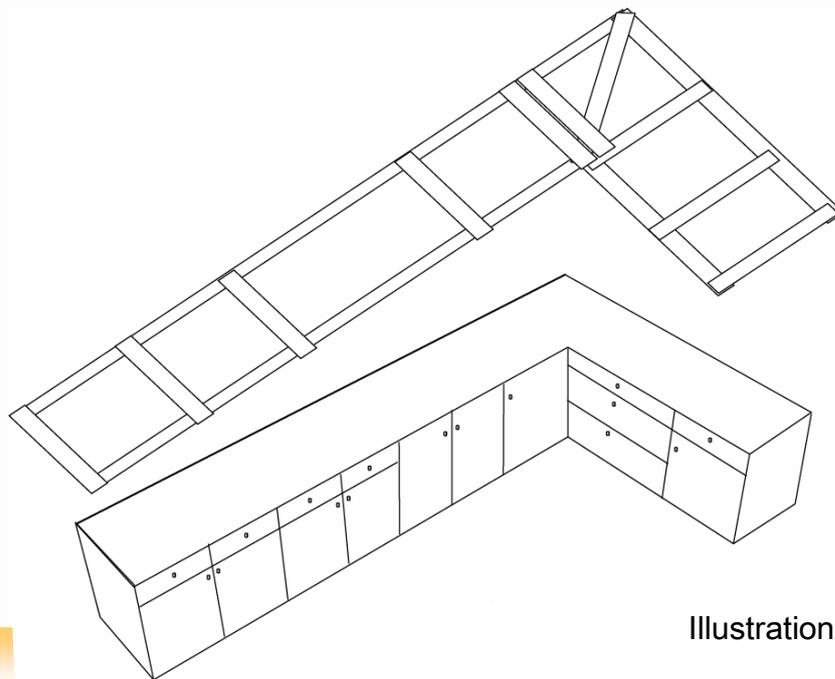


Illustration (8.2-a)

Note

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

Measurements & Templates

8.2 Luan Strip Template Method

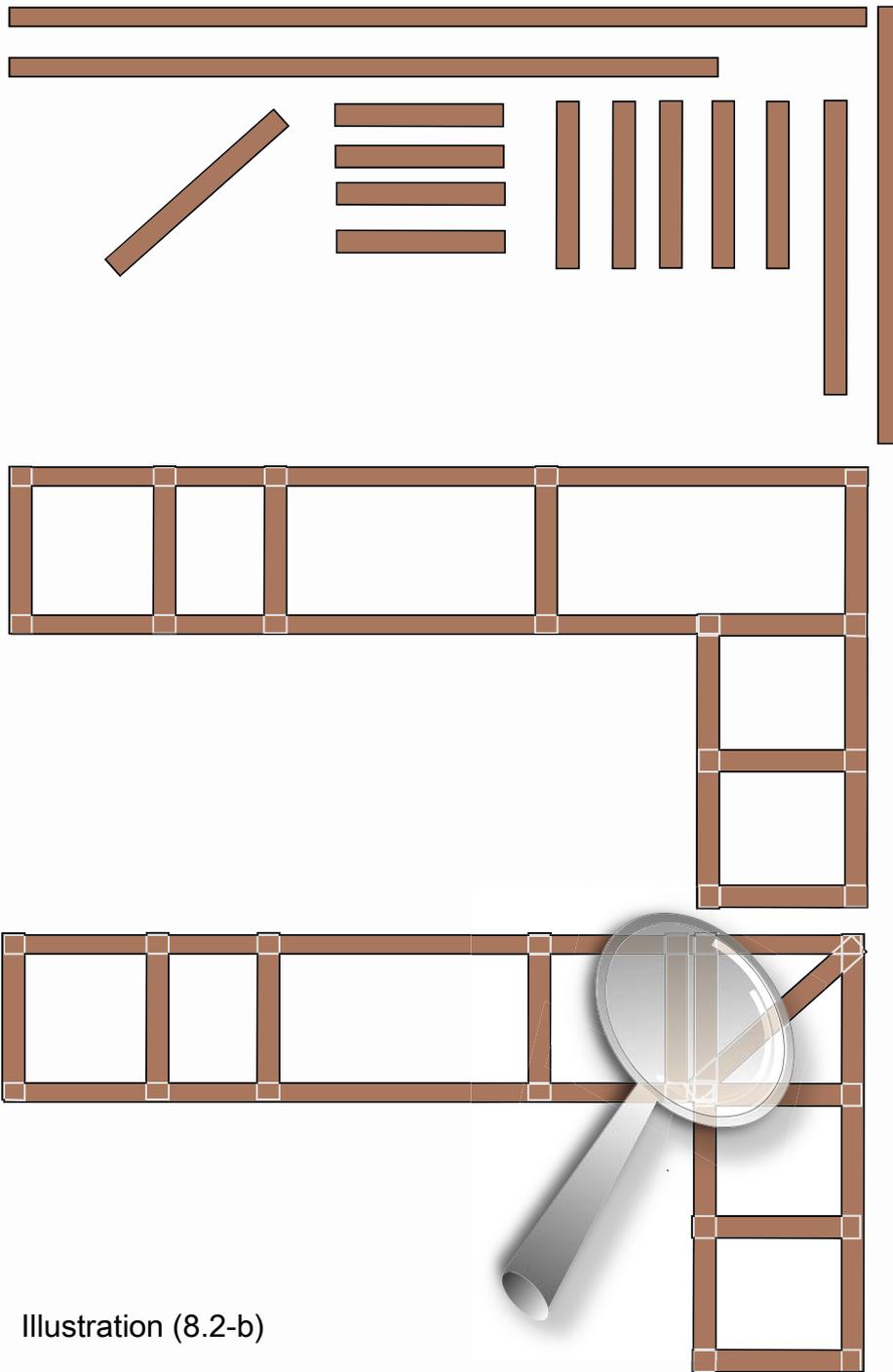


Illustration (8.2-b)

Measurements & Templates

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

Overview:

- Layout luan strip to form frames of the countertop.
- Cut excess material to fit the frames of the cabinet
 - See Illustration (8.2-a) for details
- Leave generally 3mm gap when using tile backsplash on the back of the countertop. Even though small, this gap will provide little room to move the pieces into place when installing the countertop
- Determine, if any, the best location for the seam.
- 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
- Apply ample amount of glue to the corners

Note

Making physical templates are 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.

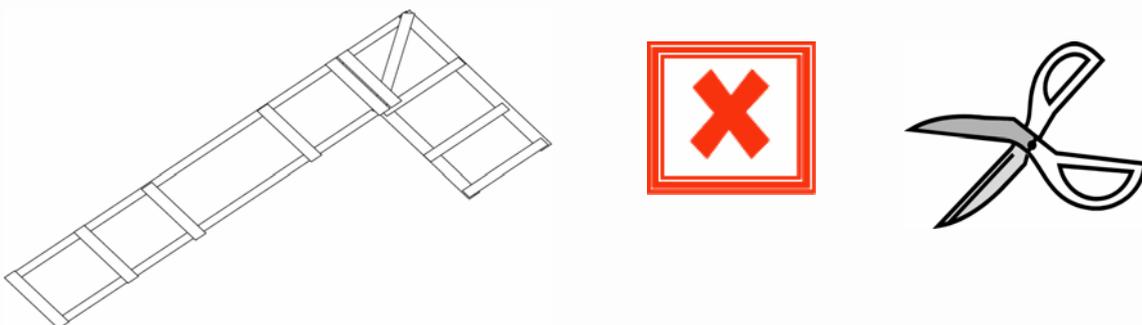


Illustration (8.2-c)

Measurements & Templates

- Once all the pieces are glued together and dried, mark the location for seam placement.
- 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
- 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
- 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.
- Edge Details
 - All finished edges should be marked and defined specifically with a name and sample drawing.
- Back Splash
 - Backsplashes should be marked and specified as to the height, placement, and polish locations.
- Cutouts
 - Even though sinks, faucets, cook tops, and other appliances should be available for measurement and take-back to the Fabrication Plant, precise measurements and indications on the templates are very important.
 - For example (Sinks or Cooktops):
 - o Measure the inside dimensions of the Base Cabinet (side to side and front to back)
 - o Mark on the template how big the opening is
 - o To alert the shop on how far back they should start the cut-outs, 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.
 - o See illustration (8.2-b) for details

Measurements & Templates

- 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 cut-outs 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.
- 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 shop, 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.

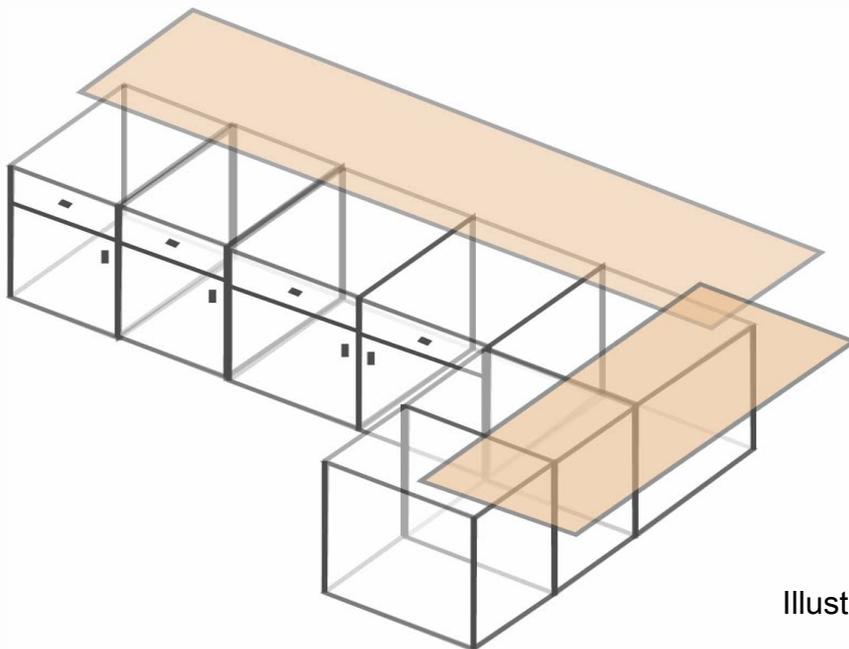


Illustration (8.3-a)

Measurements & Templates

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 signs, please check with your fabricator for details.
- Back Splash
 - Backsplashes should be marked and specified as to the height, placement, and polish locations.
 - Indicate type of Back Splash

Measurements & Templates

- Cutouts
 - Even though sinks, faucets, cook tops, 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 shop on how far back they should start the cut-outs, 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

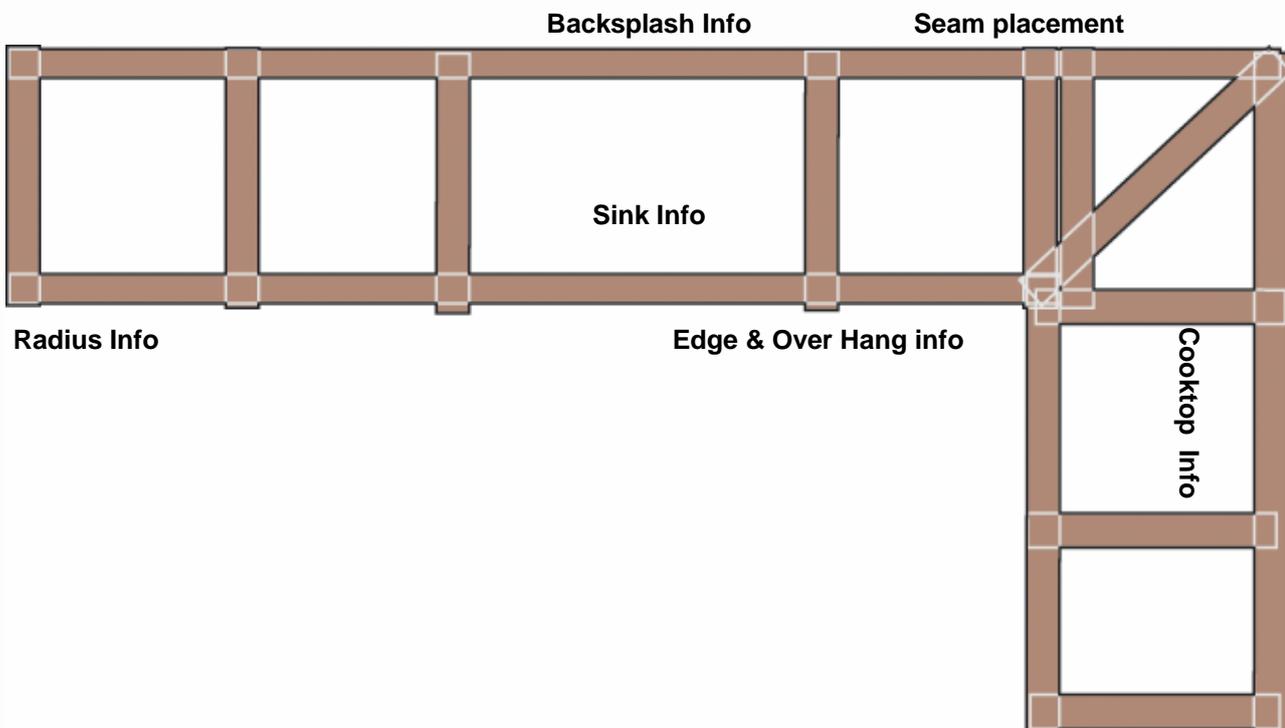


Illustration (8.3-b)

Measurements & Templates

- 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 cut-outs 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 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.
- 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.

Measurements & Templates

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 the equipment and software before going to the job.

It is advisable to take along other template method in the beginning, or every time, just in case the equipment fails (even you).

Remember, it is better to be well prepared than going back to the jobsite for re-template.

Measurements & Templates

8.5 Seam Placement

8.5-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® 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 cut-outs for appliance

8.5-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

All seams should be at least 75mm from all cut-outs, such as sinks, cook tops, and other appliances. In addition, seams should not be closer than 75mm together to prevent any failure.

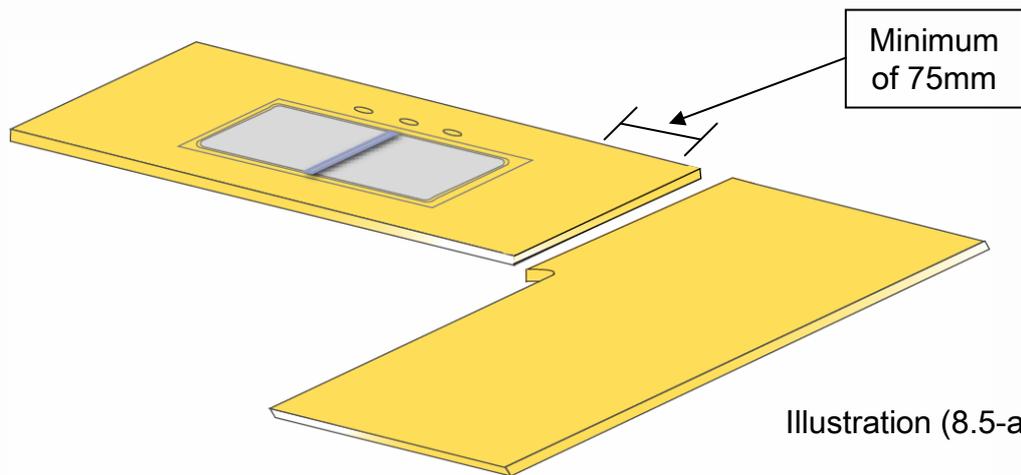


Illustration (8.5-a)

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.

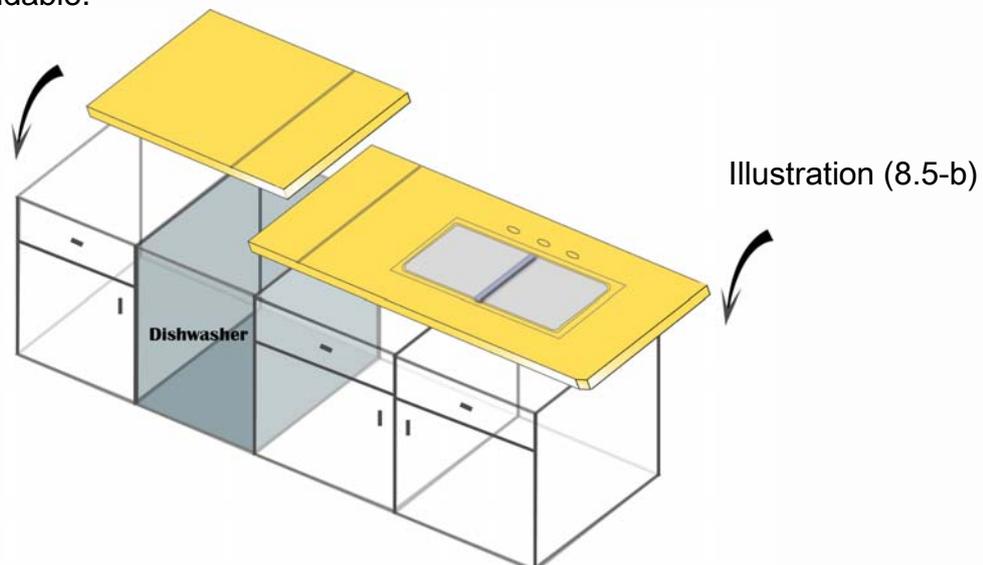


Illustration (8.5-b)

Measurements & Templates

On a “L” shaped top or top with an angle, 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 shop, 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

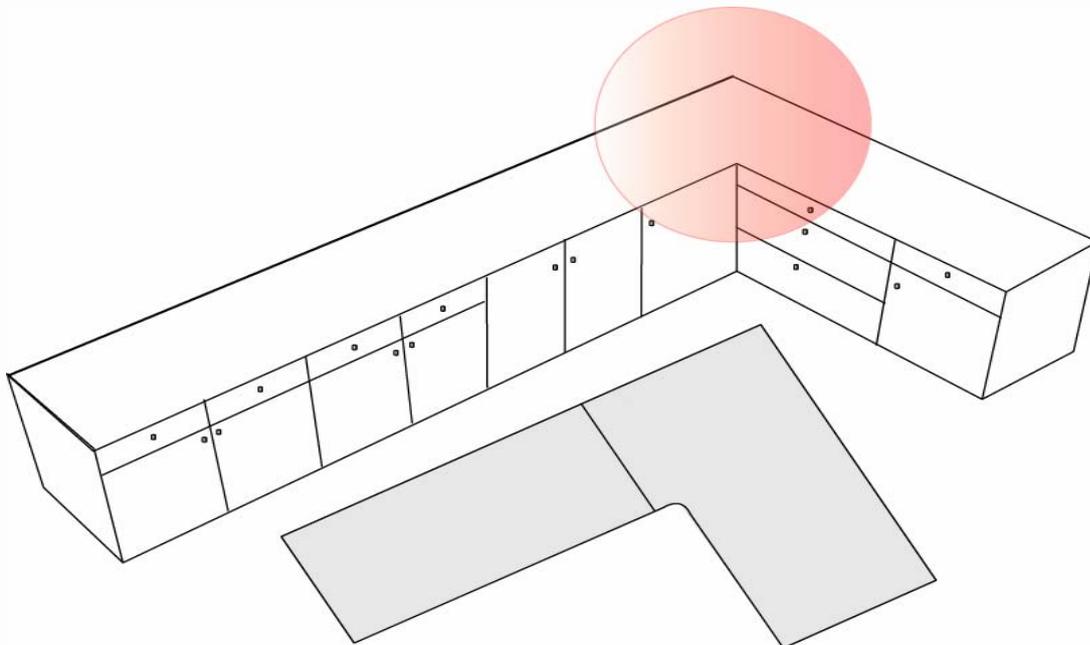


Illustration (8.5-c)

Measurements & Templates

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 Illustrations (8.5-d) for more details

Note

- If seams are not properly supported, there is a good chance of cracking or seam failures.

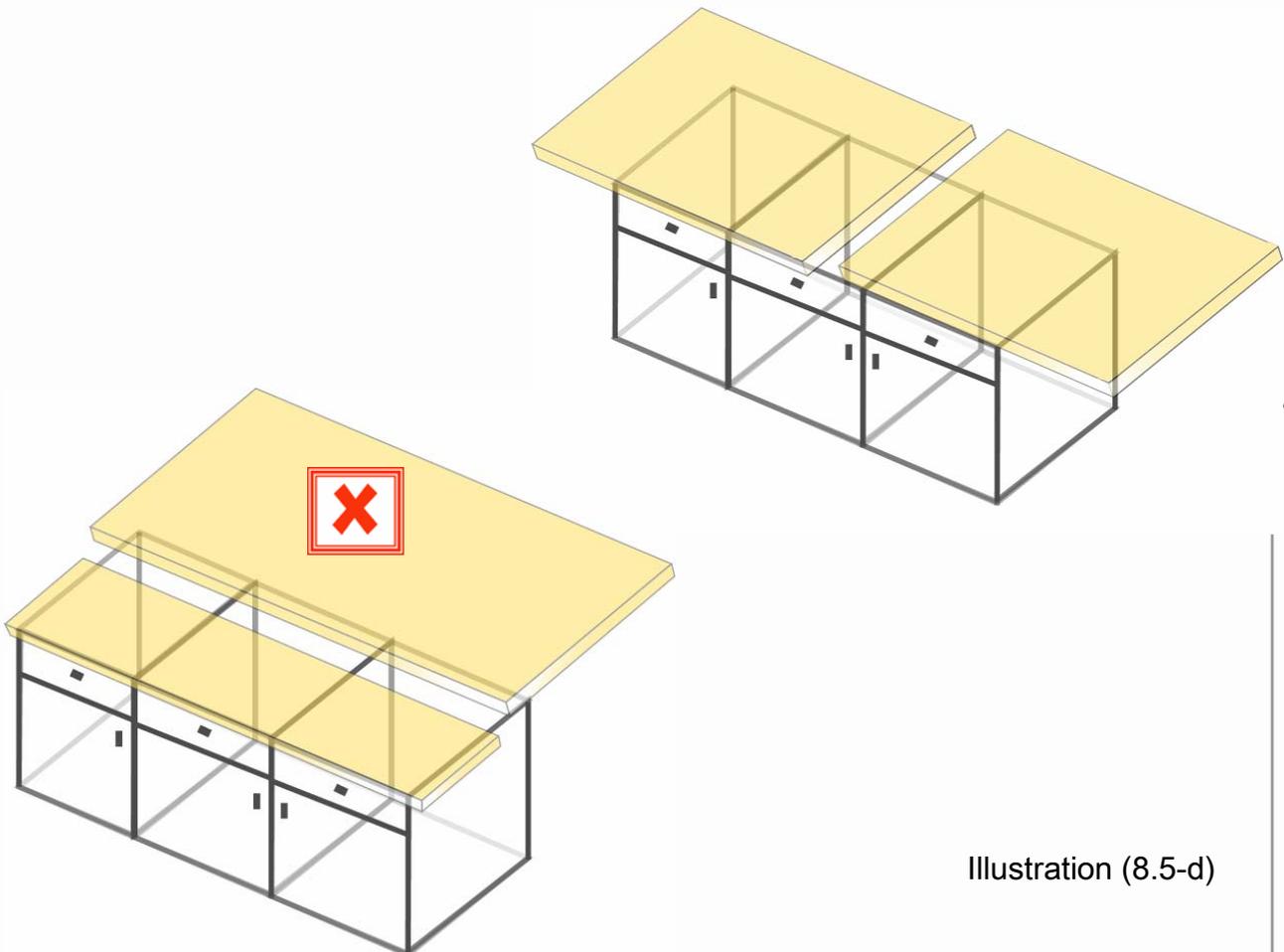


Illustration (8.5-d)

Measurements & Templates

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® Technical Services for further assistance. Contact information can be found in Chapter 24.1

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

However with the correct support and special fabrication methods, you can place 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® Technical Services for assistance and approval. If prior approvals are not received, it can void all warranties on the materials.

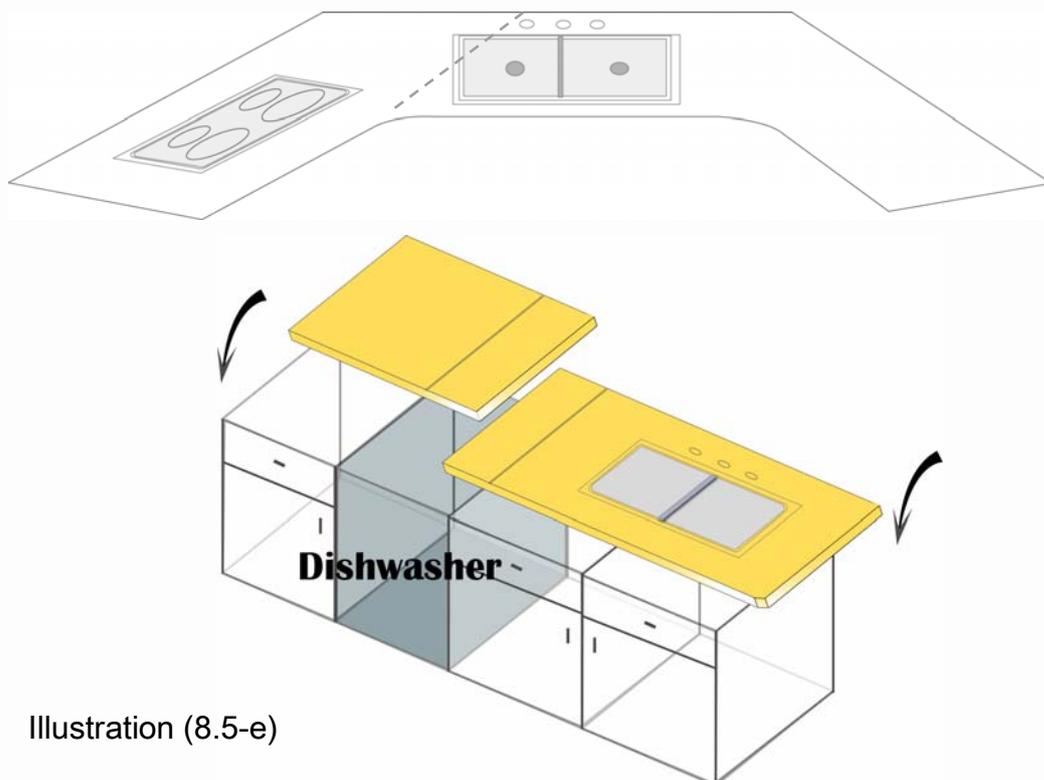


Illustration (8.5-e)

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 Surface 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® 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®. Here are some types of tools many fabricators use:

- Circular Saw
- Hand Held Routers
- Table Saw
- Panel Saw
- CNC Routers
- Jigsaws, Hacksaws, Non Solid Surface Blades and Bits, and Auger Bits should never be used on Hanex®
(Not even for rough cuts)
- Water cooled cutting equipments with diamond blades
- Etc.

These tools can be found in many Woodworking Shops and they can be used on Hanex®. 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®, 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. <i>Check with the manufacturer of the tools for more details.</i>
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 Recommendations

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®
- Jigsaws and hacksaws should never be used on Hanex® 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®. 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® together, the accuracy of the cut is very important to acquire inconspicuous seams (Chapter 10 & 11).

Initial Cutting for Fabrication

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 back-splashes, however it will not be accurate enough for seaming two pieces of Hanex® (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 equipments and ways to cut Hanex®, however, it is important to choose a method that best suit your shop.

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®, 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.

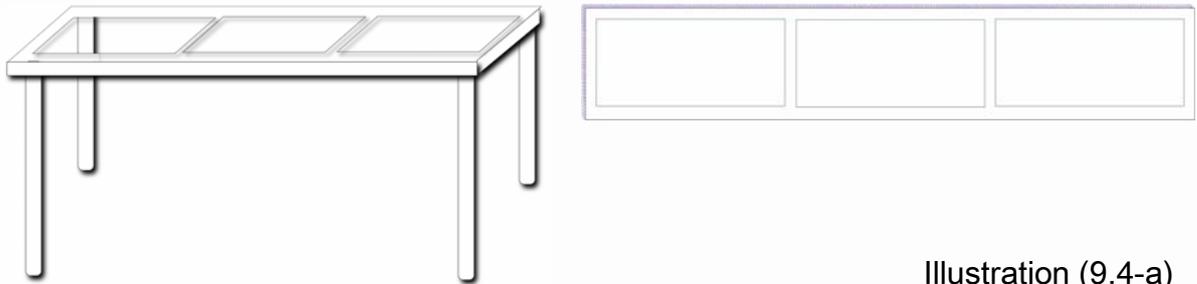


Illustration (9.4-a)

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® 100% Acrylic Solid Surface products are non-porous materials and NSF-51 Certified for Food Preparation area. Due to its innate features, Hanex® can be fabricated and installed in almost any application with inconspicuous seams. As a professional fabricator, you are responsible for fabricating Hanex® 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 Sal (Optional)
- CNC Router (Optional)
- Pulling and Tightening Equipments

Seaming Pieces Together

Before any fabrication and installation of Hanex®, 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.

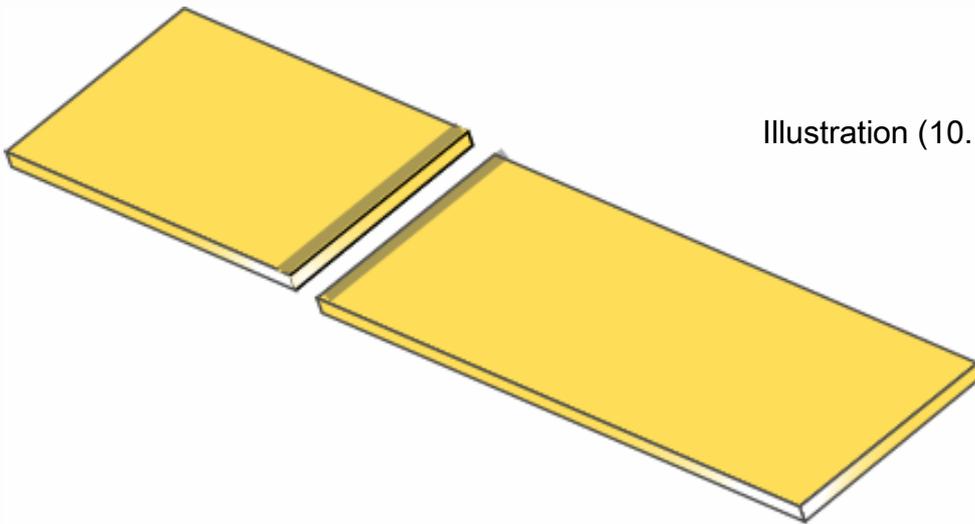


Illustration (10.1-a)

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

10.2-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:

- Layout the pieces that are going to be seamed together.
- 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)

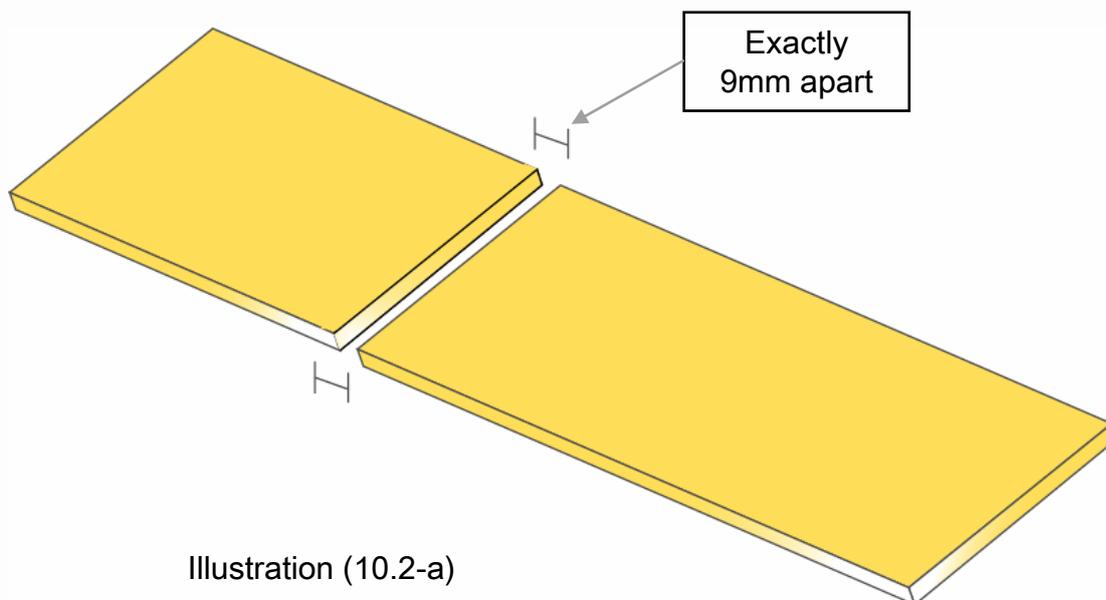


Illustration (10.2-a)

Seaming Pieces Together

Tip

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, sometimes called, 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® to make this tool. Illustration (10.2-b)

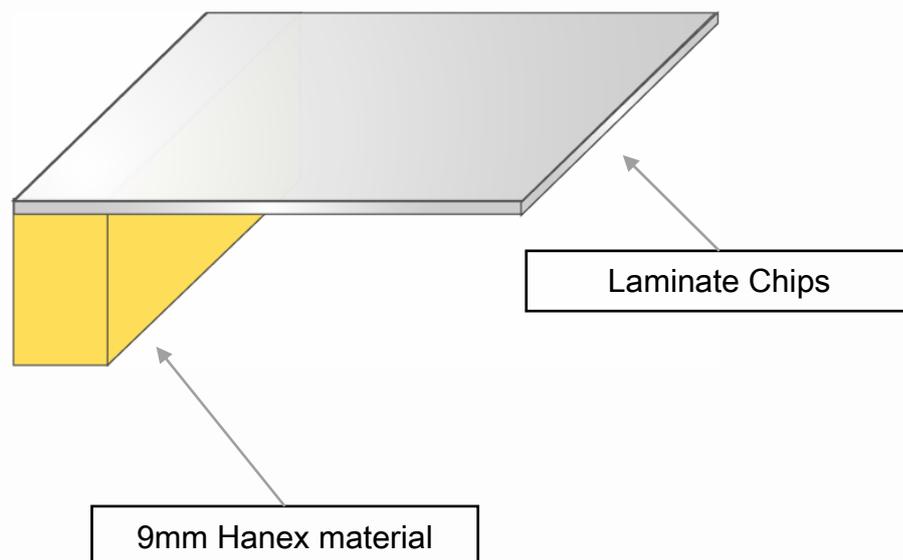


Illustration (10.2-b)

Seaming Pieces Together

Directions Continued:

- Clamp the two pieces down so they do not move
- Prepare your router with 12mm bit.
- Place the straight edge onto the left hand piece to be machined. The straight edge should be perfectly parallel to the gap.
- 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.

Tip

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)

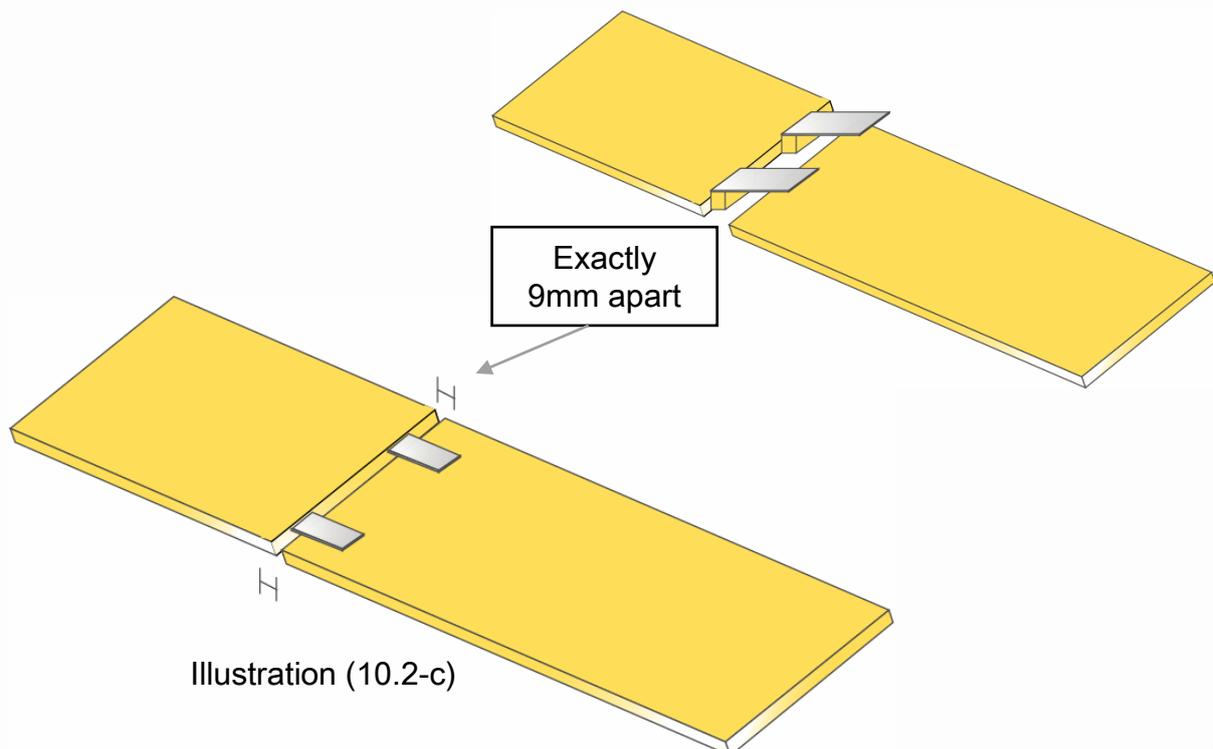


Illustration (10.2-c)

Seaming Pieces Together

Directions Continued:

- Clamp the straight edge secure.
- Set the dept of the router to cut all the way trough the materials.
- Check to make sure that all the pieces are securely clamped in place.
- 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.

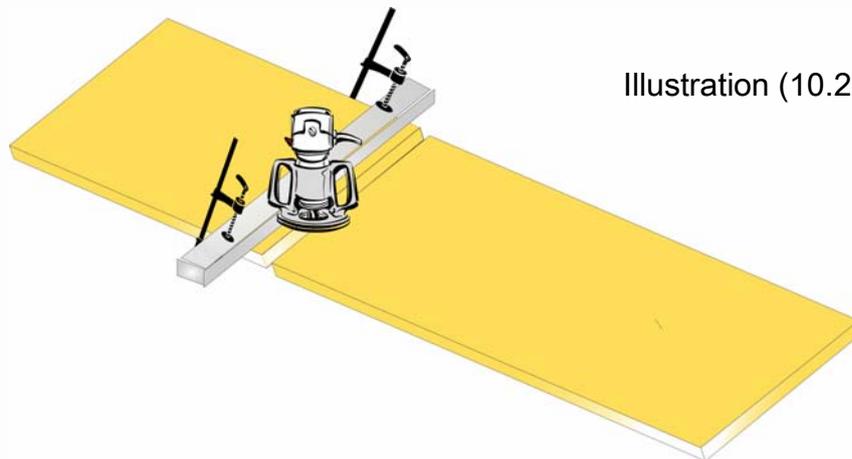


Illustration (10.2-d)

Tip

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

10.2-b Using Special Cutting Equipment

If your shop 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.

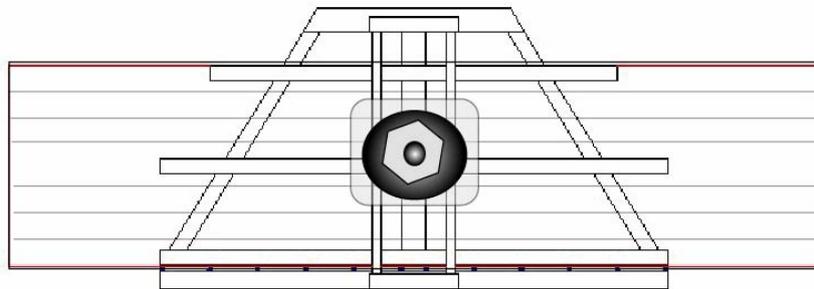


Illustration (10.2-e)

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 toll manufacturer.

Seaming Pieces Together

10.3 Seam Preparations

Directions:

- 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 used as release tape. This will ensure Hanex® will not adhere to the work table.
- Abrade the bottom portion of the seaming edge for better bonding. Use 80 grit or coarser sandpaper to create 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)

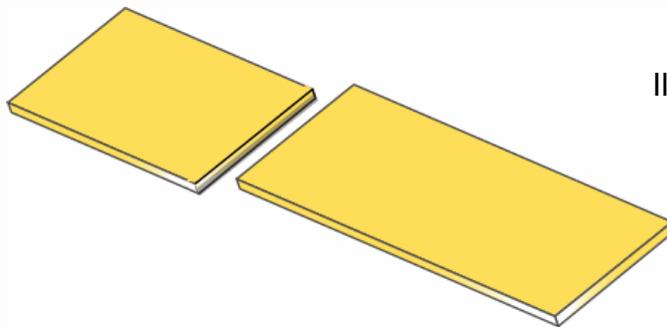


Illustration (10.3-a)

- Finally, clean all pieces, including the release tape with denatured alcohol.

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. Seaming Kits are ready to use from the cartridge. Similar to the two part epoxy, the Hanex® 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:

- Never compensate an irregular fit by changing or altering connection.
- During Dry Fit, the seam should have been pulled together without using any glue to make sure the seams are aligned and placed correctly.
- Once all the pieces are aligned and ready to join together, separate the pieces to apply the adhesive (Seaming Kit).
- Approximately 3mm gap will be enough to apply the Seaming Kit.
- Clean the seaming area and the contact point with denatured alcohol.
- 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 use. Please refer to Chapter 6 for more info.
- Apply the seam kit in the gap.
- Remember, even if the glue is not sticking to the side, the release tape under the seam will hold the glue in place
- After the seam adhesive is applied, pull the seam together using the Seaming Tool or other methods (Chapter 10.5)
- Make sure you do not have any gap, groove, or other errors.
- The seam should be leveled and have nice flush surface.
- When the seam is pulled together, excess seam adhesive will squeeze out to the top.
- Wait for the glue to cure completely before sanding
- For further details on using Hanex® 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.

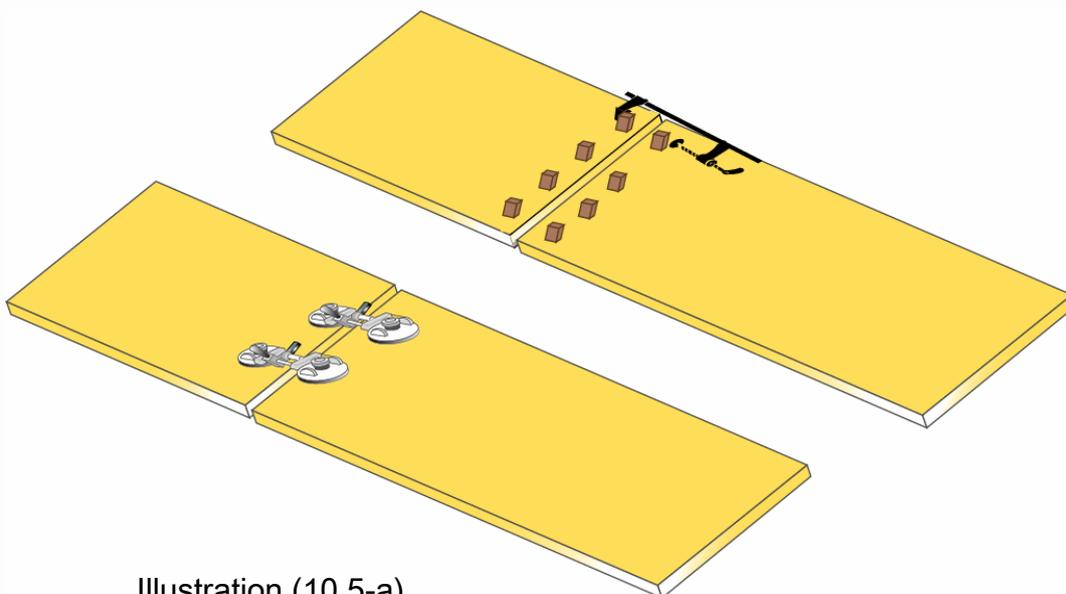


Illustration (10.5-a)

Seaming Pieces Together

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 these equipments 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.

Tip

- 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 access 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)

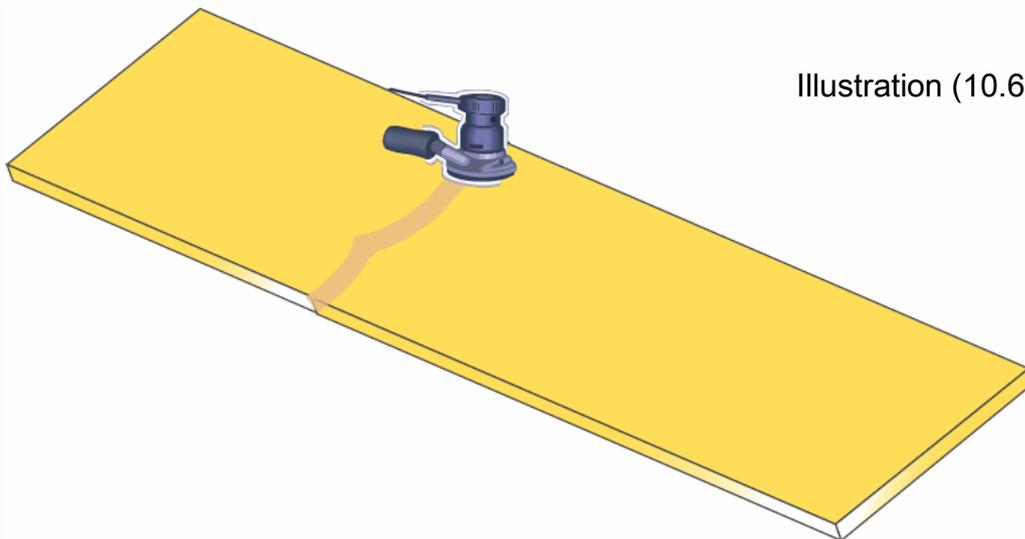


Illustration (10.6-a)

Note

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

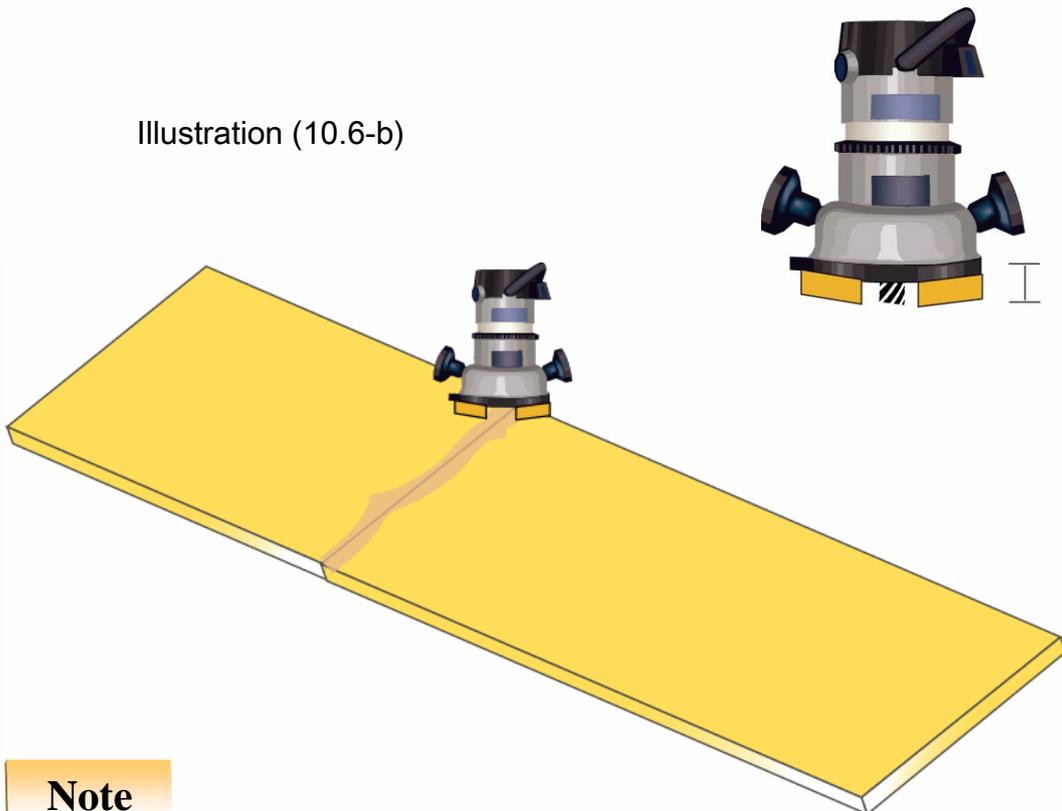
Seaming Pieces Together

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

Directions:

- Set the bit flush with the top. It is highly recommended to check your bits and the setting of the router before proceeding.
- Run the ski router over the cured seam line to remove excess glue. Make sure you have your protective eye gear.
- After the excess glue has been removed, sand the area. Please see Chapter 16 for further information on Sanding and Polishing
- 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® Material
- Side edges need to have 45° angles to prevent stress

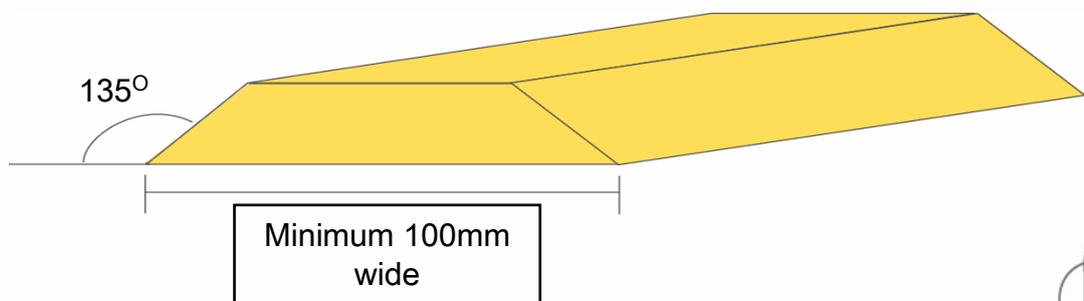


Illustration (10.7-a)

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

Directions:

- Make sure the seam plates run the full length of the seam.
- 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
- Make sure the seam plates do not rock due to the excess glue from the seam
- Abrade both the seam plate and the top before applying the adhesive
- 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.
- 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.

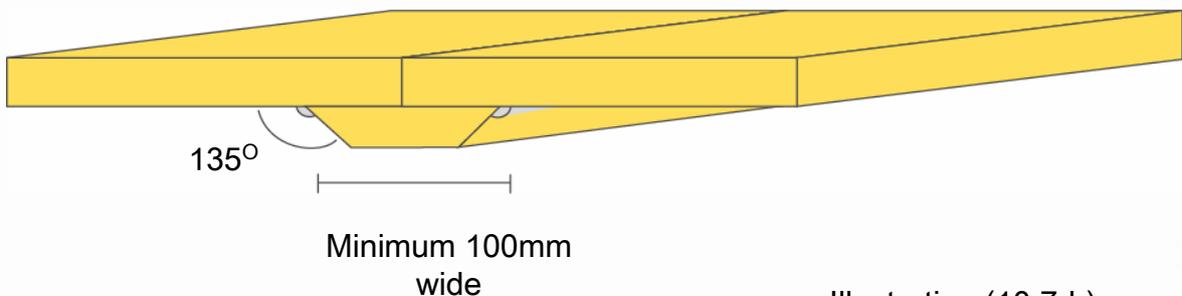


Illustration (10.7-b)

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:

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

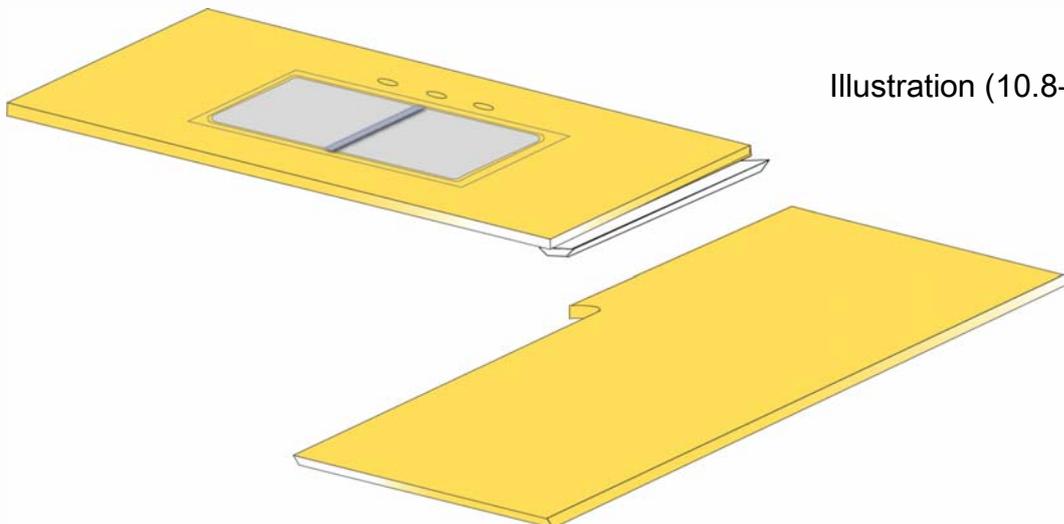


Illustration (10.8-a)

Seaming Pieces Together

Directions Continued :

- Place all the pieces on the installation site (Chapter 17).
- Wipe the area with denature alcohol and let it dry.
- Apply seam adhesive to the seam plate. Make sure to have full coverage.
- Place the second piece on the seam plate with 3mm gap to apply adhesive along the seam.
- Apply adhesive along the gap.
- Using the clamping system you use, Pull and Tighten the seam together.
- Wait for it to cure
- Remove excess adhesive (Chapter 10.6)
- Polish to match the finish.

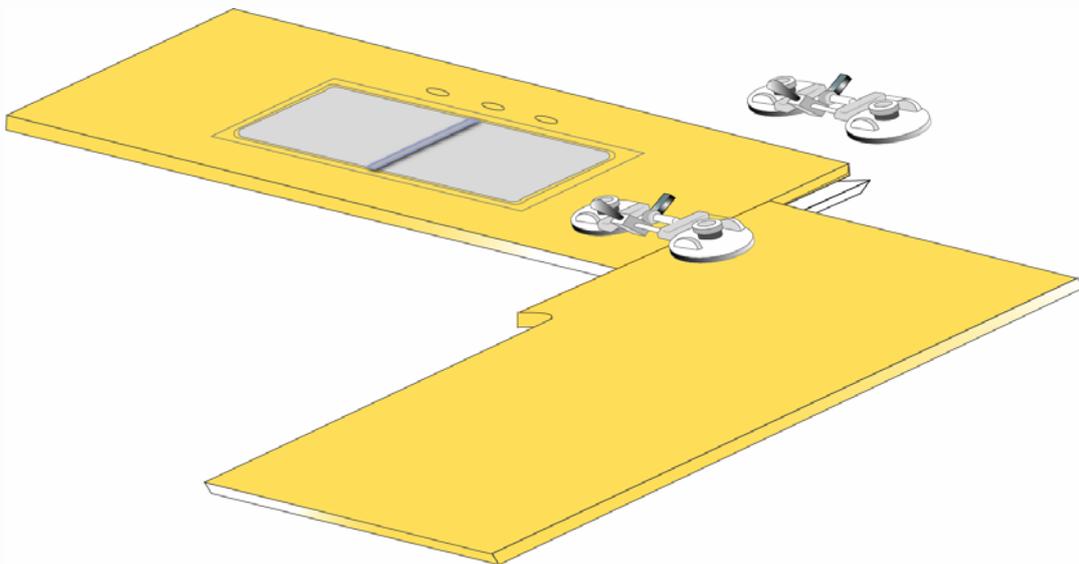


Illustration (10.8-b)

Tip

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

Edge Buildups

11.1 Edge Buildup and Detailing Tools

Edges on Hanex® 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 Surface. 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® 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

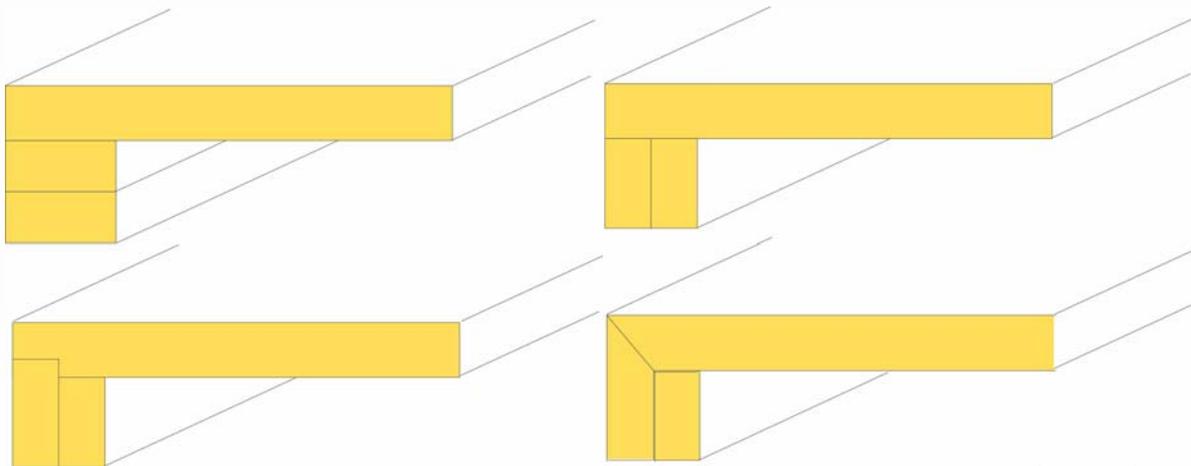


Illustration (11.1-a)

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

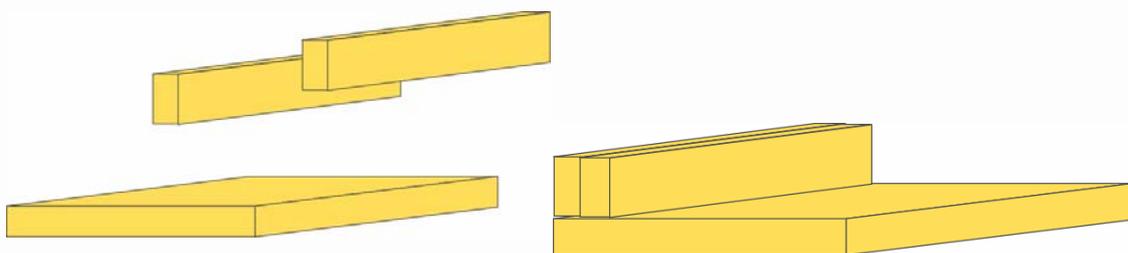
11.2 Drop Edge

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 2 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:

- Cut the strips to desired thickness.
- 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)



Note

Illustration (11.2-a)

Depending on the Decorative Edge details, you might need to use another pieces. Some edge decorative edge bits will cut more than 25mm of the edge to create it 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.

Edge Buildups

Directions Continued:

- 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®
 - Make sure the thermoformed pieces does not line up with the seam.

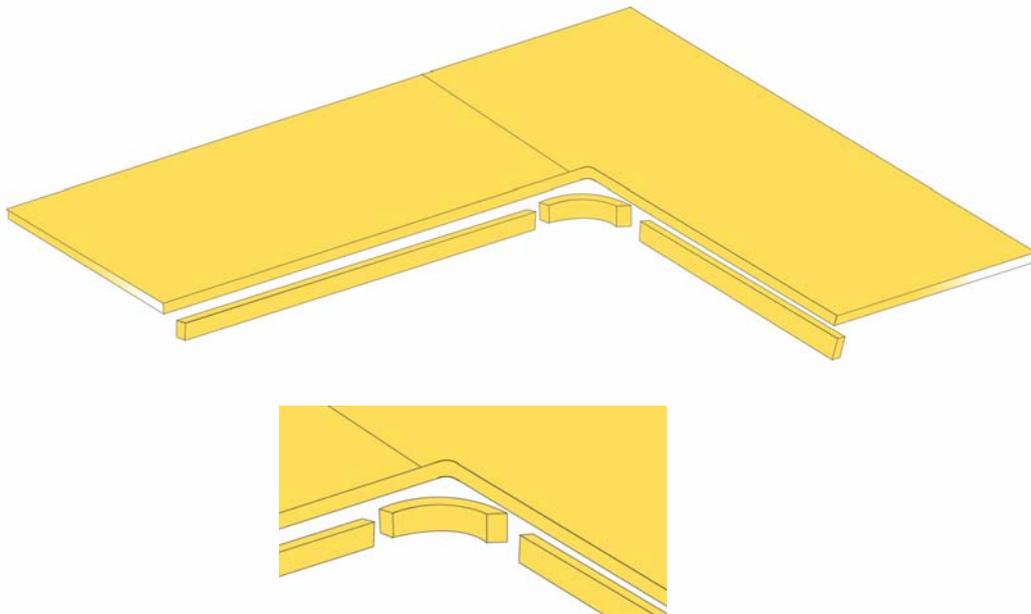


Illustration (11.2-b)

Note

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

Edge Buildups

Directions Continued:

- Inside Corner (Corner Blocks).
 - Cut two pieces of same color material into 150mm x 150mm
 - Laminate 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.

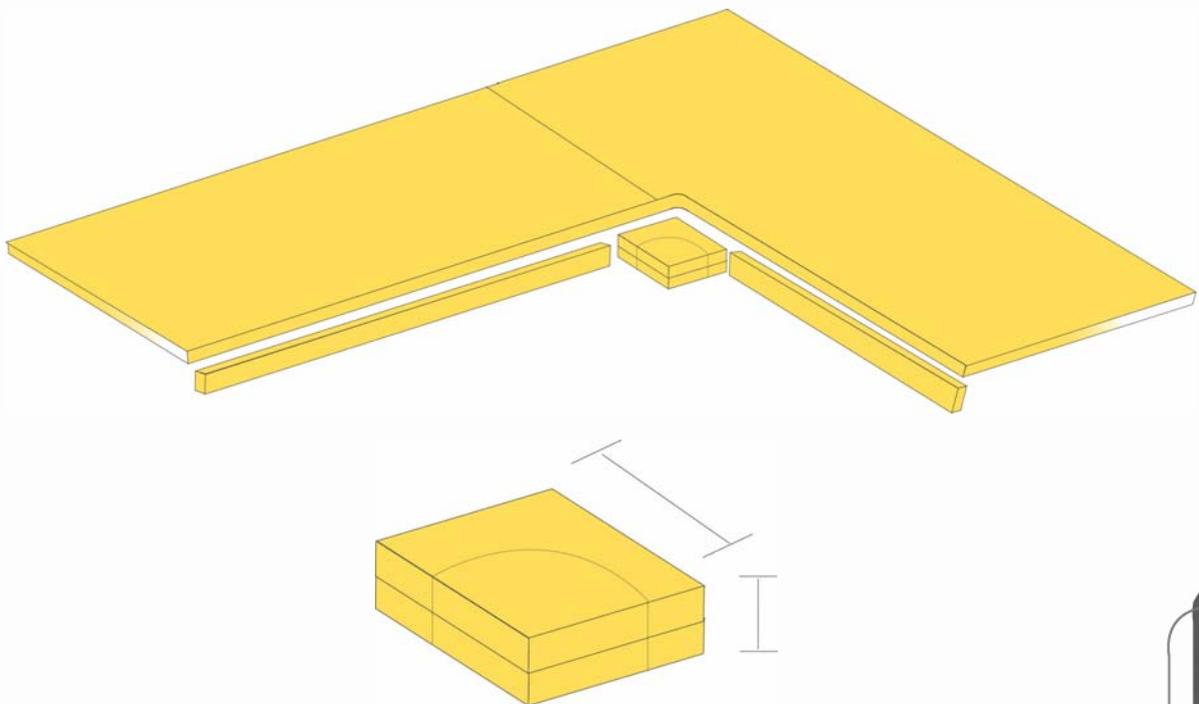


Illustration (11.2-c)

Note

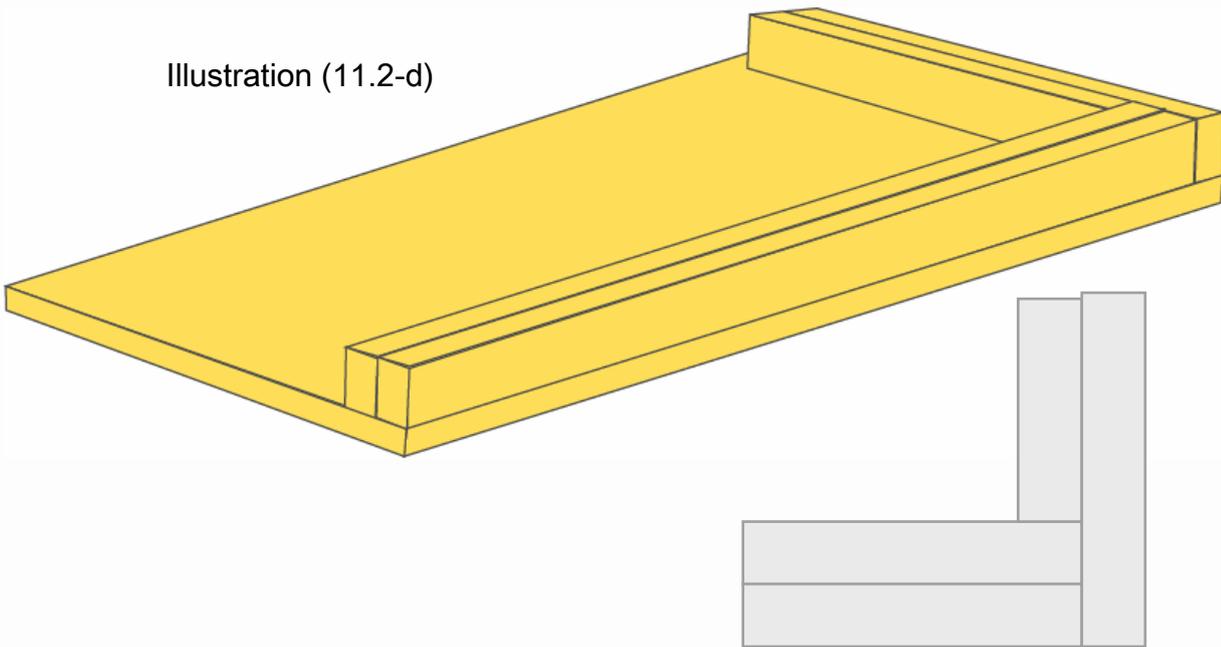
- All inside corners should have at least 12mm radius.
- The manufacturer's warranty will be voided if any inside corner radius is less than 12mm
- Remember, the bigger radius the better

Edge Buildups

Directions Continued:

- 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)



Tip

- 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

Directions Continued:

- Dry-fit all the pieces to make sure the seam lines disappear.
- Remember, if you see seam lines when you clamp down the pieces, you will see the seam line after.
- In most cases, the seam lines will show if your cutting instrument is dull and is not cutting the strips cleanly.
- Use small wooden blocks to set guides. Illustration (11.2-e)
- Use Hot Glue to set the wooden blocks
- Take all the pieces and sand slightly with 80 grit sand paper.
- Wipe all the pieces down with denatured alcohol
- Apply adhesive and clamp all the pieces down.

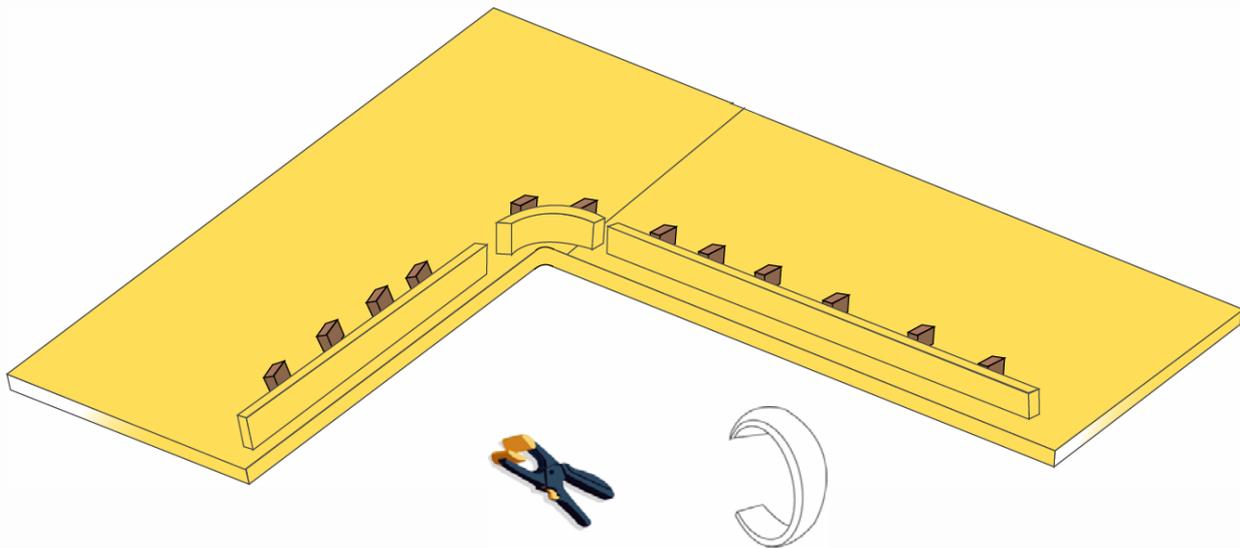


Illustration (11.2-e)

Tip

Always use spring clamps for right pressure.

Edge Buildups

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.

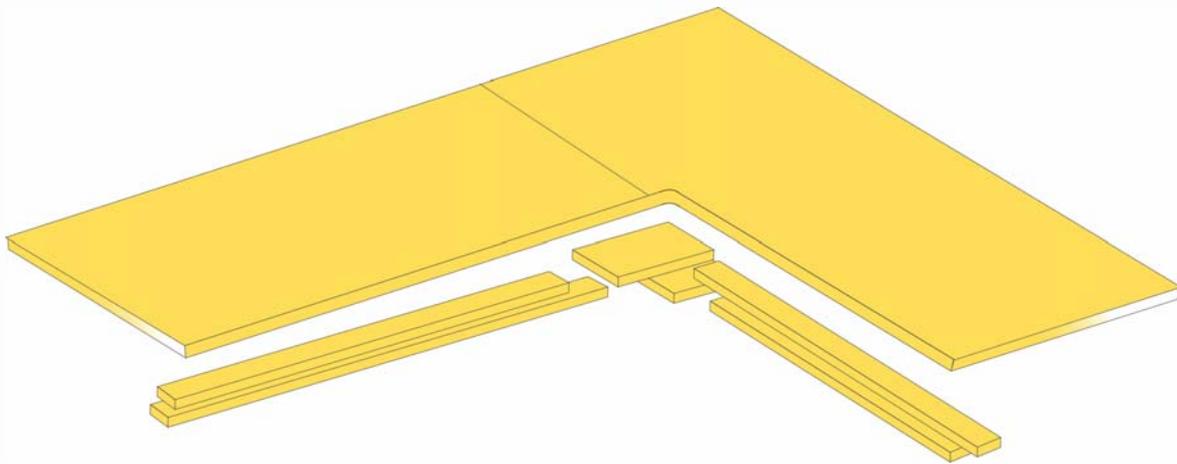


Illustration (11.3-a)

Note

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

Edge Buildups

Directions:

- Cut the strips to desired thickness.
- You will need two strips for each edge build-up, depending on the thickness of your edge.
- 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 seam plate in all the seams. Illustration (11.3-b)
 - Cut two pieces of same color material to 100mm x 150mm
 - Overlap the pieces on each other and fit the strips right up against the corner pieces. Illustration (11.3-b)

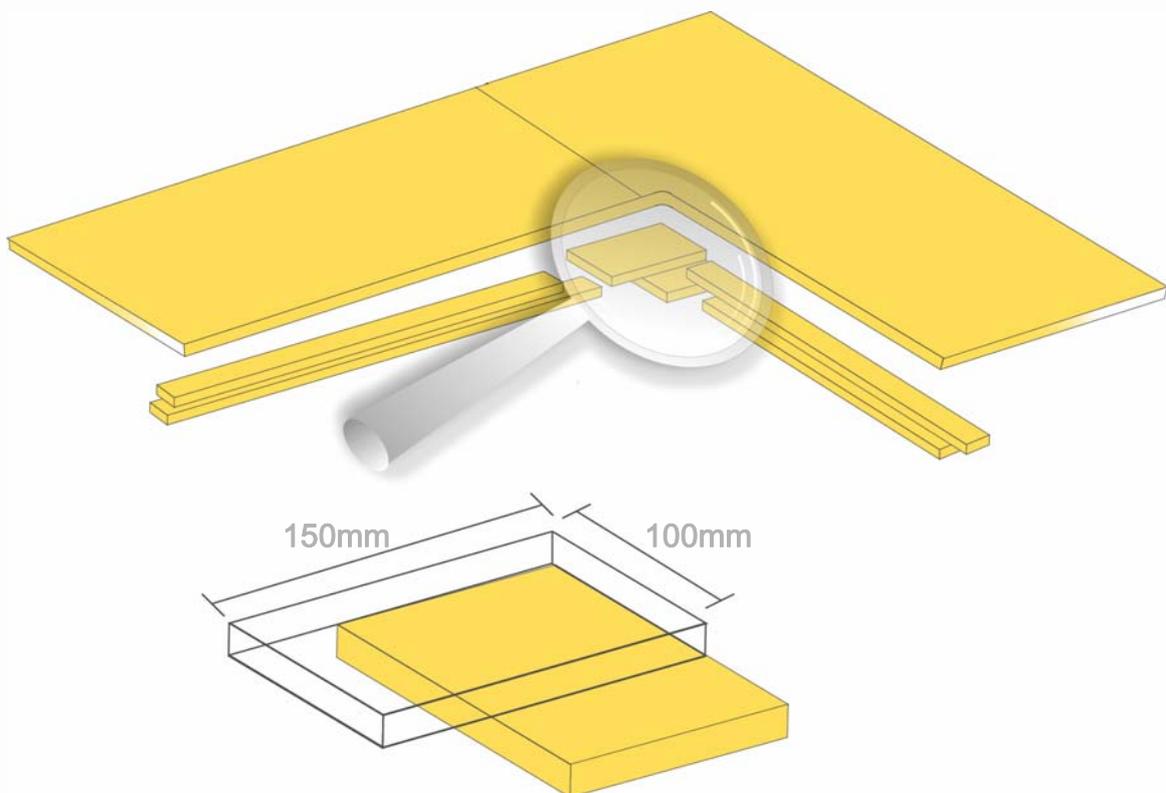


Illustration (11.3-b)

Edge Buildups

Directions Continued:

- Dry-fit all the pieces to make sure the seam lines disappear.
- Remember, if you see a seam lined when you clamp down the pieces, you will see the seam line after.
- In most cases, the seam lines will show if your cutting instrument is dull and is not cutting the strips cleanly.
- Use small wooden blocks to set guides. Illustration (11.3-c)
- Use Hot Glue to set the wooden blocks
- Take all the pieces and sand slightly with 80 grit sand paper.
- Wipe all the pieces down with denatured alcohol
- Apply adhesive and clamp all the pieces down.

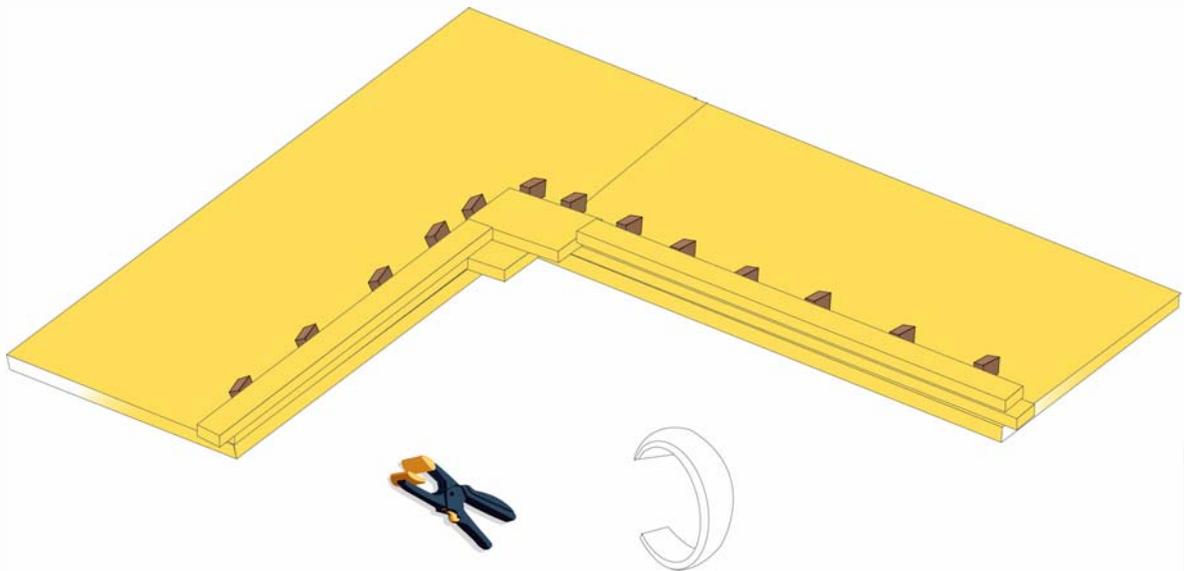


Illustration (11.3-c)

Tip

Always use spring clamps for right pressure.

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.

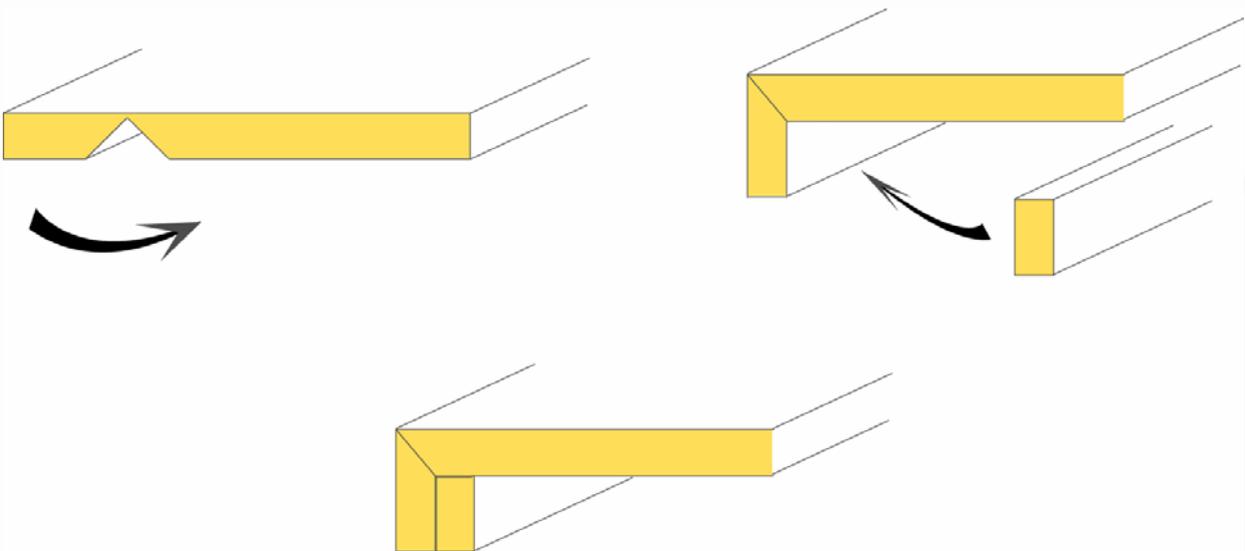


Illustration (11.4-a)

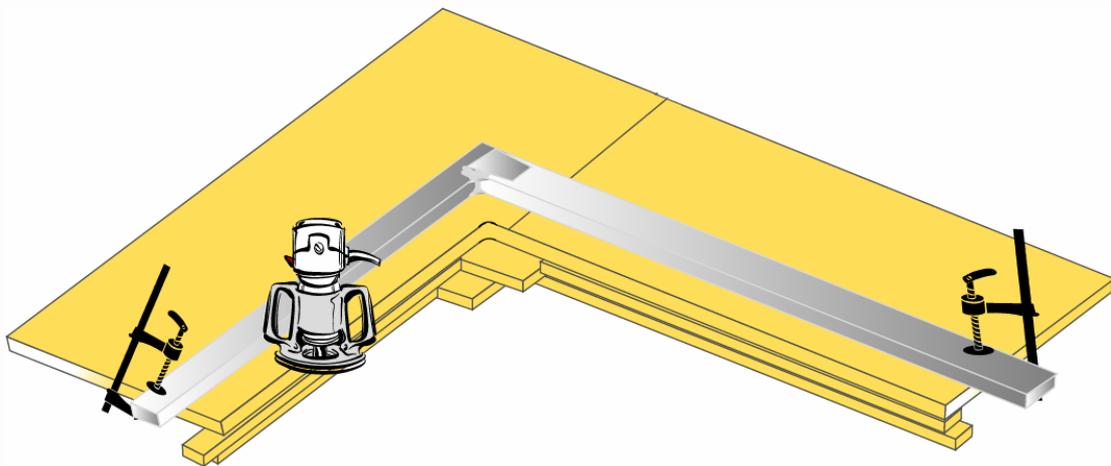
Edge Buildups

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:

- Make sure all the glue has cured and there are no soft spots.
- Remove all the clamping equipment.
- Remove all the blocks which were used as a guide for the edges.
- Flip the countertop over to show the top surface of the countertop
- 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.



Note

Illustration (11.5-a)

- Run the router from left to right.
- Make sure to clamp all the pieces down before routing.

Edge Buildups

11.6 Decorative Edge Profile

Having the right decorative edge profile can be very important to some and 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:

- After you have completed all the build-ups and preparation work, you can run the router with your decorative bit.
- 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.
- Among the many different types of decorative edges, most commonly used are:

Eased Edge	Ogee
6mm,12mm,19mm Radiuses	Roman Ogee
Full Bull Nose	Triple Pencil
Half Bull Nose	etc

- After the decorative edges have been profiled on to the top. Sand the edge to match the finish of the top.
- 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® 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.

Sinks and Bowls

12.1 Types and Installations

With Hanex® Solid Surface, 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® are Integrated Solid Surface Sinks and Bowls. However, Hanex® Solid Surface 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
- 12mm 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 options in fabrication:

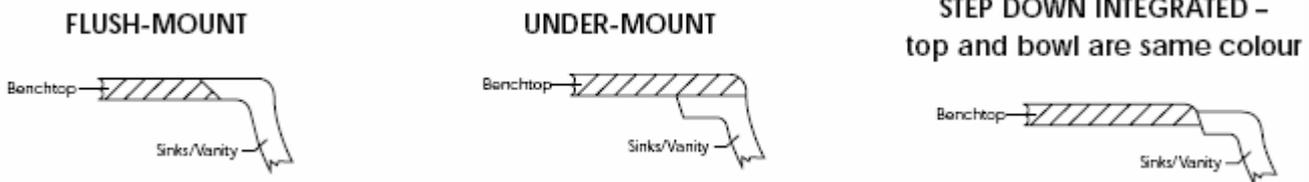


Illustration (12.1-a)

Sinks and Bowls

12.2 Integrated Solid Surface Sinks / Bowls

12.2-a *Drop-In or Angle Mount*

Directions (Fabrication):

- 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.
- Mark the exact location for the sink and place sink model template in position, ensuring the allowance of the 30mm diameter copying ring.
- 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
- Place hot melt blocks around the perimeter of the router template to ensure exact location for further steps in the fabrication process.
- 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® removal.
- Note: Ensure adequate support on the under side of the Hanex® off-cut to ensure no damage is caused by the final break through the router bit.
- 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.
- Note:
 - (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.
- Remove the router template, ensuring that the hot melt location blocks remain in position.

Sinks and Bowls

Directions (Installation):

- Once the routing process is completed the pre-installation will require precise preparation. Once the Hanex® adhesive is applied to the top and sink edges, speed in application is essential.
- With the use of 50mm wide plastic packaging tape, place tape around the underside of the sink cut-out, this will ensure that excessive adhesive does not drop through the edges to be bonded.
- Clean both the top and sink edges with denatured alcohol.
- Prepare Hanex® adhesive bulk cartridge and mixer tip, and run a bead of Hanex® adhesive around the perimeter edge of the sink and top.
- 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.
- Do not move or machine sink for at least three hours after application.
- For sink step-down application, replace the router template between the hot melting location blocks, and router to desired finish.
- For flush fitting sink design, simply remove excess Hanex® adhesive ooze with a hand plane, and finish sand.

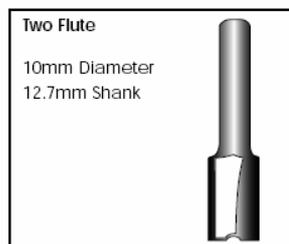
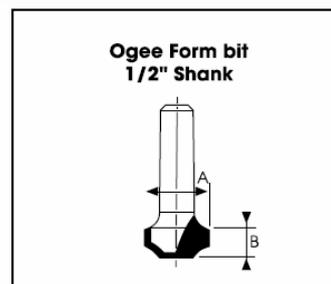
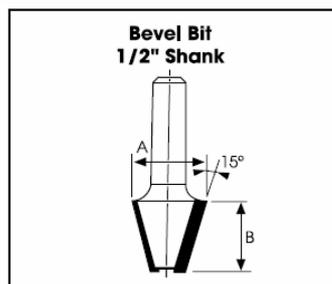


Illustration (12.2-a)



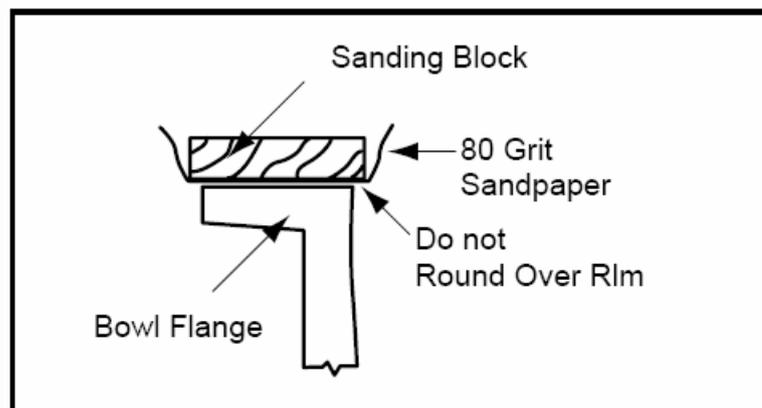
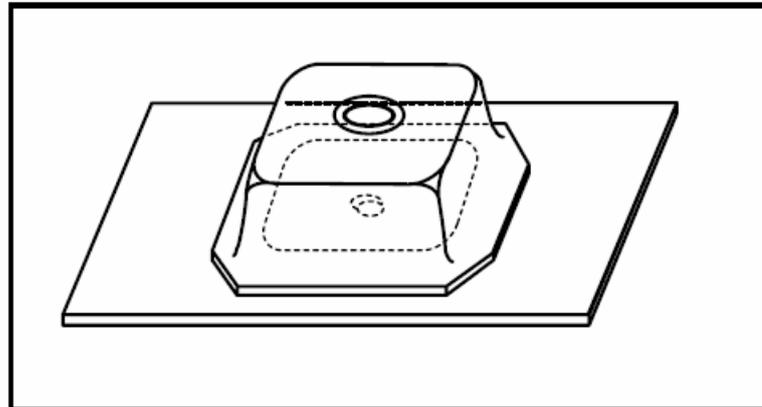
Sinks and Bowls

12.2 Integrated Solid Surface Sinks / Bowls 12.2-b Under-Mount

Directions (**Positioning and Preparation**):

- Sinks are recommended for bonding to 12mm Hanex® sheet thickness or greater. Turn the Hanex® sheet back-side up on a well supported surface. Position the bowl on the sheet
- 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.
- With a flat sanding block, scuff sand with #80 grit sandpaper the top flange of the bowl. Do not round over or knock the rim

Illustration (12.2-b)

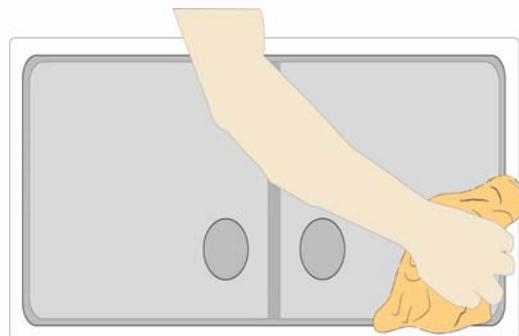
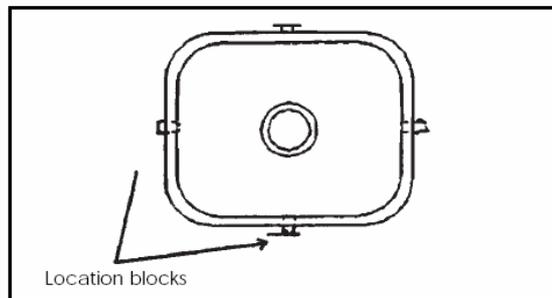


Sinks and Bowls

Directions (**Bonding**):

- 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.
- Remove the bowl and clean the areas to be bonded with denatured alcohol and allow to dry.
- Prepare Hanex® adhesive seaming gun and apply ample amount of adhesive to the rim of the Sink or the Bowl.
- Place sink in position between the Guide blocks.
- 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.
- Ensure sufficient pressure is applied to obtain adhesive ooze around bowl flange.
- Allow to dry completely.

Illustration (12.2-c)



Tip

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

Sinks and Bowls

Directions (**Shaping**):

- 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 cut-out before installing the sink.
 - However, it is important to make the final cut with the router and specified bearings.
- Start from the top to avoid damage to the edge
- Use specially-designed, bowl-router bits to shape either a flush or other bowl edge trims.

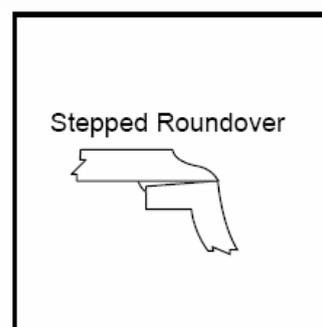
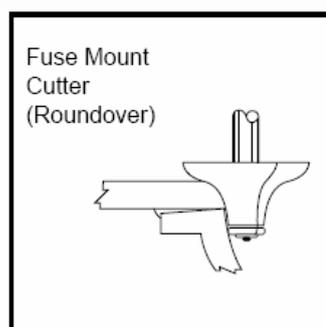
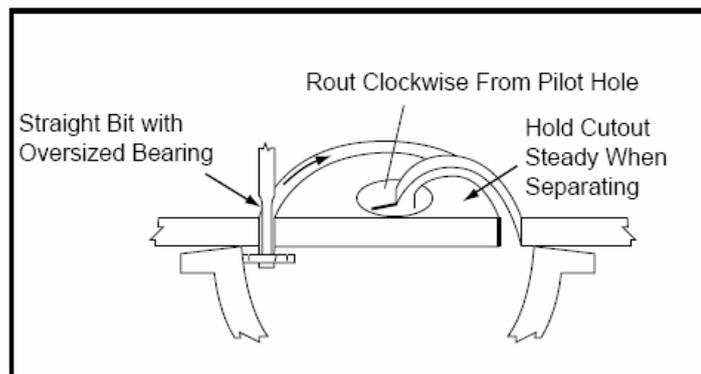


Illustration (12.2-d)

Tip

Precutting the sink cut-out 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.

Sinks and Bowls

12.3 Non-Solid Surface Sinks / Bowls

12.3-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® will support any types of sinks in the market, whether it be Stainless Steel, Cast Iron, Solid Surface, 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 cut-out. Please consult the sink manufacturer for the specifications and other details on the product.

Because the sinks, faucets, cook tops, 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 cut-outs, 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

- ❑ 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.

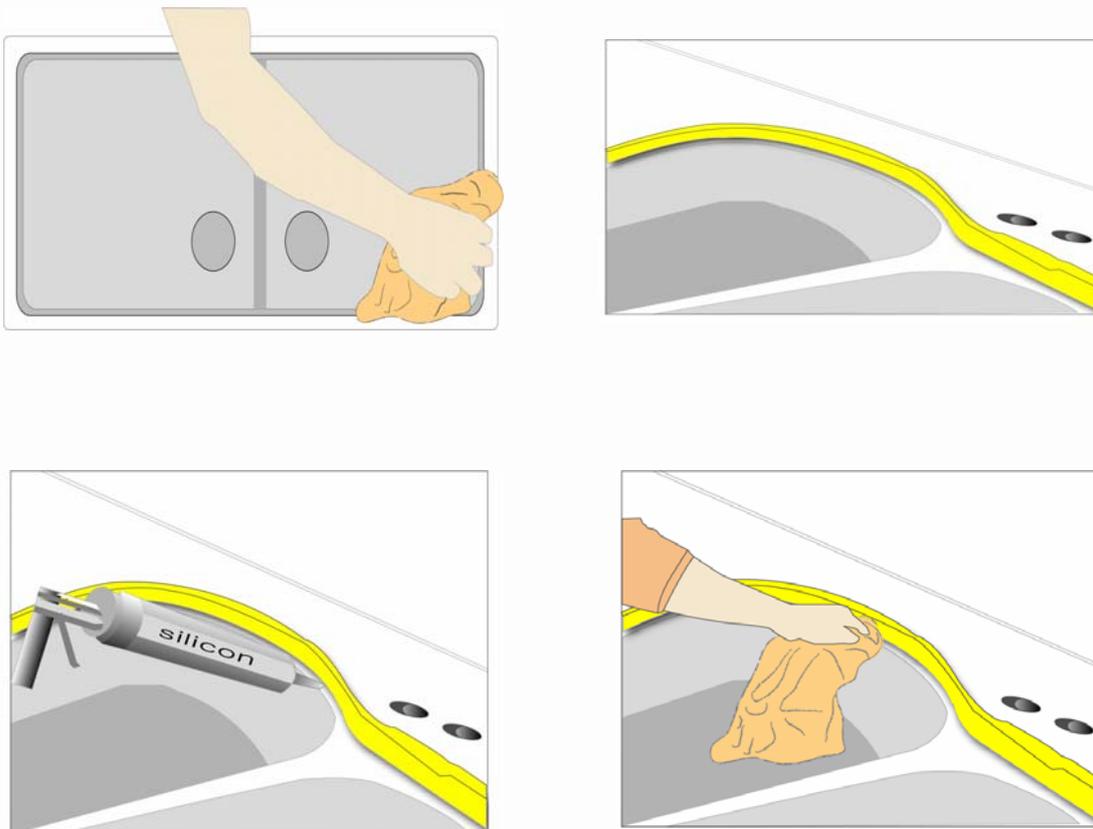


Illustration (12.3-a)

Sinks and Bowls

12.3 Non-Solid Surface

12.3-b Drop-In

Drop-in Sinks are unpopular with many consumers, however, to cut costs, some consumers chooses 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 cut-outs do not have to be polished.
- Secondly, during installation, Drop-in Sinks are less time consuming and risky.

Overview:

- Clean the sink and installation area with Denatured Alcohol.
- Apply bead of 100% silicone around the cut-out.
- Drop-in the Sink.
- Apply bead of 100% silicone around the join between the sink and the countertop.
- Wipe off excess silicone.

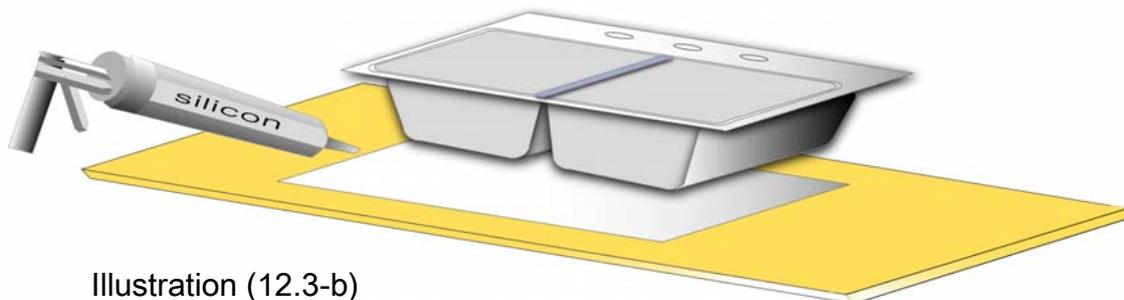


Illustration (12.3-b)

Sinks and Bowls

12.4 Cast Iron and Other Heavy Sinks

When installing Hanex ® 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 25mmx 75mm hand made 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 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, Cook-top Cut-outs need to be fabricated in a certain way to give extra barrier between the Cooktop and Hanex®.

There are many different cook tops in the market today that produce a high amount of heat which can be transferred to Hanex® and cause it to fail. These fabrication steps are used to reinforce the cut-out as much as possible in order to prevent any failures.

Check List:

- All cut-outs need to be done with a router
- Use Templates for the cut-outs
- Specially designed Corner Blocks must be used in all 4 corners
Minimum of 100mm x 100mm blocks are required
- Try to make the cut-out as big as possible to provide space between the Cooktop and Hanex®
- Special radius cuts are required for all 4 corners
- Be sure to sand all the sides of the cut-out
All top edges of the cut-out 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 (Nomax or similar) that will provide a protective barrier against heat. (Used in Firefighter Gears)
- 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

Unlike Sinks and Bowls, where the sizes and specifications are limited, there are a wide range of Cook-tops available in the market. Having templates available for each model would be almost impossible.

Remember, it is required to cut the Cook-top Cut-outs 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 Cook-top Cut-out.

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:

- Cut MDF into a minimum of strips of 75mm wide.
- Trace the cut-out on the top
- Remember to center the cut-out from the front and back
- Be sure that enough room is required from the edge
- Take the MDF strips and hot glue them to the cutout lines
- Make sure you have enough glue to hold the MDF in place
- All corners should be at 90 degrees to make sure your templates are not aligned correctly.

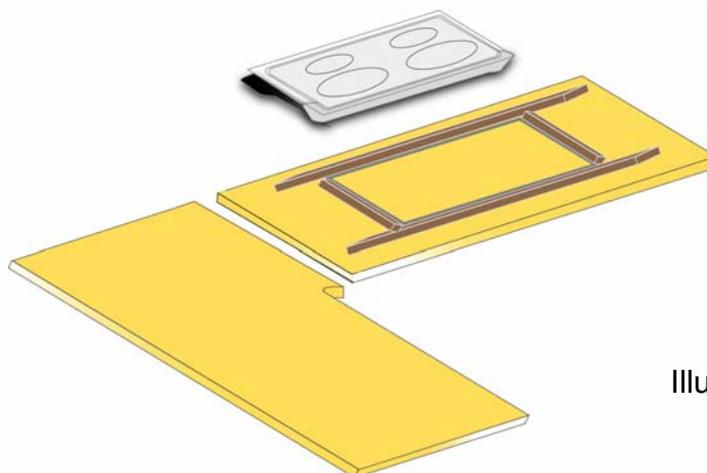


Illustration (13.2-a)

13.3 Cooktop Cutouts

After you have finished making the cut-out template and it is secured to the top, you are now ready routing.

Directions:

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

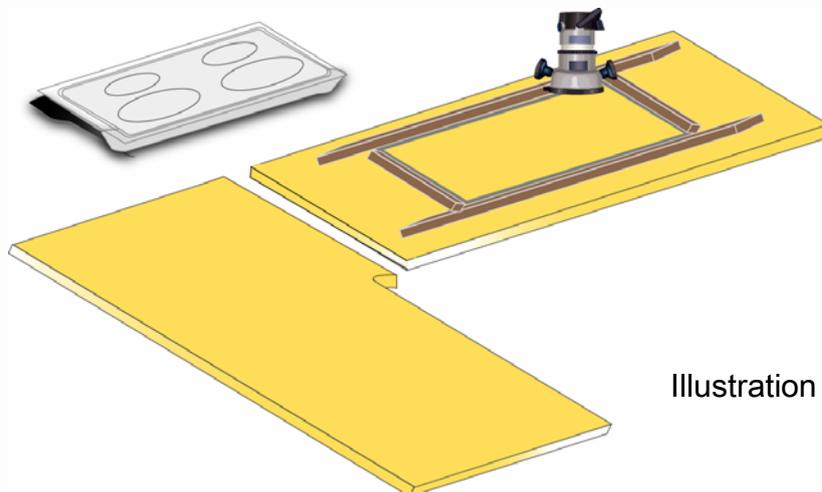


Illustration (13.3-a)

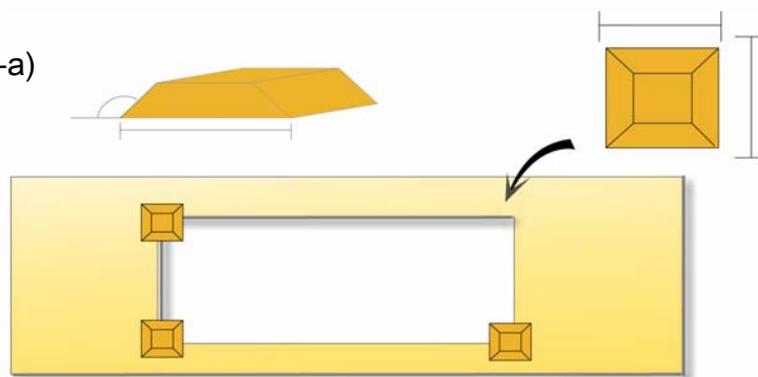
13.4 High Strength Corner Blocks

Similar to Seam Plates, High Strength Corner Blocks should have a minimum size and specification.

Directions:

- All four corners require high strength corner blocks.
- These blocks need to be 100mm x 100mm or bigger for adequate support.
- Like the seam plates, these blocks will not be visible when installed. Different colored Hanex® (scrap pieces) can be used.
- 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.
- After corner blocks are ready, line up the blocks to center the blocks in the corner.
- Attach the blocks using Hanex® adhesive in all four corners and use clamps to hold them in place
- 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® manufacturer warranty if they are not properly used.

13.5 Final Rout and Sanding

These steps to strengthen the Cook-top cut-outs can be tedious, however, they will provide an extra barrier to prevent any failures.

Directions:

- After the Seam Kit (adhesive) is dry, cut off the extra materials of the corner blocks with a router.
- Remember, only Routers are permitted.
- After the corner blocks are installed, you can route out extra materials in each corner to provide a little more space between the Cook-top and Hanex®. 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 Cook-top again.
 - Because the corners of the most Cook-tops are square, it will cover the radius corners.

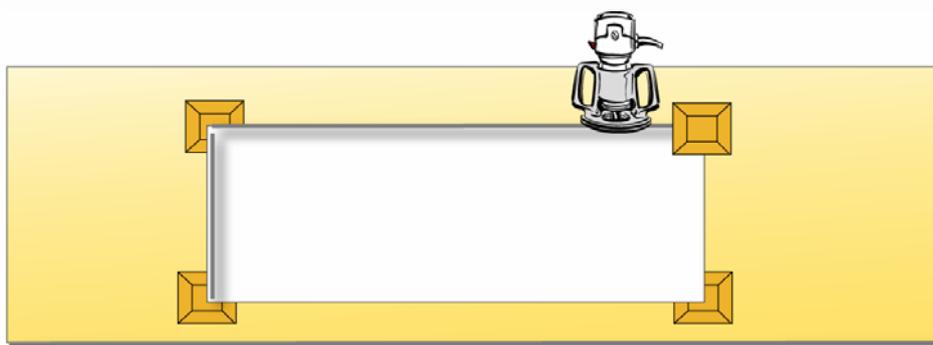


Illustration (13.5-a)

Tip

Use the pencil marking of the Cook-top 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.

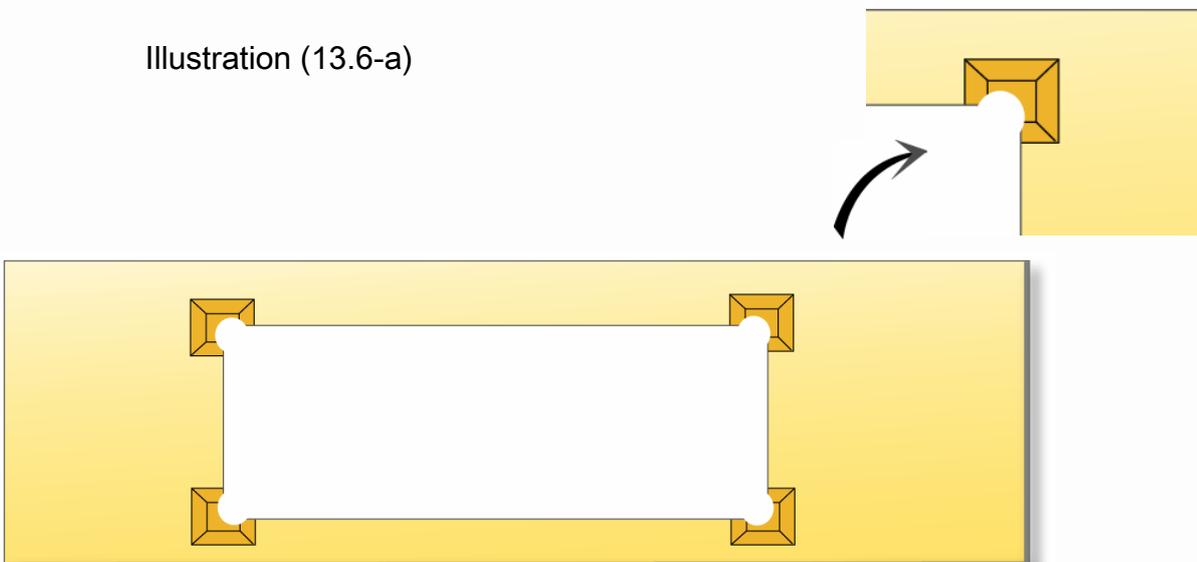
13.6 Preventive Measures

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

Directions:

- Route a 3mm radius on the top edges of the cut-out.
- Sand entire cut-out with 150 grit (or equal) sandpaper.
- The entire cut-out (top and bottom) must be sanded until smooth
- All chips and router chatters must be sanded out and cut-out must be free of any stress risers.
- After sanding, clean the area with denature alcohol to get rid of the dust.
- Finally, apply Heat Reflection tape (Aluminum Tape) all the way around the cut-out.
- Make sure not to fold the Aluminum Tape.
- If possible, apply Heat Barrier tape (Nomax or similar) that will provide protective barriers against heat. (Contact your distributors for more information on Nomax tapes)

Illustration (13.6-a)



Cooktops

Potential Problems:

- Excessive Heat
- Stress points in the cut-out
- Missing protective heat reflection and/or barrier tape
- Faulty Cook-top
- Not enough space between the Cook-top and the countertop
- Missing high strength corner blocks
- Seam through the Cook-top
- Customer Abuse
- Not properly supported
- Not sanded properly
- Oversize cooking pots and pans, where the heat is transferred to the countertop.
- Etc.

Preventions:

- All cut-outs need to be done with Router.
- Use Templates for the cut-outs.
- Specially designed Corner Blocks must be used in all 4 corners
Minimum of 100mm x 100mm blocks are required.
- Try to make the cut-out as big as possible to provide space between the Cooktop and Hanex®.
- Special radius cuts are required for all 4 corners
- Make sure to sand all the sides of the cut-out.
All top edges of the cut-out need to have 3mm radiuses. Bottom edges need to be sanded smooth.
- Apply Heat Reflection tape (Aluminum Tape) all the way around the cut-out.
- Make sure not to fold the Aluminum Tape.
- If possible, apply Heat Barrier tape (Nomax or similar) that will provide a protective barrier against Heat. (Used in Firefighter Gears)
- Make sure there are ventilations available under the inside and the inside the cabinet where the Cook top 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

14.1-a Inlays

Hanex® Solid Surface 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 non-porous, sanitary surfacing which can be used for signage, decorations, and many other applications.

Soft Inlay (Basic):

- Depending on the size of the inlay and the complicity of it, different tools can be used.
 - Small inlays can be done 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. Illustration (14.1-a)
- 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

Decorative Options

Inlay. Create a dam with hot glue

Illustration (14.1-a)

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-b)

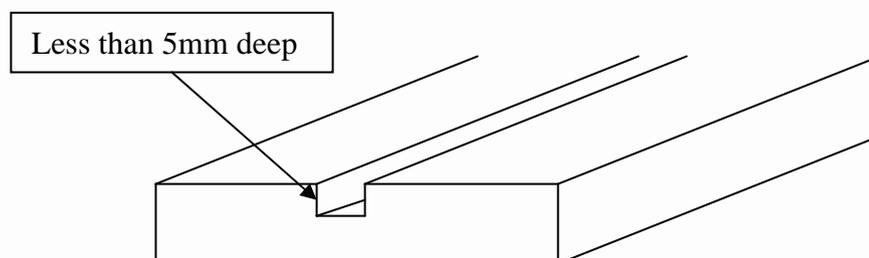


Illustration (14.1-b)

Decorative Options

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-c)
- 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.

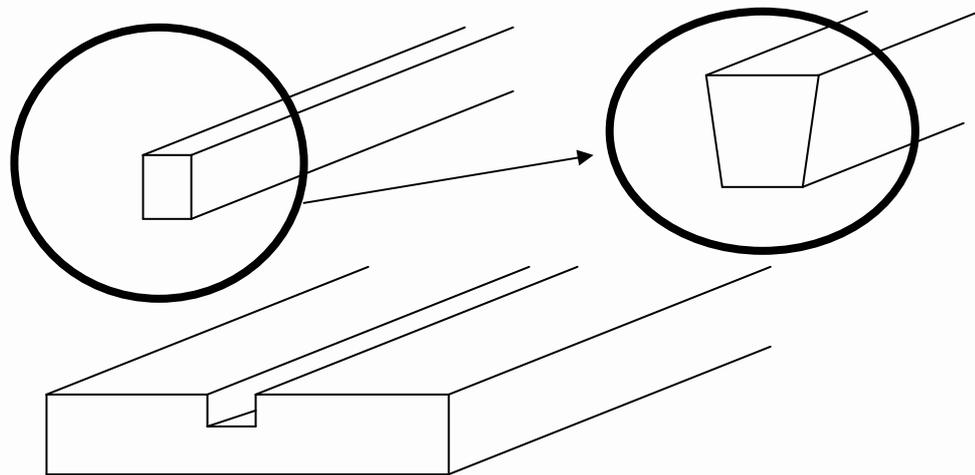


Illustration (14.1-c)

Decorative Options

14.2 Edges

14.2-a Inlays

Creating Edge inlay 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 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

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.

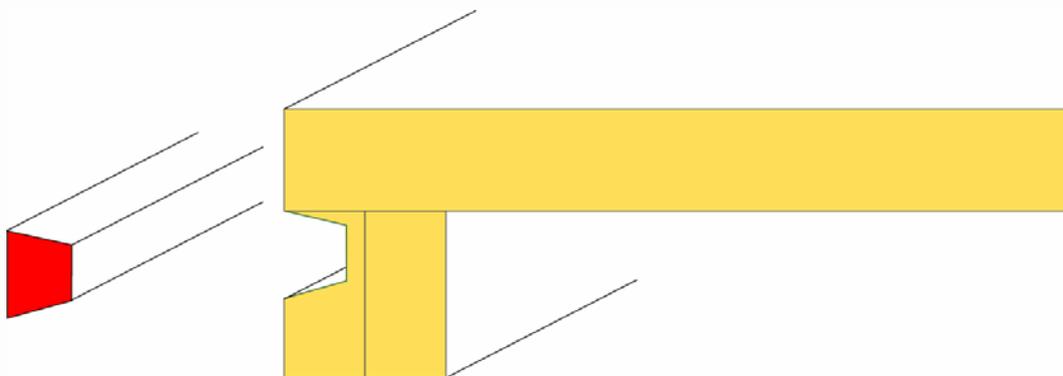


Illustration (14.2-b)

Decorative Options

14.2 Edges

14.2-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:

- Make sure all the glue has cured and there are no soft spots.
- Remove all the clamping equipment.
- Remove all the blocks which were used as a guide for the edges.
- Flip the countertop over to show the top surface of the countertop
- 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.

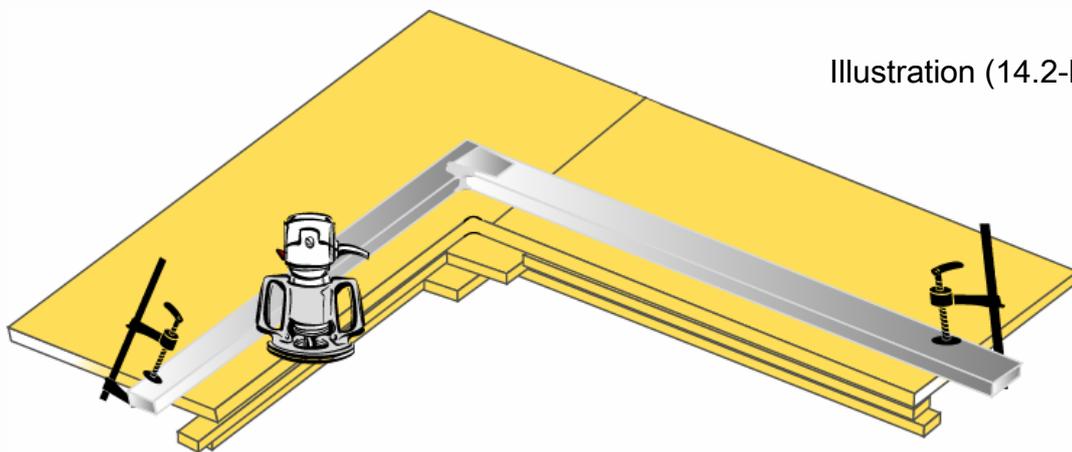


Illustration (14.2-b)

Note

- Run the router from left to right.
- Make sure to clamp all the pieces down before routing.

Decorative Options

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:

- After you have completed all the build-ups and preparation work, you can run the router with your decorative bit.
- 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.
- Among the many different types of decorative edges, most commonly used are:

Eased Edge	Ogee
6mm,12mm,19mm Radiuses	Roman Ogee
Full Bull Nose	Triple Pencil
Half Bull Nose	etc

- After the decorative edges have been profiled on to the top. Sand the edge to match the finish of the top.
- 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® 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.

Decorative Options

14.3 Sinks

14.3-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:

- Cut a piece of Hanex® material of inlay color you choose.
- The piece should be at least 50mm bigger than the perimeter of the sink cut-out. Illustration (14.3-a)
- Using Hanex® Seam 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
- Follow direction in Chapter 12 for proper sink installations

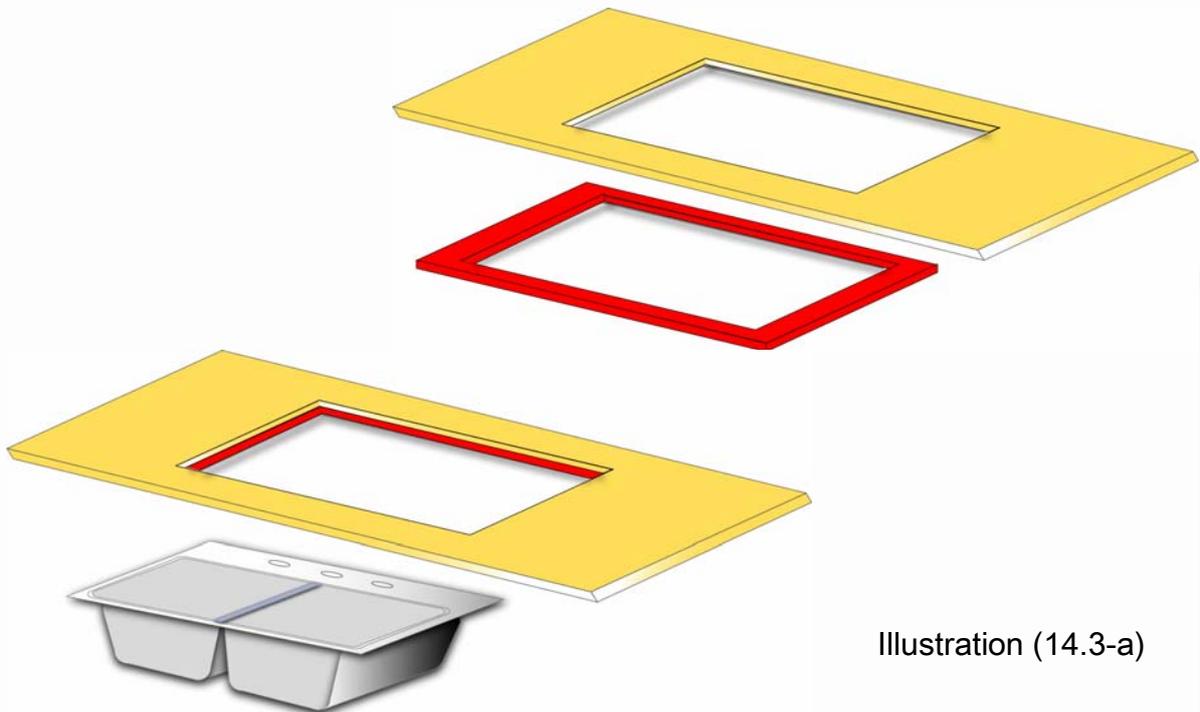


Illustration (14.3-a)

Backsplashes

15.1 Loose Backsplash

There are two ways to install Loose Backsplashes to the countertop. First, Back Splashes can be seamed to the top using a Hanex® Seam Kit. Secondly, it can be installed using silicone, because there are some installers or customers who do not want the back splashes to be permanently glued to the top.

Using Hanex® Seam Kit (Permanent):

- Using Masking Tape, tape both the back splash and the countertop where the glue (Seam Kit) will squeeze out.
- Prepare the Seam Kit. (Chapter 6.2)
 - Apply the seam 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.

Note

- Back splash installation guidelines will differ depending on Fabricator.
- Please check with the design of the countertop and the Homeowner on how the back splashes 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.

Backsplashes

The second way to install loose Back Splash 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:

- 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 tightly to the wall.
- Hold it in place until Hot Glue dries.
- After the Hot Glue sets, apply a 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 either laminate chip or other material, wipe off the excess silicone.
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy.

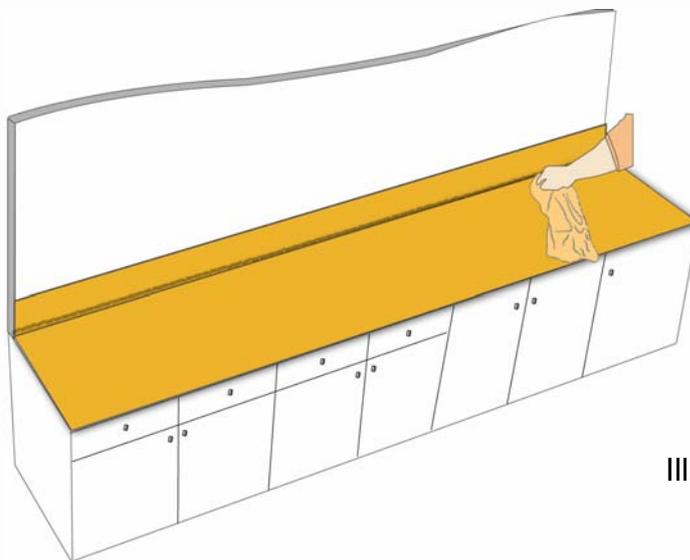


Illustration (15.1-a)

Backsplashes

15.2 Coved Backsplash

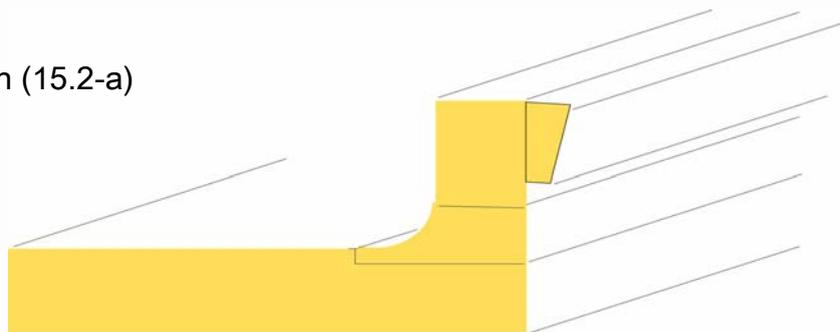
Integrated Cove Backsplash is extremely popular and is a fabrication technique which can set the solid surface industry apart from any other surfacing materials in the market.

While coved backsplash is a desired feature of Solid Surface, there are specific fabrication techniques that need to be followed. If done correctly, Cove Backsplash can add beauty and functionality to the countertop.

Precautions:

- It is extremely important, that the on-site 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® 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 been 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)
 - If the backsplash is built, without the notch in the deck, not only will the appearance of the seam will be bad, but the top will be voided of its warranty.

Illustration (15.2-a)



Backsplashes

15.2 Coved Backsplash

15.2-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:

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



Illustration (15.2-b)

Tip

When using the V-Grooving machines, there is no need to have notch, which was described in Illustration (15.2-b). Because of special “V” cut, the backsplash will be in accordance to the standards.

Backsplashes

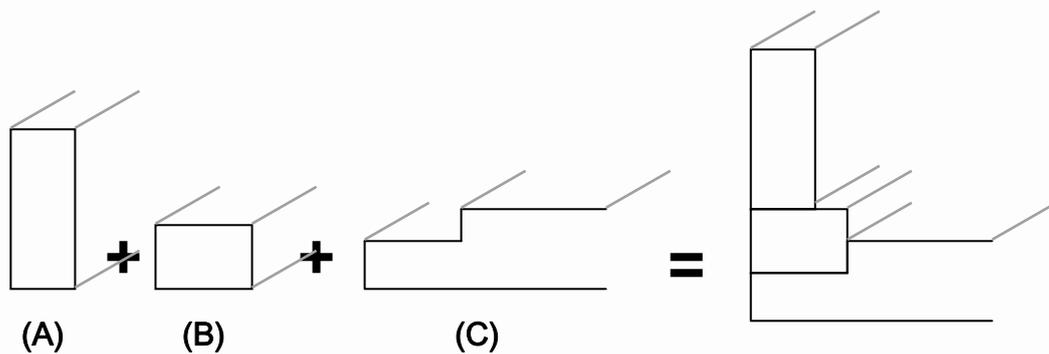
15.2 Coved Backsplash

15.2-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

Direction:

- Cut the Backsplash piece (A) 9mm smaller than it's actual height.
 - This is because the Insert piece (B) will add the 9mm in height.
- Cut the Insert piece (B) 22mm thick
 - (12mm x 22mm x length of the backsplash)
- 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 150mm apart for the entire length.
- On the top, notch out 3mm deep and 22mm wide with a rabbit bit, where the backsplash will be located. Illustration (15.2-c)



Backsplashes

Directions Continued:

- Once the notch is complete and the glue has cured, it is ready to pull all the pieces together.
- It is very important to keep all the splash pieces 90° to the countertop.
- 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.
- Place the blocks every 300mm apart. Illustration (15.2-d)
 - One should be placed about 50mm from the both end.
- Dry fit the pieces together and clamp them down to see if there are any gaps or imperfections.
- 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

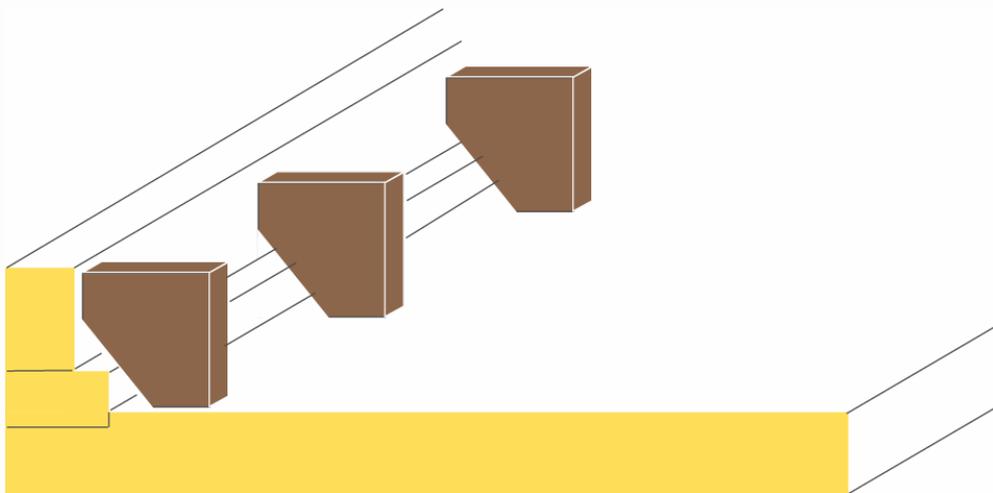


Illustration (15.2-d)

Backsplashes

Directions Continued:

- After all the blocks are hot glued to the top, wipe down both the notch and the backsplash with denatured alcohol to remove any dust.
- When the denature alcohol is completely dry, apply Hanex® 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.

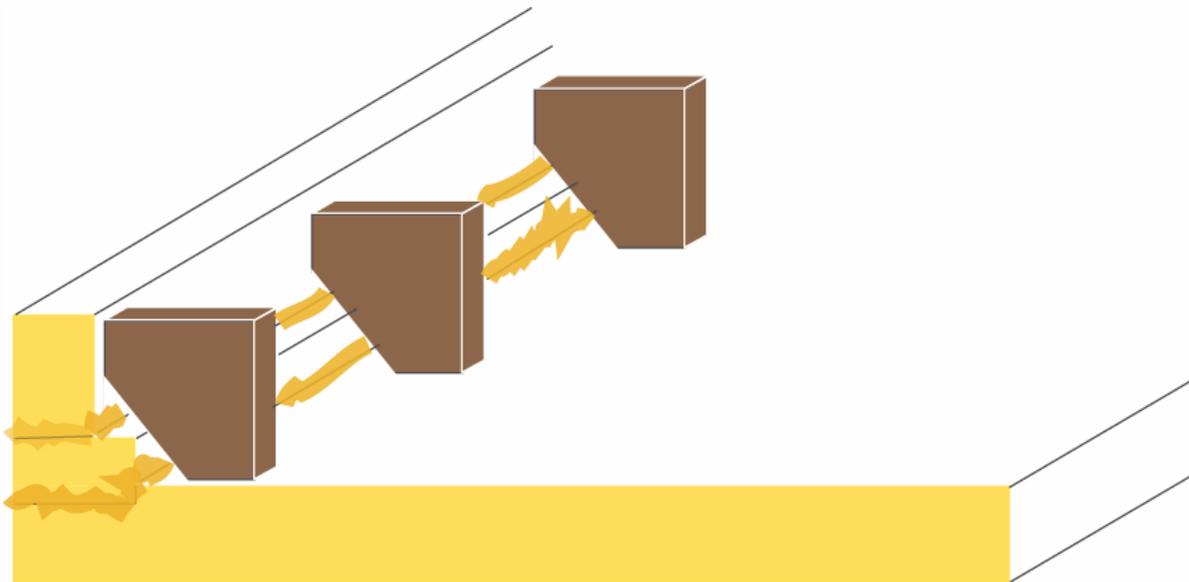


Illustration (15.2-e)

Backsplashes

Directions Continued:

- Place the backslash piece on the notch and clamp it down with appropriate clamping system.
 - 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.

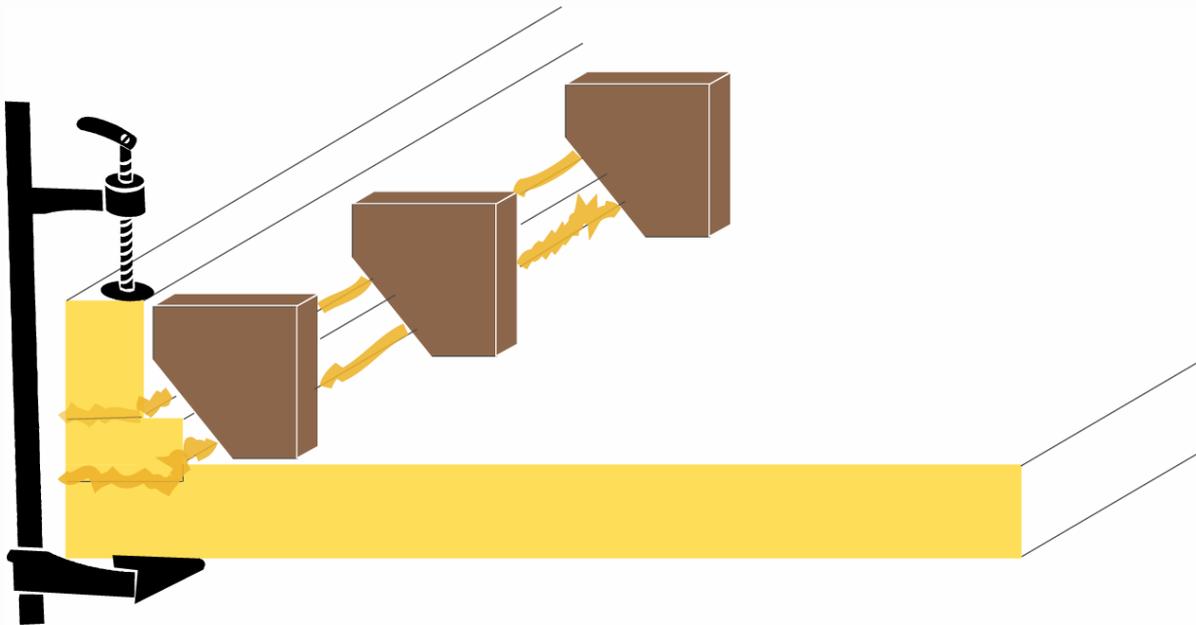


Illustration (15.2-f)

Tip

When setting the splash 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 splash and in front of the seam line.

Backsplashes

Directions Continued:

- When the glue cures, remove the clamps, wood blocks and any hot glue residue.
- Calibrate the cove router to have the bit touch the deck of the countertop and the backsplash.
- Run the router from left to right.
- 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.
- After successfully routing out the cove, sand and polish to desired finish.

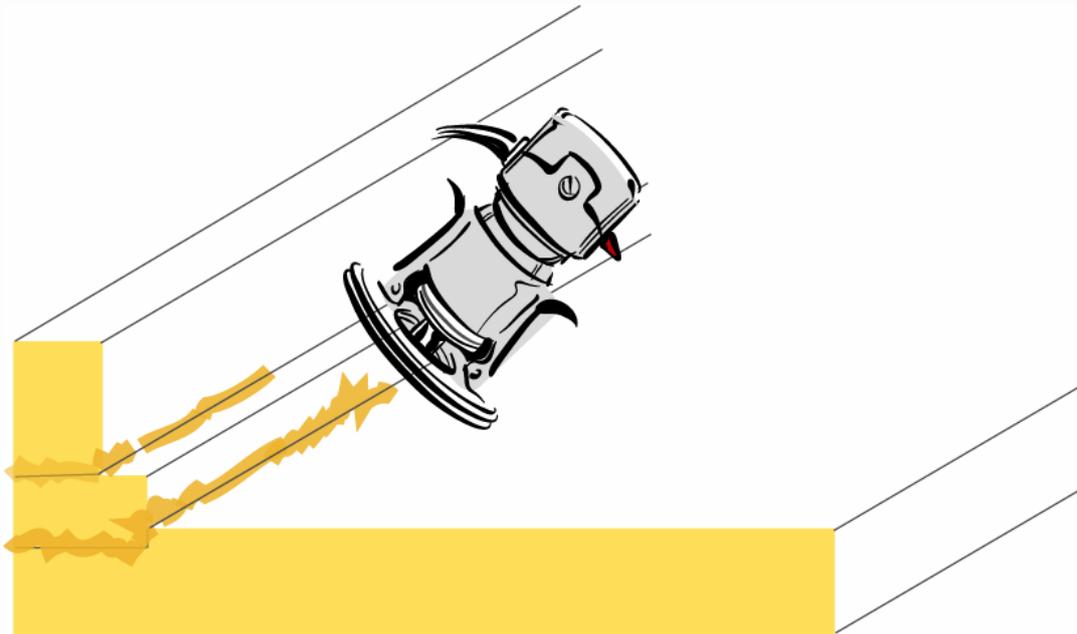


Illustration (15.2-g)

Tip

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 backsplash..

Backsplashes

15.2 Coved Backsplash 15.2-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 hand-held 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® 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 on-site 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® 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

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

Directions:

- 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 backsplash will be located. Illustration (15.2-h)

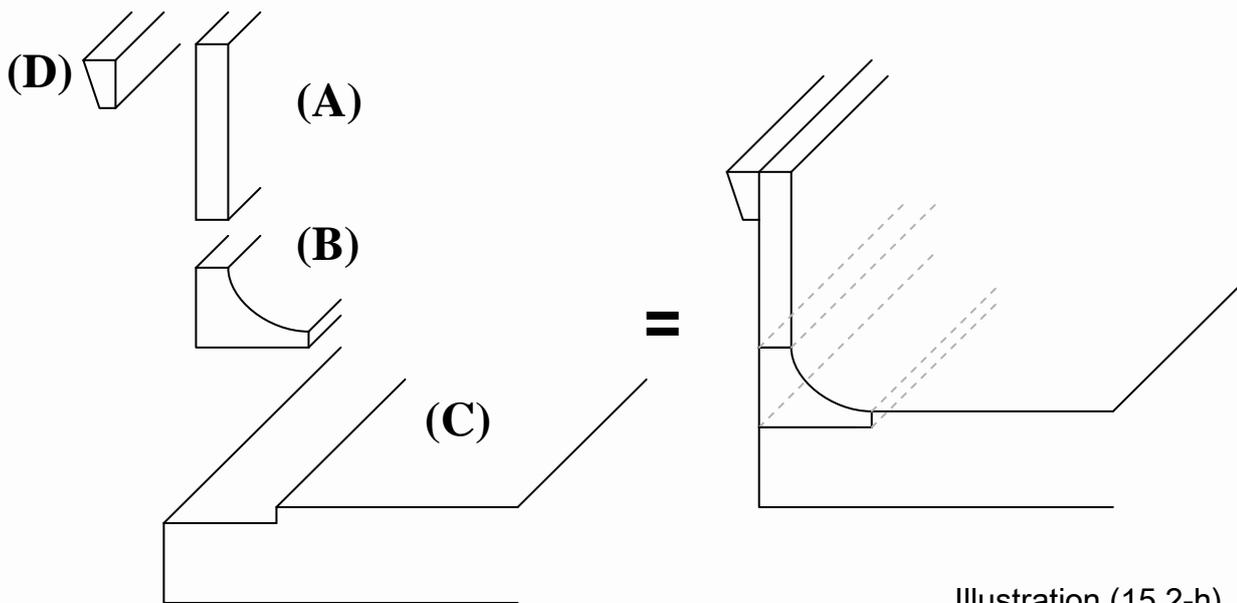


Illustration (15.2-h)

Backsplashes

Directions continued:

- 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.

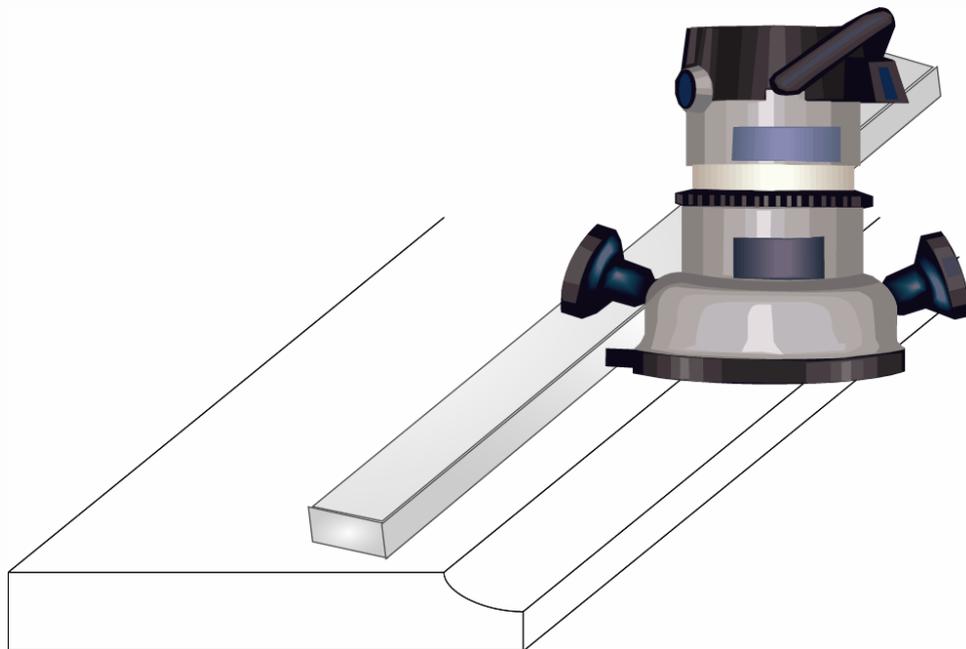
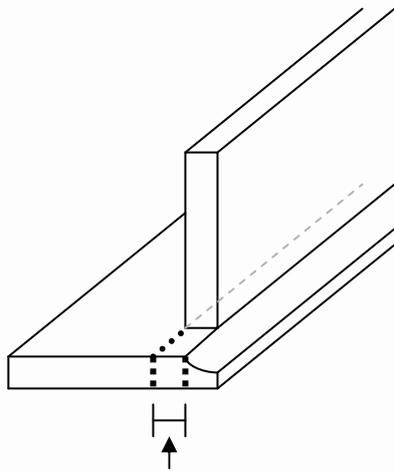


Illustration (15.2-i)

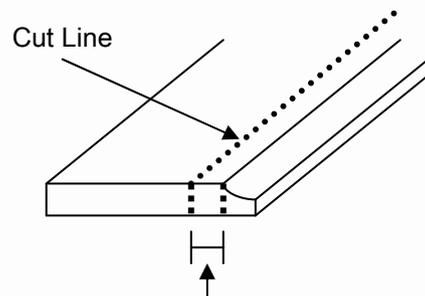
Backsplashes

Directions continued:

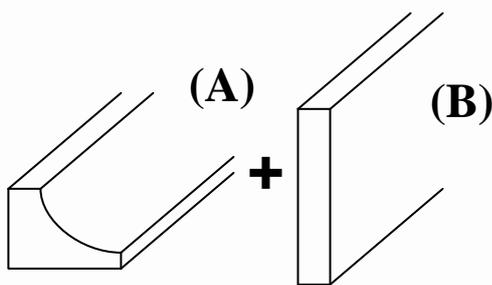
- Using the table saw with a sharp blade, cut the material at an exact thickness of the materials. Illustration (15.2-j)
- To cut, set the table saw up with a sharp blade and set the fence accordingly to cut the distance from front edge to the scribed line.



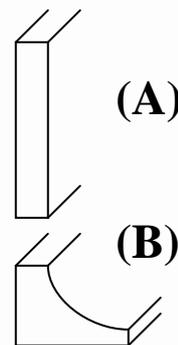
Should be exact thickness of the sheet.



Should be exact thickness of the sheet.



=



Tip

Illustration (15.2-j)

To measure the exact thickness of the cut, place a scrap piece of the Hanex® 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.

Backsplashes

Directions Continued:

- The two pieces will become the Backsplash. Illustration (15.2-j)
- 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

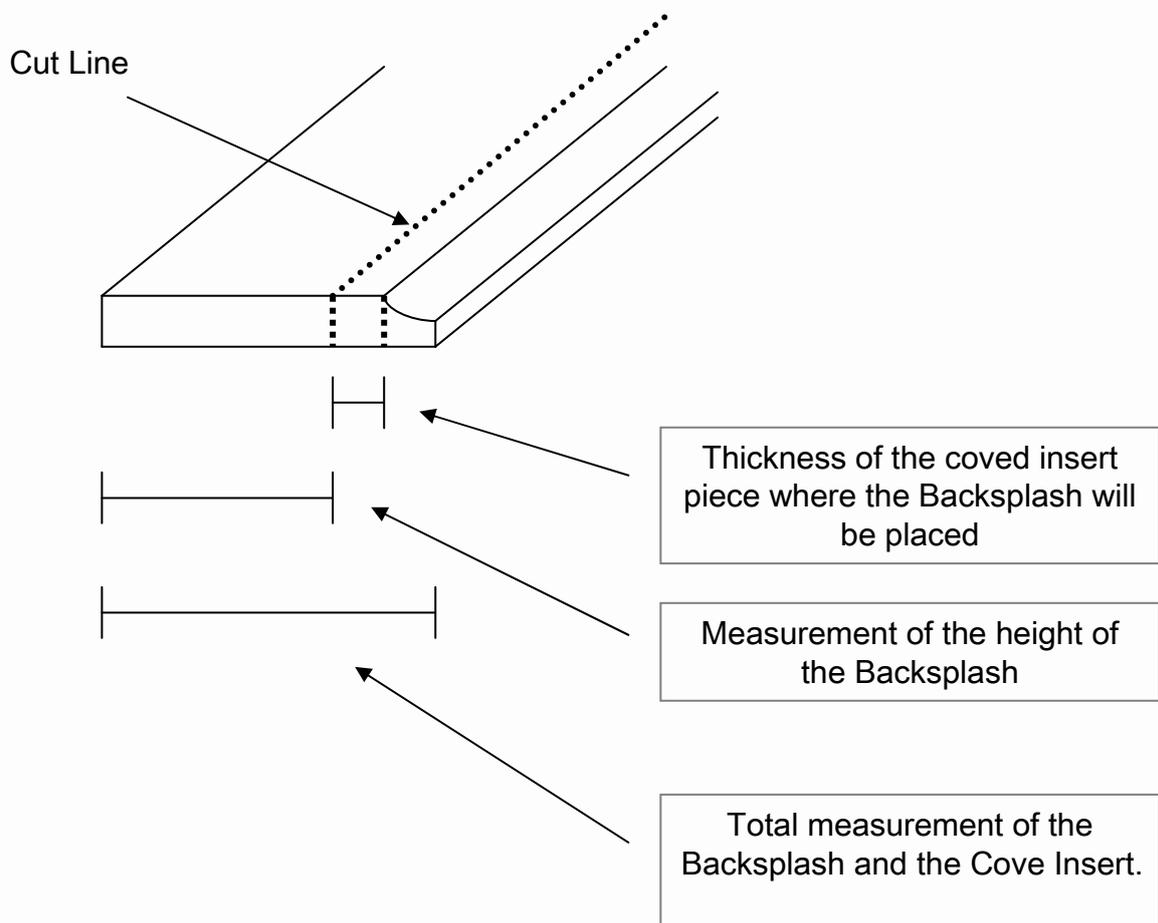
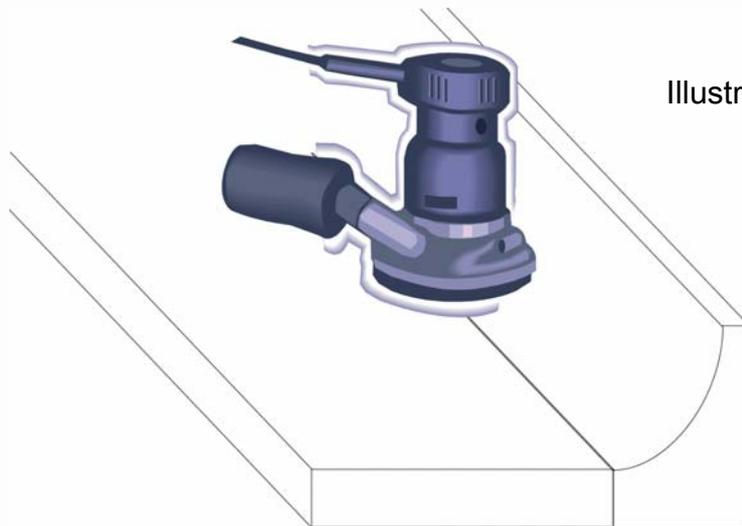


Illustration (15.2-k)

Backsplashes

Directions Continued:

- After all the pieces are cut and ready, glue the piece “A” with piece “B”.
- Using Hanex® Seam Kit, 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)
- 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.
- After the seam kit fully cures, remove the clamps and sand the Backsplash to desired finish



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.

Backsplashes

Directions Continued:

- Once all the pieces are ready it is time to pull the remaining pieces together.
- It is very important to keep all the splash pieces 90° to the countertop.
- 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.
- Place the blocks every 300mm apart. Illustration (15.2-m)
 - One should be placed about 50mm from both ends.
- Dry fit the pieces together and clamp them down to see if there are any gaps or imperfections.
- 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

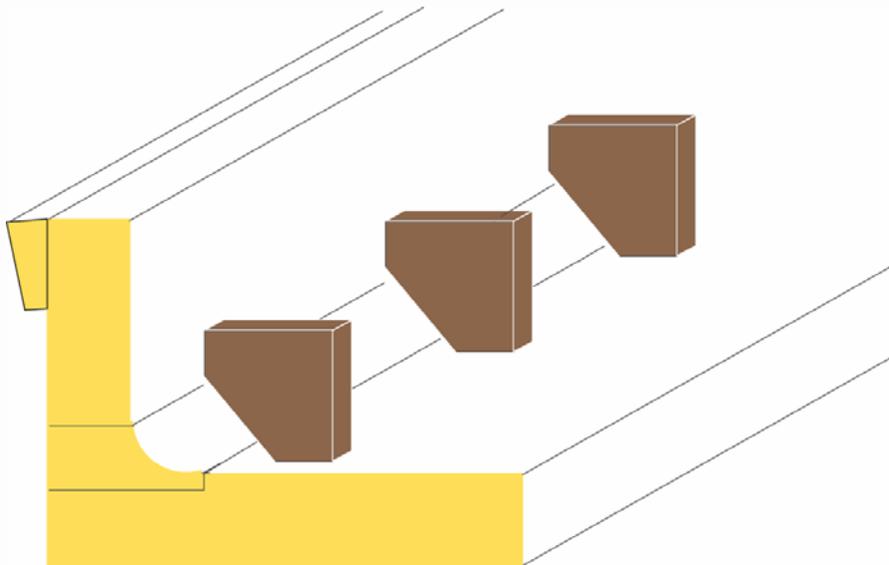


Illustration (15.2-m)

Backsplashes

Directions Continued:

- After all the blocks are hot glued to the top, wipe down both the notch and the backsplash with denatured alcohol to remove any dust.
- When the denatured alcohol is completely dry, apply Hanex® 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.

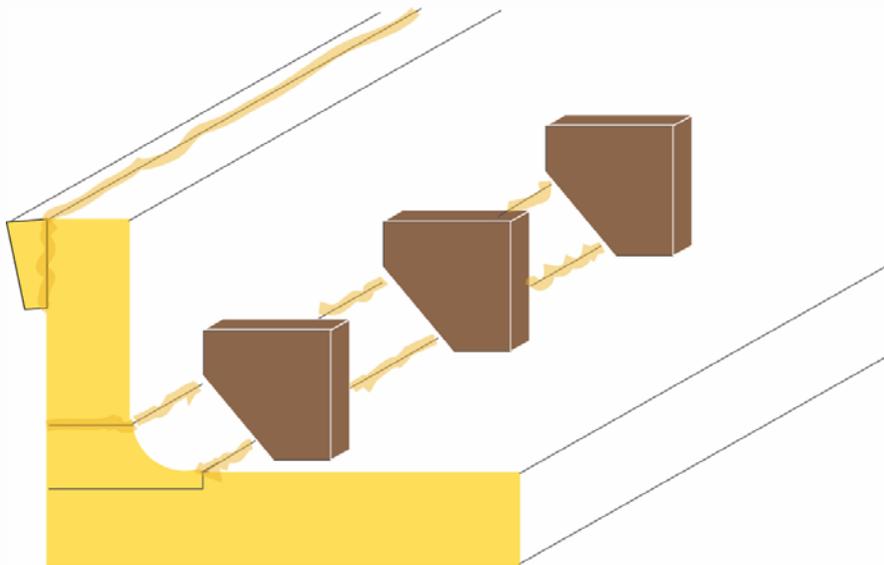


Illustration (15.2-n)

Tip

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

Backsplashes

Directions Continued:

- Place the backslash 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.
- When the glue cures, remove the clamps, wood blocks and any hot glue residue.
- Sand and polish to desired finish.
 - Remember, the Backsplash is already sanded, take necessary precautions not to touch the backsplash while sanding.

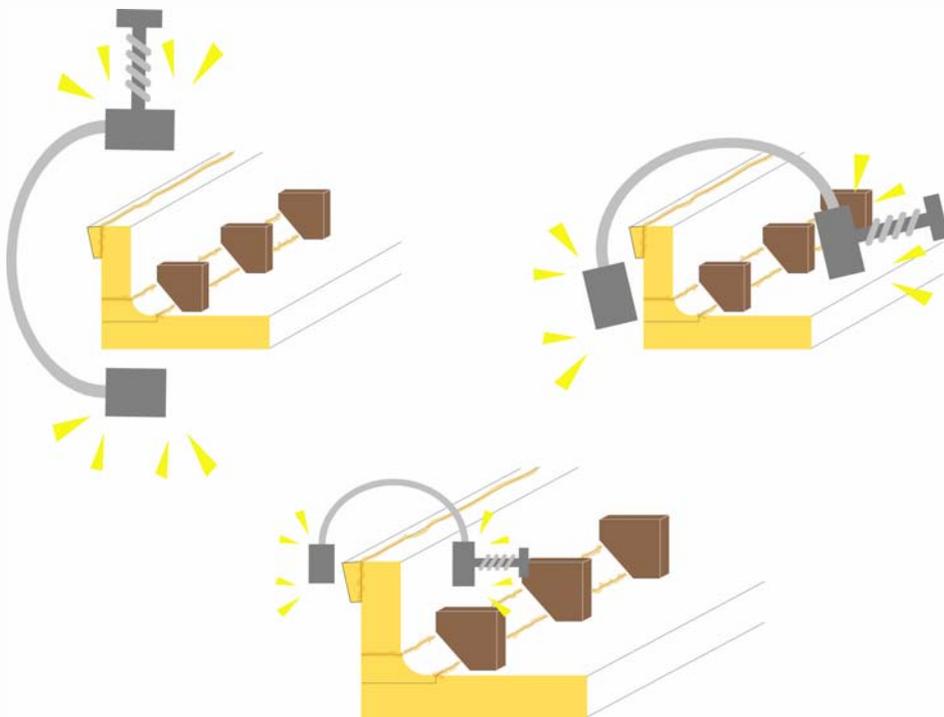


Illustration (15.2-o)

Backsplashes

15.3 Full High Backsplash

15.3-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:

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

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.

Backsplashes

Directions Continued:

- 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 either laminate chip or other material, wipe off the excess silicone.
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy

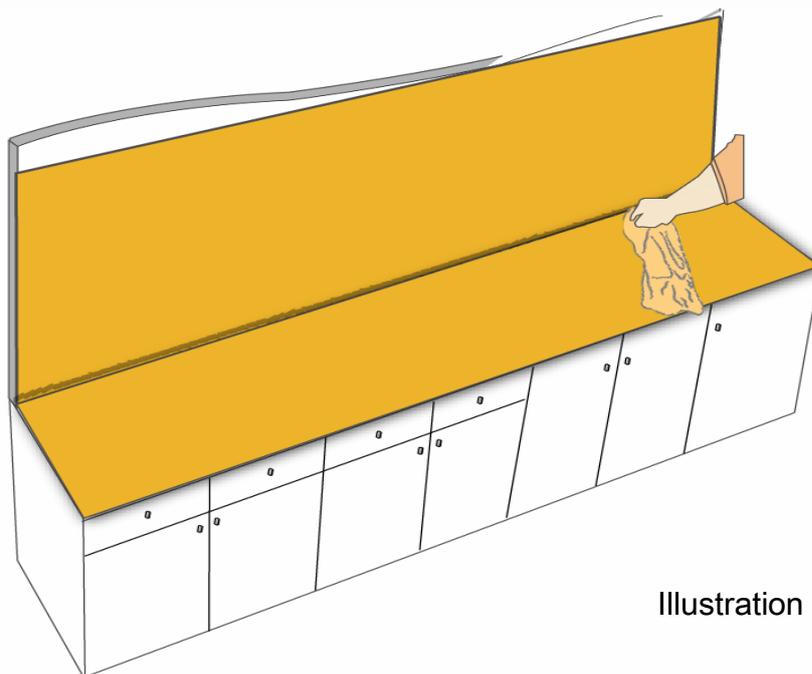


Illustration (15.3-a)

Backsplashes

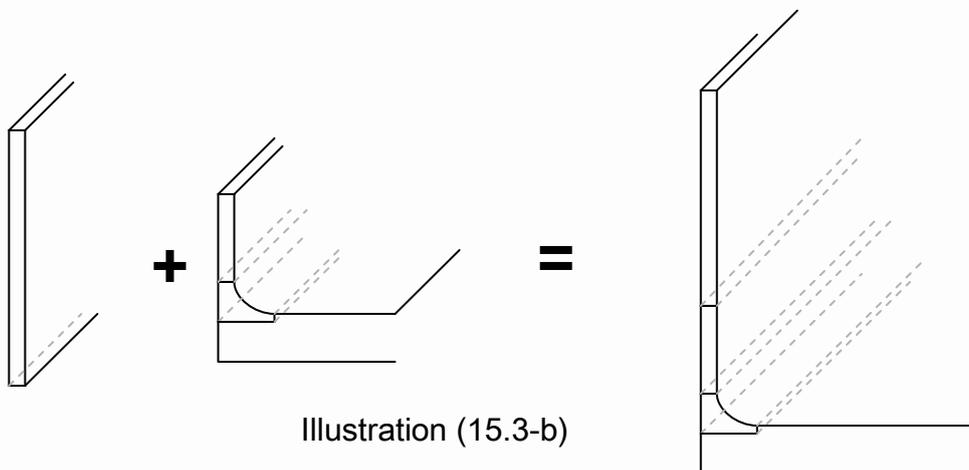
15.3 Full High Backsplash

15.3-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:

- Using any one of the methods described in Chapter 15.2 a coved backsplash with 75mm or higher should be fabricated at the shop.
- After the countertop is installed, the rest of the splash can be templated, fabricated, and installed. Illustration (15.3-b)
- In Full High Backsplash precise templates should always be used to make sure of a proper fit.
- If templates cannot be made due to any reason, measurements can be taken. Remember, any error in the measurement can alter an entire backsplash.
- Refer to Chapter 8 for measurement or template instructions.
- 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.
- Before the installation of the backsplash, it needs to be cut for any switch or outlet on the back wall.
- Remember, **DO NOT USE JIGSAW** to cut the material. Use small routers to make the cutouts.



Backsplashes

Directions Continued:

- Dry-fit to ensure proper installation.
- 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.
- Apply Hanex® seam kit, on existing coved backsplash.
- Using the right equipment, place the back panel piece in place.
- 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.
- After the glue cures, sand and polish the area accordingly to match the finish.

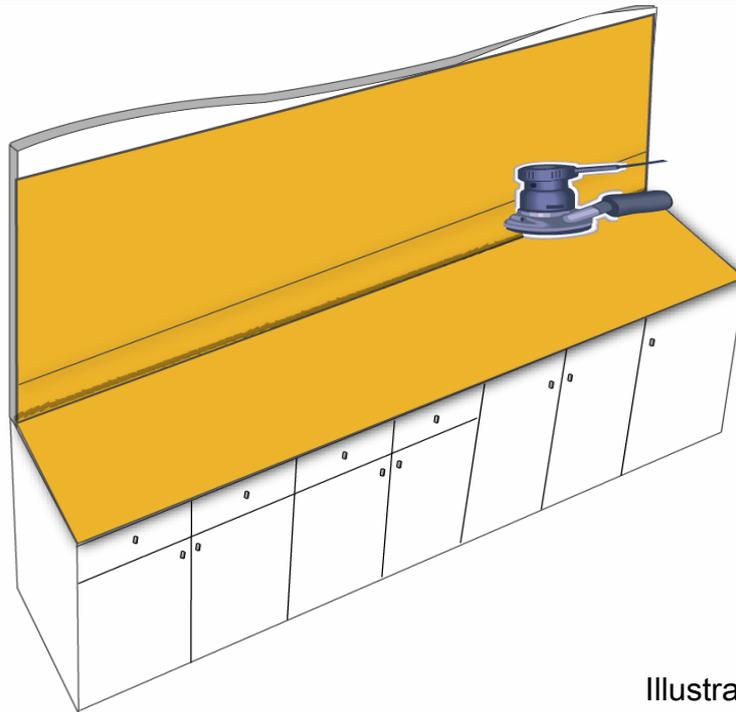


Illustration (15.3-c)

Sanding / Polishing

16.1 Different Sanding Equipments

Before any sanding or polishing of Hanex®, having the right tools and Sanding pads are important to get the proper finish you desire. There are many types of sanders that you can use in the market. For the most part, most orbital sanders can be used on Hanex®, 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:

Table (16.1-a)

Types	Spec.
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

Different types of Finish

Table (16.1-b)

Finish	Remarks
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

Sanding / Polishing

This Technical information is designed to provide support in fabrication, installation, and/or to ensure performance of Hanex® 100% Acrylic Solid Surface. The information is based on the technical data which Hanwha Surfaces 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 Surfaces and its affiliates.

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

Table (16.1-c)

Finish	Standard Grit	Micron	Abralon	Trizact
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.			

** 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 ()

Sanding / Polishing

16.2 Sanding

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

Directions:

- When sanding, always sand in the same direction to prevent swirl marks
- In order not to miss any area, sand front to back and side to side in circular motion.
- The circular motion should be done **clockwise**.
- Make sure to overlap half the diameter of the sander
 - If the sanding is 150mm, it should be overlapped by 75mm

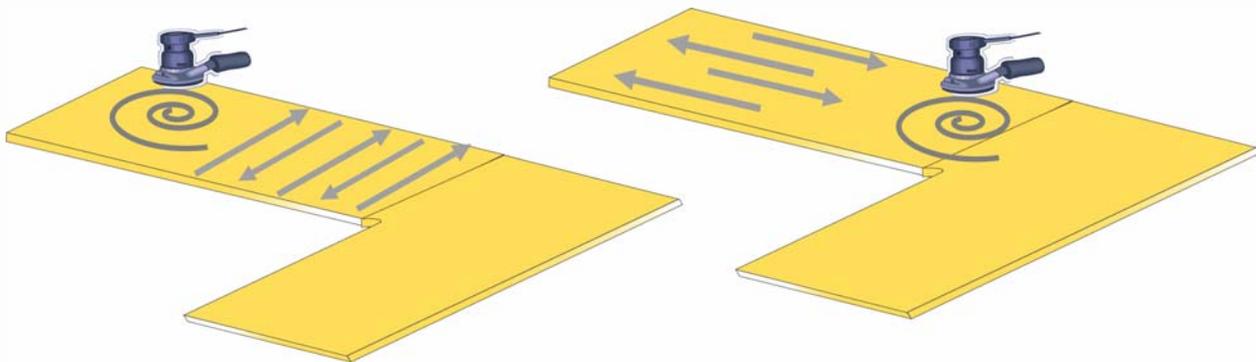


Illustration (16.2-a)

Tip

It is important to wipe of 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.

Sanding / Polishing

16.3 Polishing

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

Directions:

- Follow the steps in Chapter 16.2 to sand the top to gloss finish.
- Remember to wipe down all the dust after every step of the sanding.
- There are three rubbing compounds that need to be used to achieve high gloss finish.
 - Marin Paste Rubbing Compound
 - Finesse-it
 - Liquid Glass
- It is important to use different pads for each compound.
- Use the first pad with Marine Paste Rubbing compound. Spread small amount of the paste onto the surface
- Make sure to coat the pad with the compound before proceeding.
- Polish the top just as you would sand with sandpaper
- Similar to sanding, polish front to back and side to side clockwise in circular motion.
- Wipe down the compound before proceeding to next step
- Change pad and follow previous steps using Finesse-it compound.
- 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.

Tip

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

Sanding / Polishing

16.4 Advantages & Disadvantage of Different Finish

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

At Hanwha Surfaces, 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® 100% Acrylic Solid Surface 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 counter, etc.

All Hanex® 100% Acrylic Solid Surface 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.

Sanding / Polishing

The following colors are not recommended for use in residential or commercial applications that are subject to heavy use, due to its frequent care and maintenance requirements needed to keep their appearance. It is important to note that this recommendation is for the purpose of voluntary notification of frequent care and maintenance requirements on following colors.

Table (16.4-a)

ATLANTIC BLUE	BLACKSPOT	TERRASIENNA
GREENSHADOW	DESERTCASTLE	AQUAMARINE
BLACKBEAT	HAZELNUT	SANDCOPPER
NAVYBLUE	BLUEWAVE	PEARLBLACK
BLACKBURN	SOLID BLACK	INDIGOBLUE
BLACKHILL		

Note

- Hanex® 10 Years Limited Warranty does not cover against Minor conditions such as scratches, stains, water spots, and burns, which may be corrected by HANEX® care & maintenance instructions/guidelines or customer expectation issue.
- This list should be updated periodically when new colors and designs are launched.

17.1 Transportation

17.1-a *Transporting Fabricated top*

It's very important to take every precautionary measure when handling and transporting a fabricated top to the job site. Special attention should be taken in packaging, loading, transporting, and unloading of the top. Remember, improper handling will result in damage to the top, costing hundreds to thousands of dollars. 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 cut-outs.
- ❖ 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

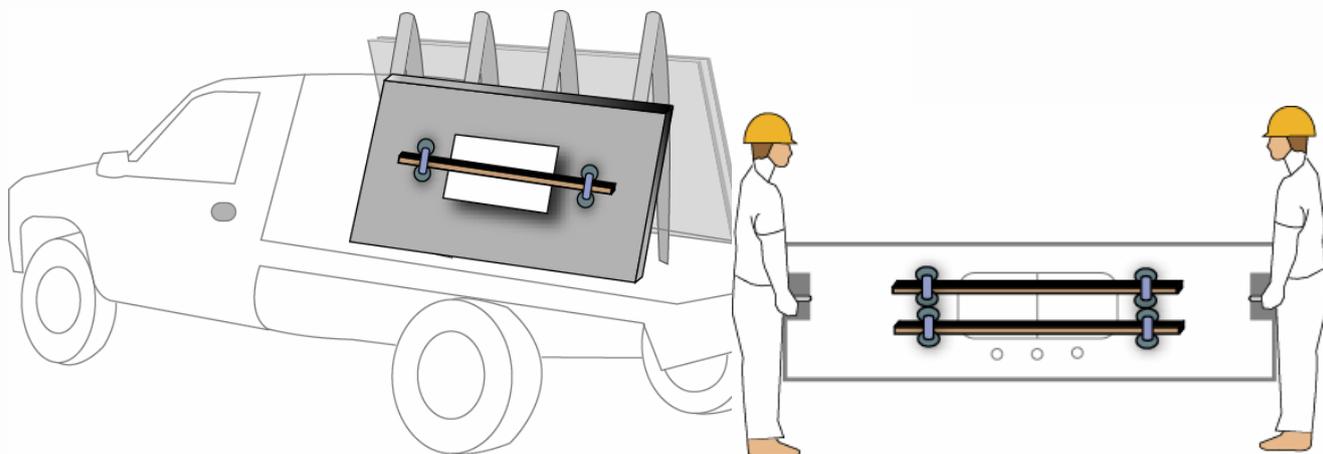


Illustration (17.1-a)

17.1 Fabricated Product

17.1-b Handling Fabricated Top

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

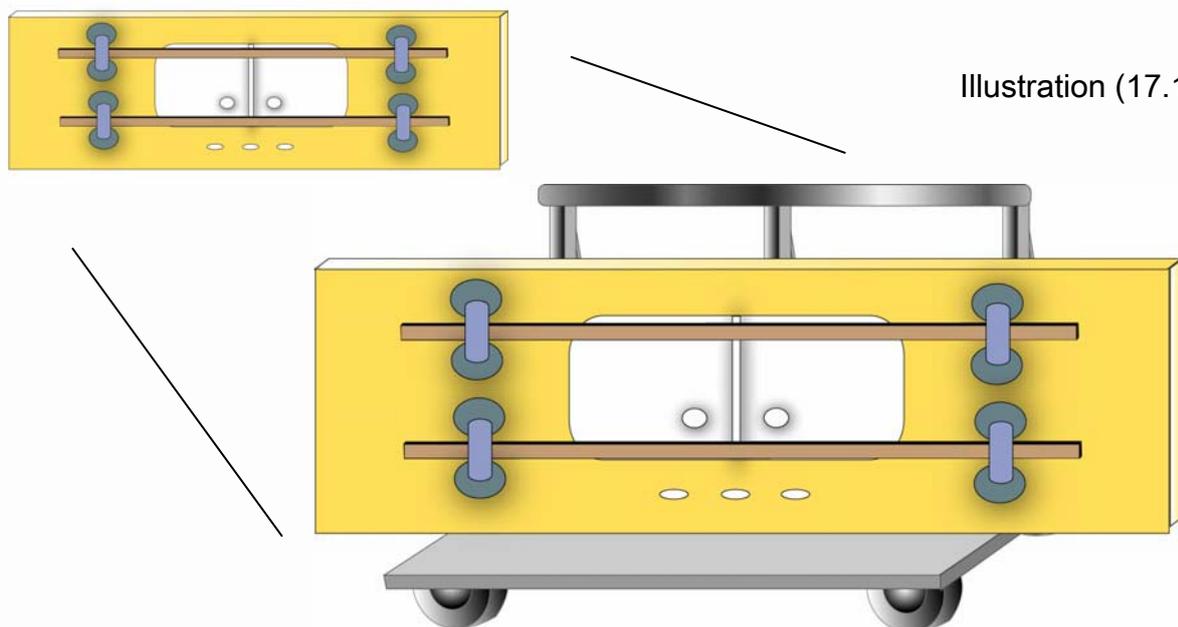


Illustration (17.1-b)

17.2 Before Unloading The Top

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

Here are some special handling advise. 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 cut-outs are required.
- Good rule to follow is to handle the materials like handling glass.

Before unloading and brining 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 top.
- 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.

17.3 Being Professional

17.3-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® 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® 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

17.3-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®, 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 special 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 floorings, 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®, 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 on-site 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
- Repeat the process with other pieces.

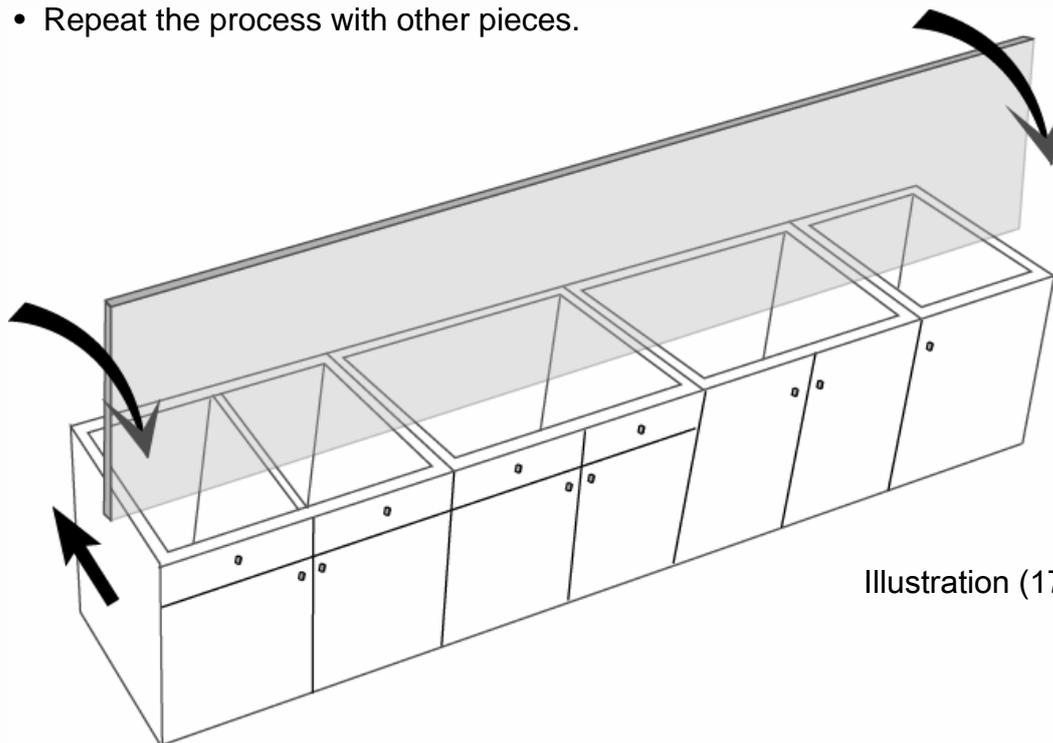


Illustration (17.4-a)

Installation

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 are 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 3mm for every 3,000mm 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 to fix the top to the cabinets..

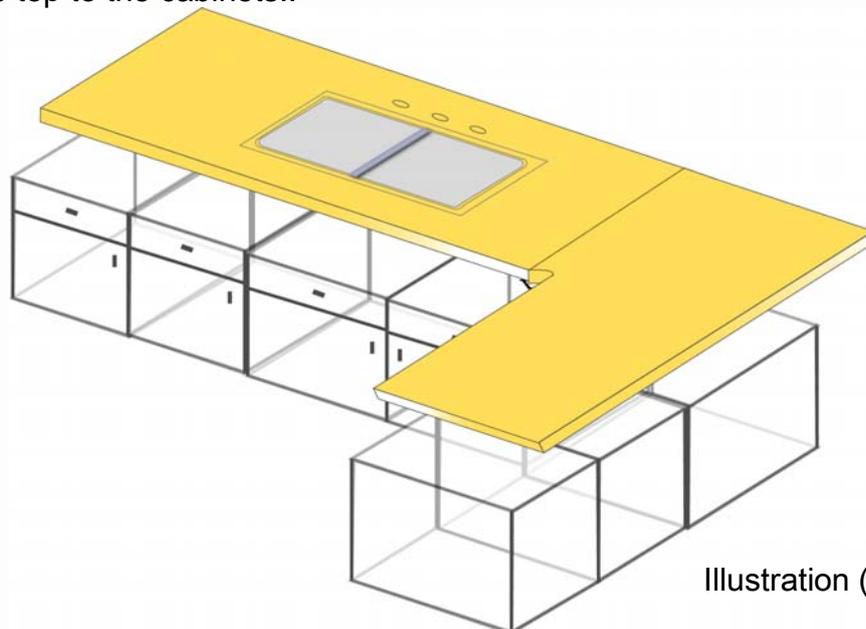


Illustration (17.4-b)

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
- 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:

- Follow same procedure in Chapter 10,1 – 10.3 and 10.7 in preparing the seam.
- Attach the seam plate to only one side of the seam at the shop. See Illustration (17.5-a)

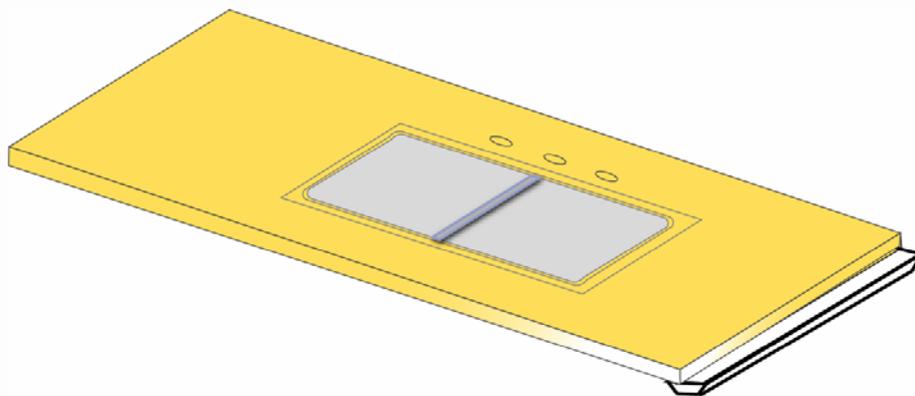


Illustration (17.5-a)

Installation

Directions Continued :

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

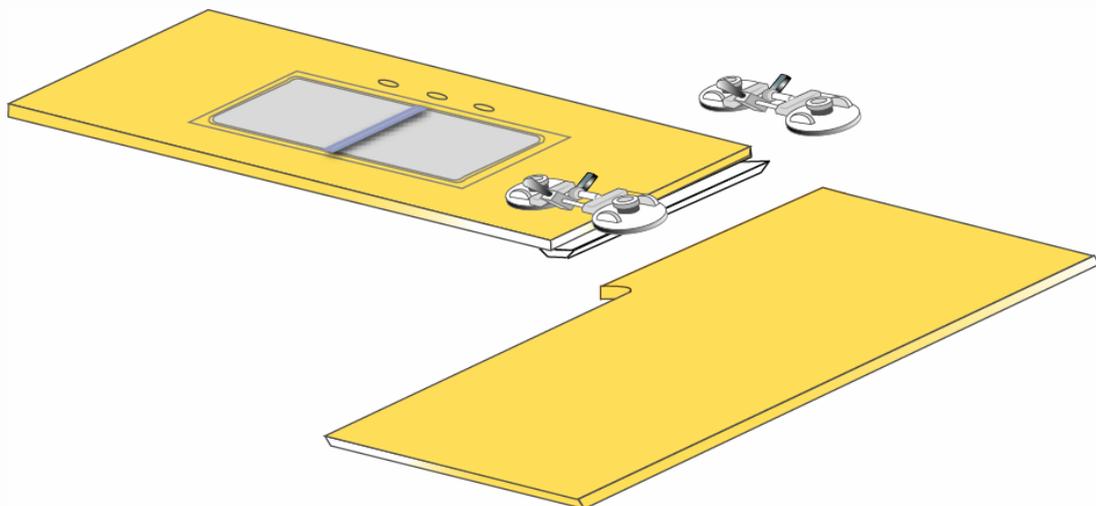


Illustration (17.5-b)

Tip

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

Installation

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 cut-outs.

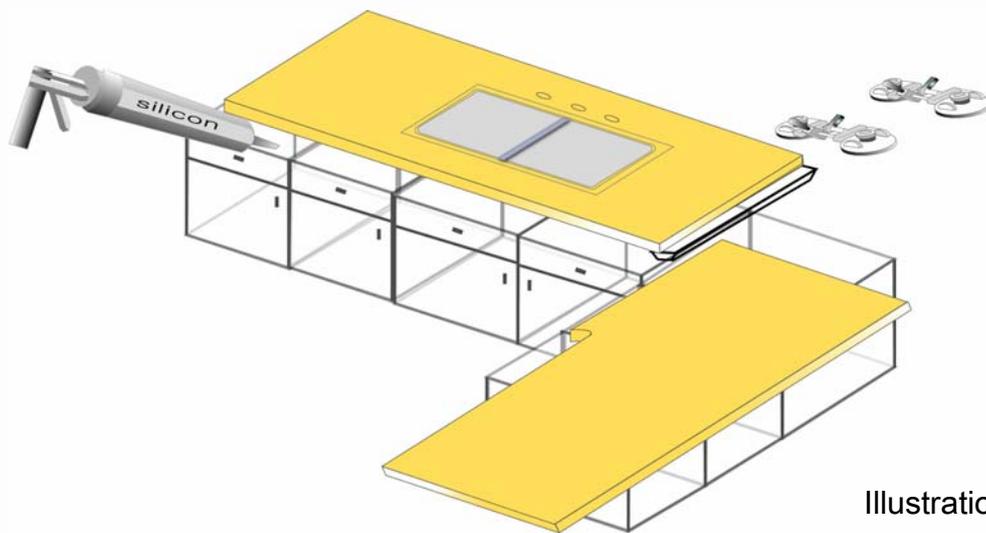


Illustration (17.6-a)

Fixing the Top to the Cabinets

- Adhere the top to the cabinets using flexible silicone. (100% silicone is recommended). This will allow the top to move “Expand and Contract”.
- DO NOT use Liquid Nail or other rigid adhesive to adhere the top to the cabinets.
- Place dabs of silicone approximately 250mm apart (should be less than 300mm apart)
- Allow at least 24 hours for the silicone to dry completely.

17.7 Backsplash

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, Back Splashes can be seamed to the top using Hanex® Seam Kit. Secondly, it can be installed using silicone, because there are some installers or customers who do not want the back splashes to be permanently glued to the top.

Using Hanex® Seam Kit (Permanent):

- Using Masking Tape, tape both the back splash and the countertop where the glue (Seam Kit) will squeeze out.
- Prepare the Seam Kit. (Chapter 6.2)
 - Apply the seam 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.

Note

- Back splash installation guidelines will differ depending on Fabricator.
- Please check with the design of the countertop and the Homeowner on how the back splashes should be installed.

Installation

The second way to install a loose Back Splash 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 either laminate chip or other material, wipe off the excess silicone.
 - Because of the denatured alcohol, the excess silicone will not stick to anything, making cleaning easy

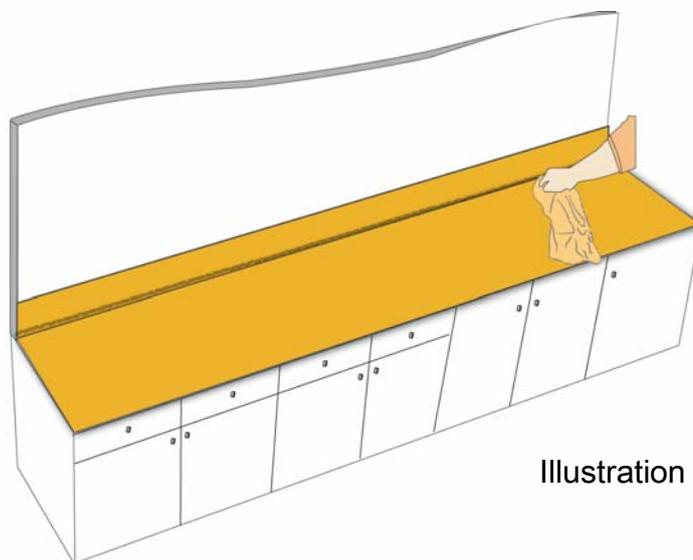


Illustration (17.7-a)

Installation

17.8 Installing Appliances

Hanex® 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 cook tops and other appliances to Hanex® 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® .

- Avoid placing seam on or near a dishwasher.
- Never screw anything directly into Hanex®.
- 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 crack in the countertop.
- On the cook top cut-out, follow all instructions in Chapter 13. Remember to apply a heat barrier and heat reflection tape around the cut-out to reflect the heat from the cook top.
- 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®.

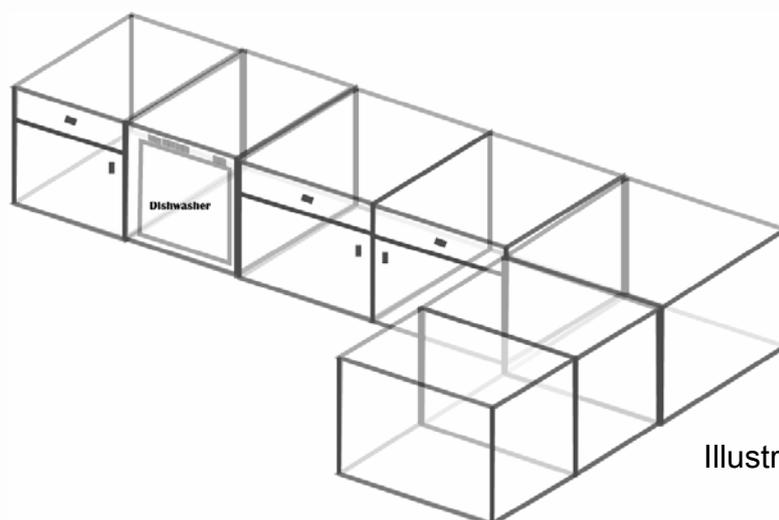


Illustration (17.8-a)

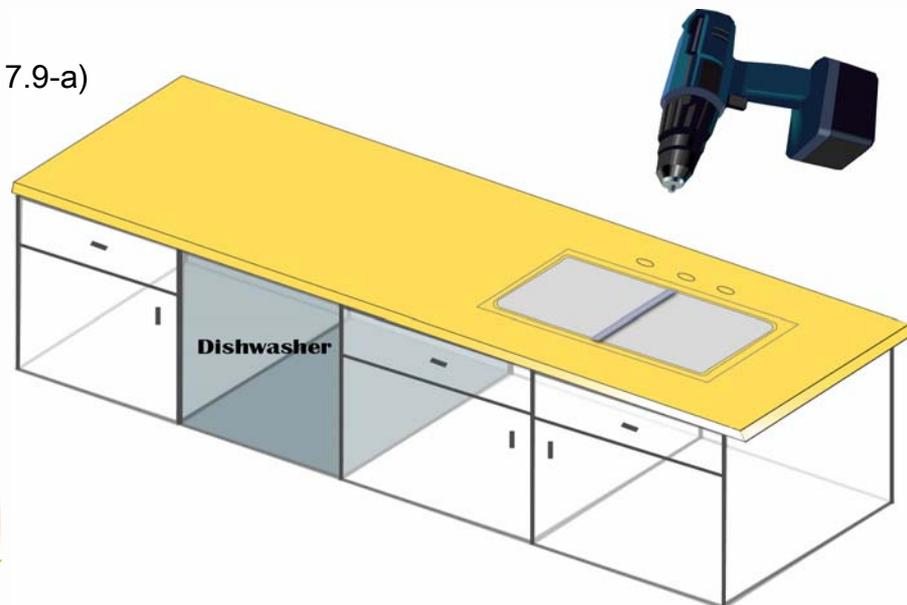
17.9 Faucet Holes

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 home owners have the faucets ready during the site inspection or when making the templates.

Directions:

- Standard Hole Saw can be used.
- 6mm Pilot bit attached to the hole saw is recommended.
- On Kitchen faucets, 9mm hole saw are usually used. However, please check the size of the faucet and manufacturer instructions.
- Take necessary precautions to center the hole to the Sink or Bowl

Illustration (17.9-a)



Note

- 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 through too hard.
 - The drill can slam into the top and cause damage.
- Sand the hole smooth

17.9 Installation Check List

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 is full perimeter support for the top. Remember, the countertop should be supported every 300mm or less.
- Make sure there are 3mm gap for every 3,000mm of material when the surface is enclosed between two walls or other obstacles.
- Never install any mechanical fasteners directly into Hanex®. Make sure to use proper fastener guide.
- Always leave color match material with the customer for future repair.
 - Minimum of 0.18sqm 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 is done correctly and any nicks and/or scratches are removed.
- Cook tops and other appliances are installed properly.
- All cut-outs 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.
- Etc.

18.1 Countertop Support

18.1-a Full Perimeter Support

One of the most easiest and most important guidelines in Fabrication and Installation of the Hanex® 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® 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® 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 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
 - Particleboard is not acceptable for use as support
- It is important to provide extra support under seams.

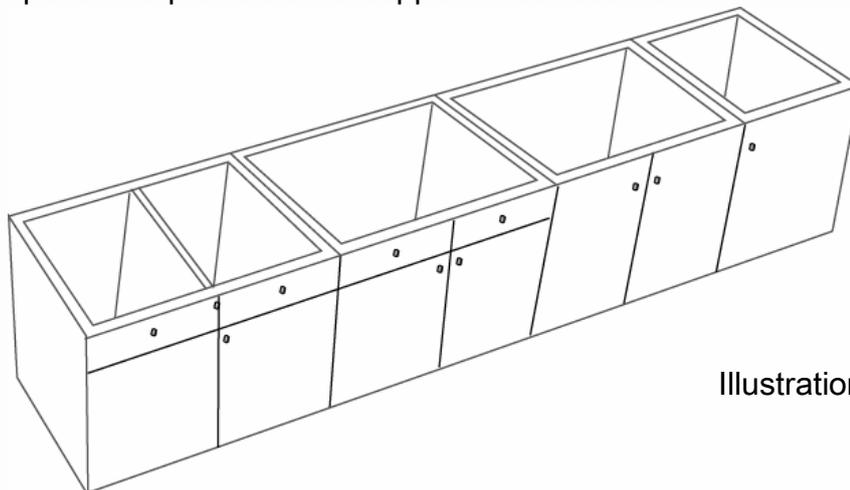


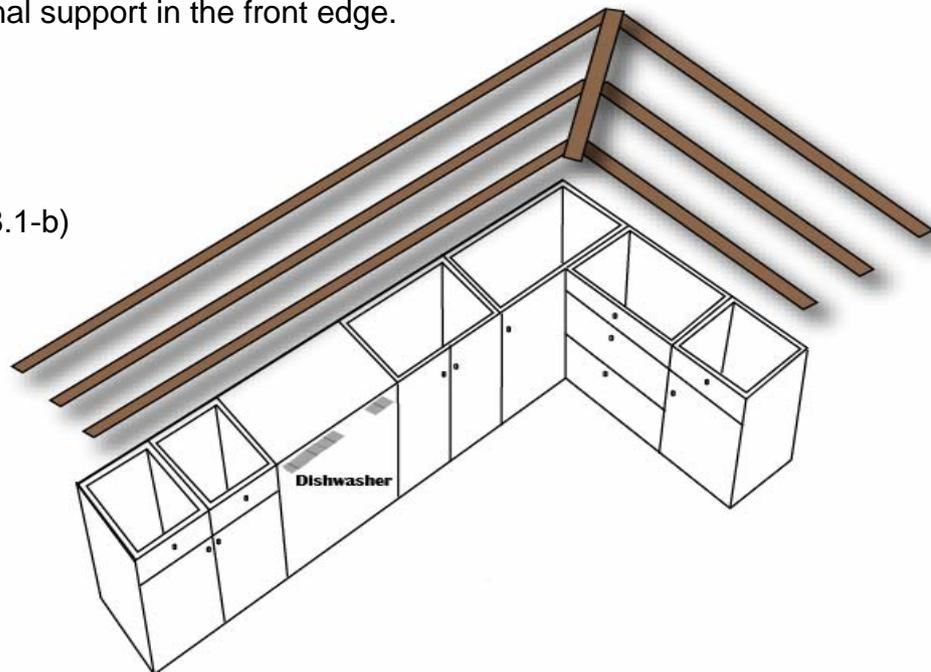
Illustration (18.1-a)

Supports

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
 - Particleboard is not acceptable for use as support
- These frames can be cut and installed in 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® 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)



Note

- 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.

Supports

Support Buildup Continued:

- When placing a wood buildup support right behind the Edge Buildup, it is required to have 3mm gap between the Edge buildup and the support strip.
 - This gap will give room for the Hanex® 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)

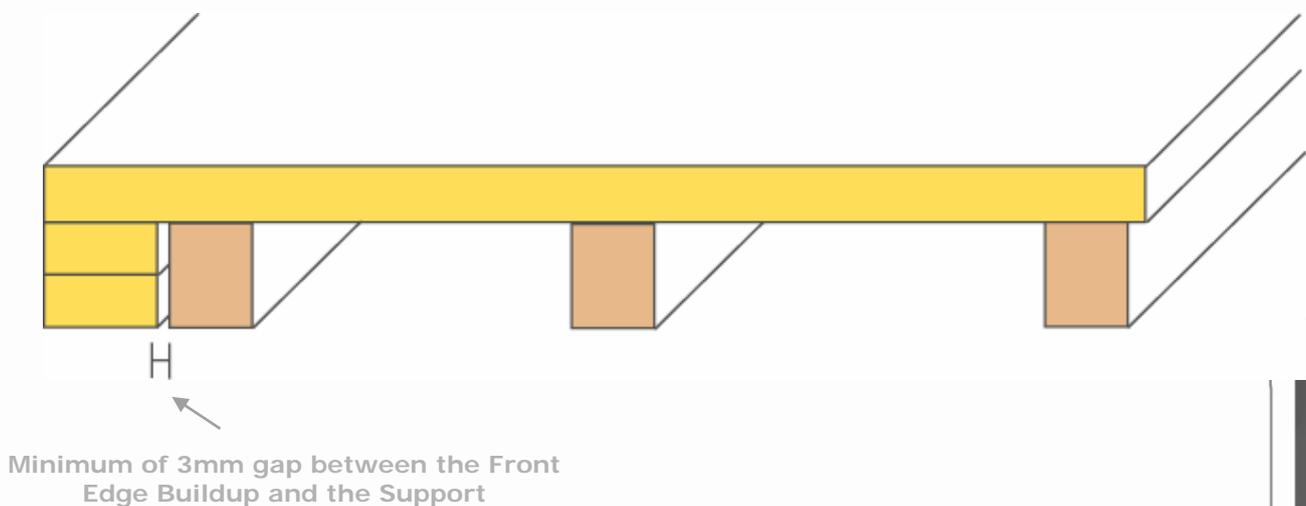
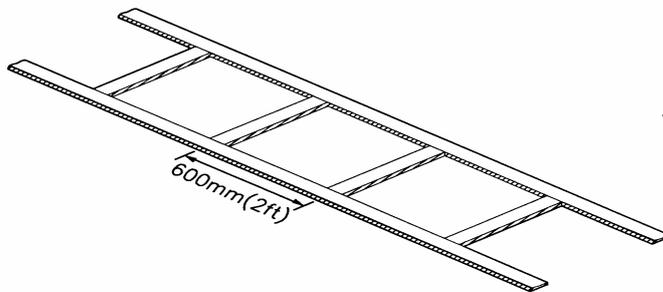


Illustration (18.1-c)

Supports

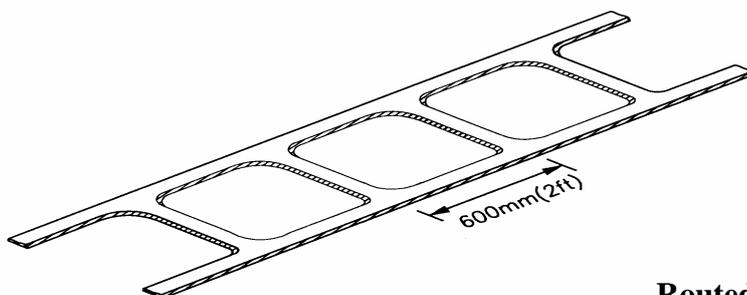
Framing:

- Many fabricators don't use framing techniques to provide support to the Hanex® 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 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)
 - Particleboard is not acceptable for use as support



Constructed ladder system

Illustration (18.1-d)



Routed ladder system

Supports

18.2 Overhang Support

Depending on the project, you might be required to provide an overhang support for the countertop. The following are some guidelines to follow when working with overhangs.

Table (18.2-a)

Requirements	12mm Hanex® Material	6mm Hanex® Material
All Overhangs	<i>It's always safe to use proper support for any overhangs</i>	
Support required	Provide proper support for overhangs over 150mm	A l w a y s r e q u i r e d 6mm Material not recommended for countertop use
Ladder Support Or Corbels	150 – 375mm use solid substrate along with corbels evenly spaced less than 75mm apart	
Solid Substrates with Legs or Columns	Overhangs over 400mm use solid substrate along with legs or columns	
Service Bars	<i>Solid Substrates and bracket support is always required</i>	

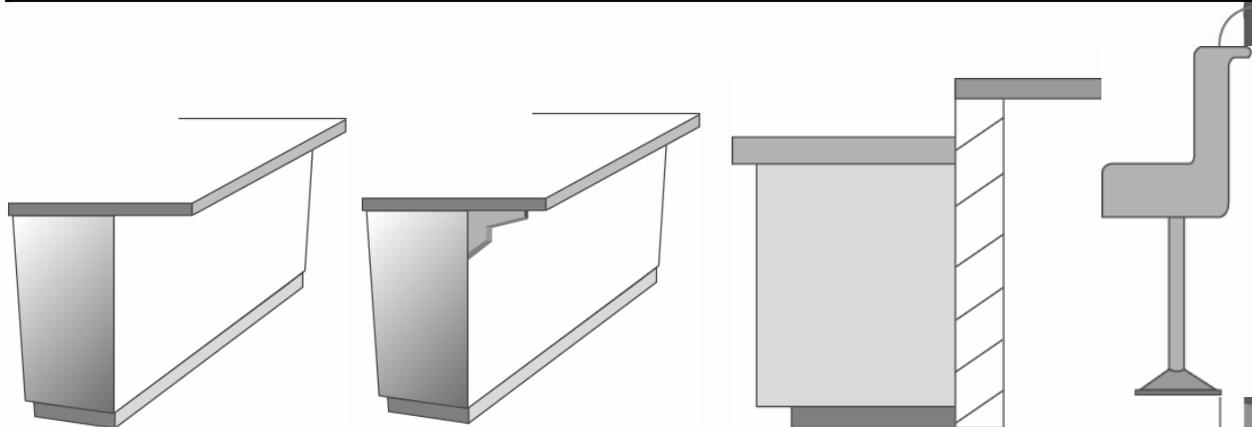


Illustration (18.2-a)

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 175mm~375mm need to be properly supported. See Table (18.2-a) in 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

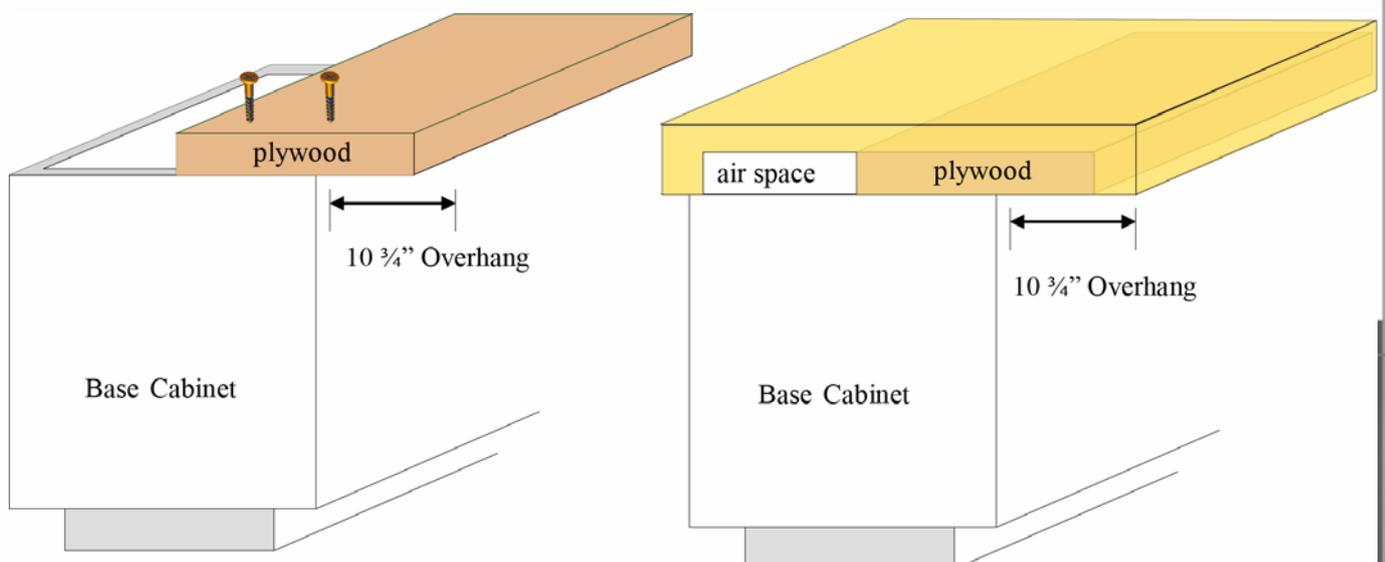


Illustration (18.2-b)

Note

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

Commercial Applications

19.1 Applications

Commercial applications of Hanex® Solid Surface 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® Websites, and by contacting Hanex® 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® 100% Acrylic Solid Surface can be used in a variety of applications with great results.

This chapter will cover two main areas in Commercial Application of Hanex®:

- 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 150mmx150mm High Strength Corner Buildups on all the cut-outs.
 - Please refer to Chapter 13.4 for details
- For all the cut-outs, 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 cut-outs.
- 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

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® Countertop.
- The Flange of the stainless steel tank is required to be aligned at least 3mm above the surface of Hanex® 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)

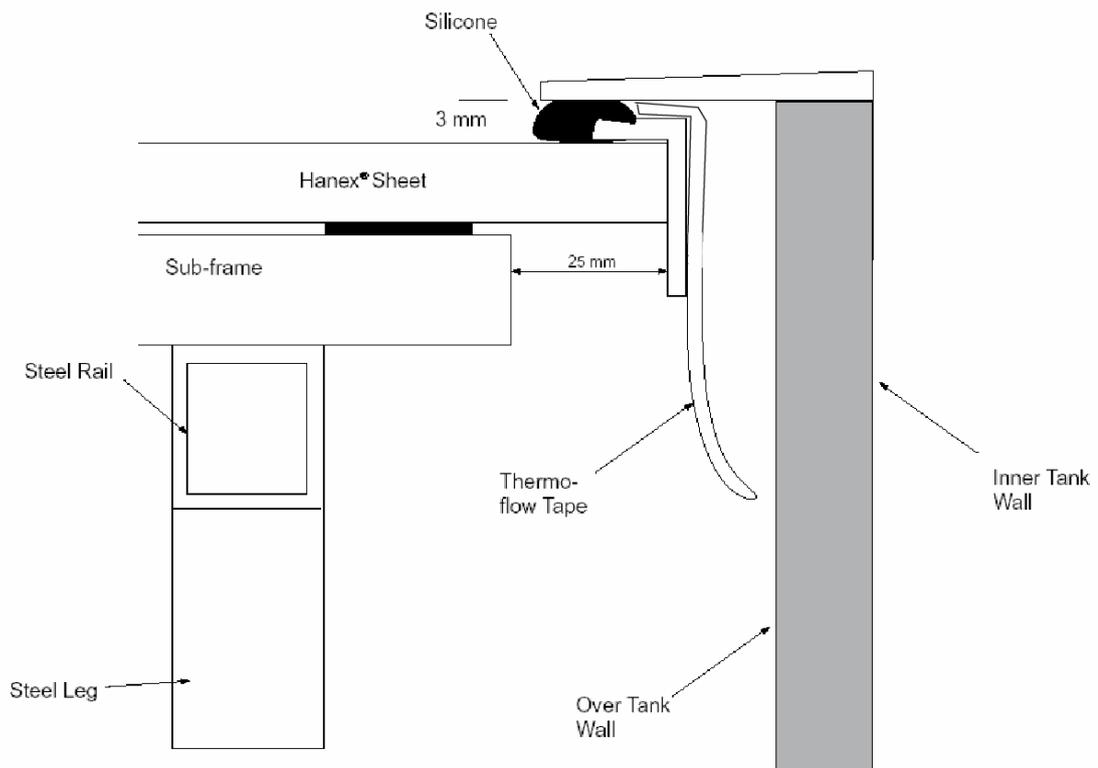


Illustration (19.1-a)

Vertical Applications

20.1 Applications

Due to its versatility, Hanex® Solid Surface is used in many other applications in both Commercial and in Residential use. The applications can range from furniture, signage, stair railings, arts, deco, walls, partitions and many more. This chapter will discuss briefly about Hanex® Wall Applications.

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

- Shower surrounds
- Tub 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® Technical Service Center for more details.

Note

- Remember, rigid adhesives cannot be use on Hanex® at anytime.
- Special Anchoring system should be used when anchoring Hanex® to the wall or as free standing partitions.

Vertical Applications

20.2 Fabrications and Installations

Directions:

- Using any one of the Template methods, measure template to the desired application of the walls or partitions.
 - See Chapter 8 for more details.
- Cut the sheets oversized by about 12mm around the perimeter.
- After tracing the template or marking the measurement on the cut pieces, make the final cut using a router
- Sand the edges and the surface to desired finish
 - See Chapter 16 for more details
- Dry-fit the pieces to make sure of a proper fit.
- 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.
- Remember to measure all the cut-outs and cut prior to installation.
 - If making the cut-outs after installation, make sure all measurements are done properly.

Note

- 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 3mm gap for every 3000mm 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.
- Out side corners can be hard seams using Hanex® seam kits.

Vertical Applications

Directions Continued:

- To attach the pieces to the wall, place bead of 100% silicone all around the perimeter of the sheet and place quarter size dabs of silicone every 250mm ~ 300mm.
- Additionally, enough dabs of Hot Glue should be applied to hold the pieces in place, until the silicone dries completely.
- 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.
- 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®.
 - Cut strips at about 50mm wide and set over the seam.
 - silicone the strip over where the two pieces of material meets

Note

- 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.

Thermoforming

21.1 General Rules

21.1-a Material Preparation

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

Directions:

- Remove the protective film from the material.
- Cut all the pieces accurately to its required dimensions.
 - It is important to consider the shrinking and expanding during the thermoforming process.
- 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
- Follow the Table (21.1-a) on maximum inside radiuses.

Sheet Thickness	Maximum Inside Radius	Material Grade
6mm Material	25mm Radius	Solo, Duo
12mm Material	75mm Radius	Solo, Duo
12mm Material	125mm Radius	Trio
12mm Material	175mm Radius	Palazzo

Table (21.1-a)

Note

The above chart is an estimated numbers. Take necessary precautions and test when thermoforming the Hanex® products

Thermoforming

21.1 General Rules

21.1-b *Mold Preparation*

Unless the thermoform material 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 M.D.F. materials, due to its property. It is important to make both male and female sections to hold the heated pieces in the desired shape.

Directions:

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

Note

There is special equipment and molds designed for Thermoforming Solid Surface materials. Please check with the manufacturer for further details.

Thermoforming

21.1 General Rules

21.1-c *Oven Preparation*

Having the right oven is essential for properly thermoforming Hanex®. 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:

- The Oven should be calibrated.
 - Please consult with the manufacturer for proper calibration
- Preheat the oven to desired temperature
- The oven should be designed for Solid Surface sheets and be able to heat uniformly
- The materials should be fully enclosed in the oven
- Depending on the oven, radius, thickness, and other factors, the time and temperature may vary.
- Calibration
 - On a test piece of Hanex® material drill a hole at 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.

Note

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

Thermoforming

21.2 Thermoforming

Directions:

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

Sheet Thickness	Oven Temperature	Time
6mm Material	150 °C (302°F)	30 – 60 min
	175 °C (347°F)	15 – 30 min
12mm Material	150 °C (302°F)	45 – 80 min
	175 °C (347°F)	25 – 60 min

Table (21.2-a)

Note

Do not force the material, instead make sure to check to see if the material was heated enough at right temperature.

21.3 Thermoforming Check List

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

Check List:

- 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®
- 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.

Note

- Do not use open flame to heat Hanex® for thermoforming under any circumstance.
- Using open flame from torch will make the material blister and damage the product.

22.1 Inside Corner Repair

Inside Corner Repair

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 12mm straight bit, route through the deck only (leave onion skin of material).
5. Use wide router base to remove deck over buildup 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 buildup (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 12mm flute bit, route through damaged buildup.
11. Remove template
12. Hot melt 2 pieces of repair material (one at a time) to plug template and route with 25mm straight bit with bearing.
13. Slide repair buildup pieces into buildup and mark out backside to line up with existing buildup.
14. Either cut buildup repair pieces to exact size using 25mm 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

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 (22.3-b)

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 25mm template and 12mm" single flute bit, route through damaged build-up (as shown).



Illustration (22.3-b)

Repair

Inside Corner Repair – Step by Step

9. Remove template. Countertop is now ready.
10. Hot melt 2 pieces (1 at a time) of repair material to the plug template and route with 25mm 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.

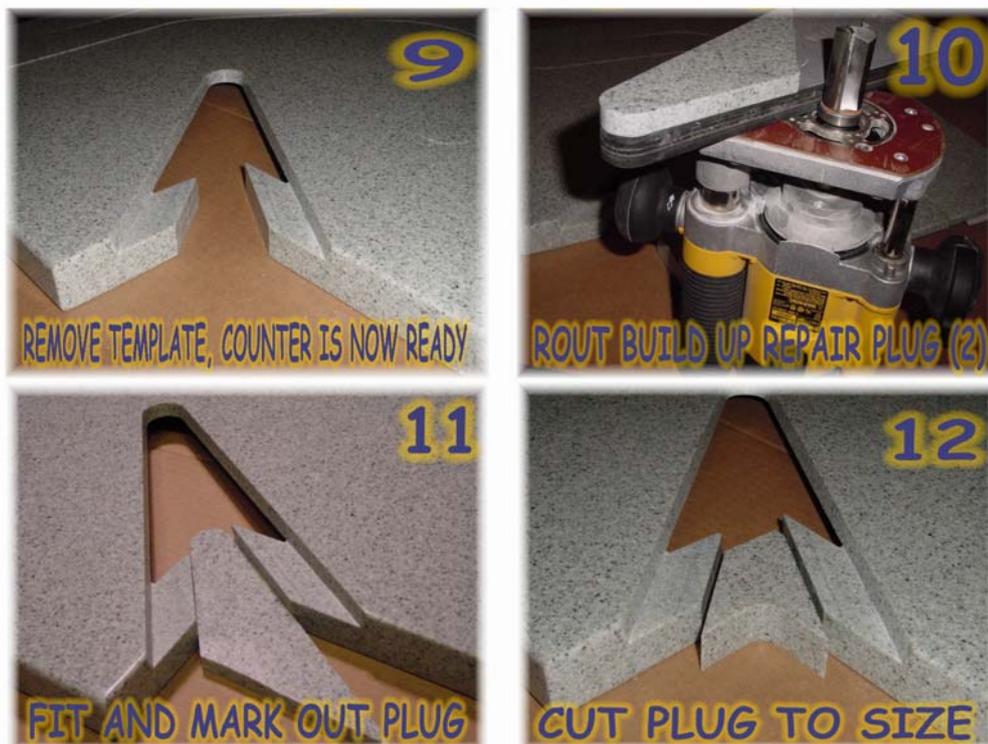


Illustration (22.3-b)

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 (22.3-b)

22.2 Bevel Repair

Bevel Repair

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.

Repair

Bevel Repair

11. Clean all surfaces to be glued with denatured alcohol using clean white cloth.
12. Place aluminum tape on the underside of the counter cut-out 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

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 4 dime size dabs of glue to counter so crack is encompassed and rout 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 3mm to 6mm coverage on template.

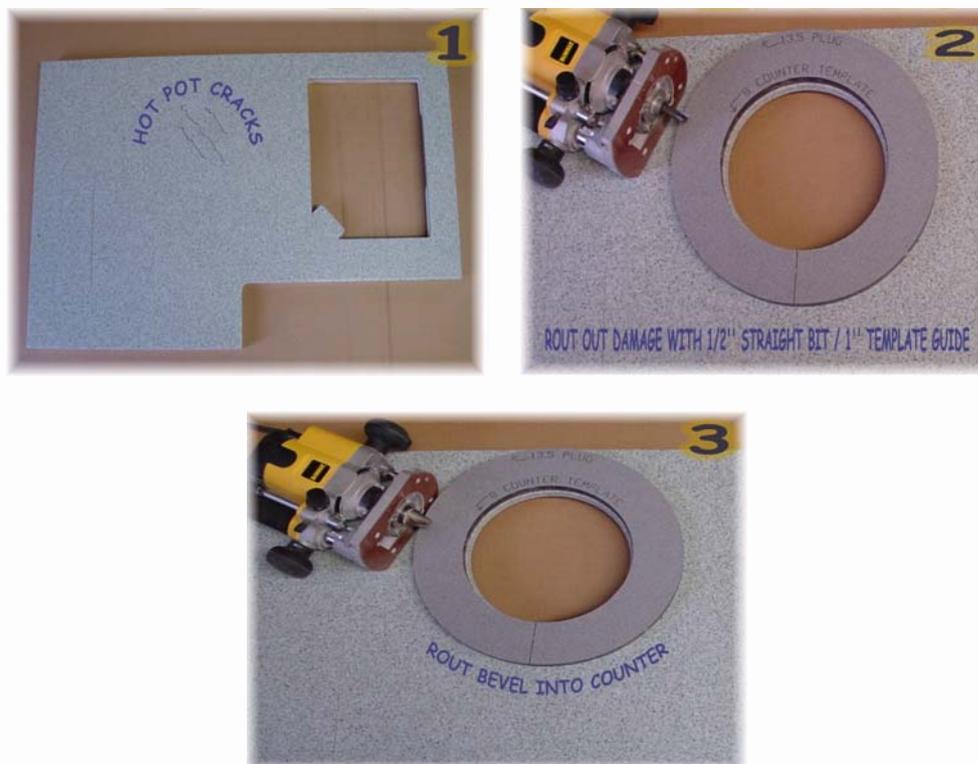


Illustration (22.3-b)

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

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 cut-out 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 40cm x 52.5cm 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 takes 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 4 sides.
2. Center the appropriate Andreas Dustless Sink template between the marks.
3. Hot melt # 12mm x 25mm x 150mm 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. 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 150mm 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.

Solid Surface Sink Replacement

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. 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 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).
11. Remove the web clamp and lower the sink.
12. Clean the surface of the sink and the cut-out.
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 \pm 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

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

Repair

Solid Surface Sink Replacement – Step by Step

1. On the deck surface, measure back 25mm from the inside of the sink on all 4 sides.
2. Center the appropriate Andreas Dustless Sink template between the marks.
3. Hot melt # 12mm x 25mm x 150mm 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)

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 150mm 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)

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. Cut out front of sink (router can move in a forward or backward direction due to it's multi tooth 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.

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)

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 cut-out.
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 \pm 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.

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



Illustration (22.4-d)

23.1 Sample Check List **23.1-a Site Evaluation**

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.

- 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, cook-tops, 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 Check List

23.1-b *After Measurement and Template*

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.

- 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, and etc.
- Mark location of all cutouts
 - Sinks / Bowls
 - Cooktops
 - Others
- Mark location of all appliances
- Mark location of all centerlines of the cut-outs
- Indicate interior and exterior dimensions of the cabinets with cut-outs
- 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)

23.1 Sample Check List

23.1-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 3mm gap for every 3,000mm of material when the surface is enclosed between two walls or other obstacles.
- Never install any mechanical fasteners directly into Hanex®. Make sure to use proper fastener guide.
- Always leave color match material with the customer for future repair.
 - Minimum of 0.18sqm 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.
- Cook tops and other appliances are installed properly.
- All cut-outs 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.
- Etc.

Customer Service Information

24.1 Warranty Information

HANEX® SOLID SURFACE 10-YEARS LIMITED WARRANTY

Hanwha L&C Corporation (hereunder “Hanwha”) warrants to the original purchaser that, its product, HANEX Solid Surface, when installed by a Certified Hanex Solid Surface Fabricator, shall be free from Defects in material, workmanship, fabrication and installation under normal use and service, for ten(10) Years from the date of sale to the original purchaser. Hanwha L&C Corporation shall repair or replace The product that is affected, at its idscretion, free of charge to the original purchaser. This Warranty Only applied to HANEX Solid Surface which is stored, handled , fabricated, and installed in the manner Recommended in the HANEX Solid Surface Fabrication Guide provided by Hanwha L&C Corporation This Warranty shall not apply to damage arising from any of the following

The above Residential and Commercial warranty do not cover:

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 Surface product that is removed from their original place of installation or alteration/repair performed on product by one other than Certified HANEX® Solid Surface 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®. 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 Corp.
Hanwha Bldg. #1 Changgyo-dong,
Chung-guSeoul, Korea
Tel : 82-2-729-2906,1591
E-mail: h9517535@hanwha.co.kr

Customer Service Information

24.2 Registration Information

HANEX® SOLID SURFACE 10-YEARS LIMITED WARRANTY

Hanwha L&C Corporation (hereunder "Hanwha") warrants to the original purchaser that, its product, HANEX Solid Surface, when installed by a Certified Hanex Solid Surface Fabricator, shall be free from Defects in material, workmanship, fabrication and installation under normal use and service, for ten(10) years from the date of sale to the original purchaser. Hanwha L&C Corporation shall repair or replace the product that is affected, at its idscration, free of charge to the original purchaser. This Warranty Only applied to HANEX Solid Surface which is stored, handled, fabricated, and installed in the manner recommended in the HANEX Solid Surface Fabrication Guide provided by Hanwha L&C Corporation his Warranty shall not apply to damage arising from any of the following **HANEX^a SOLID SURFACE**

The above Residential and Commercial warranty do not cover:

- . Failure to comply with Hanwha's recommended storage, handling, fabrication and installation and care & maintenance guidelines.
- . Damage caused by accidents, abuse, misuse, fabrication/installation error, exposure to extreme heat, or act of nature.
- . Installed HANEX® Solid Surface product that is removed from their original place of installation or alteration/repair performed on product by one other than Certified HANEX® Solid Surface Fabricator/Installer
- . Appearance of joints or seams due to improper fabrication/installation or improper grout or caulk due to improper maintenance
- . 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®. 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 Corp
Hanwha Bldg. #1 Changgyo-dong
Chung-gu, Seoul Korea
Tel: 82-2-729-2906,1591

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SOLID SURFACE

Effective March 1, 2005 **HANEX®**

Customer (End-User) Information

* Name (First, Last)	<input type="text"/>	<input type="text"/>
* Street Address	<input type="text"/>	
* City, ST, Zip	<input type="text"/>	
* Phone	(<input type="text"/>)	- <input type="text"/>
* <u>email</u>	<input type="text"/>	

Product Information

* Date Installed	<input type="text"/>
* Application	<input type="checkbox"/> Residential <input type="checkbox"/> Commerical
* Type of Installation	<input type="text"/>
* Product Category	<input type="checkbox"/> Countertop <input type="checkbox"/> Shapes
* Lot Number	<input type="text"/>
* Color Name	<input type="text"/>
* Type of Sink	<input type="text"/>

Retailer Information

* Sold By	<input type="checkbox"/> Dealer <input type="checkbox"/> Builder <input type="checkbox"/> Fabricator <input type="checkbox"/> GC <input type="checkbox"/> Other (<input type="text"/>)
* Company Name	<input type="text"/>
* Street Address	<input type="text"/>
* City, ST, Zip	<input type="text"/>
* Phone	(<input type="text"/>) - <input type="text"/>

Fabricator / Installer Information

* Company Name	<input type="text"/>
* Street Address	<input type="text"/>
* City, ST, Zip	<input type="text"/>
* Phone	(<input type="text"/>) - <input type="text"/>

(*) Required Information

Customer Service Information

24.3 Care & Maintenance Information

Unlike other Surfacing materials which are produced by laminating or coating, Hanex® is Non-Porous and Solid through the entire material. These features make Hanex® 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® 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®. Always use trivets with rubber feet when placing hot items on the countertop. Remember, placing hot pans or heat-generating appliances directly on Hanex® 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 surface 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

- **Simple steps to avoid damages:**

- Avoid cutting directly on Hanex®, use a cutting board.
- Never place hot pans directly on the countertop. Even though Hanex® can withstand temperatures up to 175°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 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 cleanser 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® Repair Agent or Certified Hanex® Fabricator.

Customer Service Information

24.4 FAQ

- What is Hanex®?
 - Hanex® 100% Acrylic Solid Surface 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 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® made of?
 - Hanex® 100% Acrylic Solid Surface 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® Displays?
 - Please contact your nearest Distributor to find your local retail design center and/or fabricator. The Distributor info can be found in “Where to Buy” page of this website.
- Where can I purchase Hanex® 100% Acrylic Solid Surface?
 - Hanex® 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® Samples?
 - Hanex® samples are provided to help our customers in making the right selection from the vast array of colors and designs.
- Is Hanex® Repairable?
 - Unlike other surfacing materials, Hanex® can be repaired to its original condition. Hanex® 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.

Customer Service Information

- How do I clean and take care of my Hanex® countertop?
 - Unlike other Surfacing materials which are produced by laminating or coating, Hanex® is Non-Porous and Solid through the entire material. These features make Hanex® 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 third-party 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® 100% Acrylic Solid Surface have been tested by NSF, Certified, and is currently listed as NSF 51 Certified.
- Can I Fabricate and Install Hanex® myself?
 - To ensure proper fabrication, installation, and warranty coverage, Hanex® is only available to certified fabricators.
- Who can Fabricate and Install my Hanex® countertop?
 - To ensure proper fabrication, installation, and warranty coverage, Hanex® is only available to certified fabricators. To become Certified Hanex® Fabricator, please contact your local Distributor for more information. The Distributor info can be found in “Where to Buy” page of this website.
- Who can repair or refinish my Hanex® 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® Repair Agent or Certified Fabricator.

Customer Service Information

- What do I do with small sample material Fabricator left after installation of Hanex®?
 - It is required by Hanwha L&C Corp. 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®?
 - Your Hanex® can be finished to have Matte, Simi-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®
 - The innate feature of Hanex® 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®. Always use trivets with rubber feet when placing hot items on the countertop. Remember, placing hot pans or heat-generating appliances directly on Hanex® may cause damages to your countertop. Avoid direct and indirect heat with temperatures over 80°C (170°F). In most cases, the damages can be repaired, however to protect your Hanex® countertop, always use trivet when placing hot items or heat-generating appliances.
- What are the advantages of Hanex® 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® over Granite, however, most importantly; your Hanex® is fully repairable and renewable. Additionally, unlike granite, Hanex® comes with 10-year limited warranty, best in the industry.

Customer Service Information

- What are the advantages of Hanex® over Laminates Countertops?
 - Laminates over time will separate due to moisture. Hanex® is non-porous, solid, and homogenous. The water absorption ratio is among the lowest in the industry. In daily use of Hanex®, moisture cannot penetrate it. There are many other benefits of Hanex® over Laminates, however, most importantly; your Hanex® is fully repairable and renewable. Additionally, unlike laminates, Hanex® comes with 15-year limited warranty, best in the industry.
- What are the advantages of Hanex® over Tiles Countertops?
 - 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 back-splashes, 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® over tiles, however, most importantly; your Hanex® is fully repairable and renewable. Additionally, unlike tiles, Hanex® comes with 15-year limited warranty, best in the industry.
- What are the advantages of Hanex® over other Countertops materials like Wood, Concrete, Stainless Steel...
 - Hanex® 100% Acrylic Solid Surface 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® can transform any space into a beautiful environment. The unlimited design flexibility of Hanex® 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

- What is the warranty in Hanex®
 - Your Hanex® 100% Acrylic Solid Surface comes with 10-year limited warranty. The inherent properties of Hanex® with its DBCU manufacturing process, Hanex® name is recognized in the industry for quality. Hanex® can only be fabricated and installed by Certified Hanex® 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®?
 - 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® 100% Acrylic Solid Surface. You will be pleasantly surprised.

Technical Bulletins and Updates

25.1 Technical Bulletins and Updates

Please Attach New Bulletins and Updates in this Section.





HEAD OFFICE

Hanwha Bldg., 15F, #1, Janggyo-Dong,
Jung-Gu, Seoul, 100-797, KOREA
Tel : 82-2-729-2906, 1591 Fax : 82-2-729-1447

OVERSEAS OFFICE

EUROPE_Hanwha Europe GmbH

Mergenthaler Allee 79-81, 65760 Eschborn, Germany
Tel : 49-6196-5016-0 Fax : 49-6196-5016-90

U.S.A_MFI

11165 Knott Ave. Suite C, Cypress, CA 90630, USA
Tel : 1-714-901-9410 Fax : 1-714-901-5138

JAPAN_Hanwha Japan Co., Ltd.

Hanwha Bldg 8F, 10-1, Shiba-4 Chome, Minato-ku, Tokyo 108, Japan
Tel : 81-3-5441-5900 Fax : 81-3-5441-5921

CHINA_Hanwha Living & Creative (Shanghai) Co., Ltd.

No. 16 Block, Jiading Industrial Zone(North), Shanghai, China 201807
Tel : 86-21-3996-3996 Fax : 86-21-3996-3911, 3922

www.hanex-i.com