GENERAL WARRANTY:

In the production of metallic laminates some surface irregularities and color and pattern variations will appear. We recommend that you inspect the material before cutting or laminating. If any material proves to be defective, Chemetal will be liable for the cost of that material only. No other warranty is expressed or implied.

APPLICATIONS:

Chemetal laminates are recommended for interior use only on vertical and light-duty horizontal surfaces. Please contact Chemetal regarding any uncertainty regarding the use of our product in an application.

When used on other horizontal surfaces the laminates should be protected under glass or other equivalent materials. Caution should be taken on surfaces that may be exposed to harsh chemicals, acidic type acids or beverages (alcoholic, colas, etc.) without cleaning the surface for lengthy periods of time.

STORAGE AND HANDLING:

Store flat, not on edge. The laminates should be stored face-up in a cool, dry area and in a completely supported flat position. Use a top sheet of chipboard or similar material to hold stored sheets flat. Protect material from twist, rack and edge damage.

To prevent surface distortion, large sheets should be handled by two people and transported face up. If materials are to be rolled, care must be taken to avoid bending. Do not compress coils. Material with a backer must have the face out. Rolling with the face in will crack the backing material. Roll loosely to a minimum diameter of 18 inches. Do not roll finishes in the 100 Series.

PROTECTIVE MASK:

Although Chemetal's metallic laminates are supplied with a protective mask, care should be taken when handling them. Do not expose sheets to light for long periods of time. This may cause problems with the removal of the protective mask.

It is recommended to leave this mask on the surface of the laminates during processing work. Nevertheless, color uniformity and other quality checks should be carried out on the sheets beforehand by simply lifting up the edge of the mask and lying it back down.

CLEANING AND MAINTENANCE:

Clean with a soft cloth using mild soap and water or nonabrasive glass and metal cleaning liquids. Do not use ammonia, abrasive cleaners or pads, or harsh solvents. Number 710 should only be cleaned with agents containing ammonia.

SHIPPING:

Chemetal recommends that all sheets of solid metal be shipped flat. The customer assumes all responsibility for sheets of solid metal that are rolled and shipped in a carton(s).

Chemetal cannot roll sheets of 48" wide metal that are backed with phenolic. Therefore, 48" wide phenolic backed Chemetal must be shipped flat. All HPL backed Chemetal may be rolled and shipped in a carton. It is often cost effective to ship HPL backed Chemetal flat for orders greater than four sheets.

SUBSTRATE PREPARATION:

A warm and dry storage environment must be provided for all Chemetal products, substrates and adhesives prior to fabrication and installation. A normal temperature of 75° F and a relative humidity of 45 to 50% provide ideal storage conditions.

We recommend that all Chemetal products, adhesives and the substrates they are to be bonded to remain in the same environment for a period of five to seven days for optimal pre-conditioning. A minimum of 48 hours is recommended for pre-conditioning. These times are recommended although decorative metal laminates have minimal dimensional change.

Following these recommendations will allow the adhesive to create a strong and firm bond between the substrate and the Chemetal laminate which will minimize potential dimensional change after lamination.

LAMINATION:

It is recommended that all substrates, adhesives and Chemetal laminates be stored at room temperature (75°F) with a relative humidity of 45 to 50% for at least 48 hours prior to lamination. All materials should be stored in the same environment where fabrication or installation will take place under the above conditions. A five to seven day period of time is recommended for optimal pre-conditioning in a warm and dry environment. (continued next page)

LAMINATION CONTINUED:

Lamination performed in cold temperatures may affect long-term results. We recommend the use of balancing sheets. They act as a moisture barrier to ensure a balanced construction. If possible, balanced construction should be used with sheets of equivalent expansion and shrinkage ratios. Please note that metal laminates experience minimal if any change in dimension.
The fabricated parts should be stored for at least 48 hours before exposure to extreme temperature or humidity changes. (Most contact adhesives require this minimum time to reach initial bond strength). Following these procedures allows the metal to bond firmly to the substrate.

The above procedures should be followed when the lamination is to be completed on the job site. Any lamination that is completed in conditions that are different than the expected day to day living conditions may result in failure of the application as noted above. All heating and air conditioning systems should be operating to achieve expected living conditions before any lamination or installation takes place on a job site.

Failure to comply with these recommendations may cause failure of your application. Most substrates experience a change in dimension that may be significantly different than that of metal laminates. This difference may cause the metal to pull away from the substrate or buckle at the weakest point of adhesion.

Sufficient spacing must be provided between and at each end of sheets or strips to accommodate possible linear expansion from the ambient temperature range at the installation site. Minimum spacing of 1/32" is recommended but a more accurate determination can be made by allowing 1/100" for each 96" of metal surface for each 10 degrees Fahrenheit of anticipated temperature change.

If you are not sure how any metallic laminate will work for your particular application, we suggest you test the application system you have selected under production and/or installation site conditions.

Proper substrates must be used and careful bonding procedures must be observed. Substrates should be of good quality plywood, high density particleboard or high quality fiberboard. The more resistant the substrate is to dimensional change (shrinkage and/or expansion from changes in humidity and temperature) the better the long-term results will be.

The face of the substrate must be smooth and free of grease, wax, dust, chips and other foreign matter. When using reflective decorative metal surfaces it is imperative that the bonding surface is absolutely flat or distortions in the reflectiveness may occur.
(continued next page)

LAMINATION CONTINUED:

For best results, it is recommended that the back of any solid metal be scratched with Scotch Brite pads prior to lamination.

To ensure a good bond, consult and follow the adhesive manufacturer's instructions on preparation of substrates, surfaces and adhesive application. All types of adhesive must be applied evenly and uniformly. Globules may transfer through the surface during laminations, and starvation areas may cause long-term delamination. There must be no bridging, and positive bonding pressure must be applied uniformly and progressively over the entire surface.

To bond a metallic laminate to your substrate after gluing, pressure must be firmly and evenly applied over the entire surface using a rotary or platen press. If possible, balanced construction should be used with sheets of equivalent expansion and shrinkage ratios. The use of hand or "J" rollers is not recommended for laminating metallic laminate sheets. They can be used for laminating strips as long as firm, even pressure is applied to the entire length.

Once you have started to lay down a piece of metallic laminate do not try to realign it. While you may be able to force it into position, you will put stress into the metal, which

may cause buckling and bond failure during a short period of time. Chemetal's metallic laminates will readily conform to the surface of your substrate. For a smooth, flat surface appearance, extra care may be required in surface preparation and lamination. A phenolic backer sheet is available upon request for finishes that are not already supplied with one if you determine that your application requires the additional support.

ADHESIVES:

We recommend the use of a mechanical fastening system when using Knockout (100 Series) finishes.

Chemetal laminates may be laminated with many of the conventional adhesives normally used with plastic laminates, such as many contact cements. Always check with your adhesive supplier to make sure the adhesive you select is suitable for your application. In all cases, the adhesive manufacturer's instructions should be followed as to the use of the adhesive and substrate preparation.

To clean off adhesives, use a solvent like alcohol, benzene, naphtha or mineral spirits. Do not use ammonia, abrasive cleaners or pads, or harsh solvents. Do not use solvents that attack lacquers. It is recommended that you test your adhesive system and/or cleaning agents with a sample piece of metal.

CUTTING, MACHINING, ROUTING AND SAWING

CAUTION:

In all cutting, machining and finishing procedures safety goggles, gloves, long pants and long-sleeved shirts must be worn and precautions must be taken to protect eyes from metal particles. Caution should be exercised in handling pieces since burred edges can cause cuts. Metallic laminates will conduct electricity and can cause shocks or short circuits when in contact with ungrounded electrical circuits.

CUTTING AND MACHINING:

Most hand and power woodworking equipment and techniques may be used to work Chemetal's metallic laminates. For laminates that are solid metals, some adjustments may be required in handling and processing techniques. All blades must be sharp, and the use of carbide-tipped cutters and multi-fluted router bits are recommended. Dull cutters create excessive chipping and burring and reduce the quality of the work.

When routing, the less material removed the better. It is also important that the face of the material be protected from the base plate of the router. To remove any burrs that may occur, use a smooth mill bastard file to feather all corners and edges. Air operated files may be used.

When cutting finish #710 on a table saw, panel saw etc., the stainless steel layer must be facing up. The travel speed should be approximately 16-20 feet per minute. The diameter of the blade can be from 7" to 16" with a 6 degree negative hook, 13mm pitch, triple grind carbide blade. It is recommended to shut your exhaust system off while cutting stainless steel because sparks may occur.

ROUTING:

Routing may be done using electric or air powered routers. Sharp multi-fluted carbide cutters are necessary; the larger the diameter of the cutter the better the results. The speeds recommended are the same as those used in standard woodworking practices.

It is important to use a router having adequate horsepower to maintain cutting speeds. It is also important that the cutter travel direction is against the cutter rotation.
For edge trimming, high speed trimmers should be used (approximately 22,000 RPM) and will produce smooth burr-free edges. The less material cut, the smaller the burr: 1/8" of material should be the maximum. Use special care at corners to avoid tearing or bending of the metal. Protect the surface from scratches by riding the router base on a

(continued next page)

ROUTING CONTINUED:

strip of .020" backing sheet or equivalent. If a bearing guide is to roll on the surface, it must be completely free rolling. Use a smooth mill bastard file to feather all corners and remove burrs from machined edges. Always file down on the decorative surface. Air operated files may also be used.

When cutting on CNC type routers, testing showed that 3 fluted solid carbide bits gave the best results for routing finish #710. The speed of the router should be approximately 7,000 to 8,000 RPM, and the travel speed of the router would be approximately 10-15 feet per minute. The shank diameter would be ½" to ¾". The length of the router bit can be from 3" to 4". The up cut or down cut determines which way the finished side of the material will face up. The right hand twist determines the face to be down and the left hand twist determines the face to be up.

Do not force the router through the material. A constant feed rate will produce smoother cuts. Note: dull or damaged bits will tear, scorch, melt or even delaminate laminated material.

SAWING:

To minimize burring and edge distortion, it is important that the saw blade teeth cut into the decorative face, with the blade height about 1/4" above the material, and the saw access plate refitted to reduce free space surrounding the blade. This may be accomplished by using 1/4" hard board as an overlay carrier board. Hold downs on either side of the blade help reduce chatter. Please see special instructions for sawing finish #710.

General rules for selecting saw blades for 3450 RPM table saw:
- Sharp carbide tip blade
- Blade diameter: 8" to 14"
- Number of teeth: the more teeth per inch the better the results
- Pitch: 0.417" or less
- Rake angle: 10 degrees or less (zero degrees works well)
- Kerf: the thicker the blade the less chatter
- Grind: uni-chip or triple-chip

Do not force material through saw. A constant feed rate will produce smoother cuts. Blade wax will promote better cuts and longer tool life. Note: Dull or damaged blades will tear, scorch, melt or even delaminate laminated material. It is recommended that you sandwich the metal between two substrates in all sawing operations. The use of a carrier sheet during cutting may be a viable option.

BENDING AND FORMING:

Any metal without a phenolic or HPL backer can be bent to wrap around square or radiused corners.

RECOMMENDATIONS BY SERIES:

150 Series, 200 Series, 300 Series, 700 Series:

All radius bending should be handled in the same manner as all grades of non-post forming high pressure decorative laminates.

800 Series:

Outside radii are possible down to 10" when the product is used with a phenolic backer. For smaller radii, the material must be used without the phenolic backer. Inside radii can only be achieved with metal without a phenolic backer.

100 Series, 400 Series, 50 Series, 600 Series, 800 Series, 900 Series:

Any solid metal can be bent to wrap around square or radiused corners. We suggest that the metal be preformed to the desired radius prior to lamination. For a sharp, crisp bend, scribe or score the face of the metal on the line where it is to be bent using a sharp razor knife and a straight edge, approximately 1/3 into the thickness of the metal. (Note: when bending to a tight radii, it is normal for some slight crazing of the anodized surface layer to occur.) On radiused corners use hose clamps or hand-held pressure tools or rolling tools that will enable the metal to conform to the substrate contours.

Although these metals have very little "spring back," extra-firm laminating pressure must be applied just in front of and following the corner, and on curved areas. Also, some pre-forming of the metal sheet will help the material to bond properly. For a slightly radiused corner, barely scribe the metal with the "V" cutter. Use caution when folding. The scored section cannot be repeatedly opened and closed as it will eventually break off.

GENERAL:

The user of Chemetal products must determine the suitability of products for any particular purpose and use, including the establishment of his or her own procedures for fabrication and installation of these products. The information supplied is a general guideline and a supplement to tool manufacturers' recommendations as to proper use and capabilities of their equipment. This information is believed to be reliable but no warranty is expressed or implied.

Technical Information

#160 Magnetic Dry Erase Steel

Application

Product is recommended for vertical surfaces, but may be used in light duty horizontal areas.

Base Material

Steel containing varied alloys.

Material Specifications

Size: Sheets are 48" X 96" (4' x 8')

Thickness: .023", .05 w/backer

Weight per sheet 30 lbs. (.94 lbs./sqft)

Shipping

Material sould be shipped flat, with adequate protected on all sides, faces and corners.

Appearance

The surface of the sheet is a white dry erase coating.

Cleaning

Clean the surface using a light-duty conventional cleaners such as mirror glass cleaners. Do not use cleaners that contain abrasives, and try to avoid cleaners with ammonia. Blown air or dusting is another recommended cleaning method.

Surface resistance

The surface is not resistant to scratching. It may be used in horizontal applications, but must be considered light duty. It should be used in vertical or horizontal applications where temperatures don't exceed 160˚F. Maximum heat resistance temperature is 160˚F.

How to process

The sheets are shipped with a protective mask. Quality checks should be carried out on the sheets beforehand.

Cutting

The steel can be processed utilizing various types of metal working equipment and hand tools. Additionally, Chemetal can provide cut-to-size- pieces to aid installation. Charges and minimums apply.

Because alloys in steel can create sparks, dust collection systems must be turned off or disengaged.

Examples of hand tools include circular, band, or jig saws equipped with Bi-Metal blades such as the Lenox Bi-Metal Jig Saw Blades, Lenox Metal Cutting Circular Saw Blades, Lenox Bi-Metal Hole Saws, and Lenox Air Saw Blades for use in pneumatic machine cutting.

Examples of metal working equipment include shears, brakes, rolls, waterjet cutting, and plasma arc cutting.

NOTE: If a torch or plasma arc cutting system is used to cut the parts, the protective wrap should be removed and moved away from the work area prior to cutting to avoid potential fire from the heat and sparks generated.

Safety Note

When handling this material always utilize safe lifting and carrying practices. When working with or cutting the materials always utilize proper Personnel Protective Equipment specified by the manufacturer of the equipment or cutting tool manufacturers.

Backer materials

The steel may be laminated to materials such as fiberboard, particleboard, veneer plywood, plywood and plasterboards, as well as rigid foams and metals.

Bonding

Conventional glues and adhesives and special purpose thermo-setting resins or solvent based contact adhesives may be used for lamination. material may also be fastened mechanically. Pinch rolling the material is also recommended. If necessary, balancing should be done with sheets of equivalent shrinking and expanding ratios.

Technical Information

160 Magnetic Dry Erase Steel

LAMINATION

It is recommended that all substrates, adhesives and Chemetal laminates be stored at room temperature (75°F) with a relative humidity of 45 to 50% for at least 48 hours prior to lamination. All materials should be stored in the same environment where fabrication or installation will take place under the above conditions.

A five to seven day period of time is recommended for optimal pre-conditioning in a warm and dry environment. Lamination performed in cold temperatures may affect long-term results. We recommend the use of balancing sheets. They act as a moisture barrier to ensure a balanced construction. If possible, balanced-construction should be used with sheets of equivalent expansion and shrinkage ratios. Please note that-metal laminates experience minimal if any change in dimension. The fabricated parts should be stored for at least 48 hours before exposure to extreme temperature or humidity changes. (Most contact adhesives require this minimum time to reach initial bond strength). Following these procedures allows the metal to bond firmly to the substrate. The above procedures should be followed when the lamination is to be completed on the job site. Any lamination that is completed in conditions that are different than the expected day to day living conditions may result in failure of the application as noted above. All heating and air conditioning systems should be operating to achieve expected living conditions before any lamination or installation takes place on a job site.

Failure to comply with these recommendations may cause failure of your application. Most substrates experience a change in dimension that may be significantly different than that of metal. This difference may cause the metal to pull away from the substrate or buckle at the weakest point of adhesion.

Sufficient spacing must be provided between and at each end of sheets or strips to accommodate possible linear expansion from the ambient temperature range at the installation site. Minimum spacing of 1/32" is recommended but a more accurate determination can be made by allowing 1/100" for each 96" of metal surface for each 10 degrees Fahrenheit of anticipated temperature change.

If you are not sure how any Chemetal will work for your particular application, we suggest you test the application system you have selected under production and/or installation site conditions.

Proper substrates must be used and careful bonding procedures must be observed. Substrates should be of good quality plywood, high density particleboard or high quality fiberboard. The more resistant the substrate is to dimensional change (shrinkage and/or expansion from changes in humidity and temperature) the better the long-term results will be.

The face of the substrate must be smooth and free of grease, wax, dust, chips and other foreign matter.

For best results, it is recommended that the back of any solid metal be scratched with Scotch Brite pads prior to lamination.

To ensure a good bond, consult and follow the adhesive manufacturer's instructions on preparation of substrates, surfaces and adhesive application. All types of adhesive must be applied evenly and uniformly. There must be no bridging, and positive bonding pressure must be applied uniformly and progressively over the entire surface. To bond metal to your substrate after gluing, pressure must be firmly and evenly applied over the entire surface using a rotary or platen press. If possible, balanced construction should be used with sheets of equivalent expansion and shrinkage ratios. The use of hand or "J" rollers is not recommended for laminating metallic laminate sheets. They can be used for laminating strips as long as firm, even pressure is applied to the entire length.

Once you have started to lay down a piece of metallic laminate do not try to realign it. While you may be able to force it into position, you will put stress into the metal, which may cause buckling and bond failure during a short period of time. Chemetal's metallic laminates will readily conform to the surface of your substrate. For a smooth, flat surface appearance, extra care may be required in surface preparation and lamination. A phenolic backer sheet is available upon request for finishes that are not already supplied with one if you determine that your application requires the additional support.

Application

Product is recommended for vertical surfaces, but may be used in light duty horizontal areas.

Base Material

Steel containing varied alloys.

Material Specifications

Size: Sheets are 48" X 96" (4' x 8')

Thickness: 24 Gauge (.024")

Weight per sheet 32.75 lbs. (1.02 lbs./sqft)

Coating: Spray Polyurethane

Shipping

Material sould be shipped flat, with adequate protected on all sides, faces and corners.

Appearance

The surface of the sheet has a rust appearance, iron oxide. There may be minor surface deformation as a result of the normal oxidation process.

Cleaning

Clean the surface using a light-duty conventional cleaners such as mirror glass cleaners. Do not use cleaners that contain abrasives, and try to avoid cleaners with ammonia. Blown air or dusting is another recommended cleaning method.

Surface resistance

The surface is not resistant to scratching. If surface rubs off it may be "re-rusted" by applying water or salty water. It may be used in horizontal applications, but must be considered light duty. It should be used in vertical or horizontal applications where temperatures don't exceed 160˚F. Maximum heat resistance temperature is 160˚F.

How to process

The sheets are shipped with a protective paper wrapping. Quality checks should be carried out on the sheets beforehand by simply lifting up the edge of the wrapping and then laying it back down.

Cutting

The steel can be processed utilizing various types of metal working equipment and hand tools.

Because alloys in steel can create sparks, dust collection systems must be turned off or disengaged.

Examples of hand tools include circular, band, or jig saws equipped with Bi-Metal blades such as the Lenox Bi-Metal Jig Saw Blades, Lenox Metal Cutting Circular Saw Blades, Lenox Bi-Metal Hole Saws, and Lenox Air Saw Blades for use in pneumatic machine cutting.

Examples of metal working equipment include shears, brakes, rolls, waterjet cutting, and plasma arc cutting.

NOTE: If a torch or plasma arc cutting system is used to cut the parts, the protective wrap should be removed and moved away from the work area prior to cutting to avoid potential fire from the heat and sparks generated.

After cutting the sheet into desired sizes it is recommended that the cut edges be protected from oxidation by applying a coat of clear lacquer.

Safety Note

When handling this material always utilize safe lifting and carrying practices. When working with or cutting the materials always utilize proper Personnel Protective Equipment specified by the manufacturer of the equipment or cutting tool manufacturers.

Backer materials

The steel may be laminated to materials such as fiberboard, particleboard, veneer plywood, plywood and plasterboards, as well as rigid foams and metals.

Bonding

Conventional glues and adhesives and special purpose thermo-setting resins or solvent based contact adhesives may be used for lamination. material may also be fastened mechanically. Pinch rolling the material is also recommended. If necessary, balancing should be done with sheets of equivalent shrinking and expanding ratios.

LAMINATION

It is recommended that all substrates, adhesives and Chemetal laminates be stored at room temperature (75°F) with a relative humidity of 45 to 50% for at least 48 hours prior to lamination. All materials should be stored in the same environment where fabrication or installation will take place under the above conditions.

A five to seven day period of time is recommended for optimal pre-conditioning in a warm and dry environment. Lamination performed in cold temperatures may affect long-term results. We recommend the use of balancing sheets. They act as a moisture barrier to ensure a balanced construction. If possible, balanced-construction should be used with sheets of equivalent expansion and shrinkage ratios. Please note that-metal laminates experience minimal if any change in dimension. The fabricated parts should be stored for at least 48 hours before exposure to extreme temperature or humidity changes. (Most contact adhesives require this minimum time to reach initial bond strength). Following these procedures allows the metal to bond firmly to the substrate. The above procedures should be followed when the lamination is to be completed on the job site. Any lamination that is completed in conditions that are different than the expected day to day living conditions may result in failure of the application as noted above. All heating and air conditioning systems should be operating to achieve expected living conditions before any lamination or installation takes place on a job site.

Failure to comply with these recommendations may cause failure of your application. Most substrates experience a change in dimension that may be significantly different than that of metal. This difference may cause the metal to pull away from the substrate or buckle at the weakest point of adhesion.

Sufficient spacing must be provided between and at each end of sheets or strips to accommodate possible linear expansion from the ambient temperature range at the installation site. Minimum spacing of 1/32" is recommended but a more accurate determination can be made by allowing 1/100" for each 96" of metal surface for each 10 degrees Fahrenheit of anticipated temperature change.

If you are not sure how any Chemetal will work for your particular application, we suggest you test the application system you have selected under production and/or installation site conditions.

Proper substrates must be used and careful bonding procedures must be observed. Substrates should be of good quality plywood, high density particleboard or high quality fiberboard. The more resistant the substrate is to dimensional change (shrinkage and/or expansion from changes in humidity and temperature) the better the long-term results will be.

The face of the substrate must be smooth and free of grease, wax, dust, chips and other foreign matter.

For best results, it is recommended that the back of any solid metal be scratched with Scotch Brite pads prior to lamination.

To ensure a good bond, consult and follow the adhesive manufacturer's instructions on preparation of substrates, surfaces and adhesive application. All types of adhesive must be applied evenly and uniformly. There must be no bridging, and positive bonding pressure must be applied uniformly and progressively over the entire surface. To bond metal to your substrate after gluing, pressure must be firmly and evenly applied over the entire surface using a rotary or platen press. If possible, balanced construction should be used with sheets of equivalent expansion and shrinkage ratios. The use of hand or "J" rollers is not recommended for laminating metallic laminate sheets. They can be used for laminating strips as long as firm, even pressure is applied to the entire length.

Once you have started to lay down a piece of metallic laminate do not try to realign it. While you may be able to force it into position, you will put stress into the metal, which may cause buckling and bond failure during a short period of time. Chemetal's metallic laminates will readily conform to the surface of your substrate. For a smooth, flat surface appearance, extra care may be required in surface preparation and lamination. A phenolic backer sheet is available upon request for finishes that are not already supplied with one if you determine that your application requires the additional support.

Application

Product is recommended for vertical surfaces, but may be used in light duty horizontal areas.

Hygiene criteria

Odorless, suitable for use with foodstuff.

Cleaning

Clean the surface using a conventional cleaning agent such as mirror glass cleaners, or those containing ammonia, etc. Do not use cleaners that contain abrasives.

Surface resistance

The surface is resistant towards household liquids. However, it is not resistant to scratching. It may be used in horizontal applications, but must be considered light duty. It should not be used in vertical or horizontal applications where temperature exceeds 160˚F. Maximum heat resistance temperature is 160˚F.

How to process

The sheets are covered with a protective mask. It is recommended to leave this mask on the surface of the laminates even during processing work. Nevertheless, color uniformity and other quality checks should be carried out on the sheets beforehand by simply lifting up the edge of the mask and then laying it back down.

Attention

Do not expose sheets to light for long periods of time. This may cause problems with the removal of the protective mask.

Base materials

The stainless steel laminate may be laminated to materials such as fiberboard, particleboard, veneer plywood, plywood and plasterboards, as well as rigid foams and metals.

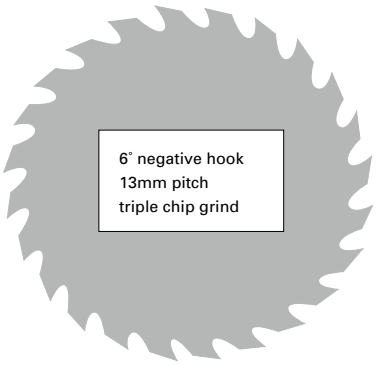
Bonding

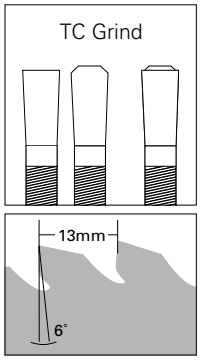
Conventional glues and adhesives–white glue (PVA) special purpose thermo-setting resins or solvent based and water based contact adhesives may be used for lamination. Pinch rolling the material is also recommended. If necessary, balancing should be done with sheets of equivalent shrinking and expanding ratios.

Sawing

Table and panel saws

When cutting on table saws, panel saws, etc. the stainless steel layer must always be facing up. The speed of the travel should be approximately 16-20 feet per minute. The blade diameter can be from 7 inches to 16 inches with a 6 degree negative hook, 13mm pitch, triple chip grind carbide blade.





CNC routers

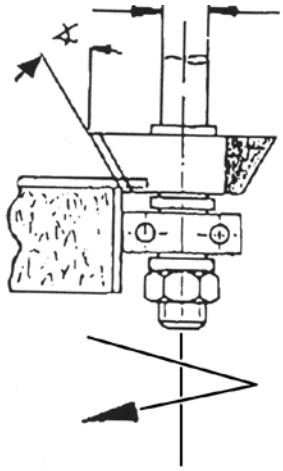
When cutting on CNC-type routers, in-house testing showed that the 3 fluted solid carbide bits gave the best results. The speed of the router would be approximately 7,000 to 8,000 RPM and the speed of travel would be approximately 10-15 feet per minute. The shank diameter would be 1/2 inch to 3/4 of an inch. The length can be from 3 to 4 inches. The upcut or downcut determines which way the finished side of the material will face. The right hand twist determines the face to be down, and the left hand twist determines the face to be up.

spiral bits
solid carbide
3 flute

cutting diameter	cutting length	shank diameter	overall length
3/8″	11/4″	1/2″	3″
1/2″	11/2″	1/2″	31/2
1/2″	2″	1/2″	4″
5/8″	2″	5/8″	4″
3/4″	21/8″	3/4″	4″

Hand operated routers

When cutting with hand operated routers, the work piece must be fed along the ball-bearing angle of the bezel of carbide tipped routing cutters with 15, 30 and 45-degree angles. The cutters should have three tips for best performance. The running speed should be approximately 16,000 to 20,000 RPM and forward speed should be about 20 feet per minute.



Chemetal Magnetic Laminates are HPL (High Pressure Laminates) that contain a thin foil layer of iron sandwiched in the HPL Backer, enabling magnetic effect when used with magnets. We recommend obtaining a sample of material for testing prior to installation. Surface is melamine.

APPLICATION:Vertical interior application.
SIZE: 4 x 8 feet (122 x 244 cm)
THICKNESS: .04" (1 mm)
WEIGHT: 18 LBS

IDEAL USAGE PER PRODUCT:
Dry Erase: Chemetal #152, #157
Chalk: Chemetal # 151
Image Projection: Chemetal #153
Paintable: Chemetal #150
Custom: Any Chemetal 400, 500, 800 (metal only), 900 or Tints Series designs may be applied.

See Product Chart in Magnetic Laminate Brochure for more Product Info.

CLEANING:
Do not use washing detergents. Sponge and water are suitable for most cleaning requirements. For more complete cleaning conventional spirits (ethyl alcohol) may be used except where noted below.

Chemetal #152, #157: Dry wipeable, sponge and water may be used, as well as conventional spirits.
Chemetal #151: Sponge and water
Chemetal #153: Require frequent cleaning when used with dry erase markers. Other Chemetal finishes are recommended for regular dry erase use. Sponge and water may be used, and conventional spirits.
Chemetal #150: This laminate backer is meant for surface customization (paint, etc.) Follow cleaning recommendations of surface material.

All Chemetal Magnetic Laminates are supplied with a protective mask or film. It is recommended that surface be cleaned with conventional spirits (ethyl alcohol) after mask removal to remove any residue.

NOTE: Never use detergents such as washing liquids to clean the surface because they usually contain fatty or oil substances to prevent skin from drying. A greasy film can remain on surface making cleaning difficult.

TRANSPORT:
Chemetal Magnetic Laminates must be stored and transported FLAT to avoid surface cracks.

CUTTING AND MACHINING:
Please note that sparks may occur during cutting and machining due to iron layer in HPL laminate. Best cutting results are achieved with Carbide-tipped circular saw blade. SPECS: 12" (305 mm) diameter, .07" to .086" (1.8-2.2 mm) thickness. Z60 RPM: 1500 FEED: 26 feet per minute. When cutting double-sided Magnetic Laminates the bottom side must first be slitted for a clean cut.
USE:
Chemetal Magnetic Laminates should be used in well air-conditioned rooms. Overly dry room conditions or direct heat influence should be avoided (risk of cracking). A short-term temperature influence on the laminate up to 140 Farenheit 60°C is possible.

ADHESIVES
When applying dampness impermeable materials on top of Chemetal #150 never use water-containing adhesive as the dampness of the adhesive cannot escape and the adhesive bonding can consequently not dry.

ENVIRONMENTAL:
Laminate Components: 54% iron, 26% paper, 20% synthetic resin (irreversible hardened).
The raw materials and production proccesses guarantee that the boards are free of substances that are harmful to the environment. According to transportation regulations, Chemetal Magnetic Laminates are not classified as hazardous materials, a marking is not necessary. They are physiologically recognized as safe, emission free, insoluble in water and suitable for the contact with food stuffs. Waste material can be disposed in accordance with the local waste regulations on controlled waste disposal sites.

NOTE ON DRY ERASE MARKERS
Quality, age, operating time and storage of dry erase markers have an enormous impact on the dry erase ability. It is necassary to store board markers horizontally. Please observe the storage directions of the manufacturers.

CAUTION:

Metallic laminates will conduct electricity and can cause shocks or short circuits when in contact with ungrounded electrical circuits.

WARRANTY DISCLAIMER AND LIABILITY:

The information in this Technical Information Sheet and all related documents released by Chemetal is believed to be reliable; but Chemetal disclaims the creation of any expressed or implied warranty including the warranties of merchantability and fitness for a particular purpose with respect to Chemetal products. In all cases, users must determine the suitability of such products for any particular use and shall assume all risk and liability whatsoever in connection herewith.

Since we exercise no control in handling, storage, application and use of these products or the products of others with which they are used in combination, no warranty, express or implied, is made as to the results and effect of their use. User must also establish his or her own procedures and verify the finish of any product to be as ordered before use. We recommend testing all procedures before beginning production or installation. Buyer's exclusive remedy for a loss or claim resulting from the use of Chemetal products shall be replacement of product proven to be defective. In no event shall the Seller be liable for any special, incidental, consequential or exemplary damages.

CERTIFICATIONS:

Chemetal is ASTM E84-05 tested.
Chemetal is also IMO and Coast Guard certified (164.112/EC1347) for most products.

IMPORTANT:

This information is intended to be a general guideline.

For further information please contact:

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